

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 LHS 47-051-01833-00-00

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 LHSFarm Name:CONSOLIDATION COAL COMPANY/ MURRAY EU.S. WELL NUMBER:47-051-01833-00-00Horizontal 6ARe-WorkDate Modification Issued:11/9/2021

Promoting a healthy environment.



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

October 19, 2021

Ck# 626713

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

RE: MND1 LHS Request for Permit Revision – (47-051-01833) 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 LHS 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 <u>dwhite@hgenergyllc.com</u>.

Very truly yours,

Diane White

Diane C. White

Enclosures

RECEIVED Office of Oil and Gas

OCT 29 2021

WV Department of Environmental Protection

cc: Barry Stollings - DEP State Inspector

API NO. 47-051 _01833 / OPERATOR WELL NO. MND1 LHS / Well Pad Name: MND1 /

DEPAR	TMENT OF	ENVI	RONME	NTAI	WEST VI	CTION	OFFICE O	FO	IL AND G	AS
DEITH	110101-1 01	WE	LL WOR	K PE	ERMIT A	PPLICA	TION			
		arme II	Annalaci	nia I	494519	932	Marshall	1	Clay	Powhatan Point
1) Well Operato	r: HG Ene	ergy it.	Appalact	na, 🖬	Operato		County		District	Quadrangle
2) Operator's W	ell Number	: MND	1 LHS	-			ad Name: <u>M</u>			
3) Farm Name/S	Surface Own	ner: M	urray Ene	ergy (Corp / Pi	iblic Ro	ad Access:	Cou	unty Highv	vay 88/8 🖌
4) Elevation, cu										(pad constructed
4) Elevation, cu5) Well Type	(a) Gas	X	C)il			derground S			
5) wen rype	Other							_		
	(b)If Gas	Shallo	www.y	(Deep				-
		Horiz	ontal)	(Mo	1	1.1.	12
6) Existing Pad	: Yes or No	Yes					_ 139	K		12021 -
7) Proposed Ta Marcellus 62	rget Format 62' - 6309', 4	tion(s), 47' Thic	Depth(s), k, 4204 ps	Antio	cipated Th	hickness	and Expect	ed H	ressure(s):	
8) Proposed To										
9) Formation at	Total Vert	ical De	pth: Mai	rcellu						
10) Proposed T				43'	/					
11) Proposed F				16' 1			1.1.1.			
12) Approxima				s:	521', 5	38', 80	1', 898', 947	71		
					Nearest	offset v	vell			RECEIVED Difice of Oil and Gas
13) Method to 14) Approxima					<u>pereternes</u>					OCT 2.9 2021
					2'					WW Separtment of
15) Approxima	ate Coal Sea	an Dep	uns. <u>020</u>	1	tura lunara	tathar	. None ant	icip	ated	Sevironmental Protectio
16) Approxima						i, other,				
17) Does Prop directly overly	osed well lo ing or adjac	cation cent to a	contain co an active i	oal se mine?	ams Y	es X		N	lo	
(a) If Yes, pr	ovide Mine	Info:	Name:	We	lls are loo	cated in	abandoned	d ar	ea of McE	Iroy Mine
(a) 11 1 03, pr			Depth:	692	to seam	base				
			Seam:	Pitt	sburgh #	8				
			Owner:	Cor	asol Mini	na Com	pany, LLC			

Page 1 of 3

API NO. 47-051 - 01833 OPERATOR WELL NO. MND1 LHS Well Pad Name: MND1

WW-6B (04/15)

18)

CASING AND TUBING PROGRAM

10)						INTERVALS:	CEMENT:
TYPE	Size (in)	<u>New</u> or Used	Grade	<u>Weight per ft.</u> (lb/ft)	<u>FOOTAGE: For</u> <u>Drilling (ft)</u>	Left in Well (ft)	<u>Fill-up</u> (Cu. Ft.)/CTS CTS
Conductor	20"	New	J-55	94	40' "Already grouted in"		I come the second
	13 3/8"	New	J-55 BTC	54.5	1100'	1100' -	40% excess yield = 1.18. CTS
Fresh Water	13 3/0	INEW	0.00 0.0				
Coal					00001	2600' /	40% excess, yield = 1.2, CTS
Intermediate	9 5/8"	New	J-55 BTC	40	2600'		10% excess, yield = 1.34, CTS
Production	5 1/2"	New	P-110 HP	20	13443'	13443'	10% 0.000, 900 10 10
Tubing							
Liners						1	1

150K 10/25/2021-

TYPE	Size (in)	Wellbore Diameter (in)	<u>Wall</u> <u>Thickness</u> <u>(in)</u>	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	<u>Cement</u> <u>Type</u>	<u>Cement</u> <u>Yield</u> (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 = 1.1
Coal							
Intermediate	9 5/8"	12 1/4"	0.395	3950		Type 1, Class A	
Production	5 1/2"	8 1/2"	0.361	14360	10000	Type 1. Class A	10% excess, yield = 1.2
Tubing							
Liners						1.	

PACKERS

RECEIVED Office of Oil and Gas

Kind:	DCT 2 9 2021
Sizes:	WV Department of Environmental Protection
Depths Set:	

Page 2 of 3

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 6,716' lateral length, 13,443' 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

Surface Casing - Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface

Production Casing - . Run 1 spiral contralizer every 5 joints from the top of the curve to surface. Run 1 spiral contralizer 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:	RECEIVED
Conductor - Already grouted in	Office of Oil and Gas
Surface Casing - *15.8 ppg Class A Neat 94#sk40% ExcessYleid*1.18 / CTS*	
Inzermedizate Cesling - *15,8 ppg Classa A. 944/sk1%, Celokum BWOC - 40% ExcessYield+1.2 / CTS*	OCT 29 2021
Production Casing - "Class A 14.8 ppg/leid 1.34D255 - 0.4% BWOB Flaid LossD196 - 0.55% BWOB RatarderD047 - 0.02 gal / seck Anti FoarnD208 - 0.05% BWOB Viscositier10% Excess"	
	WV Department of Environmental Protection

25) Proposed borehole conditioning procedures:

Conductor - Once at casing setting depth, ensure hole is clean at TD

Surface Casing - Circulate & condition @ TD wir Air. Rith wir casing & f5 wir Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bble of 6% bentonite Gel/50# of poly flake, then clear casing wir Fresh Water prior to pumping certer

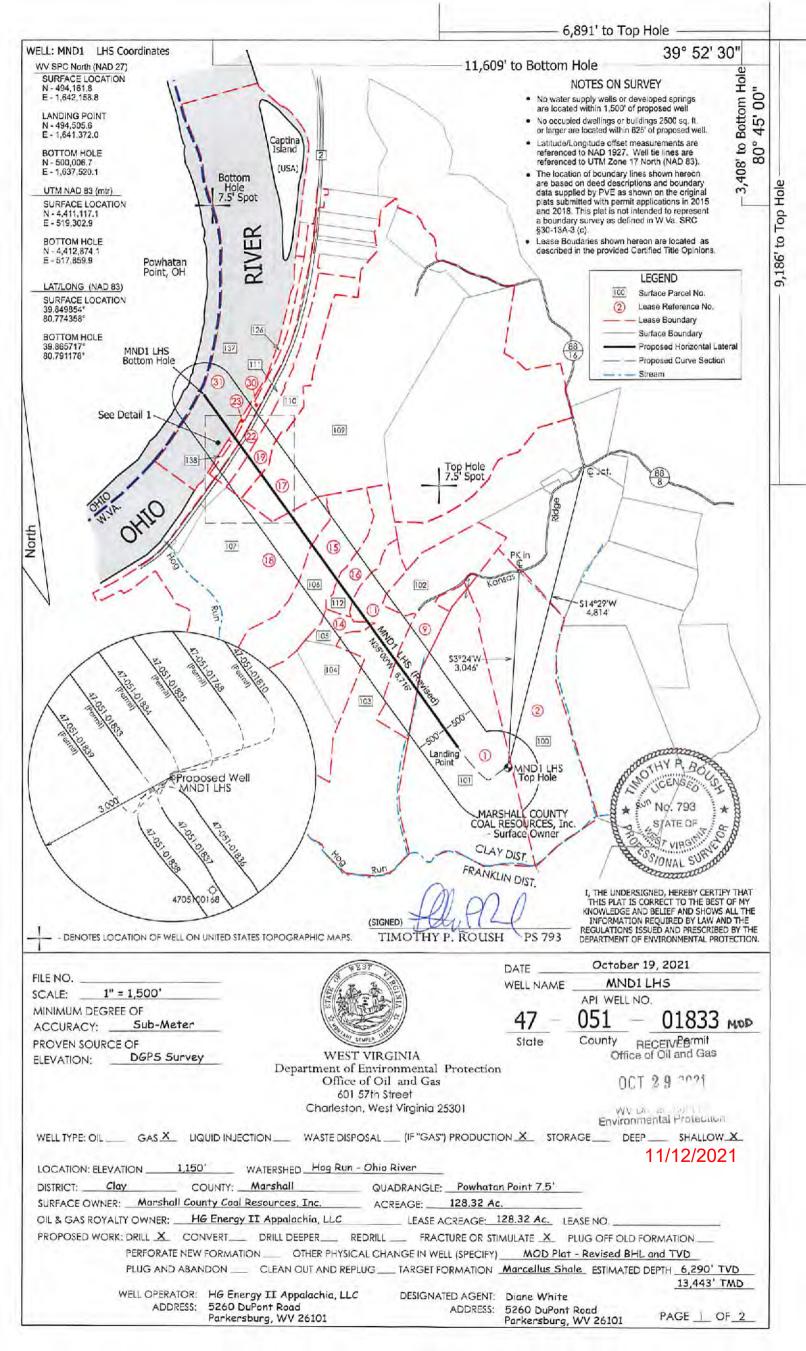
Intermediate Casing - Circulate & condition @ TD will Air. Rill will casing & El will Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbits of 8% bemonite Get/50# of poly faxe, then clear casing will Fresh Water prior to pumping cement.

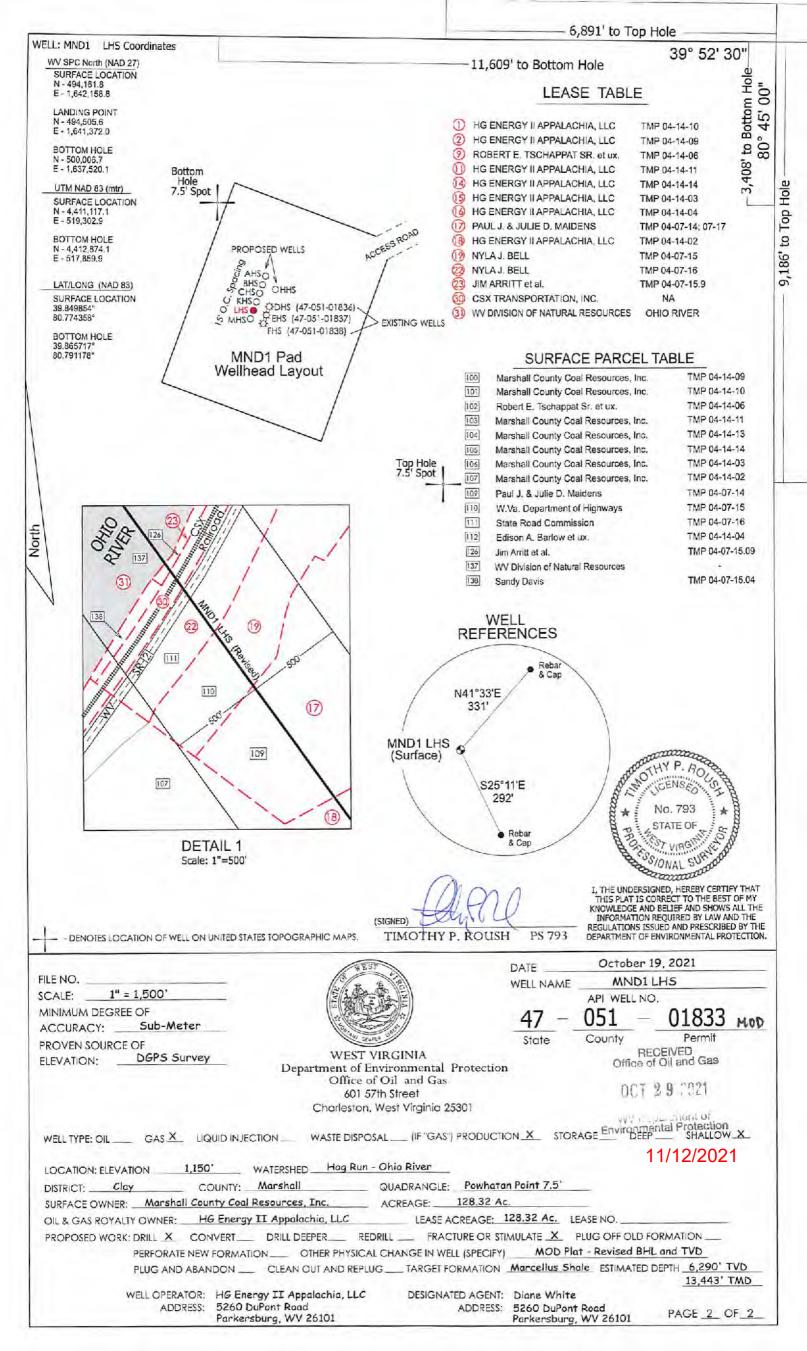
Production Casing - Once on bottom/TD with casing, circulate at max silowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping coment.

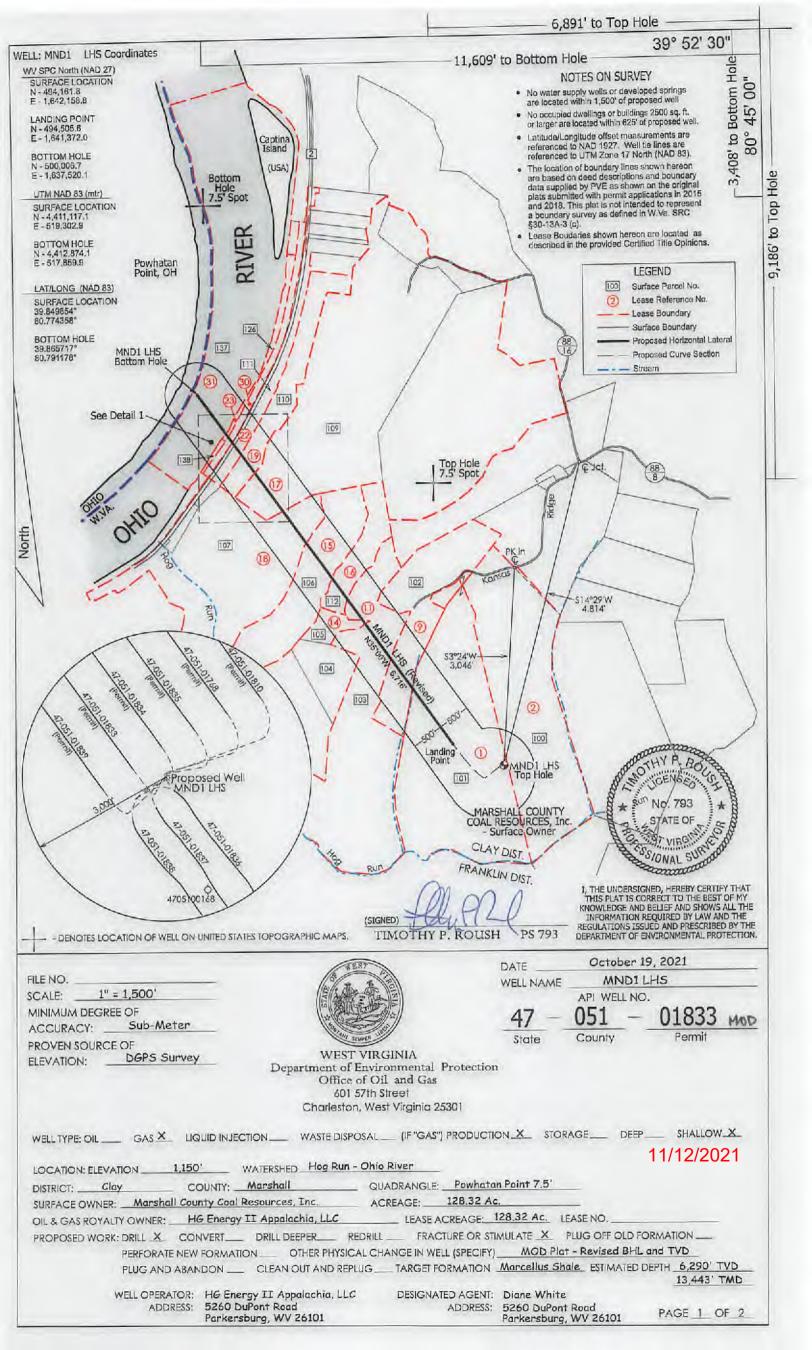
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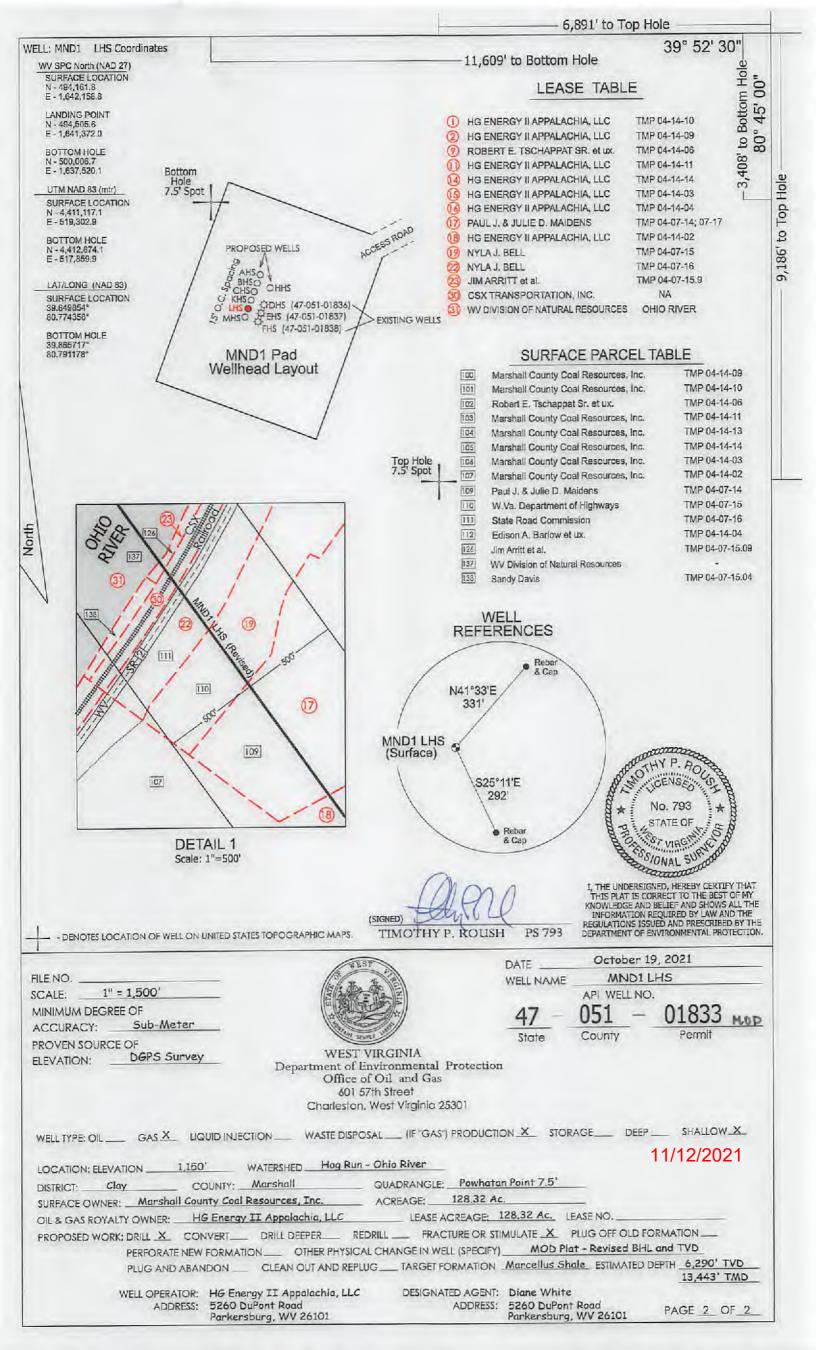
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4705101833					COMMENTS		Conductor casing = 0.420" wall trickness	Envicezation pai		Surface casing = 0.380° wall	Burst=2730 psi		Intermediate casing = 0.395"	wall thickness Burst-3950 psi							Production casing = 0.361"	Wall thickness Burst-14,360 psi	Note Actual centralizer	scredules may be changed due to hole conditions					X	TD @ +/-5290' TVD +/-13443' MD
	MND1LHS Marcellus Shale Horizontal Marshall County, WV	494161.81N 1642158.83E	494505.59N 1641371.97E	500006.74N 1637520.05E	CONDITIONING		Once at casing setting depth, ensure hole is claan at TD		Circulate & condition @ TD w/ Air. RIH w/ casing	& fill w/ Fresh Water. Circulate a minimum of 1	of poly flake, then clear casing w/ Fresh Water prior to pumping cement.	Circulate & condition @ TD w/ Air RiH w/ casing & til w/ rest Water Circulate a minimum of 1 hole volume, plus 30 bols of 6% bennotite Get60 of poly fielke, then clear casing w/ Fresh Water prior to pumping cement.									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 note is clean. Circulate a minimum of one hole volume	prior to pumping cement.					X	+1-6716' ft Lateral
	MND1LHS Marcellus Shale Horizor Marshall County, WV				CENTRALIZERS		VIN			_	then every third joint to 100' from surface	Bow Springs (over colars) on first 12 colars, then every third in joints then every third in joint to 100 from surface					Run 1 spiral centralizar every 5 joints from the top of the curve to surface.						Run 1 spiral centralizer of every 3 joints from the tat 5.5 ' long joint to the top of the curve.							
CEIVED Sattment of Coll and Gaa Sattment of Date Clon Ceived	100				CEMENT	Aready Grouted In*		15.6 ppg Class A Neat 94#/sk 40% Excess Yield=1,18 / CTS				15.6 ppg Class A 94#/sk	1% Calcium BWOC - 40% Excess Yield=1.2 / CTS						Class A 14.8 pp Vield 1.24 D255 - 0 4% BWOE Fluid Loss D188 - 0.55% BWOE Retarder D047 - 0.02 gal VWOB Viscosifier D209 - 0.05% BWOB Viscosifier D7% Excess											
CEINED	18	MND1LHS SHL	MND1LHS LP	MND1LHS BHL	DUM		âR				UIX			AIR	0		AIR and/o:	9.0ppg SOBM				Airthen	11 5ppg-	Mana 6dde.21				11.5ppg- 12.5ppg SOBM		
		MNI	MM	MNE	BASE		40		1, 890', 947'	1100	709	1032 / 1922		2075	1117	3302	4889	5102	5200	3002	3075	B104	5166	28187	5222	6262	6069	6290		Dung
				325°	TOP		0		530', 601',	0	704	1742 / 1832	1922	1922 2164	2164	3369	4778	5015	4976	5719	6002	6075	6104	6163	6187	6222	6262	13443	6309 X 66 88 88 88 88 88 88 88	8.5" Hole - Co 5-1/2" 20# P
			50'		GEDLOGY		Conductor	"Conductor already set"	Fresh Water	Surface Casing	Caal(s)	Big Lime / Big Injun		Pacono / Price	in call a set	Intermediate Casing Speechley	Java	Pipe Creek	Angola	Rheinstreet	Cashaqua	Middlesex	West River	Burkett	Tully	Hamilton	Marcellus	TMD / TVD	Orondaga	
	ENERGY		1150		CASING		20" 94# J-55			13-3/8" 54 5#	J-65 BTC		0.5/8* 40#	J-55 BTC			-					5-1/2"	P-110 HP	сосніа			1			
					HOLE		26"				671			12.25*			8.75*	Vertical					8.7578.5 Curve					8.5* Lateral	X H H H H H H H	6290' TVD /
			Ground Elevation	Azm	WELLBORE DIAGRAM			×			×	×			<							×						4	*	









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**

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	

Page 1 of

11/12/2021

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- OCT 29 2021
- WV Department of Environmental Protection

HG Energy II Appalachia, LLC MND1 LHS Lease Chain

LAT LEASE NO.	PLAT LEASE NAME	HG Lease Number	MPID	Original Lessor	Original Lessee	Royalty	Book	Pag
					HG ENERGY II			1
1	HG Energy II Appalachia, LLC	1) 623175	04-0014-0010-0000-0000	Noble Energy, Inc.	APPALACHIA, LLC	Fee	39	1
					HG ENERGY II	1000	12.5	
2	HG Energy II Appalachia, LLC	2) 623177	04-0014-0009-0000-0000	Noble Energy, Inc.	APPALACHIA, LLC	Fee	39	1
						Not less than		
9	Robert E. Tschappat Sr. et ux.	9) Q083948001	_04-0014-0006-0000-0000	Robert E. Tschappat, Sr., et ux	AB Resources, LLC	1/8	692	463
							24	382
		Sas	A D	AB Resources, LLC	Chief & Radler		24	49
		ED Ga 2021	100	AB Resources, LLC	NPAR, LLC		25	48
			a de				25	1
		RECEIVED Office of Oil and Gas	uenenenenenenenen en en en en en en en en	Chief & Radler/NPAR, LLC	Chevron USA, Inc.		756	33
		filce of fille	010		Noble Energy, Inc./CNX			
		U U	NAN	Chevron USA Inc.	Gas Company		31	59
		0	NUE	chevion our me	HG ENERGY II			
			B.	NOBLE ENERGY INC	APPALACHIA, LLC		39	1
					HG ENERGY II			_
11	HG Energy II Appalachia, LLC	11) 623176	04-0014-0011-0000-0000	Noble Energy, Inc.	APPALACHIA, LLC	Fee	39	1
	no chergy il Appalacina, ccc	11/025170	04-0014-0011-0000-0000	Noble energy, me.	HG ENERGY II			-
14	HG Energy II Appalachia, LLC	14) 623217	04-0014-0014-0000-0000	Noble Energy, Inc.	APPALACHIA, LLC	Fee	39	1
	Ho Energy II Apparachia, LLC	14/ 023217	04-0014-0014-0000-0000	Noble Energy, Inc.	HG ENERGY II			-
-	UC Concernit Annual ashie U.C.	15) 623218	01 0014 0002 0000 0000	NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
15	HG Energy II Appalachia, LLC	15) 623218	04-0014-0003-0000-0000	NOBLE EIVENOT INC	HG ENERGY II	1.00		-
44	US Second Baseleshie U.S.	16) 623217	04-0014-0004-0000-0000	Noble Energy, Inc.	APPALACHIA, LLC	Fee	39	1
16	HG Energy II Appalachia, LLC	16) 623217		Noble chergy, mc.	AT ALACTIN, LLC	Not less than	35	-
			04-0007-0014-0000-0000,		Noble Fernance Inc.	1/8	826	90
17	Paul J. & Julie D. Maidens	17) Q082524000	04-0007-0017-0000-0000	Paul J. Maidens, et ux	Noble Energy, Inc. HG ENERGY II	1/8	620	-91
				NODE CONDOX INC	APPALACHIA, LLC		39	1
				NOBLE ENERGY INC	HG ENERGY II		33	
	and the second second	101 500040		NORECONCERNE	APPALACHIA, LLC	Fee	39	1
18	HG Energy II Appalachia, LLC	18) 623218	04-0014-0002-0000-0000	NOBLE ENERGY INC	APPALACHIA, LLC		33	1
		and a state of the second		And the second	14	not less than		
19	Nyla J. Bell	19) Q080080000	04-0007-0015-0000-0000	Nyla J. Bell, widow	Noble Energy, Inc.	1/8	813	2
	a fam and				HG ENERGY II		39	1
				NOBLE ENERGY INC	APPALACHIA, LLC			1
		and a second strength				Not less than		
22	Nyla J. Bell	22) Q085360000	04-0007-0016-0000-0000	Nyla J. Bell, widow	Noble Energy, Inc.	1/8	839	5
	infinition beau				HG ENERGY II			
				NOBLE ENERGY INC	APPALACHIA, LLC		39	1
		and an attack			HG ENERGY II	Not less than		
23	Jim Arrit SR	16) HGII01966	04-0007-0015-0009-0000	Jim Arrit SR	APPALACHIA, LLC	1/8	1120	1 5
		N day to the second			HG ENERGY II	Not less than		
30	CSX Transportation INC.	18) HGII02050	Rail Road	CSX Transportation INC.	APPALACHIA, LLC	1/8	1123	2
		11			HG ENERGY II	Not less than		
31	Division of Natural Resources	17) HGII0559	Ohio River	Division of Natural Resources	APPALACHIA, LLC	1/8	1070	3



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> To: "Knitowski, Gayne J" <e026012@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org> Wed, Nov 10, 2021 at 9:46 AM

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 dwite@doi:10.000 To: Diane White dwite@doi:10.0000 To: Diane White@doi:10.0000

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

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