



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

Wednesday, April 26, 2023
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC
380 SOUTHPOINTE BOULEVARD, PLAZA II
SUITE 200
CANONSBURG, PA 15317

Re: Permit Modification Approval for PENDLETON S-13HU
47-051-02458-00-00

Extended lateral length

TUG HILL OPERATING, 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: PENDLETON S-13HU
Farm Name: ALPINE FARM, LLC
U.S. WELL NUMBER: 47-051-02458-00-00
Horizontal 6A New Drill
Date Modification Issued: 4/26/2023

Promoting a healthy environment.

04/28/2023



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-926-0499 Ext 41239

Randall M. Albert, Chairman
dep.wv.gov

April 6, 2023

Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-02458

COMPANY: Tug Hill Operating, LLC

FARM: Alpine Farm, LLC Pendleton S-13HU modification

COUNTY: Marshall DISTRICT: Franklin QUAD: Glen Easton

The deep well review of the application for the above company is **Approved to drill to Trenton for Point Pleasant completion.**

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? No.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: **yes
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,

Susan Rose
Administrator

**Van Winkle S-20HU 47-051-02353; Pendleton N-16HU 47-051-02441; Pendleton N-8HU 47-051-02454; Pendleton N-10HU 47-051-02455; Pendleton N-11HU 47-051-02456; Pendleton S-12HU 47-051-02457; Pendleton S-14HU 47-051-02459; Pendleton S-15HU 47-051-02460; Hendrickson N-7HU 47-051-02479; Hendrickson N-8HU 47-051-02480; Hendrickson N-9HU 47-051-02481; Hendrickson S-10HU 47-051-02482; Hendrickson S-11HU 47-051-02483; Hendrickson S-12HU 47-051-02484; Hendrickson S-13HU 47-051-02485

04/28/2023

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

1) Well Operator: Tug Hill Operating, LLC 494510851 Marshall Franklin Glen Easton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Pendleton S-13HU Well Pad Name: Pendleton

3) Farm Name/Surface Owner: Alpine Farm, LLC Public Road Access: Rines Ridge Road (County Route 76)

4) Elevation, current ground: 1,272.08' Elevation, proposed post-construction: 1,272.08'

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,518' - 11,635', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,785'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 20,917'

11) Proposed Horizontal Leg Length: 8,861.41'

12) Approximate Fresh Water Strata Depths: 70; 914'

13) Method to Determine Fresh Water Depths: Based on the depth of Pittsburgh Coal seam, per WVGES mapping contours

14) Approximate Saltwater Depths: 1,427'

15) Approximate Coal Seam Depths: Sewickley Coal - 816' and Pittsburgh Coal - 908'

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 No

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

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*Steve Conrad
STRADER LOWER
8/3/2023*

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	BW	BW	120'	120'	FT^3(CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	1,040'	1,040'	1,674FT^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,800'	2,800'	1,974FT^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,485'	10,485'	3,423FT^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	20,917'	20,917'	4,970FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,051'	
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"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/Coal	20"	26"	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

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Steve Coward
STRADLER COWARD
3/13/2023

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP (10,551'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 22,200,000 lb. proppant and 400,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.23 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.88 acres

23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate strings will have 1 centralizer every other joint. Production casing will have one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

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

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - Lead: Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170 Tail: Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 + 2% ASA-301 + .6% Sodium Metasilicate; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L; Prod - Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L Tail: 25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L

25) Proposed borehole conditioning procedures:

Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

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*Note: Attach additional sheets as needed.

Stacy Combs
STRADELOW
3/13/2023



Tug Hill Operating, LLC Casing and Cement Program

Pendleton S-13HU

Casing

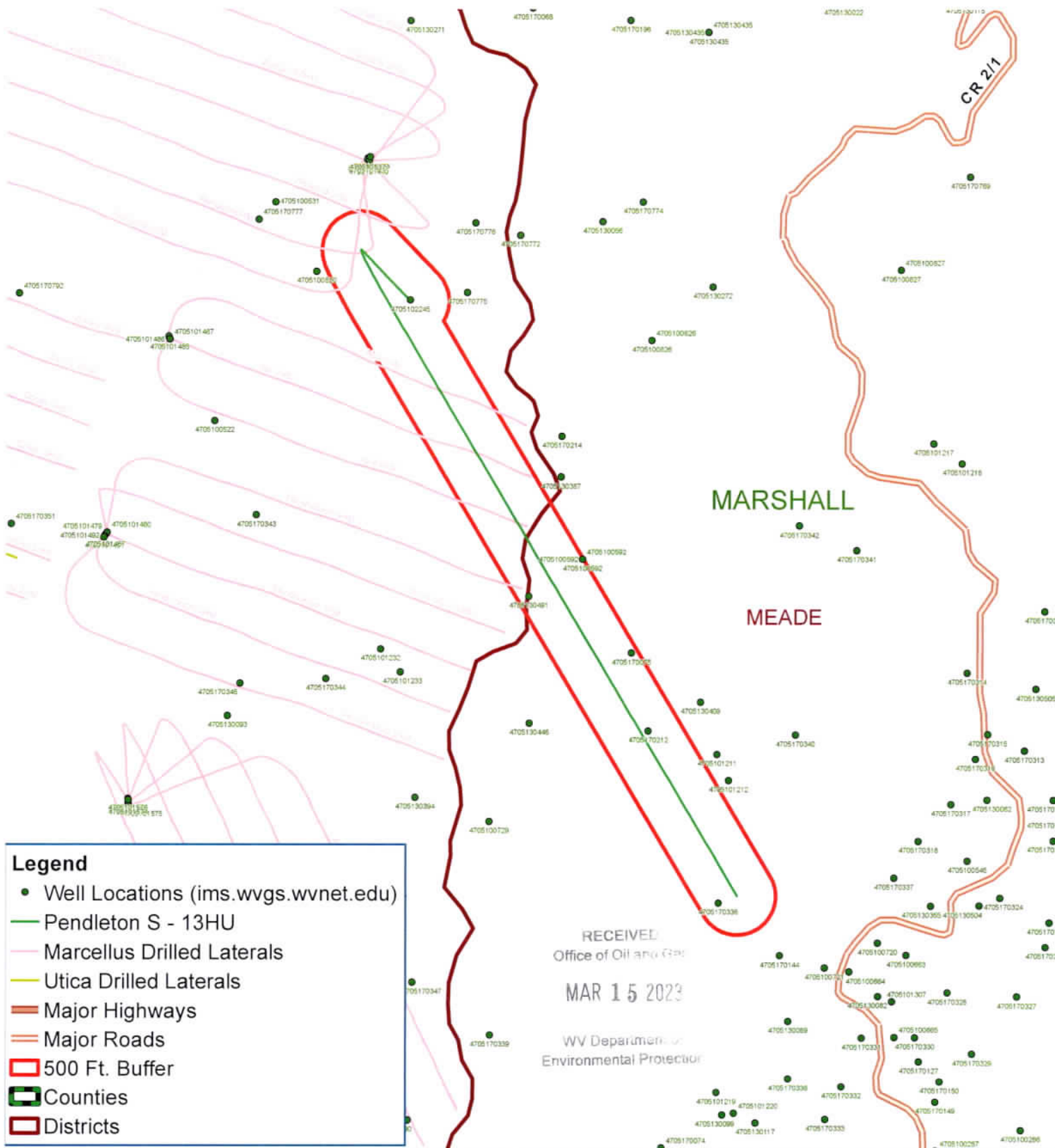
	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,040'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,800'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,485'	CTS
Production	5 1/2"	HCP110	8 1/2"	20,917'	CTS

Cement

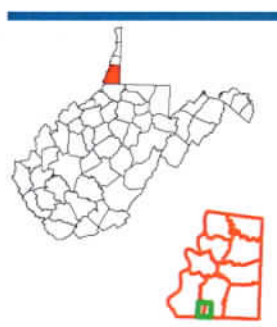
- Conductor: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2
- Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
- Intermediate 1: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2
- Intermediate 2: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 14.5 ppg, Y=1.35
- Kick Off Plug: Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug
- Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 16.5 ppg, Y = 1.03

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Pendleton S - 13HU Franklin District Marshall County, WV



Map Prepared by:
EPS
LAND SERVICES
04/28/2023

Area of Review

Sources of information to Support 35CSR8 - 5.11: 9.3 et seq.

Description of process to identify potential pathways for well communication during hydraulic fracturing activities.

Data Sources Reviewed:

1. Enverus and RS Energy Group Well Data service: Public nationwide data service that pulls directly from State agency Oil and Gas databases
2. Farm Maps
3. Topo Maps: Recent and older (contact WVGES)
4. Check with DPS

Contacted Adam Picard 724-485-9331, apicard@dpslandservices.com, DPS GIS (2/17/2023) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

Request maps for:

1. Wellbore with Enverus All Wells Layer
2. Map with Farm lines overlain and any well spots identified on Farm Maps
3. More recent (1970s vintage) topos and older topos

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Discussion with Phil Dinterman WVGES GIS Department (7/15/2016)

- WVGES has plotted every well spot they have access to and are aware of with that contains a coordinate. 30000, 70000, and 90000 series wells are available via the WVGES online map. Some locations aren't great due to vintage and manipulation of maps through time
- 30000 series – any well drilled prior to 1929 – APIs were not assigned to original wells
- 70000 series – Well spots pulled from old Farm line maps that the WVGES has access to
- 90000 series – Any sources that the WVGES has access that shows a well spot but has no additional supporting information. DEP does not have 90000 series on their maps.
- There can be duplication between wells in the 3 series
- Phil indicated that other Operators are providing a screenshot of the WVGES map with their planned well and using that for permits

Wells within 500' Buffer

Note: Well spots depicted on Area of Review map are derived from State held coordinates. The spots may differ from those depicted on the Well Plat because the Plat locations represent actual field surveyed locations. Please refer to the Plat for surveyed well spots.

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705102245	Tug Hill Operating, LLC.	11787' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705100592	Frohnapfel, Mary Jean	3702' TVD	Bayard	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	
4705130491	Manufacturers Light & Heat Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. Well is plugged.	Well was plugged 9/1/1967.
4705170075	South Penn Oil (S. Penn Nat. Gas)	2875' TVD	Gordon	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705170212	Hope Natural Gas Company	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well.	State records are incomplete.
4705170338	Hope Natural Gas Company	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well.	State records are incomplete.

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WV Geological & Economic Survey:

Well: County = 51 Permit = 02245

Report Time: Thursday, May 26, 2022 2:50:06 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705102245	Marshall	2245	Franklin	Glen Easton	Cameron	39.753455	-80.733897	522795.9	4400427.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102245	1	As Proposed	520896.4	4403611.2	-80.755969
					39.782188

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM
4705102245	-/-		Void Origin Loc. Cancelled	Alpine Farm LLC		N-9HU	Pendleton		Eli A & Fannie Mae Wengerd et al	Tug Hill Operating, LLC	11787	PI Pleasant Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT
4705102245	-/-	-/-	1272	Ground Level															

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WV Geological & Economic Survey

Well: County = 51 Permit = 00592

Report Time: Thursday, May 26, 2022 3:21:58 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705100592	Marshall	592	Meade	Wileyville	Littleton	39.744278	-80.725988	523476.6	4399411.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100592	7/22/1901	Original Loc	Completed	Adolph Frohnapele	1219					Manufacturers Light & Heat Co.			
4705100592	2/2/1908	Drilled Deeper	Completed	Adolph Frohnapele	1219					Manufacturers Light & Heat Co.			
4705100592	12/-/1911	Worked Over	unknown	Adolph Frohnapele	1219					Manufacturers Light & Heat Co.			
4705100592	-/-	unknown	unknown	Amelia Estep et al						Columbia Gas Transmission Corp.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G
4705100592	7/22/1901	5/17/1901			Cameron-Garner	Gordon	Gordon	unclassified	unclassified	Gas	unknown	Nat/Open H	2828		2028		0	0
4705100592	2/2/1908	1/1/1908			Cameron-Garner	Greenland Gap Fm	Bayard	unclassified	unclassified	Gas	unknown	Nat/Open H	3702		874		0	0
4705100592	12/-/1911	-/-			Cameron-Garner	Greenland Gap Fm	Bayard	unclassified	unclassified	Gas	unknown	Shot	3702				0	0
4705100592	-/-	-/-								not available	unknown	unknown	unknown					

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOTTOM	FM_BOTTOM	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100592	12/-/1911	Pay	Gas	Vertical	2819	Gordon	2834	Gordon	0	0	0	0	

Production Gas Information: (Volumes in Mcf) * 2021 data for H6A wells only. Other wells are incomplete at this time.

API	PRODUCING_OPERATOR	PRD_YEAR	ANN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100592	Columbia Gas Transmission Corp.	1980	3,249	276	271	257	275	268	127	0	0	574	293	308	600
4705100592	Columbia Gas Transmission Corp.	1981	1,917	309	314	288	324	314	94	0	0	0	0	0	274
4705100592	Columbia Gas Transmission Corp.	1982	1,516	316	313	278	237	141	231	0	0	0	0	0	0
4705100592	Columbia Gas Transmission Corp.	1983	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100592	Columbia Gas Transmission Corp.	1984	320	28	55	52	28	27	28	53	20	0	0	2	27
4705100592	Columbia Gas Transmission Corp.	1985	438	110	55	25	28	27	28	27	28	28	27	28	27
4705100592	Columbia Gas Transmission Corp.	1986	1,578	28	28	25	28	27	55	107	28	28	1,069	103	52
4705100592	Columbia Gas Transmission Corp.	1987	1,469	28	110	100	110	107	110	107	110	0	107	553	107
4705100592	Columbia Gas Transmission Corp.	1988	994	103	110	103	110	107	110	107	110	28	53	28	25
4705100592	Columbia Gas Transmission Corp.	1989	1,360	28	110	140	110	139	133	46	47	46	41	434	86
4705100592	Columbia Gas Transmission Corp.	1990	1,631	88	437	392	103	49	100	100	104	104	51	53	50
4705100592	Columbia Gas Transmission Corp.	1991	1,631	88	437	392	103	49	100	100	104	104	51	53	50
4705100592	Columbia Natural Resources, Inc. (CNR)	1992	333	86	0	77	82	80	8	0	0	0	0	0	0
4705100592	Columbia Natural Resources, Inc. (CNR)	2002	60	5	5	5	5	5	5	5	5	5	5	5	5
4705100592	Frohnapfel, Gerald A.	2008	4,383	171	158	270	443	578	493	526	542	228	440	331	203
4705100592	Frohnapfel, Gerald A.	2009	4,617	225	182	321	465	410	520	582	451	404	409	417	231
4705100592	Frohnapfel, Gerald A.	2010	4,041	201	211	278	423	462	438	470	473	175	391	349	170
4705100592	Frohnapfel, Gerald A.	2011	6,058	146	120	0	485	727	723	776	553	763	608	515	640
4705100592	Frohnapfel, Gerald A.	2014	5,730	327	88	178	472	646	649	650	585	681	564	431	459
4705100592	Frohnapfel, Gerald A.	2016	4,139	380	138	14	130	285	271	72	552	577	651	542	527
4705100592	Frohnapfel, Mary Jean	2018	5,338	542	457	402	639	461	465	316	364	465	508	278	441

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WV Geological & Economic Survey:

Well: County = 51 Permit = 30491

Report Time: Thursday, May 26, 2022 2:51:13 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705130491	Marshall	30491	Franklin	Wileyville	Littleton	39.742973	-80.728461	523285.2	4399265.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705130491	3/22/1901	Original Loc	Completed	W P Yoho	1	1260		2849	Ohio Edison Co	Manufacturers Light & Heat Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV_DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_B
4705130491	3/22/1901	-/-	1032 Spirit Level				unclassified		unclassified	not available	unknown							

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well ** some operators may have reported NGL under Oil

There is no Production NGL data for this well ** some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705130491	9/1/1967	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 70075

Report Time: Thursday, May 26, 2022 2:51:28 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170075	Marshall	70075	Meade	Wileyville	Littleton	39.740943	-80.723734	523670.9	4399041.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170075	11/18/1903	Original Loc	Completed	A J Frohnapfel	3					South Penn Oil (S. Penn Nat. Gas)			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT
4705170075	11/18/1903	--/--			Cameron-Garner	Hampshire Grp	Gordon	Development Well	Development Well	Oil	unknown	unknown	2875	2875				0

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705170075	11/18/1903	Pay	Oil	Vertical	2855	Gordon	2865	Gordon	0	0	0	0	

WV Geological & Economic Survey:

Well: County = 51 Permit = 70212

Report Time: Thursday, May 26, 2022 2:51:40 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170212	Marshall	70212	Meade	Wileyville	Littleton	39.736188	-80.722982	523736.3	4396736

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170212	--/--	Original Loc	Completed	E Brinkmier	1					Hope Natural Gas Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF
4705170212	--/--	--/--						unclassified	unclassified	not available	unknown	unknown							0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 70338

Report Time: Thursday, May 26, 2022 2:51:56 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170338	Marshall	70338	Meade	Wileyville	Littleton	39.732081	-80.71978	524012.7	4398059.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170338	-/-		unknown	Prpty Map A.J Stein		208				Hope Natural Gas Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FMT	DEEPEST_FM	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF
4705170338	-/-							unclassified	unclassified	not available	unknown	unknown							

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Environmental Protection



TUG HILL
OPERATING

Well Site Safety Plan
Part A – Site Specific Data and Figures

Well Name: Pendleton S-13HU

Pad Name: Pendleton

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,400,424.23

Easting: 522,796.03

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WV Department of
Environmental Protection

**KEY CONTACT FOR WELL SITE SAFETY PLAN
DEVELOPMENT AND MAINTENANCE**

Jerry V. DeRosa, Director EH&S Affairs

(724) 338-2029 (office)

(412) 736-5767 (cellular)

24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

Steve Brown
STRAKER GOWER
12-14-2022

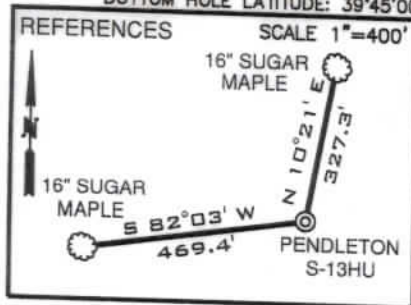
04/28/2023

PENDLETON S-13HU UTICA UNIT - 268.2443± ACRES TUG HILL OPERATING

TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°45'00"

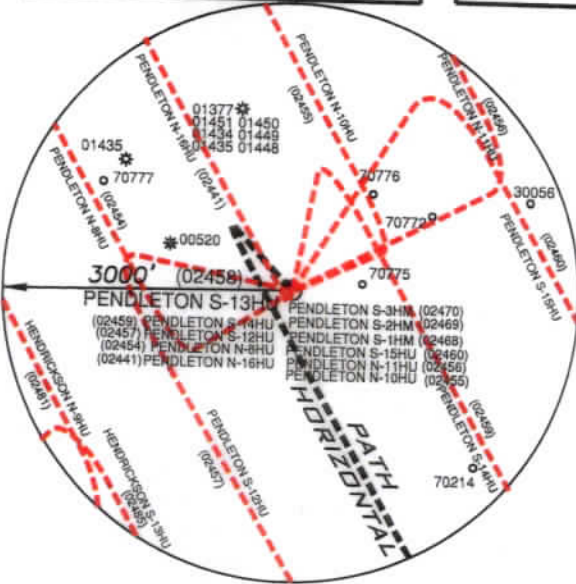


INSET "A"



LINE	BEARING	DISTANCE
L1	N 01°28' E	2,856.99'
L2	N 76°16' W	2,376.75'
L3	N 43°20' W	417.85'
L4	N 42°39' W	438.98'

- NOTES
- BORE PATH BASED ON GRID NORTH.
 - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
 - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN FEBRUARY, 2023. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
 - ALL DEEP WELLS SHOWN ON THIS PLAT.
 - L.P.1 AND (L.T.P.) ARE AT THE SAME POINT.
 - THE FTP IS OVER 500' PERPENDICULAR TO THE BOUNDARY.



Deep Wells Within 2400' of Proposed Well's Surface Location and/or 500' of Well Lateral

API	OPERATOR
47-051-02441	Tug Hill Operating, LLC
47-051-02454	Tug Hill Operating, LLC
47-051-02455	Tug Hill Operating, LLC
47-051-02456	Tug Hill Operating, LLC
47-051-02457	Tug Hill Operating, LLC
47-051-02459	Tug Hill Operating, LLC
47-051-02460	Tug Hill Operating, LLC



INSET "B"

LEGEND

- LEASE TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- LEASE # (SEE 6A1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,424.23
E) 522,796.03

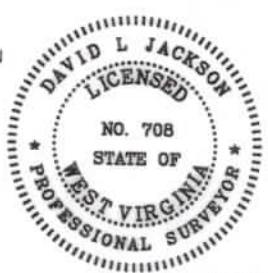
LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,412.60
E) 522,711.98

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,398,088.25
E) 524,085.91

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 42°52' W	46.14'	5131.78'	46.14'
C2	N 50°52' W	18.58'	30.89'	18.87'
C3	S 43°38' W	4.74'	2.83'	5.61'
C4	S 12°22' E	22.61'	80.54'	22.68'
C5	S 22°05' E	64.86'	701.51'	64.88'
C6	S 25°49' E	166.55'	3293.97'	166.57'
C7	S 28°28' E	535.04'	10206.81'	535.10'

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

David L Jackson



FILE NUMBER _____
DRAWING NUMBER: **PENDLETON_S-13HU REV 6**
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: **SUBMETER MAPPING GRADE GPS**



JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5851

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304

DATE: **MARCH 13, 2023**
OPERATORS WELL NO. **PENDLETON S-13HU**
API WELL NO. **47-051-02458**
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION STORAGE ___ DEEP SHALLOW ___
LOCATION ELEVATION **1271.82'** WATERSHED (HUC 10) **FISH CREEK**
DISTRICT **FRANKLIN** COUNTY **MARSHALL**
QUADRANGLE **GLEN EASTON 7.5'** LEASE NUMBER **SEE WW-6A1 Form**

04/28/2023

SURFACE OWNER **ALPINE FARM, LLC** ACREAGE **249.07**
OIL & GAS ROYALTY OWNER **ELI A. & FANNIE MAE WENGERD, ET AL** LEASE ACREAGE **249.07**
PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION **POINT PLEASANT** PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
ESTIMATED DEPTH **TVD: 11,785' TMD: 20,917'**

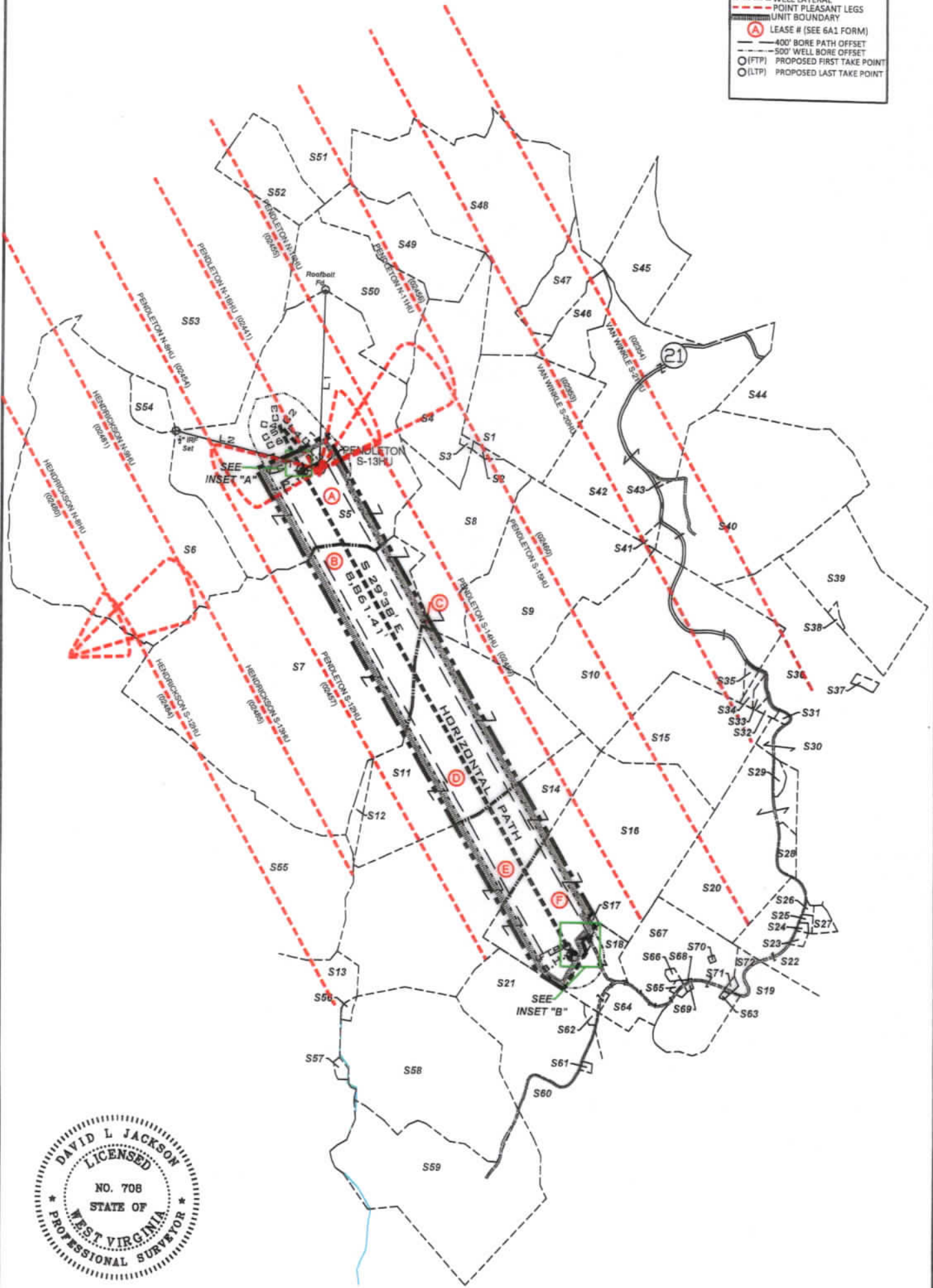
WELL OPERATOR **TUG HILL OPERATING, LLC** DESIGNATED AGENT **DARREN BROWN, CT CORP**
ADDRESS **1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107** ADDRESS **5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561**

COUNTY NAME PERMIT

PENDLETON S-13HU
UTICA UNIT - 268.2443± ACRES
TUG HILL OPERATING


LEGEND

- LEASE TRACTS
- - - SURFACE TRACTS
- - - WELL LATERAL
- - - POINT PLEASANT LEGS
- - - UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT



P.S. 708 *David L Jackson*

04/28/2023

 <p>TUG HILL OPERATING</p>	OPERATOR'S WELL #: <u>PENDLETON S-13HU</u>	WELL PLAT PAGE 2 OF 4
	DISTRICT: <u>Franklin</u>	DATE: <u>3/13/2023</u>
	COUNTY: <u>Marshall</u>	
	STATE: <u>WV</u>	
	API #: <u>47-051-02458</u>	

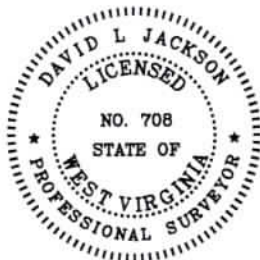
**PENDLETON S-13HU
UTICA UNIT - 268.2443± ACRES
TUG HILL OPERATING**

Parcels Within Unit Boundary				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
A	S5	05-17-06	ALPINE FARM, LLC	249.07
B	S7	05-24-02	ROY FRIEND YOHO	316.80
C	S8	09-18-01	THERESA MAE LONG THOMAS, ET AL	58.66
D	S11	09-20-02	MICHAEL JAMES PEKULA	138
E	S14	09-20-04	SHELLIE J. PEKULA, HRS	171
F	S16	09-20-05	GERALD A. FROHNAPFEL ET UX - TRUST	164.143
Number	Tax Map -Parcel	Adjoining Parcels		Acres
S1	09-16-04	BERTHA L. KLUG		73.39
S2	09-18-03	BERTHA L. KLUG		1.33
S3	09-18-04	BERTHA L. KLUG		1
S4	09-16-03	BERTHA L. KLUG		71
S6	05-17-08	ROGER H. HALL, JR		257.50
S9	09-18-02	BRIAN T. KLUG		85
S10	09-18-18	JAMES D. FROHNAPFEL, ET UX		154.03
S12	09-20-01	MICHAEL JAMES PEKULA		5
S13	05-25-03	S.D. & SUSAN SMITH FERTITTA		181.548
S15	09-20-06	KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST		64.75
S17	09-20-5.2	WHEELING CATHOLIC DIOCESE		.447
S18	09-22-04	WHEELING CATHOLIC DIOCESE		20
S19	09-20-17	MARTIN L. KLUG		49.78
S20	09-20-07	SONNY M & LINDA L TAGG		72.828
S21	09-22-3.2	MARK H. MILLER		75
S22	09-20-9	JOHN G. JR & MARILYN S. WEIGAND		48.131
S23	09-20-9.4	HELEN B. SHUTLER - LIFE		.78
S24	09-20-10	JAMES MILLER, ET UX		.50
S25	09-20-9.3	JAMES MILLER, ET UX		.804
S26	09-20-9.5	JAMES MILLER, ET UX		.666
S27	09-20-9.6	JAMES MILLER, ET UX		2.919
S28	09-20-7.1	DAVID PAUL FROHNAPFEL		4.930
S29	09-20-7.2	MICKEY R. DULANEY, JR		2.242
S30	09-18-15	KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST		29.5
S31	09-18-15.1	NICHOLAS C. FROHNAPFEL, ET UX		0.68
S32	09-18-16.1	NICHOLAS C. FROHNAPFEL, ET UX		1.50
S33	09-18-16.3	BERNARD A KLUG ET UX, ESTS.		1.818
S34	09-18-16.2	JOHN F. WAYMAN, EST		2.17
S35	09-18-18.1	JOHN .F WAYMAN, EST		1.1
S36	09-18-16	ROBERT F. VILLERS		62.893
S37	09-18-16.4	ROBERT F. & APRIL L VILLERS		1.509
S38	09-18-17.1	VINCENT JOHN WAYMAN		1.010
S39	09-18-17	VINCENT J. WAYMAN		68.99
S40	09-18-06	LOUIS FOX		141.75
S41	09-18-5.1	LOUIS FOX		1.583
S42	09-18-05	BERTHA L. KLUG		122.437
S43	09-18-5.2	LOUIS FOX		0.933
S44	09-16-20	LOUIS T. FOX		86.174
S45	09-16-11	JAMES G. RICHMOND		67.882
S46	09-16-07	BERTHA L. KLUG		26.105
S47	09-16-06	ROBERT M. & NANCY R. MCCARDLE		31
S48	09-16-05	ROBERT M. & NANCY R. MCCARDLE		133
S49	09-16-02	ROBERT M. & NANCY MCCARDLE		53.40
S50	05-17-05	ALPINE FARM, LLC		76.96
S51	09-16-01	ROBERT M. & NANCY R. MCCARDLE		46.80
S52	05-16-13	DAVID ALAN RUBCICH, ET AL		33.31
S53	05-17-04	ALPINE FARM, LLC		212
S54	05-17-07	ALPINE FARM, LLC		10.8
S55	05-24-3.3	CHARLES E. & DEBRA K. BERTRAND		120.433
S56	09-22-1.1	CNG TRANSMISSION CO		1.43
S57	05-25-3.2	CONSOL ENERGY HOLDINGS, LLC., XVI		1.43
S58	09-22-01	LOUIS T. FOX		124.57
S59	09-22-02	MARK H. J. MILLER, ETAL		124.80
S60	09-22-03	MARK HILARY MILLER		63.73
S61	09-22-3.3	MARY C. WRIGHT		.617
S62	09-22-3.1	MARGARET ANN MYSLIWIEC - LIFE		1.1
S63	09-20-22.6	MARY MARGARET STINE		0.1185
S64	09-22-5.1	HILARY G. MILLER, EST		10.62
S65	09-20-22.7	JOAN L. KLUG		1.06
S66	09-20-22.8	JOAN LOUISE KLUG		.80
S67	09-20-22	CHARLES DILLON BLAKE & ALLISON R. KLUG		70.2398
S68	09-20-22.4	CHARLES DILLON BLAKE & ALLISON R. KLUG		0.165
S69	09-20-22.5	CHARLES DILLON BLAKE & ALLISON R. KLUG		.3767
S70	09-20-22.3	GRANDVIEW-DOOLIN PSD		0.23
S71	09-20-22.1	MARY MARGARET STINE		.6
S72	09-20-21	MARY MARGARET STINE		3.25

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04/28/2023



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: PENDLETON S-13HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02458

WELL PLAT
PAGE 3 OF 4
DATE: 3/13/2023

**PENDLETON S-13HU
UTICA UNIT - 268.2443± ACRES
TUG HILL OPERATING**

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Deed Book/Page	
10*14114	5-17-6	A	ELI & FANNIE MAE WENGERD	671	323
10*14024	5-24-2	B	ROY FRIEND YOHO AND DARLENE J YOHO, ET AL	665	508
10*28262	9-18-1	C	JAMES W MESSEY ET AL	67	487
10*39661	9-20-2	D	SHELLIE J PEKULA AND MICHAEL PEKULA	1126	542
10*31101	9-20-4	E	ELIZABETH BRINKMEIER ET AL	103	183
10*19555	9-20-5	F	MARY JEAN FROHNAPFEL	936	525

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04/28/2023



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: PENDLETON S-13HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02458

WELL PLAT
PAGE 4 OF 4
DATE: 3/13/2023

**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 pages

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WV Department of
Environmental Protection

**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: Tug Hill Operating, LLC
 By: Amy L. Morris *AmyL Morris*
 Its: Permitting Specialist - Appalachia Region

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*14114	5-17-6	A	ELI & FANNIE MAE WENGERD	GASTAR EXPLORATION USA INC	1/8+	671 323	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14024	5-24-2	B	ROY FRIEND YOHO AND DARLENE J YOHO	GASTAR EXPLORATION USA INC	1/8+	665 508	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14025	5-24-2	B	NANCY CAROL GIBSON	GASTAR EXPLORATION USA INC	1/8+	697 87	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14026	5-24-2	B	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	697 91	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14027	5-24-2	B	HILDA R CONNER RUNYAN	GASTAR EXPLORATION USA INC	1/8+	697 89	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14028	5-24-2	B	WILDA L CLARK	GASTAR EXPLORATION USA INC	1/8+	697 83	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14029	5-24-2	B	MARY MAXINE CLARKE	GASTAR EXPLORATION USA INC	1/8+	697 85	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*39661	9-20-2	D	SHELLY PEKULA AND MICHAEL PEKULA	TH EXPLORATION LLC	1/8+	1126 542	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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MAR 15 2023
WV Department of Environmental Protection

04/28/2023

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment			
10*31101	9-20-4	E	ELIZABETH BRINKMEIER ET AL	HOPE NATURAL GAS CO	1/8+	103	183	Hope Natural Gas Company to Consolidated Gas Supply Corp: 374/234	Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 505/406	Consolidated Gas Transmission Corp to CNG Development Company: 515/88	CNG Development Company merged with/intro CNG Producing Company on 3/13/1991 - Wyoming Bureau of Land Management	CNG Producing Company merged with/intro Dominion Exploration & Production Inc on 6/2/2000 - WV Secretary of State	Dominion Exploration & Development Inc Merged with/intro CONSOL Gas Company: CB 19/546	CONSOL Gas Company merged with/intro CNX Gas Company LLC: MB 11/415	CNX Gas Company to TH Exploration LLC: 46/210
10*19555	9-20-5	F	MARY JEAN FROHNAPFEL	TH EXPLORATION LLC	1/8+	936	525	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RECEIVED
 Office of Oil and Gas
 MAR 15 2023
 WV Department of Environmental Protection

04/28/2023

ASSIGNMENT OF OIL AND GAS LEASES

This **ASSIGNMENT OF OIL AND GAS LEASES** (hereinafter, "**Assignment**"), made the 2nd day of November, 2020 (hereinafter, "**Effective Date**"), is by and between **CNX GAS COMPANY LLC**, a Virginia limited liability company, whose address is 1000 CONSOL Energy Drive, Suite 400, Canonsburg, Pennsylvania 15317 (hereinafter "**Assignor**") and **TH EXPLORATION, LLC**, a Texas limited liability company, whose address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 (hereinafter "**Assignee**"). All references in this Assignment to "**Party**" shall be deemed at all times to mean Assignor or Assignee and to "**Parties**" shall be deemed to mean both Assignor and Assignee. Capitalized terms used but not defined herein shall have the meaning given such terms in the Acreage Trade Agreement, by and between Assignor and Assignee dated June 19, 2020, as amended, (the "**Trade Agreement**").

WHEREAS, Assignor desires to assign all of Assignor's right, title and interest in and to the Assigned Rights (as defined below), as more particularly described in this Assignment.

NOW, THEREFORE, for and in consideration of TEN AND NO/100 DOLLARS (\$10.00) and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby **GRANT, BARGAIN, ASSIGN, TRANSFER, AND CONVEY** unto Assignee the following "**Assigned Rights**" expressly excluding the Retained Rights (as defined below):

- (a) All of Assignor's right, title, and interest in and to the oil and gas leases described on Exhibit A attached hereto and made a part hereof located in Marshall County, West Virginia ("**Leases**"); and
- (b) all rights expressly granted under the Leases including rights related to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Leases, including, without limitation, any pooling or unitization, any ability to shut-in a well(s), and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines, impoundments, structures, tanks, gas gathering and/or metering facilities, and all other related facilities.

TO HAVE AND TO HOLD the Assigned Rights unto Assignee, its respective successors and assigns, subject to the terms of this Assignment and subject to and burdened by the contracts set forth on Exhibit B.

"Retained Rights" means: (i) any and all existing oil and/or gas wells currently in, on, or pertaining to the Leases ("**Retained Wells**"), (ii) all rights relating to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Retained Wells, including, without limitation, any pooling or unitization, any ability to shut-in any Retained Wells, and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines, impoundments, structures, tanks, gas gathering and/or metering facilities, and all other related facilities, and (iii) any and all assets not expressly being conveyed, assigned or leased, as applicable, by Assignor to Assignee at Closing pursuant to the Trade Agreement.

This Assignment is further made subject to the following:

- 1. **TRANSFER TAXES / RECORDING FEES**. Assignee agrees to pay any and all fees and taxes (including recording, real estate transfer, excise, and documentary) in connection with the filing

RECEIVED
Office of Oil and Gas
MAR 15 2023
Department of Environmental Protection



March 13, 2023

WV Department of Environmental Protection
Office of Oil & Gas
601 57th Street, SE
Charleston, WV 25304
Attention: Susan Rose

RE: Pendleton S-13HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

Tug Hill Operating, LLC is authorized through, either lease or other agreement, to unitize and pool all lands falling within the boundaries of the proposed voluntary unit included with this submission.

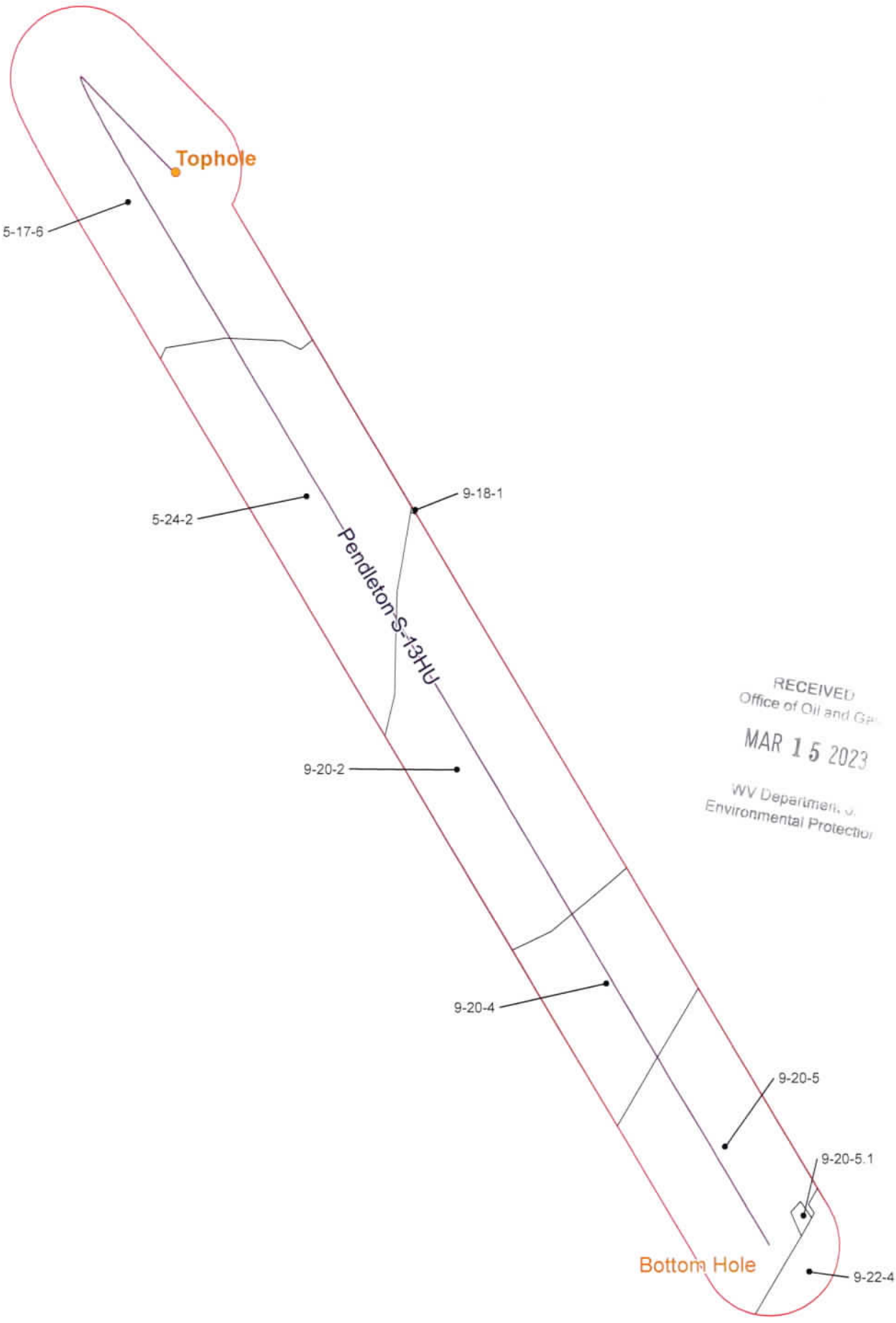
If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 724-749-8388, or by email at amorris@tug-hillop.com.

Sincerely,

Amy L. Morris
Permitting Specialist – Appalachia Region
Tug Hill Operating

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Office of Oil and Gas
MAR 15 2023
WV Department of
Environmental Protection

Pendleton S-13HU



Coordinate System: NAD 1983 UTM Zone 17N
 Population: Transverse Mercator
 Datum: North American 1983
 False Easting: 1,000,000.0000
 False Northing: 0.0000
 Central Meridian: -81.0000
 Scale Factor: 0.9999
 Latitude of Origin: 33.0000
 Units: Feet US

CONFIDENTIAL



- Utica Well
- 500' Buffer
- Force Pool

Pendleton S-13HU
 Operators within 500 Feet of Well Borehole



**Operators within 500' of Well Bores
Pendleton S - 13HU**

COUNTY	DISTRICT	TMP	MINERAL OWNER/LESSEE	ADDRESS
MARSHALL	FRANKLIN	5-17-6	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	FRANKLIN	5-24-2	TH EXPLORATION II, LLC	1321 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	FRANKLIN	9-18-1	TH EXPLORATION, LLC	1322 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-2	TH EXPLORATION, LLC	1323 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-4	TH EXPLORATION, LLC	1325 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-5	TH EXPLORATION, LLC	1327 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-5.1	SWN PRODUCTION COMPANY	10000 Energy Drive Spring, TX 77389
MARSHALL	MEADE	9-20-5.1	EQUINOR USA ONSHORE PROPERTIES INC	2107 City West Blvd. Suite 100 Houston, TX 77042
MARSHALL	MEADE	9-22-4	SWN PRODUCTION COMPANY	10000 Energy Drive Spring, TX 77389
MARSHALL	MEADE	9-22-4	EQUINOR USA ONSHORE PROPERTIES INC	2107 City West Blvd. Suite 100 Houston, TX 77042

RECEIVED
Office of Oil and Gas
MAR 15 2023
WV Department of
Environmental Protection

04/28/2023

CERTIFICATE OF CONSENT AND EASEMENT

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being the owner of the surface of that certain lot, tract or parcel of land located in Franklin District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 1 day of July, 2019.

Marshall County
Jon Pest, Clerk
Instrument 1456384
07/12/2019 @ 12:25:33 PM

ALPINE FARM, LLC.

By: [Signature]
Name: Ell A. Wengerd
Title: Member

STATE OF OHIO

SS:

COUNTY OF HOLMES

RIGHT OF WAY W/O CONSIDERATION
Book 1052 @ Page 490
Pages Recorded 2
Recording Cost \$ 11.00

On this, the 1st day of July, 2019, before me, a notary public, the undersigned officer, personally appeared Ell A. Wengerd, who acknowledged himself/herself to be the Owner of Alpine Farm, LLC and that he/she as such, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the company by himself/herself as Owner.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: July 14, 2019
Signature/Notary Public: [Signature]
Name/Notary Public (print): Amber K Sramek

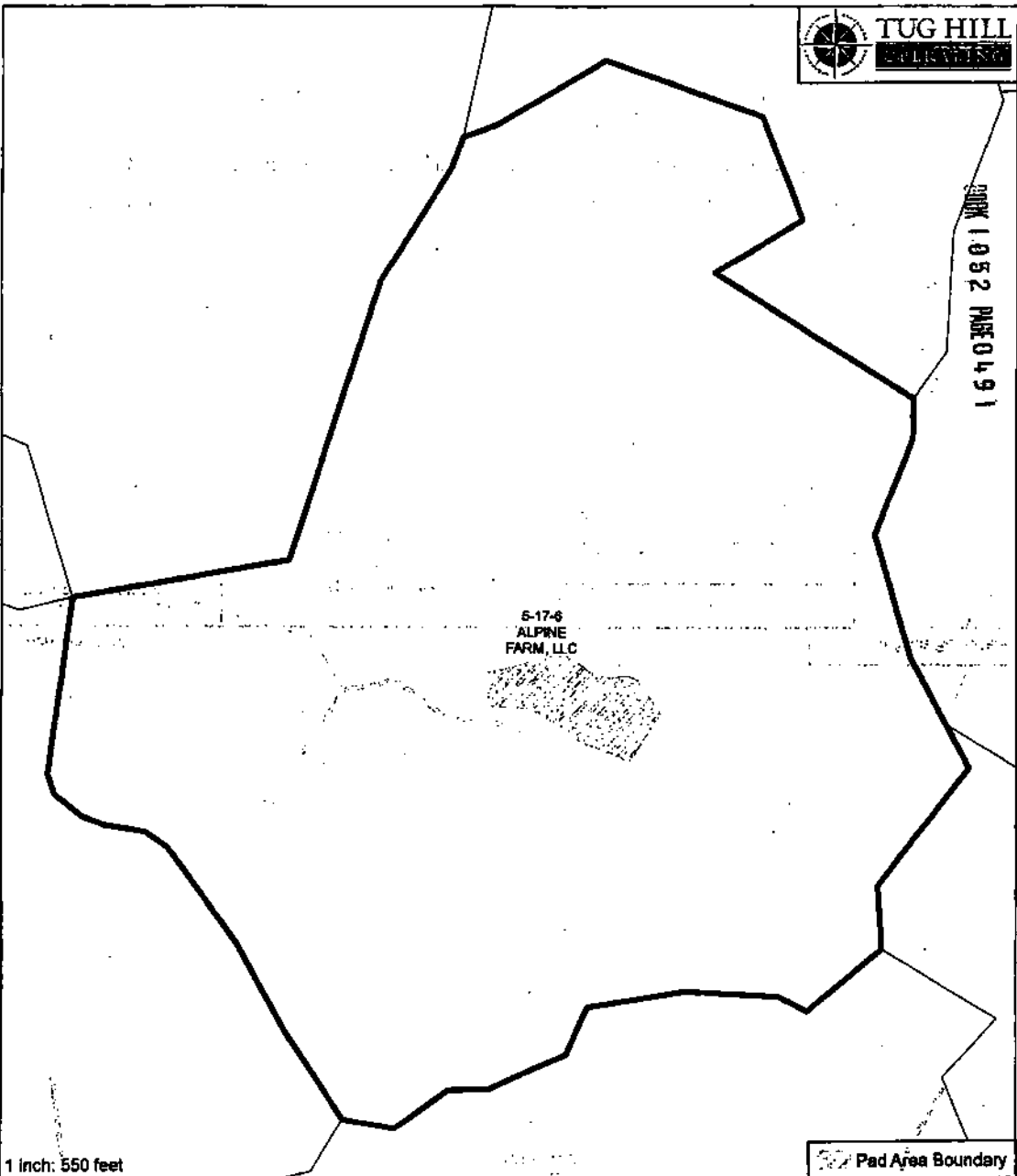
This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304



AMBER K SRAMEK
Notary Public, State of Ohio
My Comm. Expires 07/14/2019



BOOK 1052 PAGE 0491



1 inch: 550 feet

Pad Area Boundary

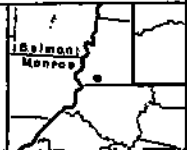
0 182.5 365 550
Feet

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"PLAT"
ALPINE FARM, LLC
Marshall, WV

Date: 7-1-19
Name: Elite Energy
Name: Jennie Mae Mangus



STATE OF WEST VIRGINIA, MARSHALL COUNTY, SCT.:

I, JAN PEST, Clerk of the County Commission of said County, do hereby certify that the annexed writing, bearing date on the 1st day of July, 2019, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 12th day of July, 2019 at 12:25 o'clock P. M.

TESTE: Jan Pest Clerk