



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-12HU
47-051-02457-00-00

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.

A handwritten signature in blue ink, appearing to read 'James A. Martin', is positioned above the printed name and title.

James A. Martin
Chief

Operator's Well Number: PENDLETON S-12HU
Farm Name: ALPINE FARM, LLC
U.S. WELL NUMBER: 47-051-02457-00-00
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 #47-051-02457

COMPANY: Tug Hill Operating, LLC

FARM: Alpine Farm, LLC Pendleton S-12HU 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-13HU 47-051-02458; Pendleton S-14HU 47-051-02459; Pendleton S-15HU 47-051-02460; Corley N-10HU 47-051-01998; Simms No. U-5H 47-051-01731; 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-12HU Well Pad Name: Pendleton

3) Farm Name/Surface Owner: Alpine Farm, LLC Public Road Access: Rines Ridge Road (CR 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 11,498' - 11,615', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,765'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 20,752'

11) Proposed Horizontal Leg Length: 8,472.77'

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: _____

John James
STRADER COVER
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'	259ft 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#	10,669'	10,669'	3,173ft ³ (CTS)
Production	5 1/2"	NEW	HCP110	23#	20,752'	20,752'	5,020ft ³ (CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,212'	
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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John C. ...
 STRADER LOWER
 8/3/2023

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 (10,712'). 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 21,200,000 lb. proppant and 385,000 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:

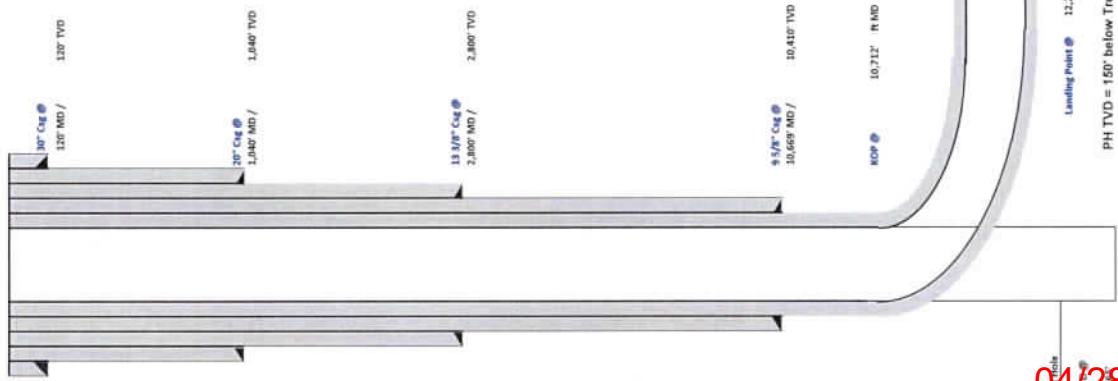
Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

*Note: Attach additional sheets as needed.

*John
STRADEY LOWE
3/3/2023*



WELL NAME: Pendleton S-12HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Franklin
DF Elev: 1,272' **GL Elev:** 1,272'
TD: 20,752'
TH Latitude: 39.753408
TH Longitude: -80.73386
BH Latitude: 39.732077
BH Longitude: -80.723879



Formation	Depth TVD
Deepest Fresh Water	914'
Seneca Shale Coal	818'
Pittsburgh Coal	908'
Big Lime	2,177'
Berea	2,658'
Tully	6,534'
Marcellin	6,654'
Onondaga	6,794'
Salina	7,403'
Lockport	8,490'
Utica	11,227'
Point Pleasant	11,498'
Landing Depth	11,548'
Trenton	11,633'
Plat Hole TD	11,765'

CASING SUMMARY							
Type	Hole Size [in]	Csg Size [in]	Depth [MD]	Depth [TVD]	Weight [lb/ft]	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	36	20	2,040'	2,040'	108.5	MS	Surface
Intermediate 1	17 1/2	13 7/8	2,800'	2,800'	54.5	MS	Surface
Intermediate 2	12 1/4	9 5/8	10,609'	10,430'	47	HPP110	Surface
Production	8 1/2	5 1/2	20,752'	11,696'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density [ppg]	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,805	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,140	A	15.6	Air	3 Centralizer every other joint
Intermediate 2	3,173	A	14.5	Air	3 Centralizer every other joint
Production	5,020	A	16.5	Air / SOBMM	1 every other joint to lateral; 1 per joint in curve; 1 every other joint to surface

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Landing Point @ 12,281' MD / 11,548' TVD
 PH TVD = 150' below Trenton Top

Scott Lewis
 STRADER
 3/15/2023



Tug Hill Operating, LLC Casing and Cement Program

Pendleton S-12HU

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"	10,669'	CTS
Production	5 1/2"	HCP110	8 1/2"	20,752'	CTS

Cement

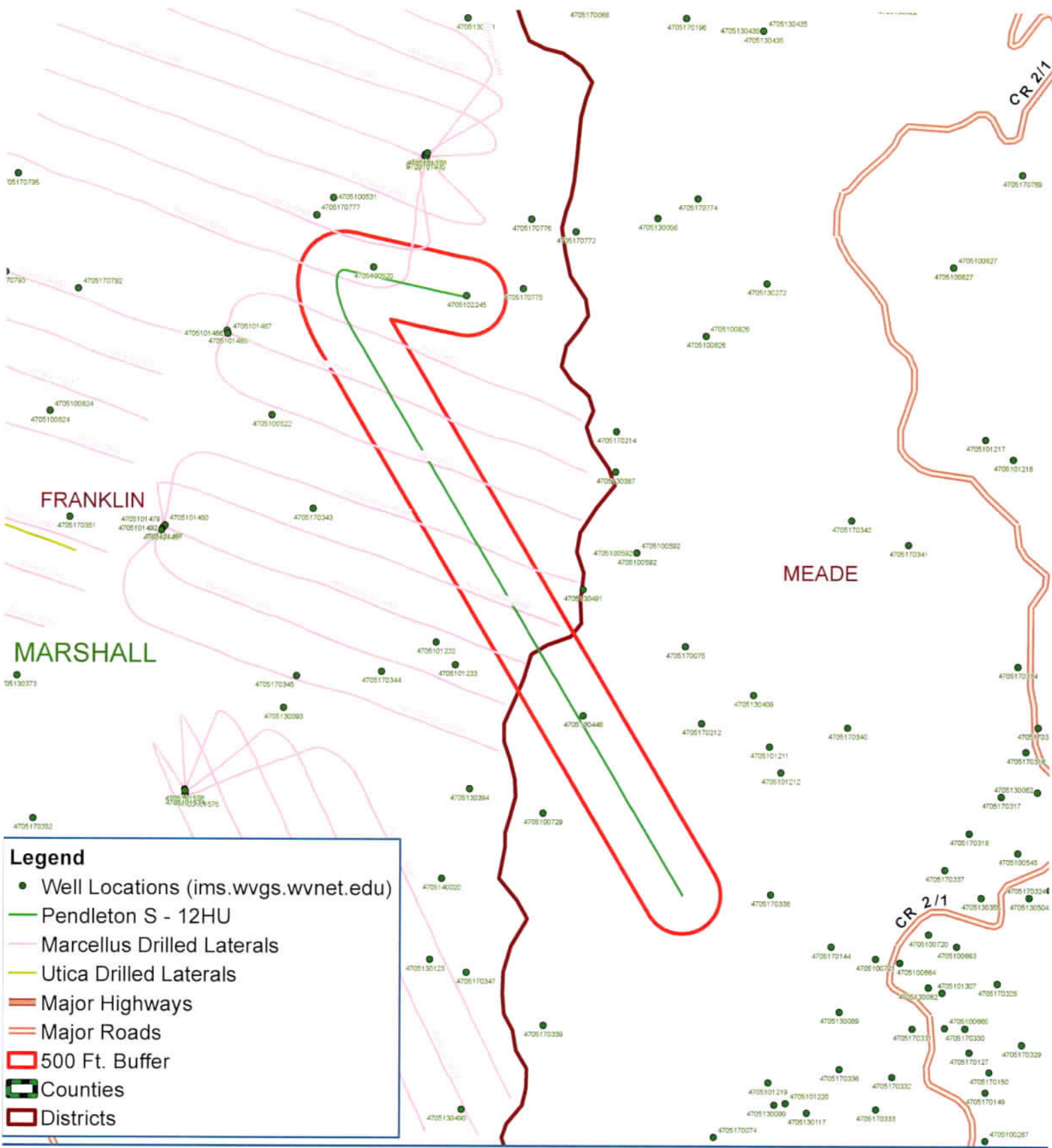
- Conductor: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2
- Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
- Intermediate 1: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed 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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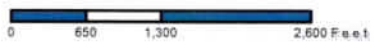
Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Pendleton S - 12HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- 500 Ft. Buffer
- ▭ Counties
- ▭ Districts



Pendleton S - 12HU Franklin District Marshall County, WV

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Map Prepared by:
EPS
LAND SERVICES

04/28/2023

Map Created February 17, 2023

Notes:
All locations are approximate and are for visualization purposes only.

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

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

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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
4705100520	Fruchtman, M.	2091' TVD	Big Injun (Price Fm & equivs)	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	
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.
4705130446	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 7/7/1962.

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WV Geological & Economic Survey:

Well: County = 51 Permit = 00520

Report Time: Thursday, May 26, 2022 5:09:35 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX	DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100520	Marshall	520	Franklin	Glen Easton	Cameron	39.754478	-80.738202	522426	8	4400540

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
4705100520	1/17/1964	Original Loc	Completed	Herbert Kelly	1				Herbert Kelly	Fruchtman, M.			

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_254
4705100520	1/17/1964	12/6/1963	1309	Ground Level	Cameron-Garner	Price Fm & equivs	Price Fm & equivs	Development Well	Development Well	Gas	Spudder	Nat/Open	H	2091				

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
4705100520	1/17/1964	Water	Unknown Water	Vertical	135				0	0			0
4705100520	1/17/1964	Water	Unknown Water	Vertical	1665				0	0			0
4705100520	1/17/1964	Pay	Gas	Vertical	2080	Big Injun (Price&eq)			0	0			2

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

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705100520	Original Loc	Sewickley coal	Well Record	833	Reasonable	1	Reasonable	1309	Ground Level
4705100520	Original Loc	Pittsburgh coal	Well Record	922	Reasonable	6	Reasonable	1309	Ground Level
4705100520	Original Loc	1st Salt Sand	Past WVGES Staff Geologist	1639	Reasonable	104	Reasonable	1309	Ground Level
4705100520	Original Loc	3rd Salt Sand	Past WVGES Staff Geologist	1640	Reasonable	100	Reasonable	1309	Ground Level
4705100520	Original Loc	Maxton	Past WVGES Staff Geologist	1956	Reasonable	15	Reasonable	1309	Ground Level
4705100520	Original Loc	Greenbrier Group	Well Record	1976	Reasonable	64	Reasonable	1309	Ground Level
4705100520	Original Loc	Big Lime	Well Record	1976	Reasonable	64	Reasonable	1309	Ground Level
4705100520	Original Loc	Big Injun (Price&eq)	Well Record	2040	Reasonable	0	Reasonable	1309	Ground Level

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WV Geological & Economic Survey:

Well: County = 51 Permit = 02245

Report Time: Thursday, May 26, 2022 5:10:06 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX	DISTRICT	QUAD	75	QUAD	15	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	TF
4705102245	-/-		Cancelled	Alpine Farm LLC	N-9HU	Pendleton	Eli A & Fannie Mae Wlengard et al	Tug Hill Operating, LLC	11787	P1 Pleasant Fr			

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 = 30446

Report Time: Thursday, May 26, 2022 5:10:30 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705130446	Marshall	30446	Meade	39.738478	-80.728457	523287	4398786.7		

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
4705130446	-/-/1901		Original Loc Completed	Adam Frohnapfe	1	1218		2885		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_BEF
4705130446	-/-/1901	-/-	1221 Ground Level				unclassified	unclassified		not available	unknown	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
4705130446	7/77/1962	0

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TUG HILL
OPERATING

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

Well Name: Pendleton S-12HU

Pad Name: Pendleton

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,400,422.33

Easting: 522,799.16

**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)

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24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

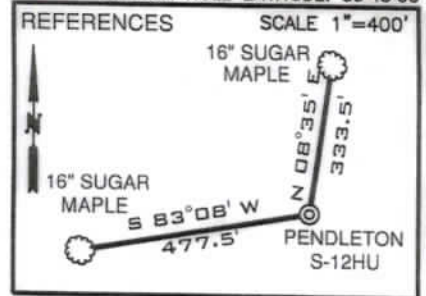
Steve Crow
STRADON CROWEN
12/14/2022

04/28/2023

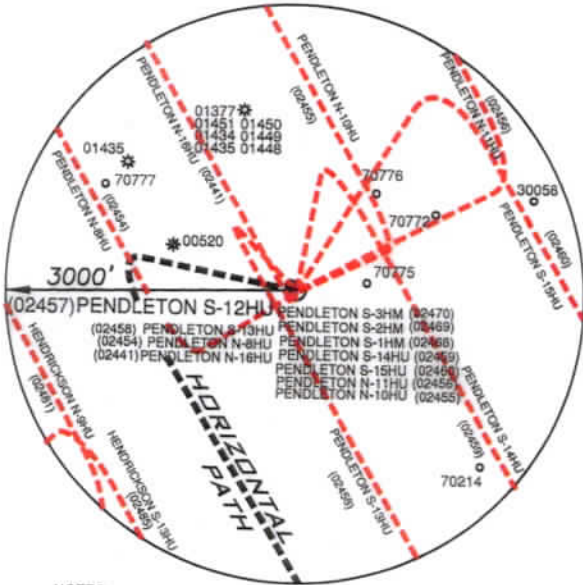
PENDLETON S-12HU
UTICA UNIT - 241.0963± ACRES
TUG HILL OPERATING

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



GRID NORTH

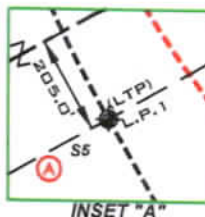


Deep Wells Within 2400' of Proposed Well's Surface Location and/or 500' of Well Lateral

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
47-051-02458	Tug Hill Operating, LLC
47-051-02459	Tug Hill Operating, LLC
47-051-02460	Tug Hill Operating, LLC

NOTES

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



SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,422.33
 E) 522,799.16

LANDING POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,280.46
 E) 522,348.71

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,398,057.52
 E) 523,661.48

LINE	BEARING	DISTANCE
L1	N 01°15' E	2,863.13'
L2	N 76°10' W	2,388.14'
L3	N 77°32' W	312.91'
L4	N 76°23' W	1,087.95'

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 76°36' W	212.53'	14,382.81'	212.53'
C2	N 89°11' W	62.71'	124.07'	63.39'
C3	S 53°50' W	58.39'	84.36'	59.62'
C4	S 23°09' W	53.24'	151.52'	53.52'
C5	S 02°48' W	122.08'	368.71'	122.65'
C6	S 12°23' E	246.65'	967.53'	247.32'
C7	S 24°27' E	404.82'	21,13.93'	405.44'

LEGEND

- LEASE TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)

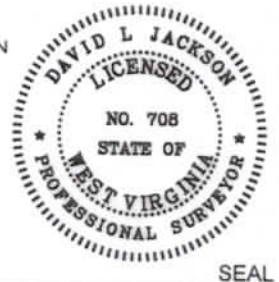
FILE NUMBER _____
 DRAWING NUMBER: **PENDLETON S-12HU REV 4**
 SCALE **1" = 2000'**
 MINIMUM DEGREE OF ACCURACY **1/200**
 PROVEN SOURCE OF ELEVATION **SUBMETER MAPPING GRADE GPS**

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

P.S. 708

David L Jackson

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-12HU**
 API WELL NO. **47-051-02457**
 STATE COUNTY PERMIT

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

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 X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___
 PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION **POINT PLEASANT** PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
 ESTIMATED DEPTH TVD: **11,765'** TMD: **20,752'**

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**

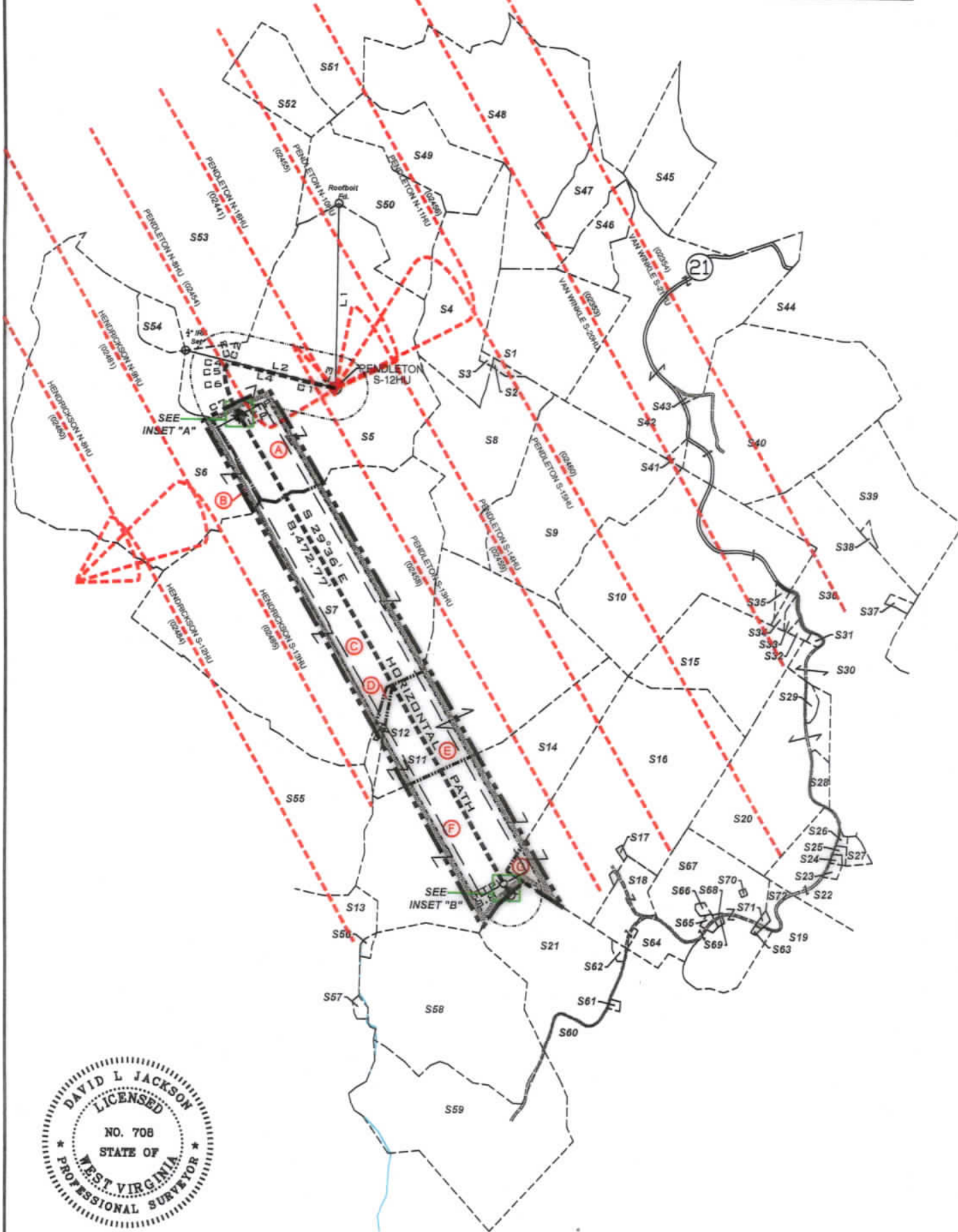
COUNTY NAME PERMIT

04/28/2023

PENDLETON S-12HU
UTICA UNIT - 241.0963± 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

	OPERATOR'S	WELL PLAT
	WELL #: <u>PENDLETON S-12HU</u>	<u>PAGE 2 OF 4</u>
	API#: <u>47-051-02457</u>	<u>DATE: 03/13/2023</u>
	DISTRICT: <u>Franklin</u>	
	COUNTY: <u>Marshall</u>	
STATE: <u>WV</u>		

form wv6

**PENDLETON S-12HU
UTICA UNIT - 241.0963 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	S6	05-17-08	ROGER H. HALL, JR	257.50
C	S7	05-24-02	ROY FRIEND YOHO	316.80
D	S12	09-20-01	MICHAEL JAMES PEKULA	5
E	S11	09-20-02	MICHAEL JAMES PEKULA	138
F	S14	09-20-04	SHELLIE J. PEKULA, HRS	171
G	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 (S)		71
S8	09-18-01	THERESA MAE LONG THOMAS, ET AL		58.66
S9	09-18-02	BRIAN T. KLUG		85
S10	09-18-18	JAMES D. FROHNAPFEL, ET UX		154.03
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 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 MYSLUWIEC - 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		04/28/2023
S72	09-20-21	MARY MARGARET STINE		3.25



P.S. 708

David L Jackson



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: PENDLETON S-12HU
API#: 47-051-02457
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV

WELL PLAT
PAGE 3 OF 4
DATE: 03/13/2023

form wv6

PENDLETON S-12HU
UTICA UNIT - 241.0963± 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*14460	5-17-8	B	GERTRUD GODDARD, H G WELLS AIF, ET AL	725	515
10*14024	5-24-2	C	ROY FRIEND YOHO AND DARLENE J YOHO, ET AL	665	508
10*39661	9-20-1	D	SHELLIE J PEKULA AND MICHAEL PEKULA	1126	542
10*39661	9-20-2	E	SHELLIE J PEKULA AND MICHAEL PEKULA	1126	542
10*31101	9-20-4	F	ELIZABETH BRINKMEIER ET AL	103	183
10*19555	9-20-5	G	MARY JEAN FROHNAPFEL	936	936



P.S.
708

David L Jackson

04/28/2023



TUG HILL
OPERATING

OPERATOR'S
 WELL #: PENDLETON S-12HU
 API#: 47-051-02457
 DISTRICT: Franklin
 COUNTY: Marshall
 STATE: WV

WELL PLAT
PAGE 4 OF 4
DATE: 03/13/2023



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-12HU

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-hilop.com.

Sincerely,

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

RECEIVED
Office of Oil and Gas

MAR 15 2023

WV Department of
Environmental Protection

**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

**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 
 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	Assignment	Assignment	Assignment	Assignment	Assignment							
10*14114	5-17-6	A	EU & FANNIE MAE WENGERD	GASTAR EXPLORATION USA INC	1/8+	671	323	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration USA Inc with and into Gastar Exploration 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	C	ROY FRIEND YOHO AND DARLENE J YOHO	GASTAR EXPLORATION USA INC	1/8+	665	508	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration USA Inc with and into Gastar Exploration 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	C	NANCY CAROL GIBSON	GASTAR EXPLORATION USA INC	1/8+	697	87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration USA Inc with and into Gastar Exploration 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	C	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	697	91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration USA Inc with and into Gastar Exploration 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	C	HILDA R CONNER RUVYAN	GASTAR EXPLORATION USA INC	1/8+	697	89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration USA Inc with and into Gastar Exploration 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	C	WILDA L CLARK	GASTAR EXPLORATION USA INC	1/8+	697	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration USA Inc with and into Gastar Exploration 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	C	MARY MAXINE CLARKE	GASTAR EXPLORATION USA INC	1/8+	697	85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration USA Inc with and into Gastar Exploration 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	9-20-1	D	SHEILIE J 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	N/A	N/A	N/A	N/A	N/A	N/A					
10*39661	9-20-2	E	SHEILIE J 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	N/A	N/A	N/A	N/A	N/A	N/A					
10*31101	9-20-4	F	ELIZABETH BRINKMEIER ET AL	HOPE NATURAL GAS CO	1/8+	103	183	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	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/into CNG Producing Company on 3/13/1991 - Wyoming Bureau of Land Management	CNG Producing Company merged with/into Dominion Exploration & Production Inc on 6/7/2000 - WV Secretary of State	Dominion Exploration & Production Inc merged with/into CONSOL Gas Company: C9 19/546	CONSOL Gas Company merged with/into CNX Gas Company LLC: MB 11/415	CNX Gas Company to TH Exploration II LLC: 46/210

RECEIVED
Office of Oil and Gas
MAR 15 2023

Department of Environmental Protection

04/28/2023

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

RECEIVED
Office of Oil and Gas

MAR 15 2023

ASSIGNMENT, BILL OF SALE AND CONVEYANCE

WV Department of
Environmental Protection

THIS ASSIGNMENT, BILL OF SALE AND CONVEYANCE (this "**Assignment**"), dated effective as of 7:00 A.M., local time, where the respective Assets are located, on July 1, 2020 (the "**Effective Time**"), is between Atinum Marcellus I, LLC, a Delaware limited liability company ("**Assignor**"), whose mailing address is One Riverway, Suite 710, Houston, TX 77056-1988, and TH Exploration II, LLC, a Texas limited liability company, whose mailing address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("**Assignee**"). Assignor and Assignee are each, individually, referred to herein as a "**Party**" and, collectively, as the "**Parties**."

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Asset Purchase Agreement dated as of November 13, 2020, by and among Assignor and Assignee (the "**Purchase Agreement**").

Section 1. **Assignment.** The conveyance and assignment herein shall be deemed effective as of the Effective Time.

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, and Assignee does hereby acquire, the undivided interests in the Leases (as defined below) set forth on Exhibit A-1, and all other of Assignor's right, title and interest in and to the interests and properties described in subsections (a) through (k) of this Section 1 (without duplication) (such right, title and interest, less and except the Excluded Assets, collectively, the "**Assets**"):

(a) The oil and gas leases, mineral leases and Royalties located in the Covered Counties (which Covered Counties include, for the avoidance of doubt, the county in which this Assignment is filed of record), including those described on Exhibit A-1 together with any and all other right, title and interest in and to the leasehold estates created thereby, subject to the terms, conditions, covenants and obligations set forth in such leases or other instrument creating such rights or interests or on Exhibit A-1 (such leases, Royalties, and mineral interests, collectively, the "**Leases**"), together with any related interest in the lands covered by the Leases or lands unitized, pooled, communitized or consolidated therewith (the "**Lands**");

(b) All of the oil and/or gas wells identified on Exhibit A-2 hereto (the "**Wells**"), and any other oil, gas, or other wells located on any of the Leases or the Lands, in each case, whether producing, non-producing, shut-in, temporarily or permanently abandoned or otherwise;

(c) All rights, titles and interests arising under any unitization, pooling and/or communitization agreements, declarations or designations for drilling, spacing and/or production units related to any of the Leases, Wells or Lands, including the units described on Exhibit A-4;

MAR 15 2023

WV Department of
Environmental Protection**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.

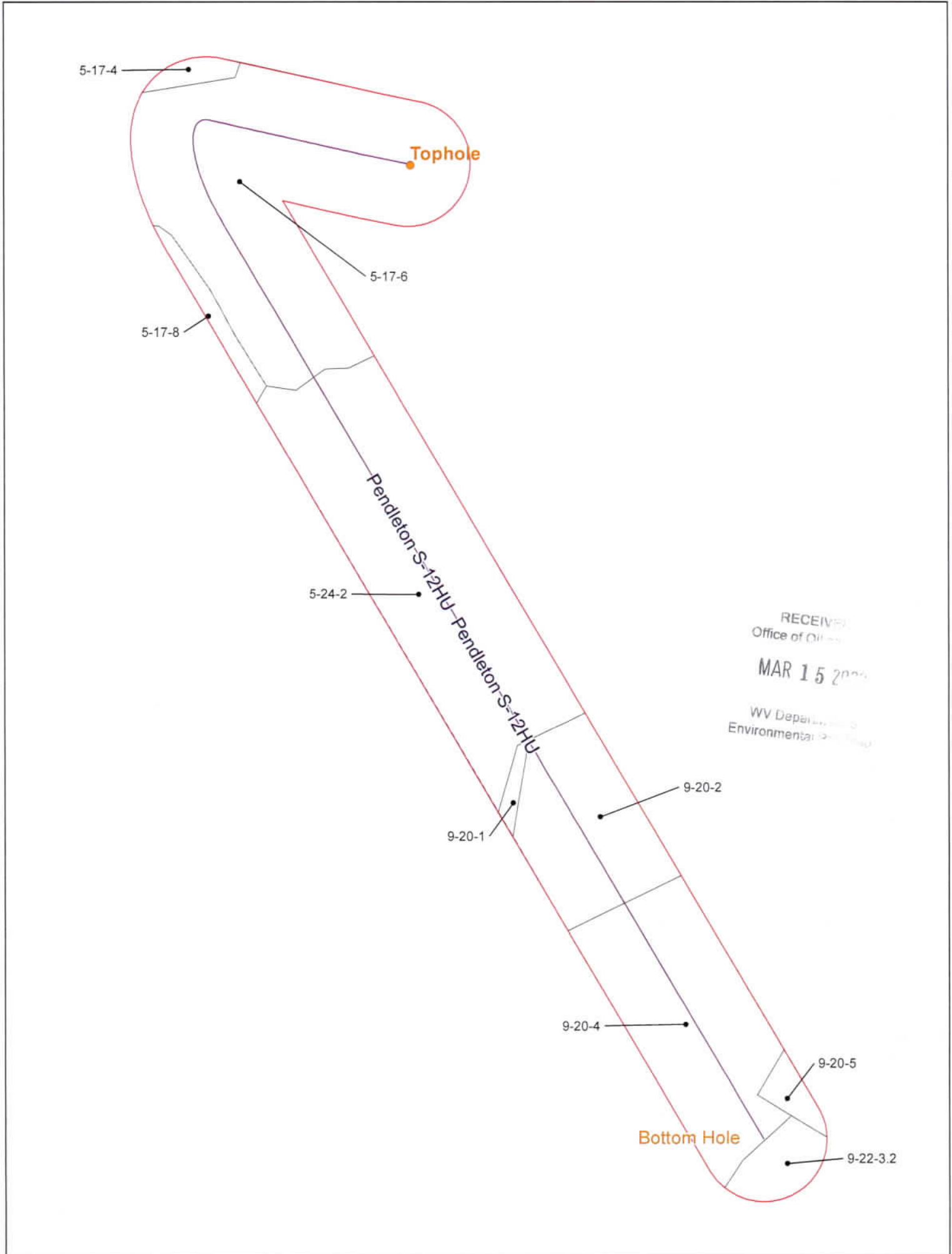
TO HAVE AND TO HOLD the Assigned Rights unto Assignee, its respective successors and assigns, subject to the terms of this Assignment and subject to and burdened by the contracts set forth on Exhibit B.

"**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

Pendleton S-12HU



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

Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Scale Factor: 0.9996
Central Meridian: 81.0000
False Easting: 500000
False Northing: 0.0000
Latitude Of Origin: 39.0000
Units: Feet US

CONFIDENTIAL



- Utica Well
- 500' Buffer
- Force Pool

Pendleton S-12HU
Operators within 500 Feet of Well Borehole



**Operators within 500' of Well Bores
Pendleton 2 - 12HU**

COUNTY	DISTRICT	TMP	MINERAL OWNER/LESSEE	ADDRESS
MARSHALL	FRANKLIN	5-17-4	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	FRANKLIN	5-17-6	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	FRANKLIN	5-17-8	SWN PRODUCTION COMPANY	10000 Energy Drive Spring, TX 77389
MARSHALL	FRANKLIN	5-17-8	EQUINOR USA ONSHORE PROPERTIES INC	2107 City West Blvd. Suite 100 Houston, TX 77042
MARSHALL	FRANKLIN	5-17-8	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	FRANKLIN	5-24-2	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-1	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-2	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-4	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-5	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-22-3.2	SWN PRODUCTION COMPANY	10000 Energy Drive Spring, TX 77389
MARSHALL	MEADE	9-22-3.2	EQUINOR USA ONSHORE PROPERTIES INC	2107 City West Blvd. Suite 100 Houston, TX 77042
MARSHALL	MEADE	9-22-3.2	NISOURCE ENERGY VENTURES, LLC	801 E 86th Avenue Merrillville, IN 46410

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
Jan Pest, Clerk
Instrument 1456384
07/12/2019 @ 12:25:33 PM

ALPINE FARM, LLC.

By: Eli A. Wengerd
Name: Eli A. Wengerd
Title: Member

STATE OF OHIO

SS:

COUNTY OF HOLMES

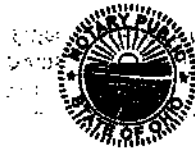
RIGHT OF WAY W/O CONSIDERATION
Book 1052 @ Page 490
Pages Recorded 2
Recording Cost \$ 11.00

On this, the 1st day of July, 2019, before me, a notary public, the undersigned officer, personally appeared Eli 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: Amber K Sramek
Name/Notary Public (print): Amber K Sramek

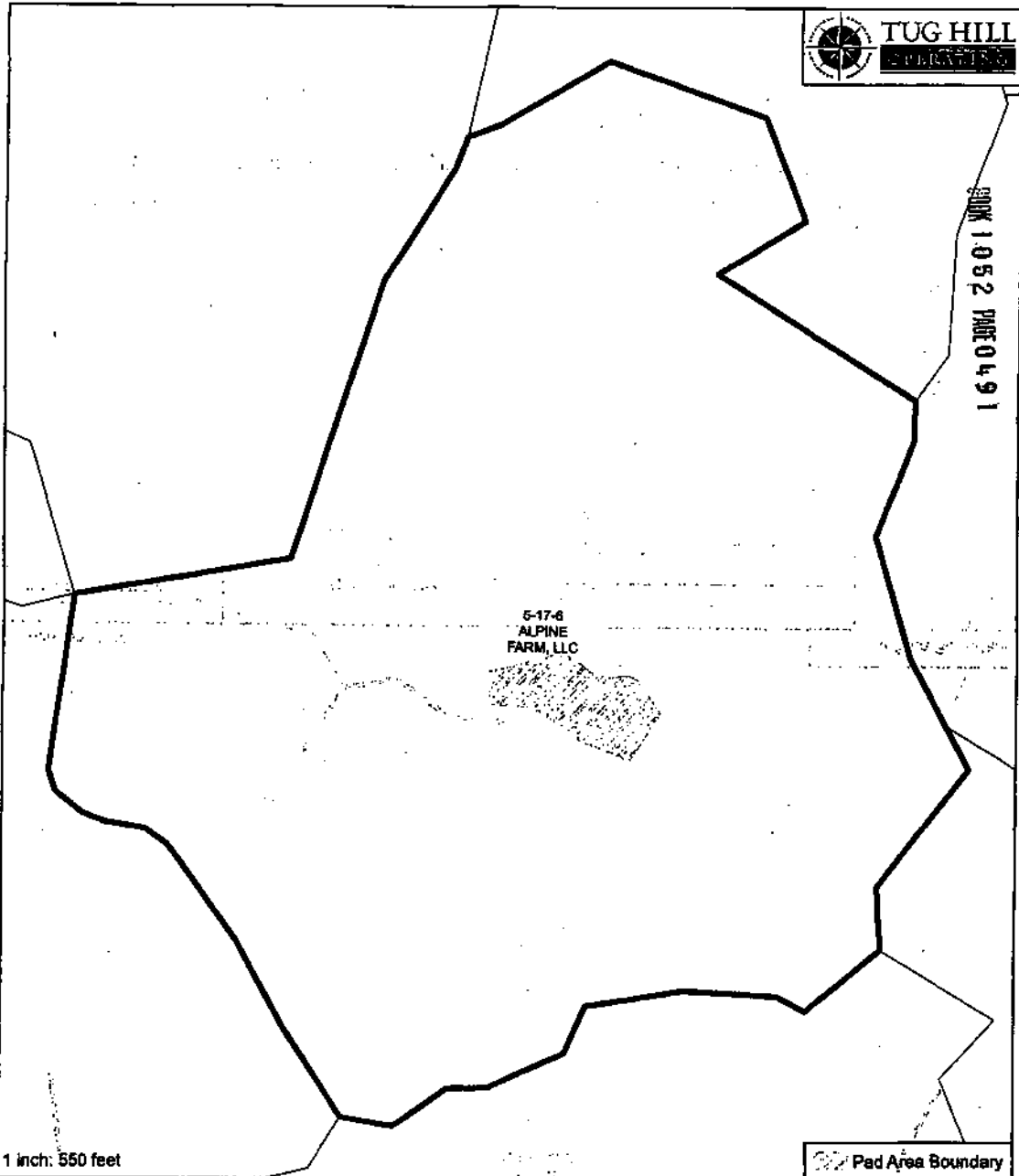
This instrument prepared by:
WV Oil and Gas Conservation Commission
601 37th Street
Charleston, WV 25304



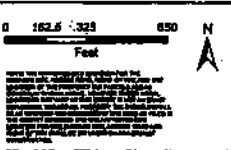
AMBER K SRAMEK
Notary Public, State of Ohio
My Comm. Expires 07/14/2019



BOOK 1052 PAGE 0491



1 inch: 550 feet



"PLAT"
ALPINE FARM, LLC
Marshall, WV

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



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

04/28/2023