



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

Monday, July 21, 2025
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

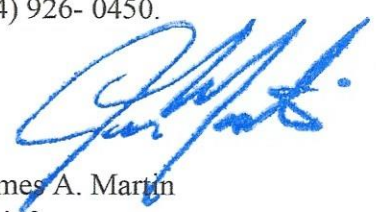
Re: Permit Modification Approval for VAN WIE 1221 N-6H
47-041-05765-00-00

Sidetrack Lateral

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: VAN WIE 1221 N-6H
Farm Name: HG ENERGY II APPALACHIA, LLC ET AL
U.S. WELL NUMBER: 47-041-05765-00-00
Horizontal 6A New Drill
Date Modification Issued: 07/21/2025

Promoting a healthy environment.

07/25/2025

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

1) Well Operator: HG Energy II Appalachia, LLC 494519932 Lewis Freeman Vadis 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Van Wie 1221 N-6H Well Pad Name: Van Wie 1221

3) Farm Name/Surface Owner: HG Energy II Appalachia, LLC Public Road Access: CR 11/3 aka Straight Run Road

4) Elevation, current ground: 1256' Elevation, proposed post-construction: 1251.7'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b) If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus at 7160' / 7200' and 40' in thickness. Anticipated pressure at 4314#.

8) Proposed Total Vertical Depth: 7,193'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 24,489'

11) Proposed Horizontal Leg Length: 15,200'

12) Approximate Fresh Water Strata Depths: 150', 181', 826'

13) Method to Determine Fresh Water Depths: Nearest offset well data, (47-017-02906, 2480, 4233,)

14) Approximate Saltwater Depths: NA

15) Approximate Coal Seam Depths: 220' - 225', 428'-438', 495'-501' (Surface casing is being extended to cover the coal in the DTI Field)

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 X

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

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4704105765

WW-6B
(04/15)API NO. 47- _____
OPERATOR WELL NO. Van Wie 1221 N-6H
Well Pad Name: Van Wie 1221

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	New	LS	157.5	120'	120'	CTS
Fresh Water/Coal	20"	NEW	J-55	94	1225'	1225'	40% Excess, CTS
Intermediate 1	13 3/8"	NEW	J-55 BTC	68	2760'	2760'	40% Excess, CTS
Intermediate 2	9 5/8"	NEW	NL-90 BTC	40	7450'	7450'	40% Excess Tail, CTS
Production	5 1/2"	NEW	P-110 HP	23	24489'	24489'	20% Excess Tail, CTS
Tubing							
Liners							

Kenneth
GreynoldsDigitally signed by: Kenneth Greynolds
DN: CN = Kenneth Greynolds email =
Kenneth.L.Greynolds@wv.gov C = AD O =
WV/DEP OJ = Oil and Gas
Date: 2025.07.14 09:36:33 -0400

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				Drilled In
Fresh Water/Coal	20"	26"	.438	2110	1200	Type 1, Class A	40 % excess yield = 1.20, CTS
Intermediate 1	13 3/8"	17 1/2"	.480	3450		Type 1/Class A	Lead 40% excess, Tail 0% excess
Intermediate 2	9 5/8"	12 1/4"	.395	5750		Type 1/Class A	Lead 40% excess, Tail 0% excess
Production	5 1/2"	8 1/2"	.415	16240	12500	Type 1/Class A	20% excess yield = 1.15, tail yield 1.00
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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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 7193'. Drill horizontal leg to estimated 15,200' lateral length, 24,489' TMD. Hydraulically fracture, 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. We plan to run an ACP above the Gantz/Dominion Storage interval to aid in sealing off and isolating the storage interval.

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): 33.79 acres

22) Area to be disturbed for well pad only, less access road (acres): 12.95 acres

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing.
Freshwater/Coal - centralized every 3 joints to surface.
Intermediate 1 - Bow Spring on every joint, will also be running ACP for isolating storage zone
Intermediate 2 - Bow Spring on first 2 joints then every third joint to 100' from surface.
Production - Vertical - Run 1 spiral centralizer every 5 joints from the top of the curve to surface, Curve - 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/Coal - "15.6 ppg PNE-1 + 3% bwoc CaCl40% Excess/Yield=1.20 / CTS"
Intermediate 1 - "**** Storage String **** CTS **** 15.4 ppg Lead - Yield 1.24 - D896 Surface Set 100 lb / sack (Mix of Class A and Gypsum to meet Dominion Requirements)B348 - 0.5% BWOB Fluid Loss / D013 - 0.75% BWOB Retarder / D47 - 0.02 gal / sack VBWOB Anti Foam / D202 - 0.15% BWOB Dispersant / D095 1.5 lb per BBL CemNET - 60% Excess/15.5 ppg Tail - Yield 1.17 - D696 Surface Set 100 lb / sack (Mix of Class A and Gypsum to meet Dominion Requirements)B160A - 0.15% BWOB Dispersant / B547 - 0.35% BWOB GasBLOK / D013 - 0.3% BWOB Retarder / D047 - 0.02 gal / sack Anti Foam / D801 - 0.03 gal / sack Retarder - 0% Excess"
Intermediate 2 - "Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl 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 MPA170Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020% Excess/Lead Yield=1.19Tail Yield=1.94CTS"



25) Proposed borehole conditioning procedures:

Conductor - Ensure the hole is clean at TD.
Fresh Water/Coal - Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.
Intermediate 1 - Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.
Intermediate 2 - 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.

Ground Elevation		1251.77'		1221 N-6H (re-drill) / ST SHL				14197376.01N 1734530.17E			
Azm		340.55°		1221 N-6H (re-drill) / ST LP				14199083.36N 1737783.26E			
WELLBORE DIAGRAM		HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
	30"	30" 157.5# LS	Conductor	0	120	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	
	26"	20" 94# J-55	Coal	740	746	AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS	Centralized every 3 joints to surface	Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.	Surface casing = 0.438" wall thickness Burst=2110 psi	
			Fresh Water Protection	0	1225	AIR / KCL Salt Polymer	See above (LEFT) for Storage String Cement Blend to Meet DTI Requirements for Gas Storage Field Isolation	Bow Spring on every joint <i>*will also be running ACP for isolating storage zone*</i>	Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.480" wall thickness Burst=3450 psi	
			Little Lime	2167	2187						
	Big Lime	2216	2265								
	17.5"	13-3/8" 68# J-55 BTC	Injun / Gantz (Storage)	2265 / 2597	2361 / 2647	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=5750 psi	
			Intermediate 1	0	2760						
			Thirty Foot	2789	2799						
	12.25"	9-5/8" 40# N / L-80 BTC	Gordon	2837	2915	AIR / KCL Salt Polymer	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		
			5th Sand	3066	3102						
			Bayard	3161	3174						
			Speechley	3634	3666						
			Benson	5038	5072						
			Alexander	5324	5444						
			Intermediate 2	0	TVD: 6675' MD: 7450' Inc: 48 deg.						
	8.75"					AIR / 9.0ppg SOBM	Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve.				
	8.5" Curve	5-1/2" 23# P-110 HP TXP / W461	Rhinestreet	6461	6749	11.5ppg-12.5ppg SOBM	Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170 Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA170 20% Excess Lead Yield=1.19 Tail Yield=1.94 CTS				
			Cashaqua	6749	6894						
Middlesex			6894	6973							
West River			6973	7042							
8.5" Lateral		Burkett	7042	7083	11.5ppg-12.5ppg SOBM						
		Tully Limestone	7083	7110							
		Hamilton	7110	7160							
		Marcellus	7160	7200							
		TMD / TVD (Production)	24489	7193							
		Onondaga	7200								
LP @ 7193' TVD / 9288' MD		8.5" Hole - Cemented Long String 5-1/2" 23# P-110 HP TXP / W461				+/-15201' ft Lateral		TD @ +/-7193' TVD +/-24489' MD			



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

July 7, 2025

CK# 51464
\$ 7500⁰⁰
7/9/2025

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

RE: Van Wie 1221 N-6H Drill Permit Revision Request – (47-041-05765)
Freemans Creek District, Lewis County
West Virginia

Dear Mr. Blevins -

Per our discussions, enclosed are revised forms (survey plat, mylar, WW-6B, well plans, and casing schematic) and a check for expedited service for the 1221 N-6H well work permit revision request. We ask for the permit to be approved for modification to reflect the revisions in the enclosures. We have adjusted the landing point, as well as the bottom hole location to reflect drilling a new lateral (offset) to the lost wellbore we plugged back.

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: Ken Greynolds – WV DEP State Inspector

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Parkersburg, WV 26101

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OLD FORD

ESTIMATED DEPTH: 7,193' TVD
24,489' MD

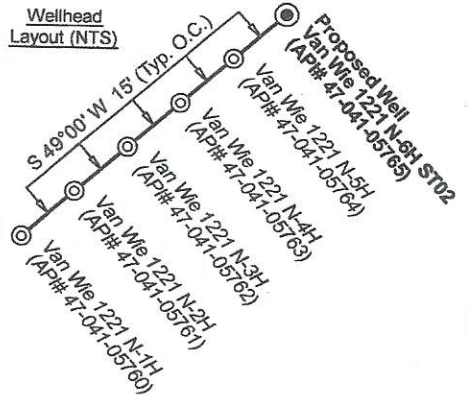
Tag	Bearing	Dist.	Description
L1	N 73°05' E	2,961.3'	5/8" Iron rebar
L2	S 75°33' E	2,821.5'	47-041-02839
L3	S 62°25' E	2,494.6'	5/8" Iron rebar
L4	S 29°35' W	1,617.6'	47-041-02809
L5	N 62°18' E	3,673.9'	Landing Point



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.)

Wellhead Layout (NTS)



West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.

Notes: Well No.
 Van Wie 1221 N-6H ST02
 WVCS 1927, North Zone
 Top Hole Coordinates
 Lat: 39°05'41.60"
 Lon: 80°40'06.45"
 Landing Point Coordinates
 Lat: 39°05'58.36"
 Lon: 80°39'25.09"
 Bottom Hole Coordinates
 Lat: 39°08'20.21"
 Lon: 80°40'28.64"

UTM Zone 17, NAD 1983

Plat orientation and corner and well references are based upon the grid north meridian. Well location references are based upon the magnetic meridian.

Notes: Well No.
 Van Wie 1221 N-6H ST02
 UTM NAD 1983 (USF)
 Top Hole Coordinates
 N: 14,197,376.01'
 E: 1,734,530.17'
 Landing Point Coordinates
 N: 14,199,083.36'
 E: 1,737,783.26'
 Bottom Hole Coordinates
 N: 14,213,410.00'
 E: 1,732,724.00'

Notes: Well No.
 Van Wie 1221 N-6H ST02
 UTM NAD 1983 (Meters)
 Top Hole Coordinates
 N: 4,327,368.863m
 E: 528,685.853m
 Landing Point Coordinates
 N: 4,327,889.264m
 E: 529,677.397m
 Bottom Hole Coordinates
 N: 4,332,256.033m
 E: 528,135.331m

ID	Lease
1	J.C. Starcher & A.C. Starcher
2	HG Energy II Appalachia, LLC
3	Joseph Krenn, et ux
16	William Walsh
17	Frank J. Maxwell, et ux, et al
18	Lorena M. Fahay, et vir, et al
19	C.E. Lawhead, et ux, et al
20	Leeman Maxwell, et al
21	Dennis Conry & Maggie Conry
22	Virginia Trimble, et al
25	Emma Droppelman, et al
28	R.A. Droppelman, et ux, et al

FILE NO: 170-12-30-FC-22

DRAWING NO: Van Wie 1221 N-6H Well Plat

SCALE: 1" = 2000'

MINIMUM DEGREE OF ACCURACY:
Submeter

PROVEN SOURCE OF ELEVATION:
CORS, Bridgeport, WV

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

DATE: July 11 20 25

OPERATOR'S WELL NO. Van Wie 1221 N-6H ST02

API WELL NO

47 — 041 — 05765
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: 1,251.77' WATERSHED: Fink Creek

DISTRICT: Freemans Creek

SURFACE OWNER: HG Energy II Appalachia, LLC, et al

ROYALTY OWNER: Joseph Krenn, et al

PROPOSED WORK: ☒ DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☒ PERFORATE NEW FORMATION ☐ OTHER PHYSICAL CHANGE IN WELL (SPECIFY)

☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,193' TVD 24,489' MD

WELL OPERATOR: HG Energy II Appalachia, LLC

ADDRESS: 5260 Dupont Road
 Parkersburg, WV 26101

DESIGNATED AGENT: Diane C. White

ADDRESS: 5260 Dupont Road
 Parkersburg, WV 26101

Lewis Co. (Freemans Creek Dist.)				
No.	TM / Par	Owner	Bk / Pg	Ac.
1	2D / 3	HG Energy II Appalachia, LLC	800 / 637	131.85
2	2D / 29	Anthony S. & Dawn H. VanWie	732 / 622	26.63
3	2D / 30	Anthony S. & Dawn H. VanWie	732 / 622	19.00
4	2D / 37	Jacob R. Straley Heirs	728 / 53	97.00
5	2D / 45	Matthew D. & Linda S. Richards	553 / 117	54.00
6	2D / 3.1	HG Energy II Appalachia, LLC	800 / 637	20.00
7	2D / 38	William J. & Ann McCutchan	793 / 173	26.96
8	2D / 40	Judith A. Rioch	403 / 270	63.89
9	2D / 42	Frances McCutchan, et al	726 / 561	124.30
10	2C / 7	James R. & Shelia A. Gum, II	721 / 350	350.78
11	2C / 9	William & Anne McCutchan	683 / 426	46.04
12	2C / 10	William & Anne McCutchan	683 / 426	1.04
13	2C / 8	Frances McCutchan	726 / 561	9.00
14	2C / 12	Frances McCutchan, et al	726 / 561	159.75
15	2C / 11	Robert E. & Joyce E. McCutchan	775 / 930	91.14
16	2C / 13	Jenny E. Droppelman, et al	740 / 25	97.00
17	2C / 14	Jenny E. Droppelman, et al	740 / 25	16.00
18	2C / 15	Jenny E. Droppelman, et al	740 / 25	107.25
19	2C / 27	Dorothy K. Downey & Frank A. Altomare, Jr.	418 / 615	90.90
Doddridge Co. (Cove Dist.)				
No.	TM / Par	Owner	Bk / Pg	Ac.
20	10 / 15	Scott Flanagan, et al	W44 / 594	98.44
21	10 / 15.1	Scott Flanagan, et al	239 / 591	101.56
22	6 / 11.1	Florence A. Adams	W103 / 448	102.00
23	7 / 2	Florence A. Adams	W103 / 448	292.87

ACREAGE: 131.85

ACREAGE: 245

07/25/2025