



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

Monday, December 9, 2019
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

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

Re: Permit Modification Approval for 1209 S-10H
47-033-05946-00-00

Increase lateral spacing from 1000' to 1500'. Total measured depth change 20692' to 21746'.

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: 1209 S-10H
Farm Name: HG ENERGY II APPALACHIA
U.S. WELL NUMBER: 47-033-05946-00-00
Horizontal 6A New Drill
Date Modification Issued: 12/09/2019

Promoting a healthy environment.

WW-6B
(04/15)

API NO. 47- 033 - 05146 MOD
OPERATOR WELL NO. Nays 1209 S-10H
Well Pad Name: Nays 1209

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

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

2) Operator's Well Number: Nays 1209 S-10H Well Pad Name: Nays 1209

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

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

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No

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

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 21,746'

11) Proposed Horizontal Leg Length: 14,221'

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

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

14) Approximate Saltwater Depths: None noted in offsets

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

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

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

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

Depth: _____

Seam: _____

Owner: _____

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SEP 24 2019

WV Department of
Environmental Protection

WW-6B
(04/15)

API NO. 47- _____
 OPERATOR WELL NO. Nays 1209 S-10H
 Well Pad Name: Nays 1209

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor - 1st	36"	New	LS	195.36	100'	100'	Drilled In
Fresh Water	20"	NEW	J-55	94	600'	600'	40% excess yield = 1.20, CTS
Coal	13 3/8"	NEW	J-55	68	1735'	1735'	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	2500'	2500'	40% excess yield = 0% Excess Yield
Production	5 1/2"	NEW	P-110	23	21746'	21746'	20% excess yield = 1.15, min yield = 1.00
Tubing							
Liners							

*SDW
9/20/2019*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	.500				CTS
Fresh Water	20"	24"	.438	2110	1200	Type 1, Class A	30 % excess yield = 1.20, CTS
Coal	13 3/8"	17 1/2"	.480	3450		Type 1/Class A	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	12 1/4"	.395	3950		Type 1/Class A	40% excess yield = 0% Excess Yield
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield = 1.15, min yield = 1.00
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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CASING AND TUBING PROGRAM

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Fresh Water	20"	NEW	J-55	94	600'	600'	40% excess yield = 1.20, CTS
Coal	13 3/8"	NEW	J-55	68	1735'	1735'	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	2500'	2500'	40% excess yield Lead/ 0% Excess T <input checked="" type="checkbox"/>
Production	5 1/2"	NEW	P-110	23	21746'	21746'	20% excess yield = 1.19, tail yield = 1.19 <input checked="" type="checkbox"/>
Tubing							
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	.500				CTS
Fresh Water	20"	24"	.438	2110	1200	Type 1, Class A	30% excess yield = 1.20, CTS
Coal	13 3/8"	17 1/2"	.480	3450		Type 1/Class A	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	12 1/4"	.395	3950		Type 1/Class A	40% excess yield = 0% Excess Lead <input checked="" type="checkbox"/>
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield = 1.19, tail yield = 1.19 <input checked="" type="checkbox"/>
Tubing							
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19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6900 feet. Drill horizontal leg to estimated 14,221' TMD, stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

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

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

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

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

23) Describe centralizer placement for each casing string:

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

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

Conductor - N/A, Casing to be drilled in w/ Dual Rotary Rig.
Fresh Water - 15.6 ppg PNE-1 + 3% bwoc CaCl₂ 40% Excess Yield = 1.20, CTS
Coal - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl₂ zero% Excess, CTS
Intermediate - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess, Tail: 15.9 ppg, PNE-1 + 2.5% bwoc CaCl₂ zero% Excess, CTS
Production - Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170, Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020% ExcessLead Yield=1.19Tail Yield=1.94, CTS

25) Proposed borehole conditioning procedures:

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

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*Note: Attach additional sheets as needed.



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1209 S-10H
Marcellus Shale Horizontal
Harrison County, WV

		1209 S-10H SHL				237409.22N 1732701.94E					
Ground Elevation		1007'				1209 S-10H LP				237512.17N 1734023.1E	
Azim		160.751°				1209 S-10H BHL				224086.82N 1738711.07E	

WELLBORE DIAGRAM	HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
	30"	30" 157.5# LS	Conductor	0	100	AIR	N/A, Casing to be drilled in w/ Dual Rotary Rig	N/A	Ensure the hole is clean at TD.	Conductor casing = 0.5" wall thickness
			24"	20" 94# J-55	Fresh Water	0	135	AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS	Centralized every 3 joints to surface
	Kittaning Coal	660			665					
	Fresh Water	0			750					
	17.5"	13-3/8" 68# J-55 BTC	Little/Big Lime	1126 / 1167	1151 / 1243	AIR / KCL Salt Polymer	Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS	Bow Spring on every joint	Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.480" wall thickness Burst=3450 psi
			Injun / Gantz (Storage)	1243 / 1535	1349 / 1585					
			Intermediate 1 (Shoe 150' below storage)	0	1735					
	12.25"	9-5/8" 40# J-55 BTC	Fifty / Thirty Foot	1650 / 1730	1697 / 1742	AIR / KCL Salt Polymer	Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS	Bow Spring on first 2 joints then every third joint to 100' form surface	Once casing is at setting depth, Circulate and condition mud at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.395" wall thickness Burst=3950 psi
			Gordon Stray / Gordon	1785 / 1850	1850 / 1940					
			5th Sand	2035	2070					
			Bayard Sand	2125	2160					
	8.5" Vertical	5-1/2" 23# P-110 HP CDC HTQ	Speechley	2745	2763	9.0ppg SOB	Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170 Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA170 20% Excess Lead Yield=1.19 Tail Yield=1.94 CTS	Run 1 spiral centralizer every 5 joints from the top of the curve to surface.	Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.	Production casing = 0.415" wall thickness Burst=16240 psi Note:Actual centralizer schedules may be changed due to hole conditions
			Balltown	2965	3005					
			Benson	4050	4083					
			West Falls	4620	5865					
8.5" Curve			5-1/2" 23# P-110 HP CDC HTQ	Rhinestreet	5865	6140		11.5ppg-12.5ppg SOB		
				Cashaqua	6140	6341				
				Middlesex	6341	6421				
				West River	6421	6514				
				Burkett	6514	6540				
				Tully Limestone	6540	6644				
8.5" Lateral	5-1/2" 23# P-110 HP CDC HTQ	Hamilton	6644	6863	11.5ppg-12.5ppg SOB					
		Marcellus	6863	6914						
		TMD / TVD (Production)	21746	6900						
			Onondaga	6914						

LP @ 6900' TVD / 7525' MD

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

+/-14221' ft Lateral

TD @ +/-6900' TVD
+/-21746' MD

X=centralizers

BHL is located on topo map 4,857 feet south of Latitude: 39° 07' 30"
 SHL is located on topo map 6,773 feet south of Latitude: 39° 10' 00"

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL
SEE PAGE 3 FOR SURFACE OWNERS

BHL is located on topo map 1,125 feet west of Longitude: 80° 25' 00"
 SHL is located on topo map 7,270 feet west of Longitude: 80° 25' 00"

	LESSOR	LEASE NO.	DIST-TM/PAR
A	J. B. GUSMAN ET AL	FK020606	20-444/11.2 12-444/21 12-444/22 20-444/11.3 12-444/11 12-444/11.1
B	HOWARD NEELY	FK014008	12-444/43 12-444/32 12-465/14 12-465/15 4-8B/1.25 4-8B/1.19 4-8B/1.5
C	W. L. RIFFE ET AL	FK064316	4-8B/1.7 4-8B/1.1 4-8B/1.18 4-8B/1.15 4-8B/1.8
D	H. S. BAILEY ET AL	FK013035	4-8B/1.5 4-8B/1.1
E	ISAAC JACKSON	LC009807	4-8B/4 4-8B/5 4-8C/29 4-8C/34
F	FREDA M. COLVIN ET VIR	CNX024530	P/O 4-8C/28
G	ROBERT BLAIR III	HGI1147	P/O 4-8B/28



SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4333356.36
 E:548191.39
 UTM 17-NAD83(ET)
 N:14217020.00
 E:1798524.60
 LAT/LON DATUM-NAD83
 LAT:39.148070
 LON:-80.442302

APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4333394.43
 E:548593.37
 UTM 17-NAD83(ET)
 N:14217144.89
 E:1799843.41
 LAT/LON DATUM-NAD83
 LAT:39.148391
 LON:-80.437648

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4329328.15
 E:550089.65
 UTM 17-NAD83(ET)
 N:14203804.12
 E:1804752.47
 LAT/LON DATUM-NAD83
 LAT:39.111666
 LON:-80.420633

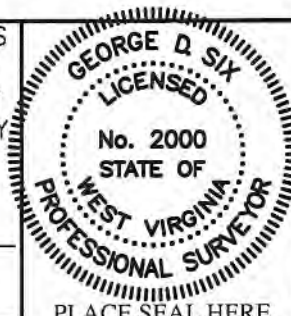
THRASHER

CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES
 800 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
 PHONE (304) 624-4109 • FAX (304) 624-7831

FILE #: 1209 S-10H
 DRAWING #: 1209 S-10H
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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

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



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



DATE: SEPTEMBER 19, 2019
 OPERATOR'S WELL #: 1209 S-10H
 API WELL #: 47 33 05946 Mod
 STATE COUNTY PERMIT

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

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

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

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

OIL & GAS ROYALTY OWNER: ANN COVINGTON, ET AL ACREAGE: 879.03±

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

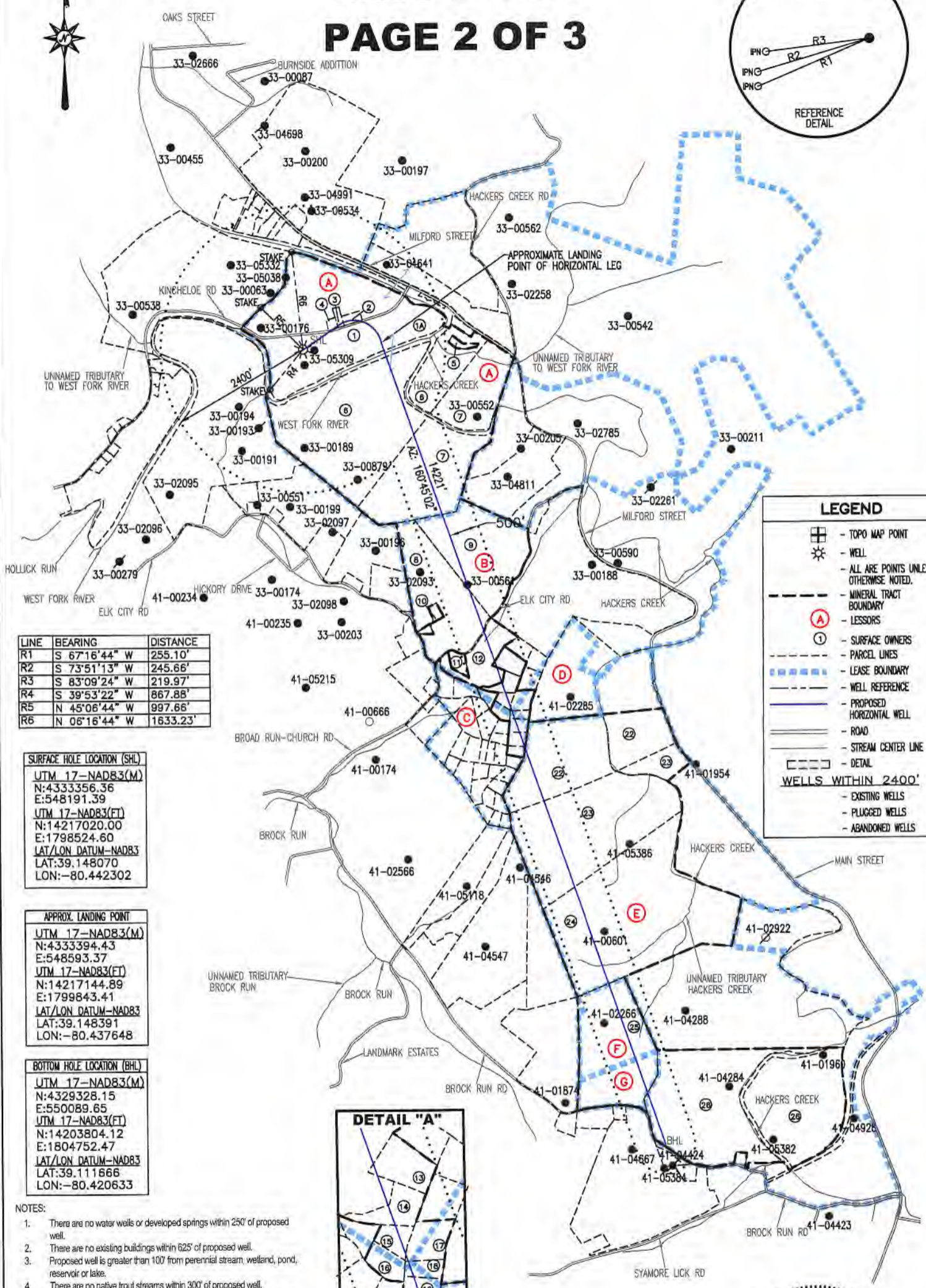
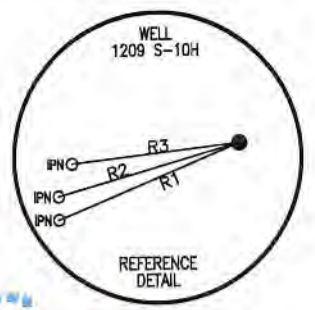
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,900'± TMD: 21,746'±

WELL OPERATOR HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT DIANE C. WHITE

Address 5260 DUPONT ROAD Address 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

1209 S-10H PAGE 2 OF 3



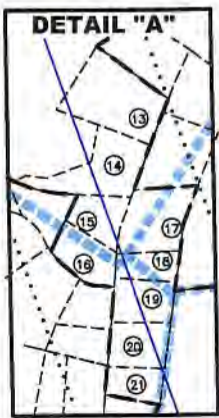
LINE	BEARING	DISTANCE
R1	S 67°16'44" W	255.10'
R2	S 73°51'13" W	245.66'
R3	S 83°09'24" W	219.97'
R4	S 39°53'22" W	867.88'
R5	N 45°06'44" W	997.66'
R6	N 06°16'44" W	1633.23'

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 LAT/LON DATUM-NAD83
 LAT:39.111866
 LON:-80.420633

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



API WELL #: 47 33 05946 MOD
 STATE COUNTY PERMIT

SEPTEMBER 19, 2019

THRASHER

CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES
 600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
 PHONE: (304) 624-4108 • FAX: (304) 624-7831



George D. Six

1209 S-10H

PAGE 3 OF 3

	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA A. STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	ERIC K. & SUSIE G. DECKER	12-444/21.2
6	ERIC K. & SUSIE G. DECKER	12-444/21
7	ERIC K. & SUSIE G. DECKER	12-444/22
8	BARBARA LEE SETLIFF	12-444/43
9	ERIC K. & SUSIE G. DECKER	12-444/32
10	REBECAH D. CARSON & PAMELA M. MINIGH	12-444/43.2
11	DAREN R. & AMANDA G. HENDERSHOT	4-8B/1.33
12	JOEL V. & KAY N. KROLL AND JOEL DANIEL KROLL	12-465/14
13	FRED J., JR. & MICHELE L. TURNER	12-465/15
14	WILLIAM E. & BARBARA A. FULTZ	04-8B/1.25
15	JEREMY M. & AMANDA A. JONES	04-8B/1.19
16	WESLEY T. BURTON	04-8B/1.7
17	KERRIE DIANE WORKMAN	04-8B/1.5
18	GERALD E. BENNINGTON	04-8B/1.1
19	WILLIAM C. WHITE	04-8B/1.18
20	DARRELL K. KINCAID	04-8B/1.15
21	JOAN G. MILLER	04-8B/1.8
22	THOMAS E. & TERRI E. HAWKINS	4-8B/4
23	THOMAS E. & TERRI E. HAWKINS	4-8B/5
24	C. D. COLE II	4-8C/29
25	C. D. COLE II	4-8C/28
25	CHARLES D. COLE II	4-8C/34

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SEPTEMBER 19, 2019

THRASHER

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STATE COUNTY PERMIT

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 SHL is located on topo map 6,773 feet south of Latitude: 39° 10' 00"

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL
SEE PAGE 3 FOR SURFACE OWNERS

BHL is located on topo map 1,125 feet west of Longitude: 80° 25' 00"
 SHL is located on topo map 7,270 feet west of Longitude: 80° 25' 00"

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A	J. B. GUSMAN ET AL	FK020606	20-444/11.2
			12-444/21
			12-444/22
			20-444/11.3
			12-444/11
			12-444/11.1
B	HOWARD NEELY	FK014008	12-444/43
			12-444/32
			12-465/14
			12-465/15
			4-8B/1.25
			4-8B/1.19
C	W. L. RIFFE ET AL	FK064316	4-8B/1.7
			4-8B/1.1
			4-8B/1.18
			4-8B/1.15
D	H. S. BAILEY ET AL	FK013035	4-8B/1.5
			4-8B/1.1
E	ISAAC JACKSON	LC009807	4-8B/4
			4-8B/5
			4-8C/29
			4-8C/34
F	FREDA M. COLVIN ET VIR	CNX024530	P/O 4-8C/28
G	ROBERT BLAIR III	HGII147	P/O 4-8B/28



SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4333356.36
 E:548191.39
 UTM 17-NAD83(ET)
 N:14217020.00
 E:1798524.60
 LAT/LON DATUM-NAD83
 LAT:39.148070
 LON:-80.442302

APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4333394.43
 E:548593.37
 UTM 17-NAD83(ET)
 N:14217144.89
 E:1799843.41
 LAT/LON DATUM-NAD83
 LAT:39.148391
 LON:-80.437648

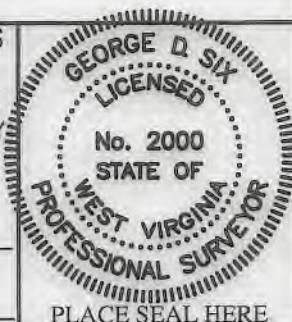
BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4329328.15
 E:550089.65
 UTM 17-NAD83(ET)
 N:14203804.12
 E:1804752.47
 LAT/LON DATUM-NAD83
 LAT:39.111666
 LON:-80.420633

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 600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
 PHONE (304) 624-4108 • FAX (304) 624-7831

FILE #: 1209 S-10H
 DRAWING #: 1209 S-10H
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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



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



DATE: SEPTEMBER 19, 2019
 OPERATOR'S WELL #: 1209 S-10H
 API WELL #: 47 33 05946 MOD
 STATE COUNTY PERMIT

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

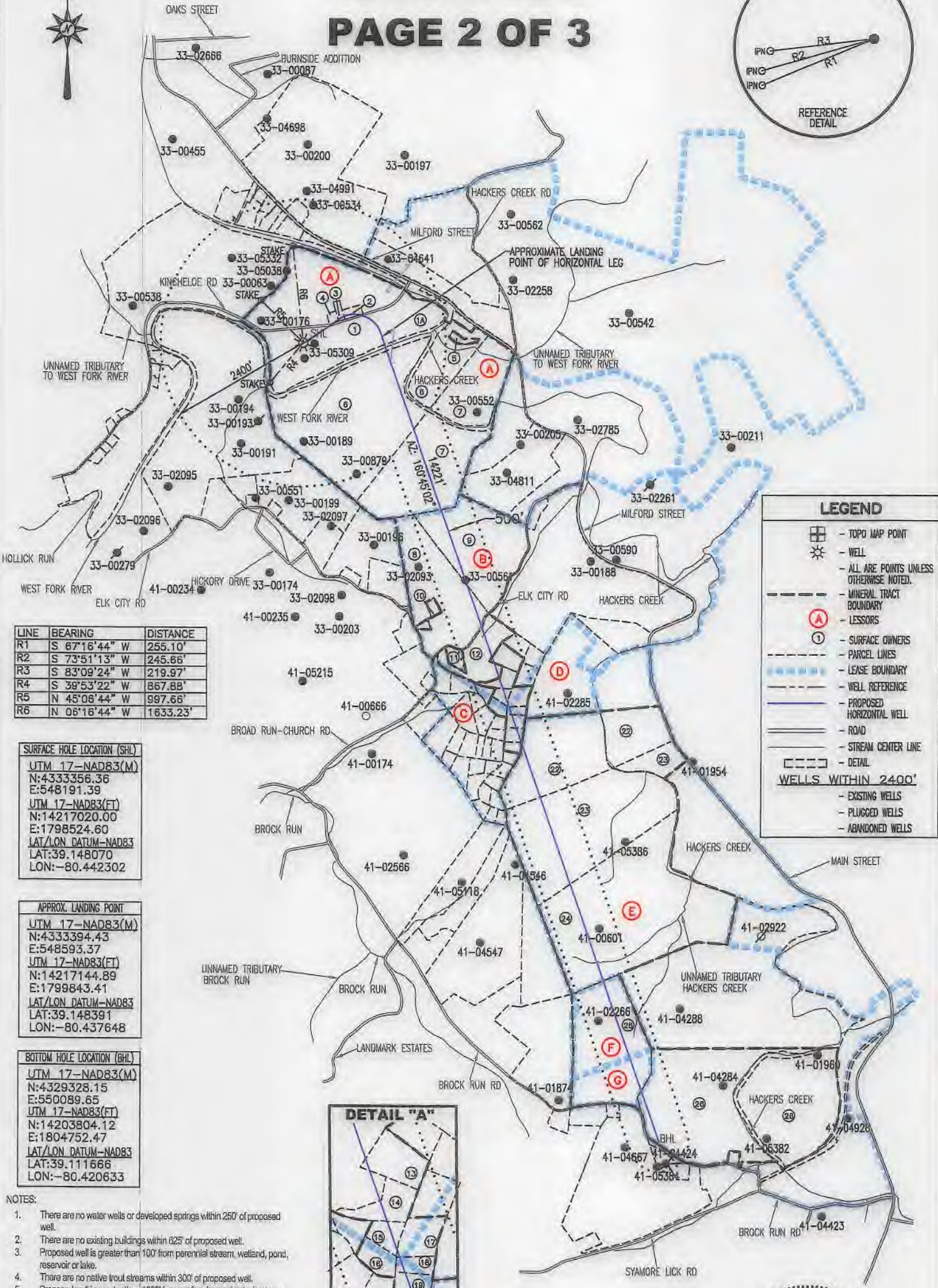
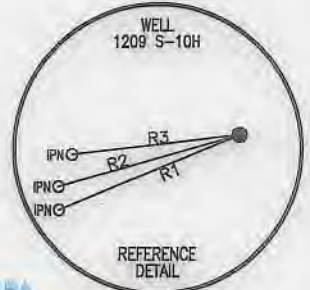
WATERSHED: MIDDLE WEST FORK CREEK ELEVATION: 1,007'±
 COUNTY/DISTRICT: HARRISON / UNION QUADRANGLE: WEST MILFORD, WV 7.5'
 SURFACE OWNER: HG ENERGY II APPALACHIA, LLC ACREAGE: 95.06±
 OIL & GAS ROYALTY OWNER: ANN COVINGTON, ET AL ACREAGE: 879.03±

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,900'± TMD: 21,746'±
 WELL OPERATOR HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT DIANE C. WHITE
 Address 5260 DUPONT ROAD Address 5260 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

1209 S-10H

PAGE 2 OF 3



LINE	BEARING	DISTANCE
R1	S 67°16'44" W	255.10'
R2	S 73°51'13" W	245.66'
R3	S 83°09'24" W	219.97'
R4	S 39°53'22" W	867.88'
R5	N 45°06'44" W	997.66'
R6	N 06°16'44" W	1633.23'

SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4333356.36
 E:548191.39
 UTM 17-NAD83(FT)
 N:14217020.00
 E:1798524.60
 LAT/LON DATUM-NAD83
 LAT:39.148070
 LON:-80.442302

APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4333394.43
 E:548593.37
 UTM 17-NAD83(FT)
 N:14217144.89
 E:1799843.41
 LAT/LON DATUM-NAD83
 LAT:39.148391
 LON:-80.437648

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4329328.15
 E:550089.65
 UTM 17-NAD83(FT)
 N:14203804.12
 E:1804752.47
 LAT/LON DATUM-NAD83
 LAT:39.111666
 LON:-80.420633

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



LEGEND

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

WELLS WITHIN 2400'

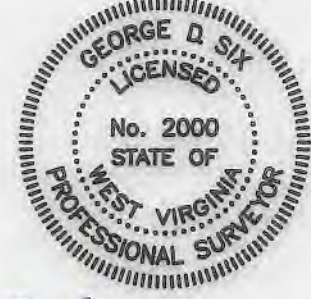
- EXISTING WELLS
- PLUGGED WELLS
- ABANDONED WELLS

API WELL #: 47 33 05946 MOD
 STATE COUNTY PERMIT

SEPTEMBER 19, 2019

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 600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 25330
 PHONE (304) 624-4108 • FAX (304) 624-7831



George D. Six

1209 S-10H

PAGE 3 OF 3

	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA A. STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	ERIC K. & SUSIE G. DECKER	12-444/21.2
6	ERIC K. & SUSIE G. DECKER	12-444/21
7	ERIC K. & SUSIE G. DECKER	12-444/22
8	BARBARA LEE SETLIFF	12-444/43
9	ERIC K. & SUSIE G. DECKER	12-444/32
10	REBECAH D. CARSON & PAMELA M. MINIGH	12-444/43.2
11	DAREN R. & AMANDA G. HENDERSHOT	4-8B/1.33
12	JOEL V. & KAY N. KROLL AND JOEL DANIEL KROLL	12-465/14
13	FRED J., JR. & MICHELE L. TURNER	12-465/15
14	WILLIAM E. & BARBARA A. FULTZ	04-8B/1.25
15	JEREMY M. & AMANDA A. JONES	04-8B/1.19
16	WESLEY T. BURTON	04-8B/1.7
17	KERRIE DIANE WORKMAN	04-8B/1.5
18	GERALD E. BENNINGTON	04-8B/1.1
19	WILLIAM C. WHITE	04-8B/1.18
20	DARRELL K. KINCAID	04-8B/1.15
21	JOAN G. MILLER	04-8B/1.8
22	THOMAS E. & TERRI E. HAWKINS	4-8B/4
23	THOMAS E. & TERRI E. HAWKINS	4-8B/5
24	C. D. COLE II	4-8C/29
25	C. D. COLE II	4-8C/28
25	CHARLES D. COLE II	4-8C/34

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M) N:4333356.36 E:548191.39
UTM 17-NAD83(FT) N:14217020.00 E:1798524.60
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UTM 17-NAD83(FT) N:14217144.89 E:1799843.41
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BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M) N:4329328.15 E:550089.65
UTM 17-NAD83(FT) N:14203804.12 E:1804752.47
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SEPTEMBER 19, 2019

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600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
PHONE (304) 624-1088 • FAX (304) 624-7831

API WELL #: 47 33 05946 Mod
STATE COUNTY PERMIT

**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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Office of Oil and Gas

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WV Department of
Environmental Protection

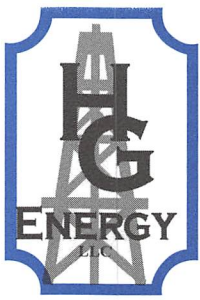
HG Energy II Appalachia, LLC
1209 S-10H LEASE CHAIN

TRACT #	LEGACY LEASE NUMBER	TAX MAP	LEASE NUMBER	GRANTOR/LESSOR	GRANTEE/LESSEE	ROYALTY	DEED BOOK	PAGE				
A	FK020606	17-20-0444-0011-0000, 17-20-0444-0011-0001, 17-20-0444-0011-0002, 17-20-0444-0011-0003, 17-20-0444-0012-0000, 17-12-0444-0013-0000, 17-12-0444-0014-0000, 17-12-0444-0021-0000, 17-12-0444-0021-0001, 17-12-0444-0022-0000, 17-12-0445-0001-0000, 17-12-0445-0002-0000, 17-12-0445-0009-0000, 17-12-0445-0010-0000, 17-12-0445-0011-0000	Q100370000	J.B. GUSMAN AND ADALINE GUSMAN	TREAT AND CRAWFORD	NOT LESS THAN 1/8	158	8				
				TREAT AND CRAWFORD	UNITED FUEL GAS COMPANY	ASSIGNMENT	226	359				
				UNITED FUEL GAS COMPANY	FAYETTE COUNTY GAS COMPANY	ASSIGNMENT	UNRECORDED					
				FAYETTE COUNTY GAS COMPANY	HOPE NATURAL GAS	ASSIGNMENT	201	3				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY COMPANY	MERGER/NAME CHANGE	903	179				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795				
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362				
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1409	680				
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1442	356				
				DOMINION EXPLORATION & PRODUCTION, INC.	DOMINION TRANSMISSION, INC.	ASSIGNMENT	1457	978				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692				
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS					
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581				
				B	FK014008	17-12-0444-0032-0000, p/o 17-12-0444-0043-0000, p/o 17-12-0445-0020-0000, 17-12-0445-0030-0001, 17-12-0445-0030-0002, 17-12-0445-0030-0003, 17-12-0445-0030-0004, 17-12-0445-0030-0005, 17-12-0445-0032-0000, 17-12-0445-0044-0000, p/o 17-12-0465-0001-0000, 17-12-0465-0002-0000, 17-12-0465-0003-0000, 17-12-0465-0012-0000, p/o 21-04-0088-0001-0000, 21-04-0088-0001-0001, 21-04-0088-0001-0005, p/o 21-04-0088-0001-0007, p/o 21-04-0088-0001-0009, p/o 21-04-0088-0004-0000	Q100369000	HOWARD NEELY, A SINGLE MAN	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	174	142
								HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136					250				
CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51					795				
CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58					362				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522					33				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543					1235				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576					125				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584					942				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600					660				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600					692				
DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS									
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601					581				
D	FK013035	p/o 17-12-465-0001-0000; p/o 21-04-0088-0004-0000	Q101150000					H.S. BAILEY, WIDOW; VIEVA BAILEY, SINGLE; JASON J. BAILEY, SINGLE	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	(HARRISON) 180 (LEWIS) 241	304 301
								HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	(HARRISON) 903 (LEWIS) 294	179 89
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	HARRISON) 1136 (LEWIS) 425	250 127				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	(HARRISON) 51	795				
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	(HARRISON) 58	362				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	(LEWIS) 672	154				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	(LEWIS) 684	57				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	(LEWIS) 712	848				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	(LEWIS) 717	1				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	(LEWIS) 722	170				

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 WV Department of
 Environmental Protection

				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	(LEWIS) 723	499				
C	FK064316	p/o 21-04-008B-0001-0000; 21-04-008B-0001-0002; 21-04-008B-0001-0003; 21-04-008B-0001-0004; 21-04-008B-0001-0006; p/o 21-04-008B-0001-0008; 21-04-008B-0001-0010; 21-04-008B-0001-0011; p/o 21-04-008B-0001-0012; 21-04-008B-0001-0013; 21-04-008B-0001-0014; p/o 21-04-008B-0001-0015; p/o 21-04-008B-0001-0016; 21-04-008B-0001-0017; 21-04-008B-0001-0021; 21-04-008B-0001-0022; 21-04-008B-0001-0023; 21-04-008B-0001-0024; 21-04-008B-0001-0026; p/o 21-04-008B-0001-0027; 21-04-008B-0001-0028; p/o 21-04-008B-0001-0029; p/o 21-04-008B-0001-0030;	Q100597000	W.L. RIFFE AND OLIVE G. RIFFE, HIS WIFE; GEORGE PICKENS AND CLARA PICKENS, HIS WIFE; CLYDE PICKENS, WIDOWER; ESCAR PICKENS AND MAE PICKENS, HIS WIFE	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	221	89				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	294	89				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	425	127				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	WVSOS					
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS					
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	672	154				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	684	57				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	712	848				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	170				
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	723	499				
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	AMENDED AND RESTATED PARTIAL ASSIGNMENT	723	527				
				E	LC009807	21-04-008B-0004-0000; 21-04-008B-0005-0000, 0001; 21-04-008B-0006-0000; 21-04-008B-0007-0000, 0001, 0002, 0003, 0014, 0015, 0016, 0017; 21-04-008C-0029-0000; 21-04-008C-0030-0000, 0002; 21-04-008C-0031-0000, 0001, 0002, 0003; 21-04-008C-0054-0000; 21-05-0001-0050-0001; 21-05-0001-0048-0000; 21-05-0001-0084-0000; 21-05-0001-0049-0000; 21-04-008C-0086-0000; 21-05-0001-0066-0000, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009; 21-04-008C-0058-0000; 21-04-008C-0049-0001; 21-04-008C-0052-0001, 0002; 21-05-0002-0021-0001; 21-04-008C-0033-0001, 0010, 0012, 0009, 0008, 0005, 0006, 0007, 0004, 0003, 0002, 0000; 21-04-008C-0047-0000; 04-0008C-0047-0001; 04-008C-0047-0002, 0003, 0004; 21-04-008C-0034-0000; 21-04-0008C-0026-0000	Q100620000	ISAAC JACKSON	SOUTH PENN OIL COMPANY	NOT LESS THAN 1/8	58	431
								SOUTH PENN OIL COMPANY	HOPE NATURAL GAS COMPANY	ASSIGNMENT (GAS)	73	272
HOPE NATURAL GAS COMPANY	JANE LEW LIGHT AND HEAT COMPANY	ASSIGNMENT (5 ACRES OF LEASEHOLD)	113					315				
JANE LEW LIGHT AND HEAT COMPANY	STANDARD GAS COMPANY	ASSIGNMENT	113					361				
HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	294					89				
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	425					127				
CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	WVSOS									
CNG TRANSMISSION CORPORATION	CNG DEVELOPMENT COMPANY	JOINT VENTURE AGREEMENT	UNRECORDED									
CNG TRANSMISSION CORPORATION	CNG DEVELOPMENT COMPANY	ASSIGNMENT	477					430				
EMAX OIL COMPANY	CABOT OIL AND GAS CORPORATION	FARMOUT AGREEMENT	UNRECORDED									
EMAX OIL COMPANY	CABOT OIL AND GAS CORPORATION	ASSIGNMENT	513					93				
CABOT OIL AND GAS CORPORATION	ENERVEST APPALACHIA, L.P.	ASSIGNMENT	558					249				
CNG TRANSMISSION CORPORATION	CNG PRODUCING COMPANY	ASSIGNMENT	522					528				
CNG TRANSMISSION CORPORATION	EMAX OIL COMPANY	WELLBORE ASSIGNMENT	522					189				
CNG TRANSMISSION CORPORATION	GAS EXPLORATION AND DEVELOPMENT COMPANY	ASSIGNMENT	554					605				
CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS									
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	FARMOUT AGREEMENT	672					154				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	684					57				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	712					848				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717					1				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	CORRECTIVE ASSIGNMENT TO DB 717-1	725					784				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722					170				
DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS									
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	723					499				
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	AMENDED AND RESTATED PARTIAL ASSIGNMENT	723					527				
F	CNX024530 FK068505	21-04-008C-0028-0000	CNX024530					FREDA MAY COLVIN AND C.E. COLVIN, HER HUSBAND	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	74	443
								HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	294	89
								CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	425	127
								CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	WVSOS	
								CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
								DOMINION EXPLORATION AND PRODUCTION, INC.	DOMINION TRANSMISSION, INC.	ASSIGNMENT	651	137
				DOMINION TRANSMISSION, INC.	CONSOL ENERGY HOLDINGS LLC XVI	ASSIGNMENT	651	318				

				CONSOL ENERGY HOLDINGS LLC XVI	CONSOL GAS COMPANY	MERGER/NAME CHANGE	WVSOS	
				CONSOL GAS COMPANY	CNX GAS COMPANY LLC	MERGER/NAME CHANGE	WVSOS	
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	659	521
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	170
G		21-04-008C-0003-0000	HGII147	ROBERT BLAIR III	HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/8	739	78



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

September 17, 2019

Ms. Laura Adkins
WVDEP
Division of Oil & Gas
601 57th Street
Charleston, West Virginia 25304

RE: Nays 1209 N-1H thru S-12H Permit Revisions – (47-033-05930, 35, 36, 37, 38, 39, 43, 44, 45, 46, 47, 48)
Union District, Harrison County
West Virginia

Dear Ms. Adkins:

Per our discussions, enclosed are revised forms (survey plats, mylars, WW-6B's, casing schematics and WW6A-1's) for four of the Nays 1209 approved well work permits, (N-1H, N-2H, S-7H and S-10H). Four permits will remain the same, (1209 N-3H, N-6H, S-9H and S-12H). Four of the laterals will be abandoned and plugged, (1209 N-4H, N-5H, S-8H and S-11H). HG will file for these P/A permits shortly.

Based on production data for nearby producing wells in this field; the drilling/engineered plans are being revised to allow for greater distance between the laterals, (increased to 1500' from 1000' previously approved). Six laterals will be modified, two laterals have no changes and four laterals will be abandoned and plugged. There will be no changes to surface locations and the only change to the wells being modified is the lateral spacing being requested.

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

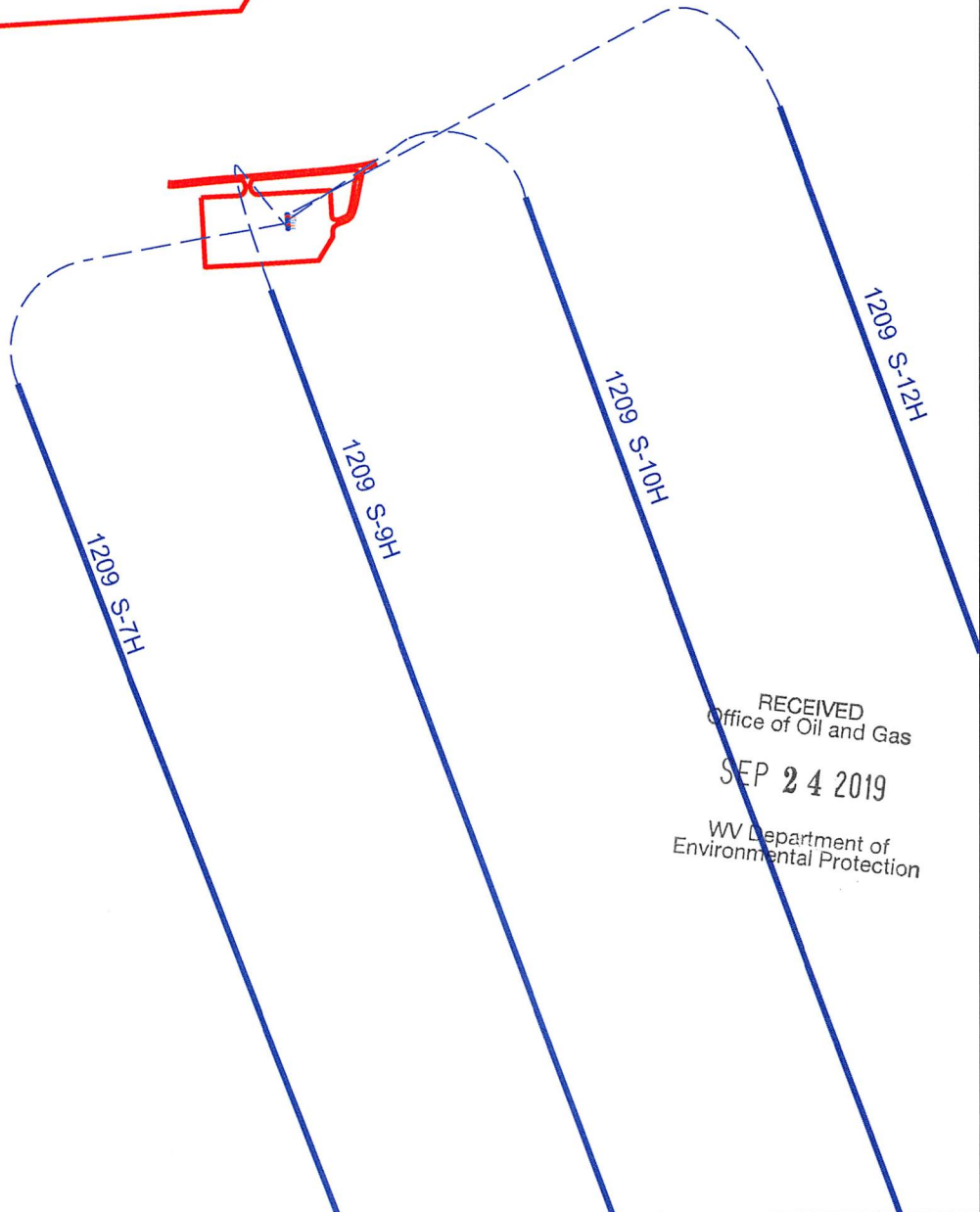
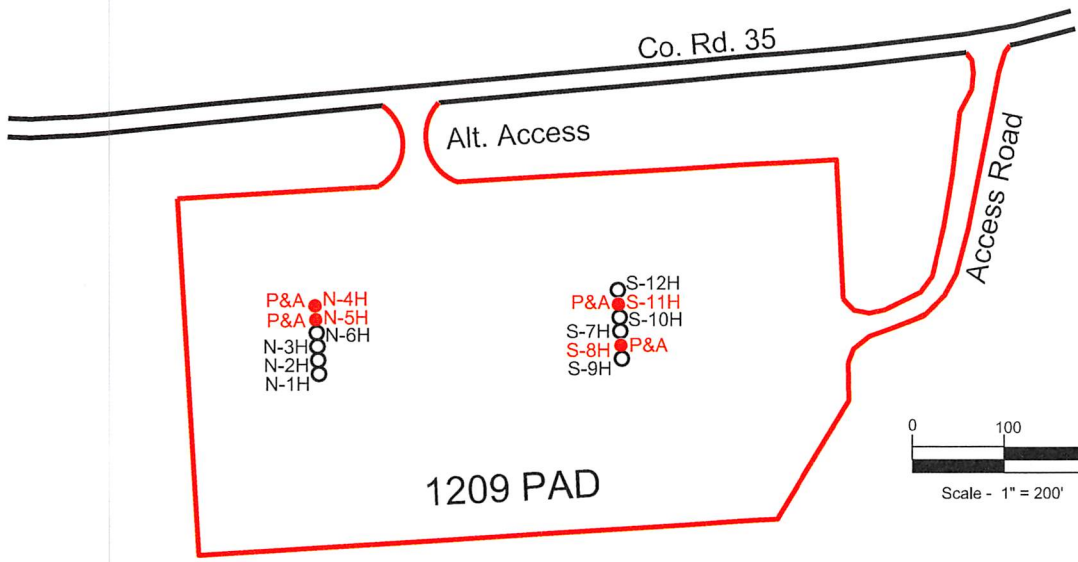
cc: Sam Ward – Inspector

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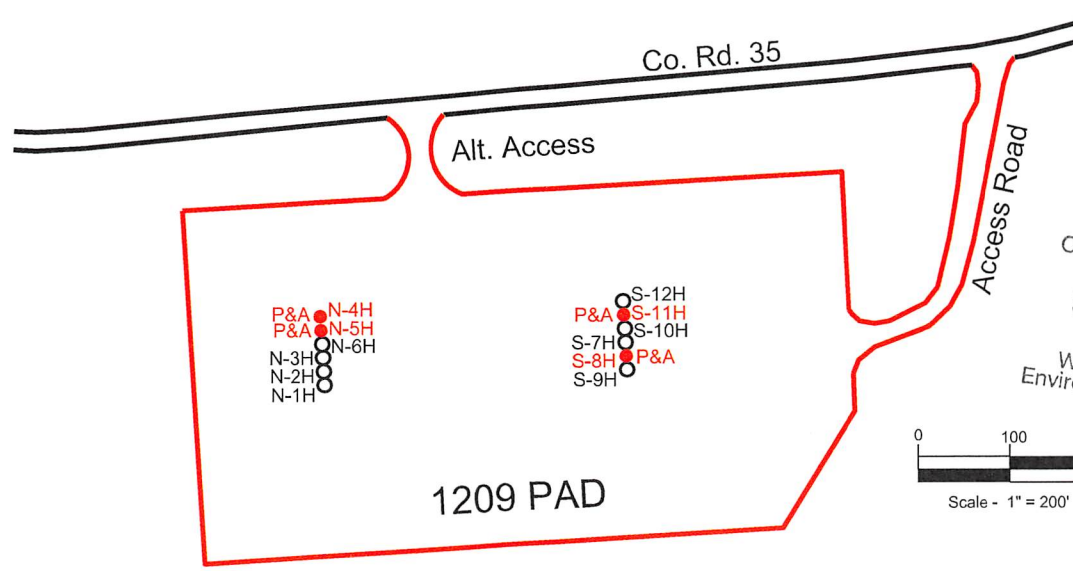
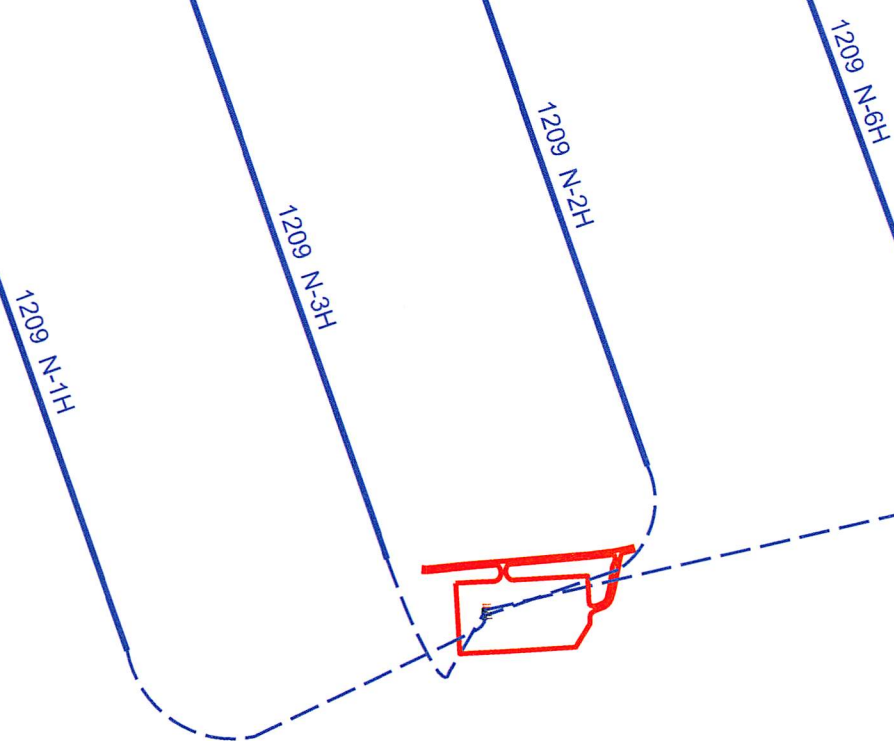
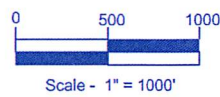
WV Department of
Environmental Protection

1209 SOUTH PAD - WELLHEAD LAYOUT



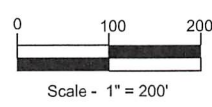
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1209 NORTH PAD - WELLHEAD LAYOUT



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

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

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

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

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

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No No

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

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 20,379'

11) Proposed Horizontal Leg Length: 12,659'

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

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

14) Approximate Saltwater Depths: None noted in offsets

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

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

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

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

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

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

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

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

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

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No No

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

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23,267'

11) Proposed Horizontal Leg Length: 15,801'

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

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

14) Approximate Saltwater Depths: None noted in offsets

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

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

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

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

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

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

2) Operator's Well Number: Nays 1209 S-7H Well Pad Name: Nays 1209

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

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

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No No

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

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17,267'

11) Proposed Horizontal Leg Length: 9,631'

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

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

14) Approximate Saltwater Depths: None noted in offsets

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

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

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

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

Depth: _____

Seam: _____

Owner: _____

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

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

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

Operator ID County District Quadrangle

2) Operator's Well Number: Nays 1209 S-10H Well Pad Name: Nays 1209

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

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

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

VOID

6) Existing Pad: Yes or No No

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

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 21,746'

11) Proposed Horizontal Leg Length: 14,221'

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

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

14) Approximate Saltwater Depths: None noted in offsets

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

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

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

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

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