



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

Thursday, August 18, 2022
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for PENDLETON N-8HU
47-051-02454-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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 N-8HU
Farm Name: ALPINE FARM, LLC
U.S. WELL NUMBER: 47-051-02454-00-00
Horizontal 6A New Drill
Date Issued: 8/18/2022

Promoting a healthy environment.

08/19/2022



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

August 5, 2022

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

RE: Application for Deep Well Permit – API #47-051-02454

COMPANY: Tug Hill Operating, LLC

FARM: Alpine Farm, LLC Pendleton N-8HU

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,

A handwritten signature in blue ink that reads 'Susan Rose'.

Susan Rose
Administrator

**Old Crow N-18HU 47-051-02123; Old Crow N-17HU 47-051-02122; Old Crow N-19HU 47-051-02190 and 2270, Old Crow N-20HU 47-051-02191; Old Crow N-21HU 47-051-02335; Bryan N-14HU 47-051-02031; Bryan N-13HU 47-051-02030; Van Winkle N-16HU 47-051-02349; Van Winkle S-20HU 47-051-02353; Pendleton N-16HU 47-051-02441; SIMMS No. U-5H 47-051-01731; Bryan N-12HU 47-051-02029; Corley N-10HU 47-051-01998; Pendleton N-10HU 47-051-02455; Pendleton N-11HU 47-051-02456; Pendleton S-12HU 47-051-02457; Pendleton S-13HU 47-051-02458; Pendleton S-14HU 47-051-02459; Pendleton S-15HU 47-051-02460

08/19/2022

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

API Number: _____

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

08/19/2022

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 N-8HU 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: 1,296' Elevation, proposed post-construction: 1,271.82'

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

(b) If Gas Shallow _____ Deep X
Horizontal X _____ *MJK 7/29/2022*

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,492' - 11,609', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,759' *pilot ✓*

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 23,061'

11) Proposed Horizontal Leg Length: 10,943.95'

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 X

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

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

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4) Elevation, current ground: 1,296' Elevation, proposed post-construction: 1,271.82'

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

(b) If Gas Shallow _____ Deep X
Horizontal X *MJK 7/28/2022*

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,492' - 11,609', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,759' *pilot ✓*

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

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

18)

CASING AND TUBING PROGRAM

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
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#	10,531'	10,531'	3,437FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	23,061'	23,061'	5,462FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,266'	
Liners							

MDK 7/28/2022

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
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			

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 (10,766'). 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 27,400,000 lb. proppant and 500,000 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.

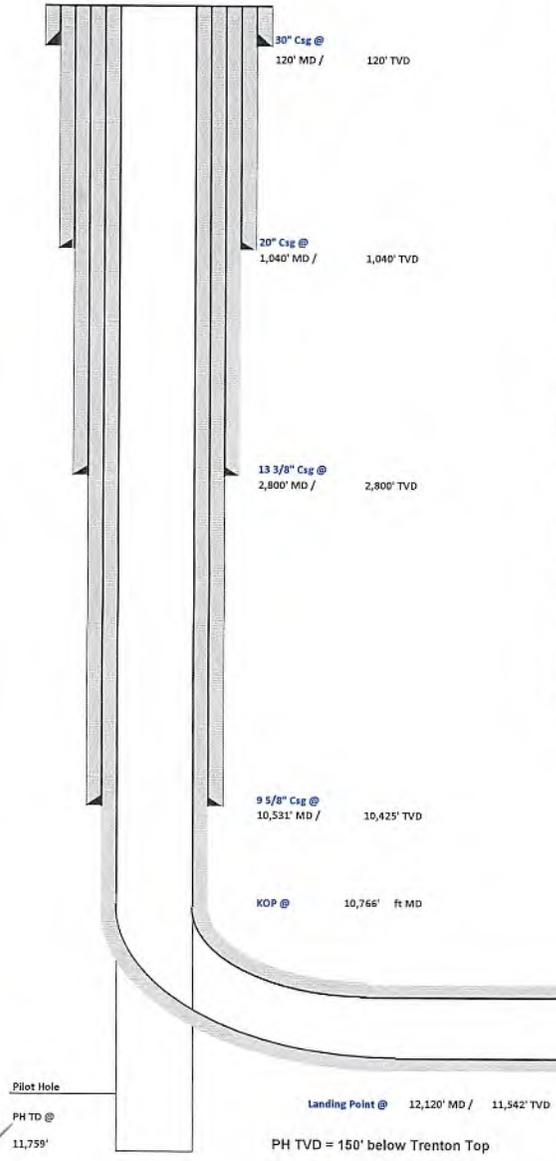


WELL NAME: Pendleton N-8HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Franklin
DF Elev: 1,272' **GL Elev:** 1,272'
TD: 23,061'
TH Latitude: 39.753391
TH Longitude: -80.733823
BH Latitude: 39.77930431
BH Longitude: -80.75893596

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	914'
Sewickley Coal	816'
Pittsburgh Coal	908'
Big Lime	2,177'
Berea	2,662'
Tully	6,559'
Marcellus	6,659'
Onondaga	6,709'
Salina	7,404'
Lockport	8,496'
Utica	11,242'
Point Pleasant	11,492'
Landing Depth	11,542'
Trenton	11,609'
Pilot Hole TD	11,759'

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	26	20	1,040'	1,040'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,800'	2,800'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,531'	10,425'	47	HPP110	Surface
Production	8 1/2	5 1/2	23,061'	11,351'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	388	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	1 Centralizer every other joint
Intermediate 2	3,131	A	14.5	Air	1 Centralizer every other joint
Production	5,586	A	16.5	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



Landing Point @ 12,120' MD / 11,542' TVD
 PH TD = 150' below Trenton Top

Lateral TD @ 23,061' ft MD
 11,351' ft TVD



Tug Hill Operating, LLC Casing and Cement Program

Pendleton N-8HU

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"	10,531'	CTS
Production	5 1/2"	HCP110	8 1/2"	23,061'	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

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 (5/24/2022) 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

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.	
4705100531	Palisades Petroleum	2104' TVD	Big Injun (undiff)	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation. Well is plugged.	Well was plugged 4/23/1969.
4705170777	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.	State records are incomplete.
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.

WV Geological & Economic Survey:

Well: County = 51 Permit = 00520

Report Time: Thursday, May 26, 2022 2:48:36 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
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		2091		25-

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
4705100520	1/17/1964	Water	Unknown Water	Vertical			1665						0
4705100520	1/17/1964	Water	Unknown Water	Vertical			1940						2
4705100520	1/17/1964	Pay	Gas	Vertical			2090	Big Injun (Price&eq)	0	0			

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	1840	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

WV Geological & Economic Survey:

Well: County = 51 Permit = 00531

Report Time: Thursday, May 26, 2022 2:49:18 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100531	Marshall	531	Franklin	Glen Easton	Cameron	39.756943	-80.740082	522265	4400813.1

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
4705100531	10/10/1966	Original Loc	Completed	Ethel Rine	1		Ethel Rine		Joseph Shiben Estate	Palisades Petroleum			

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
4705100531	10/10/1966	9/6/1966	1381	Ground Level	Cameron-Garner	Big Injun (undiff)	Big Injun (undiff)	Development Well	Unsuccessful	Dry w/ Gas Show	Spudder	Fractured	2104			2104

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
4705100531	10/10/1966	Water	Fresh Water	Vertical			110						0
4705100531	10/10/1966	Water	Salt Water	Vertical			1720						0

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
4705100531	Original Loc	unidentified coal	Well Record	885	Reasonable	5	Reasonable	1381	Ground Level
4705100531	Original Loc	Pittsburgh coal	Well Record	974	Reasonable	10	Reasonable	1381	Ground Level
4705100531	Original Loc	1st Salt Sand	Past WVGES Staff Geologist	1715	Reasonable	30	Reasonable	1381	Ground Level
4705100531	Original Loc	2nd Salt Sand	Past WVGES Staff Geologist	1919	Reasonable	36	Reasonable	1381	Ground Level
4705100531	Original Loc	Maxton	Past WVGES Staff Geologist	2020	Reasonable	15	Reasonable	1381	Ground Level
4705100531	Original Loc	Greenbrier Group	Well Record	2035	Reasonable	75	Reasonable	1381	Ground Level
4705100531	Original Loc	Big Lime	Well Record	2035	Reasonable	75	Reasonable	1381	Ground Level
4705100531	Original Loc	Big Injun (Price&eq)	Well Record	2110	Reasonable	0	Reasonable	1381	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100531	4/23/1969	0

WV Geological & Economic Survey:

Well: County = 51 Permit = 02245

Report Time: Thursday, May 26, 2022 2:49:47 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
4705102245	-/-	Dvtd Orgnl Loc	Cancelled	Alpine Farm LLC		N-8HU	Pendleton		Eli A & Fannie Mae Wengerd et al	Tug Hill Operating, LLC	11787	Pt 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_AF
4705102245	-/-	-/-	1272	Ground Level																

WV Geological & Economic Survey:

Well: County = 51 Permit = 70777

Report Time: Thursday, May 26, 2022 2:49:33 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170777	Marshall	70777	Franklin	Glen Easton	Cameron	39.75633	-80.740859	522198.7	4400744.9

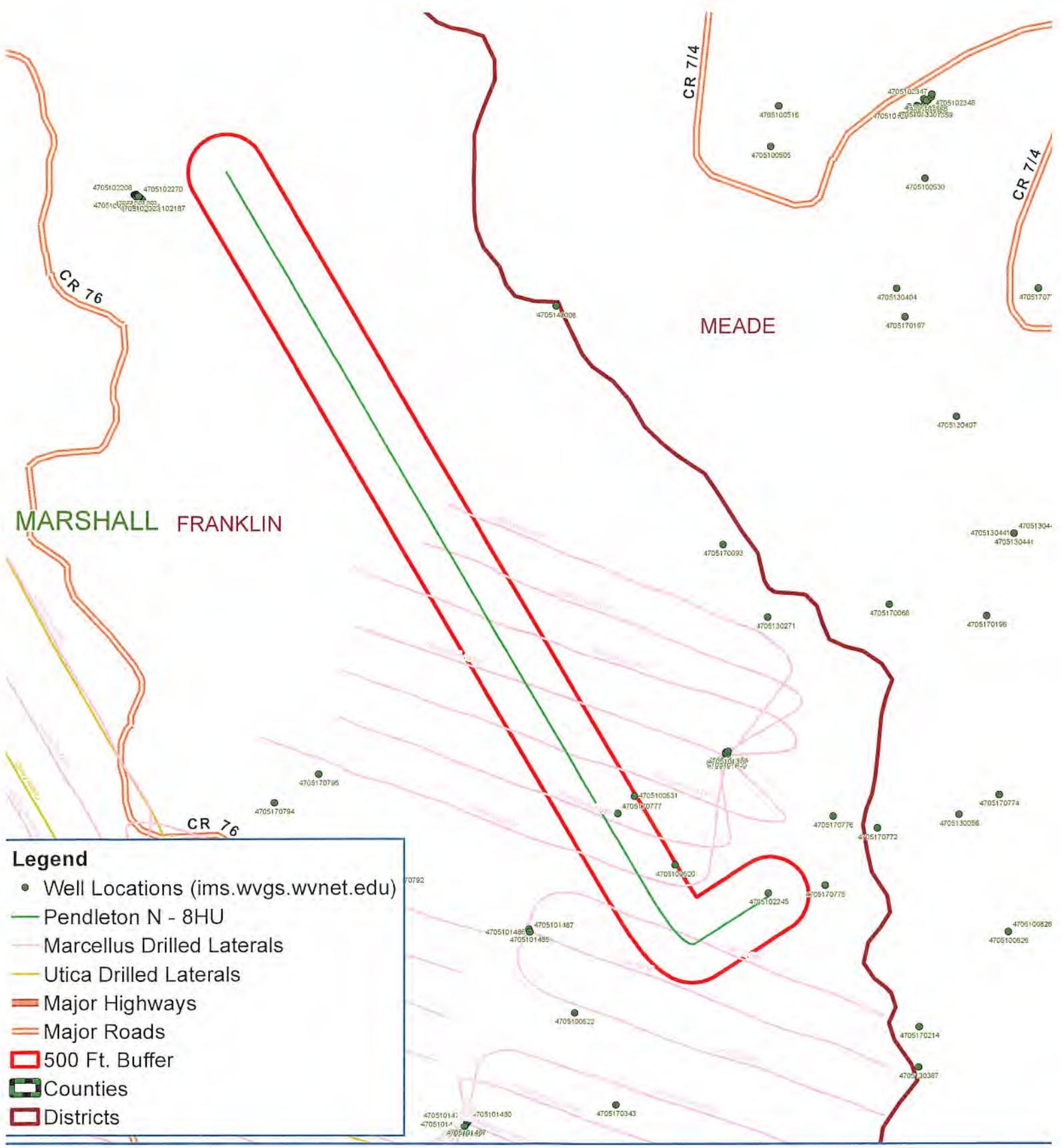
There is no Bottom Hole Location data for this well

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
4705170777	-/-	unknown	Prpty Map	Joseph Shiben		1285				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	O_AF
4705170777	-/-	-/-						unclassified	unclassified	not available	unknown	unknown								



Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Pendleton N - 8HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Counties
- Districts



Pendleton N - 8HU Franklin District Marshall County, WV



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

Map Prepared by:

08/19/2022

**Operators within 500' of Well Bores
Pendleton N-8HU**

COUNTY	DISTRICT	TMP	MINERAL OWNER/LESSEE	ADDRESS
MARSHALL	FRANKLIN	5-10-14	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-3	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-4	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-5	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-6	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-16	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-17	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-18	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-16-19	TH EXPLORATION, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-17-3	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
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	5-17-7	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth,TX 76107
MARSHALL	FRANKLIN	5-17-8	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

08/19/2022



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

Well Name: Pendleton N-8HU

Pad Name: Pendleton

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,400,420.44

Easting: 522,802.29

[Handwritten signature]
5/26/22 M.A.M.

**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

RECEIVED
Office of Oil and Gas

JUN 06 2022

WV Department of
Environmental Protection

08/19/2022



Well: Pendleton N-08 HU (slot C)
 Site: Pendleton
 Project: Marshall County, West Virginia NAD83 UTM 17N
 Design: rev1
 Rig:

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level
 Depth Reference: GL @ 1272.00ft
 Surface location
 Northing Easting Latitude Longitude
 14437046.213 1715227.302 39.75339100 -80.73382300

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.809°



Azimuths to Grid North
 True North: -0.17°
 Magnetic North: -8.81°

Magnetic Field
 Strength: 51695.5nT
 Dip Angle: 66.48°
 Date: 10/25/2021
 Model: IGRF2020

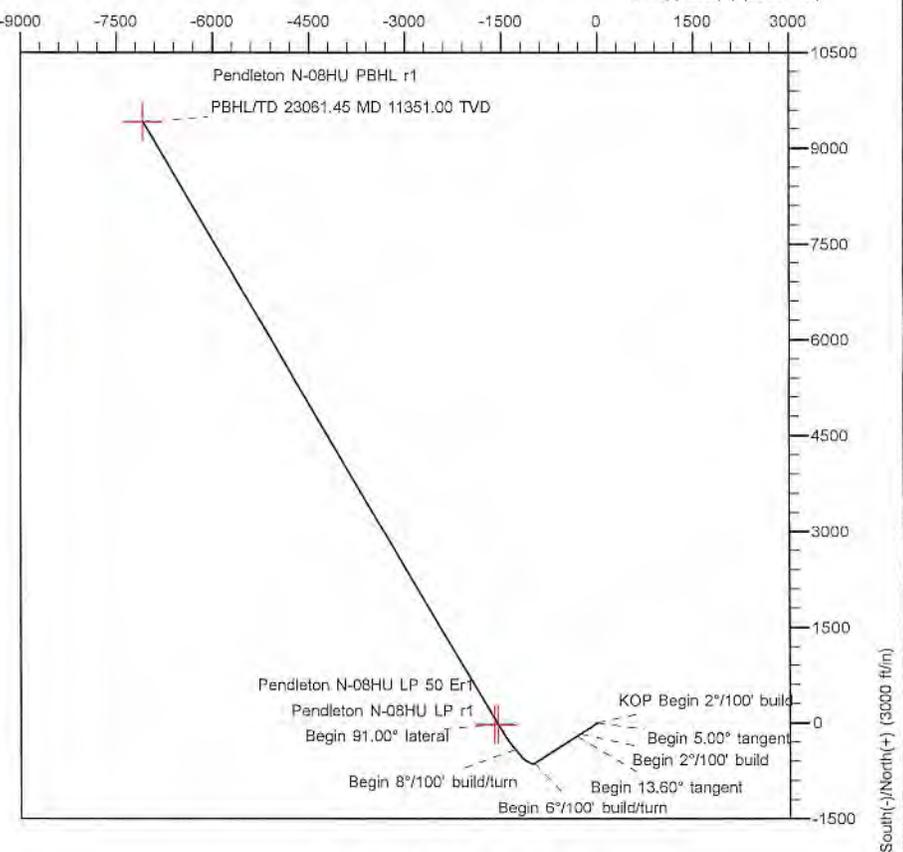
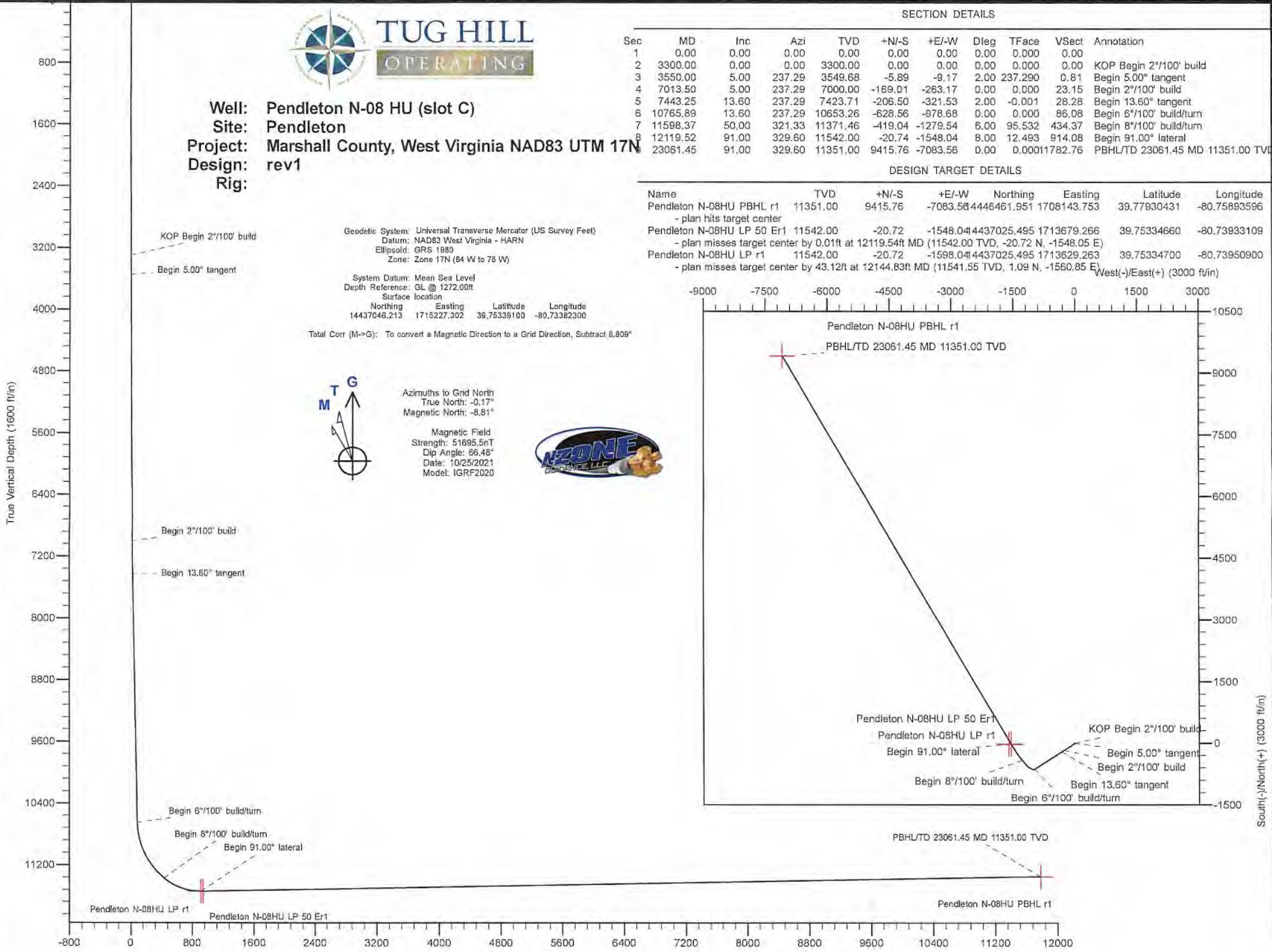


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	3550.00	5.00	237.29	3549.68	-5.89	-9.17	2.00	237.290	0.81	Begin 5.00° tangent
4	7013.50	5.00	237.29	7000.00	-169.01	-263.17	0.00	0.000	23.15	Begin 2°/100' build
5	7443.25	13.60	237.29	7423.71	-206.50	-321.53	2.00	-0.001	28.28	Begin 13.60° tangent
6	10765.89	13.60	237.29	10653.26	-628.56	-978.68	0.00	0.000	86.08	Begin 6°/100' build/turn
7	11598.37	50.00	321.33	11371.46	-419.04	-1279.54	6.00	95.532	434.37	Begin 8°/100' build/turn
8	12119.52	91.00	329.60	11542.00	-20.72	-1548.04	8.00	12.493	914.08	Begin 91.00° lateral
	23061.45	91.00	329.60	11351.00	9415.76	-7083.58	0.00	0.000	1782.76	PBHL/TD 23061.45 MD 11351.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Pendleton N-08HU PBHL r1	11351.00	9415.76	-7083.58	4446461.951	1708143.753	39.77930431	-80.75893596
- plan hits target center							
Pendleton N-08HU LP 50 Er1	11542.00	-20.72	-1548.04	4437025.495	1713679.266	39.75334660	-80.73933109
- plan misses target center by 0.01ft at 12119.54ft MD (11542.00 TVD, -20.72 N, -1548.05 E)							
Pendleton N-08HU LP r1	11542.00	-20.72	-1598.04	4437025.495	1713629.263	39.75334700	-80.73950900
- plan misses target center by 43.12ft at 12144.83ft MD (11541.55 TVD, 1.09 N, -1560.85 E)							





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-08 HU (slot C)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Project	Marshall County, West Virginia NAD83 UTM 17N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 West Virginia - HARN		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Pendleton				
Site Position:		Northing:	14,437,088.243 usft	Latitude:	39.75350685
From:	Lat/Long	Easting:	1,715,175.249 usft	Longitude:	-80.73400776
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Pendleton N-08 HU (slot C)					
Well Position	+N/-S	0.00 ft	Northing:	14,437,046.214 usft	Latitude:	39.75339100
	+E/-W	0.00 ft	Easting:	1,715,227.302 usft	Longitude:	-80.73382300
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,272.00 ft
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	10/25/2021	-8.638	66.480	51,695.51645377

Design	rev1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	323.05

Plan Survey Tool Program	Date				
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	23,061.45 rev1 (Original Hole)			

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-08 HU (slot C)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.000	
3,550.00	5.00	237.29	3,549.68	-5.89	-9.17	2.00	2.00	0.00	237.290	
7,013.50	5.00	237.29	7,000.00	-169.01	-263.17	0.00	0.00	0.00	0.000	
7,443.25	13.60	237.29	7,423.71	-206.50	-321.53	2.00	2.00	0.00	-0.001	
10,765.89	13.60	237.29	10,653.26	-628.56	-978.68	0.00	0.00	0.00	0.000	
11,598.37	50.00	321.33	11,371.46	-419.04	-1,279.54	6.00	4.37	10.10	95.532	
12,119.52	91.00	329.60	11,542.00	-20.74	-1,548.04	8.00	7.87	1.59	12.493	
23,061.45	91.00	329.60	11,351.00	9,415.76	-7,083.56	0.00	0.00	0.00	0.000	Pendleton N-08HU PI



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-08 HU (slot C)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
100.00	0.00	0.00	100.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
200.00	0.00	0.00	200.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
300.00	0.00	0.00	300.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
400.00	0.00	0.00	400.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
500.00	0.00	0.00	500.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
600.00	0.00	0.00	600.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
700.00	0.00	0.00	700.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
800.00	0.00	0.00	800.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
900.00	0.00	0.00	900.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,437,046.214	1,715,227.302	39.75339100	-80.73382300	
KOP Begin 2°/100' build										
3,400.00	2.00	237.29	3,399.98	-0.94	-1.47	14,437,045.271	1,715,225.834	39.75338842	-80.73382824	
3,500.00	4.00	237.29	3,499.84	-3.77	-5.87	14,437,042.442	1,715,221.430	39.75338069	-80.73384393	
3,550.00	5.00	237.29	3,549.68	-5.89	-9.17	14,437,040.323	1,715,218.129	39.75337490	-80.73385570	
Begin 5.00° tangent										
3,600.00	5.00	237.29	3,599.49	-8.25	-12.84	14,437,037.968	1,715,214.463	39.75336846	-80.73386877	
3,700.00	5.00	237.29	3,699.11	-12.96	-20.17	14,437,033.258	1,715,207.129	39.75335559	-80.73389491	
3,800.00	5.00	237.29	3,798.73	-17.67	-27.51	14,437,028.548	1,715,199.796	39.75334271	-80.73392105	
3,900.00	5.00	237.29	3,898.35	-22.38	-34.84	14,437,023.838	1,715,192.462	39.75332984	-80.73394720	
4,000.00	5.00	237.29	3,997.97	-27.09	-42.17	14,437,019.129	1,715,185.129	39.75331696	-80.73397334	
4,100.00	5.00	237.29	4,097.59	-31.79	-49.51	14,437,014.419	1,715,177.796	39.75330409	-80.73399948	
4,200.00	5.00	237.29	4,197.21	-36.50	-56.84	14,437,009.709	1,715,170.462	39.75329121	-80.73402562	
4,300.00	5.00	237.29	4,296.83	-41.21	-64.17	14,437,004.999	1,715,163.129	39.75327834	-80.73405176	
4,400.00	5.00	237.29	4,396.45	-45.92	-71.51	14,437,000.290	1,715,155.795	39.75326546	-80.73407790	
4,500.00	5.00	237.29	4,496.07	-50.63	-78.84	14,436,995.580	1,715,148.462	39.75325259	-80.73410405	
4,600.00	5.00	237.29	4,595.69	-55.34	-86.17	14,436,990.870	1,715,141.129	39.75323972	-80.73413019	
4,700.00	5.00	237.29	4,695.31	-60.05	-93.51	14,436,986.160	1,715,133.795	39.75322684	-80.73415633	
4,800.00	5.00	237.29	4,794.93	-64.76	-100.84	14,436,981.450	1,715,126.462	39.75321397	-80.73418247	
4,900.00	5.00	237.29	4,894.55	-69.47	-108.17	14,436,976.741	1,715,119.128	39.75320109	-80.73420861	



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-08 HU (slot C)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	5.00	237.29	4,994.17	-74.18	-115.51	14,436,972.031	1,715,111.795	39.75318822	-80.73423475
5,100.00	5.00	237.29	5,093.78	-78.89	-122.84	14,436,967.321	1,715,104.461	39.75317534	-80.73426090
5,200.00	5.00	237.29	5,193.40	-83.60	-130.17	14,436,962.611	1,715,097.128	39.75316247	-80.73428704
5,300.00	5.00	237.29	5,293.02	-88.31	-137.51	14,436,957.902	1,715,089.795	39.75314959	-80.73431318
5,400.00	5.00	237.29	5,392.64	-93.02	-144.84	14,436,953.192	1,715,082.461	39.75313672	-80.73433932
5,500.00	5.00	237.29	5,492.26	-97.73	-152.17	14,436,948.482	1,715,075.128	39.75312384	-80.73436546
5,600.00	5.00	237.29	5,591.88	-102.44	-159.51	14,436,943.772	1,715,067.794	39.75311097	-80.73439160
5,700.00	5.00	237.29	5,691.50	-107.15	-166.84	14,436,939.062	1,715,060.461	39.75309809	-80.73441775
5,800.00	5.00	237.29	5,791.12	-111.86	-174.17	14,436,934.353	1,715,053.128	39.75308522	-80.73444389
5,900.00	5.00	237.29	5,890.74	-116.57	-181.51	14,436,929.643	1,715,045.794	39.75307234	-80.73447003
6,000.00	5.00	237.29	5,990.36	-121.28	-188.84	14,436,924.933	1,715,038.461	39.75305947	-80.73449617
6,100.00	5.00	237.29	6,089.98	-125.99	-196.18	14,436,920.223	1,715,031.127	39.75304660	-80.73452231
6,200.00	5.00	237.29	6,189.60	-130.70	-203.51	14,436,915.514	1,715,023.794	39.75303372	-80.73454845
6,300.00	5.00	237.29	6,289.22	-135.41	-210.84	14,436,910.804	1,715,016.461	39.75302085	-80.73457460
6,400.00	5.00	237.29	6,388.84	-140.12	-218.18	14,436,906.094	1,715,009.127	39.75300797	-80.73460074
6,500.00	5.00	237.29	6,488.46	-144.83	-225.51	14,436,901.384	1,715,001.794	39.75299510	-80.73462688
6,600.00	5.00	237.29	6,588.08	-149.54	-232.84	14,436,896.674	1,714,994.460	39.75298222	-80.73465302
6,700.00	5.00	237.29	6,687.70	-154.25	-240.18	14,436,891.965	1,714,987.127	39.75296935	-80.73467916
6,800.00	5.00	237.29	6,787.32	-158.96	-247.51	14,436,887.255	1,714,979.793	39.75295647	-80.73470530
6,900.00	5.00	237.29	6,886.94	-163.67	-254.84	14,436,882.545	1,714,972.460	39.75294360	-80.73473145
7,000.00	5.00	237.29	6,986.55	-168.38	-262.18	14,436,877.835	1,714,965.127	39.75293072	-80.73475759
7,013.50	5.00	237.29	7,000.00	-169.01	-263.17	14,436,877.200	1,714,964.137	39.75292899	-80.73476112
Begin 2°/100' build									
7,100.00	6.73	237.29	7,086.05	-173.79	-270.60	14,436,872.423	1,714,956.700	39.75291593	-80.73478763
7,200.00	8.73	237.29	7,185.13	-181.06	-281.92	14,436,865.155	1,714,945.383	39.75289606	-80.73482797
7,300.00	10.73	237.29	7,283.69	-190.19	-296.14	14,436,856.022	1,714,931.163	39.75287109	-80.73487866
7,400.00	12.73	237.29	7,381.60	-201.18	-313.24	14,436,845.037	1,714,914.058	39.75284106	-80.73493963
7,443.25	13.60	237.29	7,423.71	-206.50	-321.53	14,436,839.715	1,714,905.772	39.75282652	-80.73496917
Begin 13.60° tangent									
7,500.00	13.60	237.29	7,478.87	-213.71	-332.76	14,436,832.506	1,714,894.547	39.75280681	-80.73500918
7,600.00	13.60	237.29	7,576.07	-226.41	-352.53	14,436,819.803	1,714,874.769	39.75277208	-80.73507968
7,700.00	13.60	237.29	7,673.27	-239.11	-372.31	14,436,807.101	1,714,854.991	39.75273736	-80.73515019
7,800.00	13.60	237.29	7,770.46	-251.82	-392.09	14,436,794.398	1,714,835.214	39.75270264	-80.73522069
7,900.00	13.60	237.29	7,867.66	-264.52	-411.87	14,436,781.696	1,714,815.436	39.75266791	-80.73529119
8,000.00	13.60	237.29	7,964.86	-277.22	-431.65	14,436,768.993	1,714,795.658	39.75263319	-80.73536169
8,100.00	13.60	237.29	8,062.06	-289.92	-451.42	14,436,756.291	1,714,775.880	39.75259846	-80.73543220
8,200.00	13.60	237.29	8,159.26	-302.63	-471.20	14,436,743.588	1,714,756.102	39.75256374	-80.73550270
8,300.00	13.60	237.29	8,256.46	-315.33	-490.98	14,436,730.886	1,714,736.324	39.75252902	-80.73557320
8,400.00	13.60	237.29	8,353.65	-328.03	-510.76	14,436,718.183	1,714,716.546	39.75249429	-80.73564370
8,500.00	13.60	237.29	8,450.85	-340.73	-530.54	14,436,705.481	1,714,696.768	39.75245957	-80.73571420
8,600.00	13.60	237.29	8,548.05	-353.44	-550.31	14,436,692.778	1,714,676.990	39.75242484	-80.73578470
8,700.00	13.60	237.29	8,645.25	-366.14	-570.09	14,436,680.076	1,714,657.212	39.75239012	-80.73585521
8,800.00	13.60	237.29	8,742.45	-378.84	-589.87	14,436,667.373	1,714,637.434	39.75235539	-80.73592571
8,900.00	13.60	237.29	8,839.64	-391.54	-609.65	14,436,654.671	1,714,617.656	39.75232067	-80.73599621
9,000.00	13.60	237.29	8,936.84	-404.25	-629.43	14,436,641.969	1,714,597.878	39.75228594	-80.73606671
9,100.00	13.60	237.29	9,034.04	-416.95	-649.20	14,436,629.266	1,714,578.100	39.75225122	-80.73613721
9,200.00	13.60	237.29	9,131.24	-429.65	-668.98	14,436,616.564	1,714,558.322	39.75221650	-80.73620771
9,300.00	13.60	237.29	9,228.44	-442.35	-688.76	14,436,603.861	1,714,538.544	39.75218177	-80.73627822
9,400.00	13.60	237.29	9,325.63	-455.06	-708.54	14,436,591.159	1,714,518.766	39.75214705	-80.73634872
9,500.00	13.60	237.29	9,422.83	-467.76	-728.31	14,436,578.456	1,714,498.989	39.75211232	-80.73641922
9,600.00	13.60	237.29	9,520.03	-480.46	-748.09	14,436,565.754	1,714,479.211	39.75207760	-80.73648972
9,700.00	13.60	237.29	9,617.23	-493.16	-767.87	14,436,553.051	1,714,459.433	39.75204287	-80.73656022
9,800.00	13.60	237.29	9,714.43	-505.87	-787.65	14,436,540.349	1,714,439.655	39.75200815	-80.73663072



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-08 HU (slot C)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,900.00	13.60	237.29	9,811.63	-518.57	-807.43	14,436,527.646	1,714,419.877	39.75197342	-80.73670122
10,000.00	13.60	237.29	9,908.82	-531.27	-827.20	14,436,514.944	1,714,400.099	39.75193870	-80.73677172
10,100.00	13.60	237.29	10,006.02	-543.97	-846.98	14,436,502.241	1,714,380.321	39.75190397	-80.73684222
10,200.00	13.60	237.29	10,103.22	-556.68	-866.76	14,436,489.539	1,714,360.543	39.75186925	-80.73691272
10,300.00	13.60	237.29	10,200.42	-569.38	-886.54	14,436,476.836	1,714,340.765	39.75183452	-80.73698322
10,400.00	13.60	237.29	10,297.62	-582.08	-906.32	14,436,464.134	1,714,320.987	39.75179980	-80.73705372
10,500.00	13.60	237.29	10,394.81	-594.78	-926.09	14,436,451.431	1,714,301.209	39.75176507	-80.73712422
10,600.00	13.60	237.29	10,492.01	-607.49	-945.87	14,436,438.729	1,714,281.431	39.75173035	-80.73719472
10,700.00	13.60	237.29	10,589.21	-620.19	-965.65	14,436,426.026	1,714,261.653	39.75169562	-80.73726523
10,765.89	13.60	237.29	10,653.26	-628.56	-978.68	14,436,417.656	1,714,248.621	39.75167274	-80.73731168
Begin 6°/100' build/turn									
10,800.00	13.55	246.02	10,686.42	-632.35	-985.71	14,436,413.866	1,714,241.597	39.75166238	-80.73733671
10,850.00	14.02	258.47	10,734.99	-635.94	-997.00	14,436,410.274	1,714,230.309	39.75165261	-80.73737691
10,900.00	15.08	269.68	10,783.39	-637.19	-1,009.44	14,436,409.027	1,714,217.869	39.75164529	-80.73742118
10,950.00	16.60	279.16	10,831.50	-636.09	-1,022.99	14,436,410.128	1,714,204.312	39.75165242	-80.73746941
11,000.00	18.48	286.93	10,879.18	-632.64	-1,037.63	14,436,413.574	1,714,189.675	39.75166200	-80.73752145
11,050.00	20.62	293.23	10,926.30	-626.86	-1,053.31	14,436,419.357	1,714,173.998	39.75167801	-80.73757716
11,100.00	22.95	298.34	10,972.73	-618.76	-1,069.98	14,436,427.459	1,714,157.324	39.75170039	-80.73763640
11,150.00	25.41	302.54	11,018.34	-608.36	-1,087.61	14,436,437.858	1,714,139.699	39.75172910	-80.73769900
11,200.00	27.97	306.03	11,063.01	-595.69	-1,106.13	14,436,450.527	1,714,121.170	39.75176404	-80.73776479
11,250.00	30.60	308.97	11,106.62	-580.78	-1,125.51	14,436,465.431	1,714,101.790	39.75180512	-80.73783359
11,300.00	33.29	311.48	11,149.05	-563.69	-1,145.69	14,436,482.528	1,714,081.611	39.75185224	-80.73790521
11,350.00	36.03	313.66	11,190.17	-544.44	-1,166.62	14,436,501.772	1,714,060.688	39.75190525	-80.73797945
11,400.00	38.79	315.56	11,229.89	-523.11	-1,188.23	14,436,523.110	1,714,039.078	39.75196403	-80.73805611
11,450.00	41.59	317.25	11,268.08	-499.73	-1,210.46	14,436,546.483	1,714,016.841	39.75202840	-80.73813499
11,500.00	44.41	318.76	11,304.65	-474.39	-1,233.27	14,436,571.828	1,713,994.038	39.75209818	-80.73821585
11,550.00	47.24	320.12	11,339.49	-447.14	-1,256.57	14,436,599.074	1,713,970.732	39.75217320	-80.73829849
11,598.37	50.00	321.33	11,371.46	-419.04	-1,279.54	14,436,627.174	1,713,947.765	39.75225055	-80.73837992
Begin 8°/100' build/turn									
11,600.00	50.13	321.37	11,372.50	-418.07	-1,280.32	14,436,628.149	1,713,946.985	39.75225323	-80.73838268
11,650.00	54.04	322.43	11,403.23	-387.03	-1,304.65	14,436,659.188	1,713,922.659	39.75233867	-80.73846891
11,700.00	57.96	323.40	11,431.18	-353.96	-1,329.63	14,436,692.253	1,713,897.677	39.75242968	-80.73855745
11,750.00	61.88	324.28	11,456.24	-319.03	-1,355.15	14,436,727.182	1,713,872.160	39.75252581	-80.73864787
11,800.00	65.81	325.11	11,478.27	-282.41	-1,381.07	14,436,763.805	1,713,846.232	39.75262659	-80.73873974
11,850.00	69.75	325.88	11,497.18	-244.27	-1,407.29	14,436,801.944	1,713,820.020	39.75273154	-80.73883261
11,900.00	73.69	326.62	11,512.86	-204.80	-1,433.65	14,436,841.413	1,713,793.651	39.75284015	-80.73892602
11,950.00	77.63	327.32	11,525.24	-164.20	-1,460.05	14,436,882.019	1,713,767.254	39.75295187	-80.73901952
12,000.00	81.57	328.01	11,534.26	-122.65	-1,486.35	14,436,923.565	1,713,740.958	39.75306618	-80.73911265
12,050.00	85.52	328.68	11,539.88	-80.37	-1,512.41	14,436,965.848	1,713,714.890	39.75318251	-80.73920496
12,100.00	89.46	329.35	11,542.08	-37.55	-1,538.13	14,437,008.662	1,713,689.178	39.75330029	-80.73929600
12,119.52	91.00	329.60	11,542.00	-20.74	-1,548.04	14,437,025.474	1,713,679.265	39.75334654	-80.73933109
Begin 91.00° lateral									
12,200.00	91.00	329.60	11,540.59	48.67	-1,588.76	14,437,094.883	1,713,638.549	39.75353749	-80.73947524
12,300.00	91.00	329.60	11,538.85	134.91	-1,639.35	14,437,181.124	1,713,587.960	39.75377473	-80.73965435
12,400.00	91.00	329.60	11,537.10	221.15	-1,689.94	14,437,267.366	1,713,537.370	39.75401198	-80.73983345
12,500.00	91.00	329.60	11,535.36	307.39	-1,740.53	14,437,353.607	1,713,486.780	39.75424923	-80.74001256
12,600.00	91.00	329.60	11,533.61	393.64	-1,791.12	14,437,439.849	1,713,436.190	39.75448647	-80.74019167
12,700.00	91.00	329.60	11,531.86	479.88	-1,841.71	14,437,526.090	1,713,385.600	39.75472372	-80.74037078
12,800.00	91.00	329.60	11,530.12	566.12	-1,892.30	14,437,612.331	1,713,335.010	39.75496096	-80.74054990
12,900.00	91.00	329.60	11,528.37	652.36	-1,942.89	14,437,698.573	1,713,284.420	39.75519821	-80.74072901
13,000.00	91.00	329.60	11,526.63	738.60	-1,993.48	14,437,784.814	1,713,233.830	39.75543545	-80.74090812
13,100.00	91.00	329.60	11,524.88	824.84	-2,044.07	14,437,871.056	1,713,183.240	39.75567270	-80.74108724
13,200.00	91.00	329.60	11,523.14	911.09	-2,094.66	14,437,957.297	1,713,132.651	39.75590994	-80.74126636



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Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,300.00	91.00	329.60	11,521.39	997.33	-2,145.25	14,438,043.538	1,713,082.061	39.75614719	-80.74144548	
13,400.00	91.00	329.60	11,519.65	1,083.57	-2,195.84	14,438,129.780	1,713,031.471	39.75638443	-80.74162460	
13,500.00	91.00	329.60	11,517.90	1,169.81	-2,246.43	14,438,216.021	1,712,980.881	39.75662168	-80.74180372	
13,600.00	91.00	329.60	11,516.15	1,256.05	-2,297.02	14,438,302.262	1,712,930.291	39.75685892	-80.74198284	
13,700.00	91.00	329.60	11,514.41	1,342.29	-2,347.61	14,438,388.504	1,712,879.701	39.75709616	-80.74216196	
13,800.00	91.00	329.60	11,512.66	1,428.53	-2,398.20	14,438,474.745	1,712,829.111	39.75733340	-80.74234109	
13,900.00	91.00	329.60	11,510.92	1,514.78	-2,448.79	14,438,560.987	1,712,778.521	39.75757065	-80.74252021	
14,000.00	91.00	329.60	11,509.17	1,601.02	-2,499.38	14,438,647.228	1,712,727.931	39.75780789	-80.74269934	
14,100.00	91.00	329.60	11,507.43	1,687.26	-2,549.97	14,438,733.469	1,712,677.342	39.75804513	-80.74287847	
14,200.00	91.00	329.60	11,505.68	1,773.50	-2,600.56	14,438,819.711	1,712,626.752	39.75828237	-80.74305760	
14,300.00	91.00	329.60	11,503.94	1,859.74	-2,651.15	14,438,905.952	1,712,576.162	39.75851961	-80.74323673	
14,400.00	91.00	329.60	11,502.19	1,945.98	-2,701.74	14,438,992.193	1,712,525.572	39.75875686	-80.74341586	
14,500.00	91.00	329.60	11,500.44	2,032.23	-2,752.33	14,439,078.435	1,712,474.982	39.75899410	-80.74359500	
14,600.00	91.00	329.60	11,498.70	2,118.47	-2,802.92	14,439,164.676	1,712,424.392	39.75923134	-80.74377413	
14,700.00	91.00	329.60	11,496.95	2,204.71	-2,853.51	14,439,250.918	1,712,373.802	39.75946858	-80.74395327	
14,800.00	91.00	329.60	11,495.21	2,290.95	-2,904.10	14,439,337.159	1,712,323.212	39.75970582	-80.74413240	
14,900.00	91.00	329.60	11,493.46	2,377.19	-2,954.69	14,439,423.400	1,712,272.623	39.75994306	-80.74431154	
15,000.00	91.00	329.60	11,491.72	2,463.43	-3,005.28	14,439,509.642	1,712,222.033	39.76018030	-80.74449068	
15,100.00	91.00	329.60	11,489.97	2,549.67	-3,055.87	14,439,595.883	1,712,171.443	39.76041754	-80.74466982	
15,200.00	91.00	329.60	11,488.23	2,635.92	-3,106.46	14,439,682.125	1,712,120.853	39.76065477	-80.74484896	
15,300.00	91.00	329.60	11,486.48	2,722.16	-3,157.05	14,439,768.366	1,712,070.263	39.76089201	-80.74502811	
15,400.00	91.00	329.60	11,484.73	2,808.40	-3,207.64	14,439,854.607	1,712,019.673	39.76112925	-80.74520725	
15,500.00	91.00	329.60	11,482.99	2,894.64	-3,258.23	14,439,940.849	1,711,969.083	39.76136649	-80.74538640	
15,600.00	91.00	329.60	11,481.24	2,980.88	-3,308.82	14,440,027.090	1,711,918.493	39.76160373	-80.74556554	
15,700.00	91.00	329.60	11,479.50	3,067.12	-3,359.41	14,440,113.331	1,711,867.903	39.76184096	-80.74574469	
15,800.00	91.00	329.60	11,477.75	3,153.37	-3,410.00	14,440,199.573	1,711,817.314	39.76207820	-80.74592384	
15,900.00	91.00	329.60	11,476.01	3,239.61	-3,460.59	14,440,285.814	1,711,766.724	39.76231544	-80.74610299	
16,000.00	91.00	329.60	11,474.26	3,325.85	-3,511.18	14,440,372.056	1,711,716.134	39.76255267	-80.74628214	
16,100.00	91.00	329.60	11,472.52	3,412.09	-3,561.77	14,440,458.297	1,711,665.544	39.76278991	-80.74646130	
16,200.00	91.00	329.60	11,470.77	3,498.33	-3,612.36	14,440,544.538	1,711,614.954	39.76302715	-80.74664045	
16,300.00	91.00	329.60	11,469.02	3,584.57	-3,662.95	14,440,630.780	1,711,564.364	39.76326438	-80.74681960	
16,400.00	91.00	329.60	11,467.28	3,670.82	-3,713.54	14,440,717.021	1,711,513.774	39.76350162	-80.74699876	
16,500.00	91.00	329.60	11,465.53	3,757.06	-3,764.13	14,440,803.262	1,711,463.184	39.76373885	-80.74717792	
16,600.00	91.00	329.60	11,463.79	3,843.30	-3,814.72	14,440,889.504	1,711,412.595	39.76397609	-80.74735708	
16,700.00	91.00	329.60	11,462.04	3,929.54	-3,865.31	14,440,975.745	1,711,362.005	39.76421332	-80.74753624	
16,800.00	91.00	329.60	11,460.30	4,015.78	-3,915.90	14,441,061.987	1,711,311.415	39.76445056	-80.74771540	
16,900.00	91.00	329.60	11,458.55	4,102.02	-3,966.49	14,441,148.228	1,711,260.825	39.76468779	-80.74789456	
17,000.00	91.00	329.60	11,456.81	4,188.26	-4,017.08	14,441,234.469	1,711,210.235	39.76492502	-80.74807373	
17,100.00	91.00	329.60	11,455.06	4,274.51	-4,067.67	14,441,320.711	1,711,159.645	39.76516226	-80.74825289	
17,200.00	91.00	329.60	11,453.31	4,360.75	-4,118.26	14,441,406.952	1,711,109.055	39.76539949	-80.74843206	
17,300.00	91.00	329.60	11,451.57	4,446.99	-4,168.85	14,441,493.194	1,711,058.465	39.76563672	-80.74861123	
17,400.00	91.00	329.60	11,449.82	4,533.23	-4,219.44	14,441,579.435	1,711,007.875	39.76587396	-80.74879040	
17,500.00	91.00	329.60	11,448.08	4,619.47	-4,270.03	14,441,665.676	1,710,957.286	39.76611119	-80.74896957	
17,600.00	91.00	329.60	11,446.33	4,705.71	-4,320.62	14,441,751.918	1,710,906.696	39.76634842	-80.74914874	
17,700.00	91.00	329.60	11,444.59	4,791.96	-4,371.21	14,441,838.159	1,710,856.106	39.76658565	-80.74932791	
17,800.00	91.00	329.60	11,442.84	4,878.20	-4,421.80	14,441,924.400	1,710,805.516	39.76682288	-80.74950708	
17,900.00	91.00	329.60	11,441.10	4,964.44	-4,472.39	14,442,010.642	1,710,754.926	39.76706012	-80.74968626	
18,000.00	91.00	329.60	11,439.35	5,050.68	-4,522.98	14,442,096.883	1,710,704.336	39.76729735	-80.74986543	
18,100.00	91.00	329.60	11,437.60	5,136.92	-4,573.57	14,442,183.125	1,710,653.746	39.76753458	-80.75004461	
18,200.00	91.00	329.60	11,435.86	5,223.16	-4,624.16	14,442,269.366	1,710,603.156	39.76777181	-80.75022379	
18,300.00	91.00	329.60	11,434.11	5,309.40	-4,674.75	14,442,355.607	1,710,552.567	39.76800904	-80.75040297	
18,400.00	91.00	329.60	11,432.37	5,395.65	-4,725.34	14,442,441.849	1,710,501.977	39.76824627	-80.75058215	
18,500.00	91.00	329.60	11,430.62	5,481.89	-4,775.93	14,442,528.090	1,710,451.387	39.76848350	-80.75076133	
18,600.00	91.00	329.60	11,428.88	5,568.13	-4,826.52	14,442,614.331	1,710,400.797	39.76872073	-80.75094052	



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-08 HU (slot C)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,700.00	91.00	329.60	11,427.13	5,654.37	-4,877.11	14,442,700.573	1,710,350.207	39.76895796	-80.75111970	
18,800.00	91.00	329.60	11,425.39	5,740.61	-4,927.70	14,442,786.814	1,710,299.617	39.76919518	-80.75129889	
18,900.00	91.00	329.60	11,423.64	5,826.85	-4,978.29	14,442,873.056	1,710,249.027	39.76943241	-80.75147808	
19,000.00	91.00	329.60	11,421.89	5,913.10	-5,028.88	14,442,959.297	1,710,198.437	39.76966964	-80.75165726	
19,100.00	91.00	329.60	11,420.15	5,999.34	-5,079.47	14,443,045.538	1,710,147.847	39.76990687	-80.75183645	
19,200.00	91.00	329.60	11,418.40	6,085.58	-5,130.06	14,443,131.780	1,710,097.258	39.77014410	-80.75201565	
19,300.00	91.00	329.60	11,416.66	6,171.82	-5,180.64	14,443,218.021	1,710,046.668	39.77038132	-80.75219484	
19,400.00	91.00	329.60	11,414.91	6,258.06	-5,231.23	14,443,304.263	1,709,996.078	39.77061855	-80.75237403	
19,500.00	91.00	329.60	11,413.17	6,344.30	-5,281.82	14,443,390.504	1,709,945.488	39.77085578	-80.75255323	
19,600.00	91.00	329.60	11,411.42	6,430.55	-5,332.41	14,443,476.745	1,709,894.898	39.77109300	-80.75273242	
19,700.00	91.00	329.60	11,409.68	6,516.79	-5,383.00	14,443,562.987	1,709,844.308	39.77133023	-80.75291162	
19,800.00	91.00	329.60	11,407.93	6,603.03	-5,433.59	14,443,649.228	1,709,793.718	39.77156746	-80.75309082	
19,900.00	91.00	329.60	11,406.18	6,689.27	-5,484.18	14,443,735.469	1,709,743.128	39.77180468	-80.75327002	
20,000.00	91.00	329.60	11,404.44	6,775.51	-5,534.77	14,443,821.711	1,709,692.538	39.77204191	-80.75344922	
20,100.00	91.00	329.60	11,402.69	6,861.75	-5,585.36	14,443,907.952	1,709,641.949	39.77227913	-80.75362842	
20,200.00	91.00	329.60	11,400.95	6,947.99	-5,635.95	14,443,994.194	1,709,591.359	39.77251636	-80.75380762	
20,300.00	91.00	329.60	11,399.20	7,034.24	-5,686.54	14,444,080.435	1,709,540.769	39.77275358	-80.75398683	
20,400.00	91.00	329.60	11,397.46	7,120.48	-5,737.13	14,444,166.676	1,709,490.179	39.77299080	-80.75416603	
20,500.00	91.00	329.60	11,395.71	7,206.72	-5,787.72	14,444,252.918	1,709,439.589	39.77322803	-80.75434524	
20,600.00	91.00	329.60	11,393.97	7,292.96	-5,838.31	14,444,339.159	1,709,388.999	39.77346525	-80.75452445	
20,700.00	91.00	329.60	11,392.22	7,379.20	-5,888.90	14,444,425.400	1,709,338.409	39.77370248	-80.75470366	
20,800.00	91.00	329.60	11,390.47	7,465.44	-5,939.49	14,444,511.642	1,709,287.819	39.77393970	-80.75488287	
20,900.00	91.00	329.60	11,388.73	7,551.69	-5,990.08	14,444,597.883	1,709,237.230	39.77417692	-80.75506208	
21,000.00	91.00	329.60	11,386.98	7,637.93	-6,040.67	14,444,684.125	1,709,186.640	39.77441414	-80.75524129	
21,100.00	91.00	329.60	11,385.24	7,724.17	-6,091.26	14,444,770.366	1,709,136.050	39.77465137	-80.75542051	
21,200.00	91.00	329.60	11,383.49	7,810.41	-6,141.85	14,444,856.607	1,709,085.460	39.77488859	-80.75559972	
21,300.00	91.00	329.60	11,381.75	7,896.65	-6,192.44	14,444,942.849	1,709,034.870	39.77512581	-80.75577894	
21,400.00	91.00	329.60	11,380.00	7,982.89	-6,243.03	14,445,029.090	1,708,984.280	39.77536303	-80.75595816	
21,500.00	91.00	329.60	11,378.26	8,069.13	-6,293.62	14,445,115.332	1,708,933.690	39.77560025	-80.75613738	
21,600.00	91.00	329.60	11,376.51	8,155.38	-6,344.21	14,445,201.573	1,708,883.100	39.77583747	-80.75631660	
21,700.00	91.00	329.60	11,374.77	8,241.62	-6,394.80	14,445,287.814	1,708,832.510	39.77607469	-80.75649582	
21,800.00	91.00	329.60	11,373.02	8,327.86	-6,445.39	14,445,374.056	1,708,781.921	39.77631191	-80.75667504	
21,900.00	91.00	329.60	11,371.27	8,414.10	-6,495.98	14,445,460.297	1,708,731.331	39.77654913	-80.75685427	
22,000.00	91.00	329.60	11,369.53	8,500.34	-6,546.57	14,445,546.538	1,708,680.741	39.77678635	-80.75703349	
22,100.00	91.00	329.60	11,367.78	8,586.58	-6,597.16	14,445,632.780	1,708,630.151	39.77702357	-80.75721272	
22,200.00	91.00	329.60	11,366.04	8,672.83	-6,647.75	14,445,719.021	1,708,579.561	39.77726079	-80.75739195	
22,300.00	91.00	329.60	11,364.29	8,759.07	-6,698.34	14,445,805.263	1,708,528.971	39.77749801	-80.75757117	
22,400.00	91.00	329.60	11,362.55	8,845.31	-6,748.93	14,445,891.504	1,708,478.381	39.77773523	-80.75775040	
22,500.00	91.00	329.60	11,360.80	8,931.55	-6,799.52	14,445,977.745	1,708,427.791	39.77797245	-80.75792964	
22,600.00	91.00	329.60	11,359.06	9,017.79	-6,850.11	14,446,063.987	1,708,377.202	39.77820966	-80.75810887	
22,700.00	91.00	329.60	11,357.31	9,104.03	-6,900.70	14,446,150.228	1,708,326.612	39.77844688	-80.75828810	
22,800.00	91.00	329.60	11,355.56	9,190.27	-6,951.29	14,446,236.469	1,708,276.022	39.77868410	-80.75846734	
22,900.00	91.00	329.60	11,353.82	9,276.52	-7,001.88	14,446,322.711	1,708,225.432	39.77892132	-80.75864657	
23,000.00	91.00	329.60	11,352.07	9,362.76	-7,052.47	14,446,408.952	1,708,174.842	39.77915853	-80.75882581	
23,061.45	91.00	329.60	11,351.00	9,415.76	-7,083.56	14,446,461.951	1,708,143.753	39.77930431	-80.75893596	

PBHL/TD 23061.45 MD 11351.00 TVD

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-08 HU (slot C)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-08 HU (slot C)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Pendleton N-08HU PBH - plan hits target center - Point	0.00	0.00	11,351.00	9,415.76	-7,083.56	14,446,461.951	1,708,143.753	39.77930431	-80.75893596
Pendleton N-08HU LP r' - plan misses target center by 43.12ft at 12144.83ft MD (11541.55 TVD, 1.09 N, -1560.85 E) - Point	0.00	0.00	11,542.00	-20.72	-1,598.04	14,437,025.495	1,713,629.262	39.75334700	-80.73950900
Pendleton N-08HU LP 5 - plan misses target center by 0.01ft at 12119.54ft MD (11542.00 TVD, -20.72 N, -1548.05 E) - Point	0.00	0.00	11,542.00	-20.72	-1,548.04	14,437,025.495	1,713,679.265	39.75334660	-80.73933109

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
3,300.00	3,300.00	0.00	0.00	KOP Begin 2°/100' build
3,550.00	3,549.68	-5.89	-9.17	Begin 5.00° tangent
7,013.50	7,000.00	-169.01	-263.17	Begin 2°/100' build
7,443.25	7,423.71	-206.50	-321.53	Begin 13.60° tangent
10,765.89	10,653.26	-628.56	-978.68	Begin 6°/100' build/turn
11,598.37	11,371.46	-419.04	-1,279.54	Begin 8°/100' build/turn
12,119.52	11,542.00	-20.74	-1,548.04	Begin 91.00° lateral
23,061.45	11,351.00	9,415.76	-7,083.56	PBHL/TD 23061.45 MD 11351.00 TVD

WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Pendleton N-8HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851
Watershed (HUC 10) Middle Fish Creek Quadrangle Glen Easton 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: AST Tanks with proper containment will be used for staging fresh and produced water for frac.

Will a synthetic liner be used in the pit? Yes No If so, what ml.? ASTs with proper containment

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number UIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes - For vertical drilling

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air for vertical

-If oil based, what type? Synthetic, petroleum, etc. n/a

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All drill cuttings to be disposed of in Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

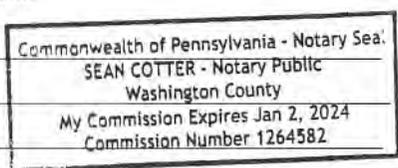
-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021/WW0109165) and Westmoreland Sanitary Landfill, LLC (SAN1405/PADEP ECH1356426), Chester Valley Landfill (110419)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature James A Pancake
Company Official (Typed Name) James Pancake
Company Official Title Vice President - Geosciences



Subscribed and sworn before me this 1 day of June, 2022

Notary Public

My commission expires 1/2/2024

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 6.88 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard Grass	12
Spring Oats	96	Ladino	3
		White Clover	2

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:  

Comments: _____

Title: Oil and Gas Inspector

Date: 5/26/22

Field Reviewed? () Yes () No

DRAWING NOT TO SCALE

REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.

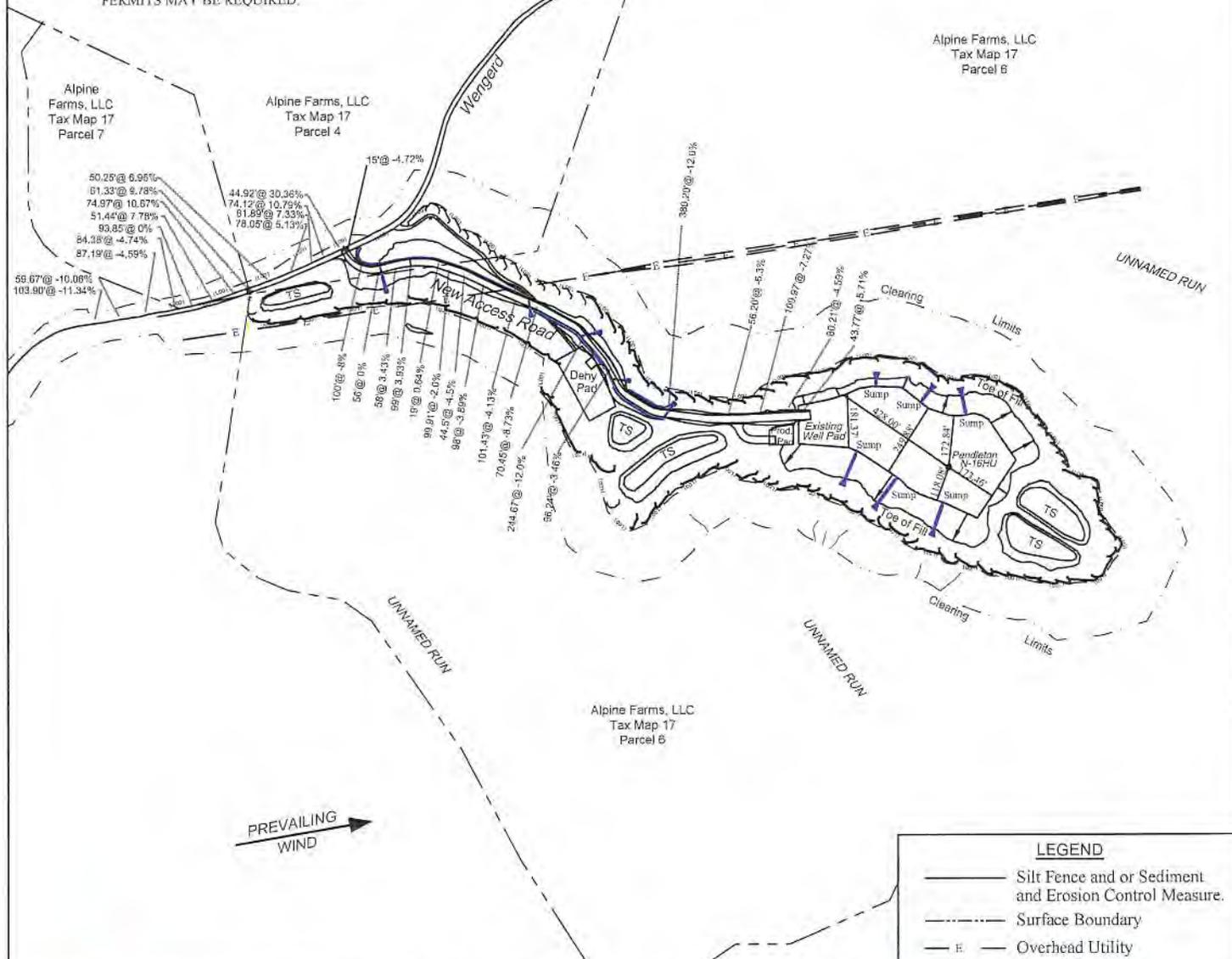
INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.

TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.

ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.



Jackson Surveying Inc.
 2413 E. Pike St.
 Clarksburg, WV 26301
 Phone: 304-628-6551

TOPO SECTION:	
GLEN EASTON 7.5'	
COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.D.C.	494510851

OPERATOR:	
PREPARED FOR:	
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
DATE	SCALE
03-16-2022	NONE

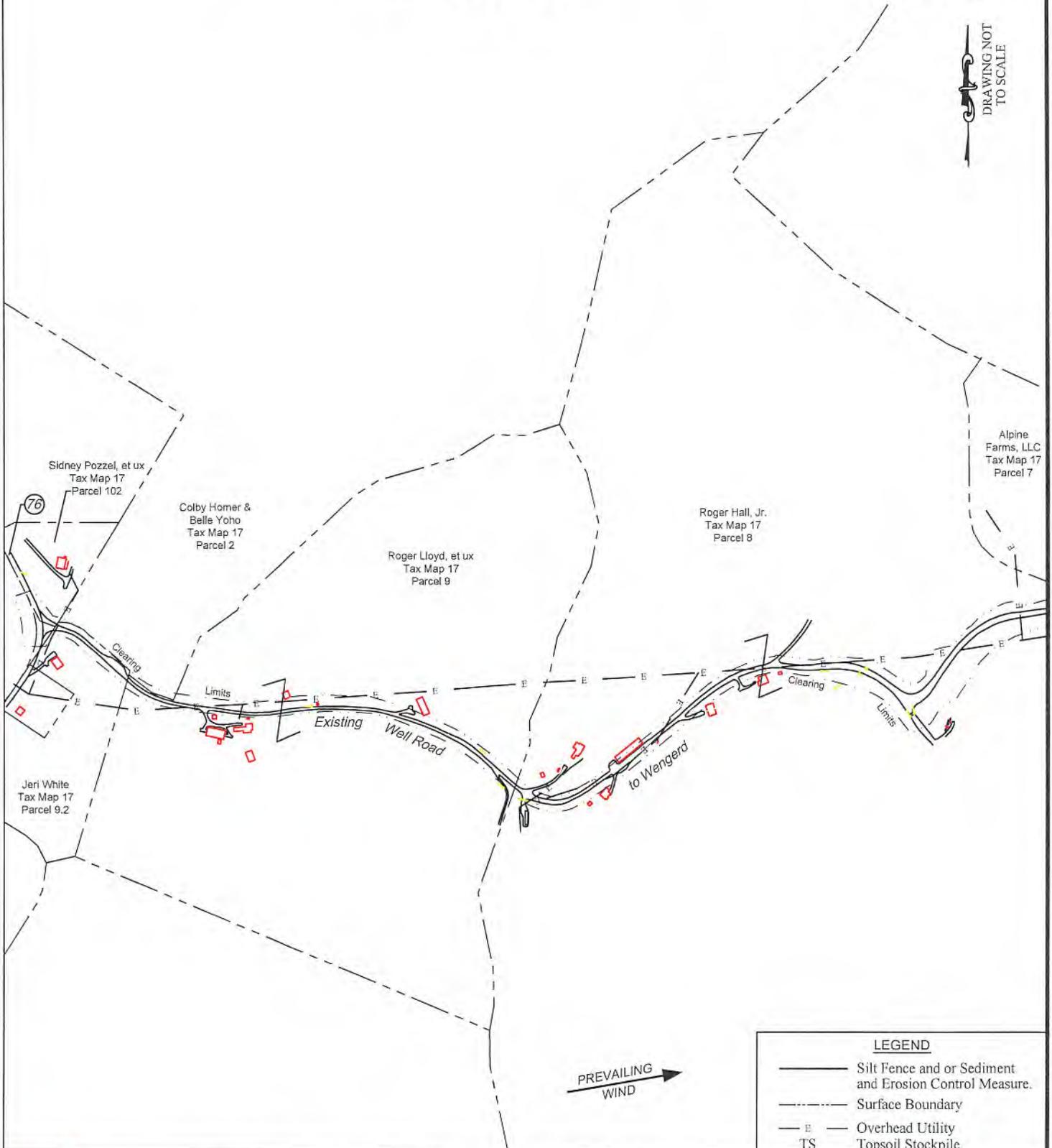


TUG HILL
 OPERATING

PROPOSED PENDLETON N16-HU

Exhibit 1
Page 2 of 2

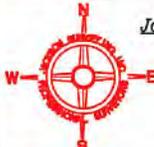
DRAWING NOT
TO SCALE



LEGEND

- Silt Fence and or Sediment and Erosion Control Measure.
- Surface Boundary
- E- Overhead Utility
- TS Topsoil Stockpile

Jackson Surveying Inc.
2418 E. Pike St.
Clarksburg, WV 26301
Phone: 304-823-5851



TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	FRANKLIN	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
J.D.C	494510851	03-16-2022	NONE



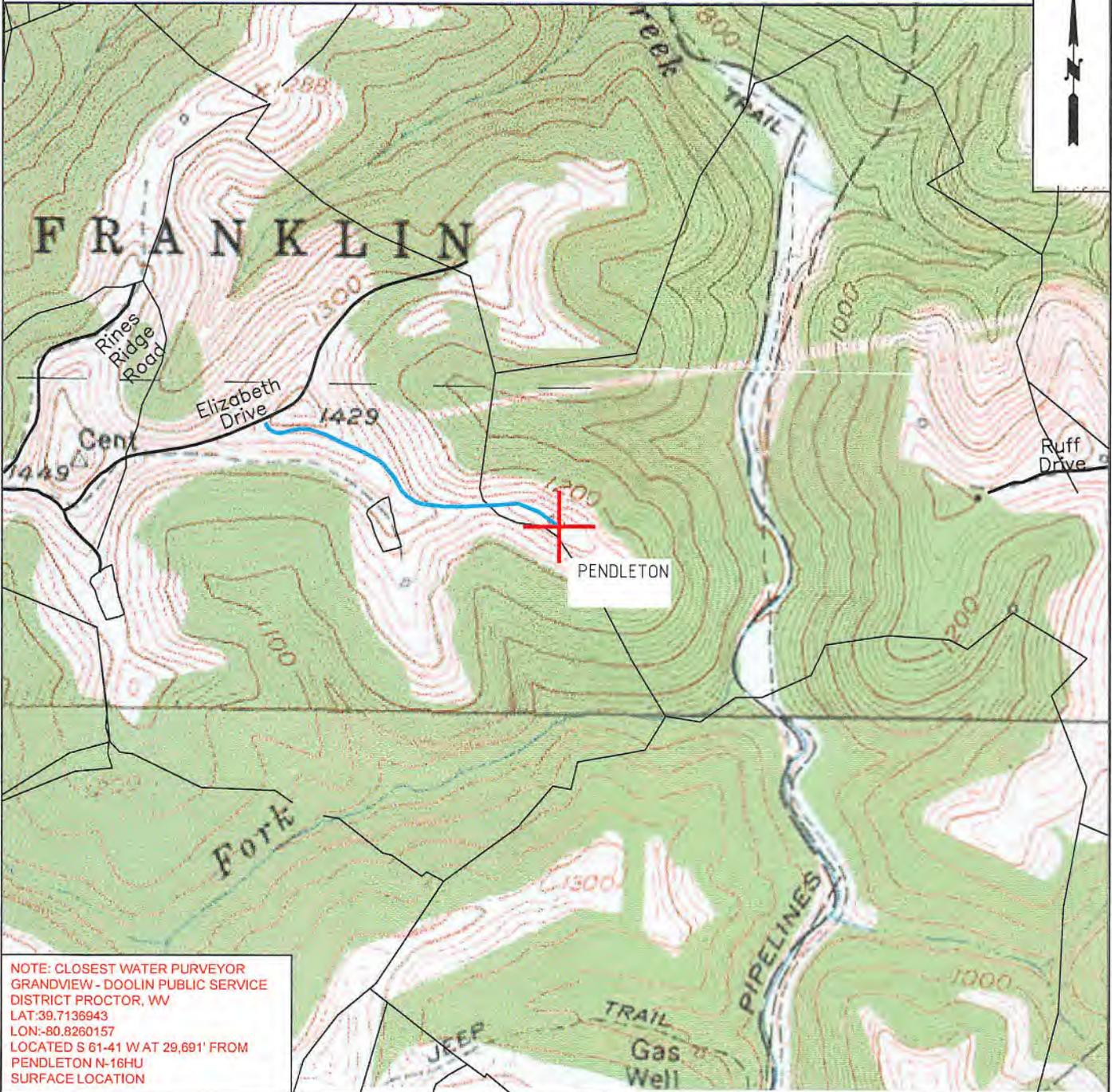
**TUG HILL
OPERATING**

WW-9

SUPPLEMENT PG. 2

Pendleton Pad

THERE APPEAR TO BE NO (0) RESIDENCES WITHIN 2,000'.



NOTE: CLOSEST WATER PURVEYOR
 GRANDVIEW - DOOLIN PUBLIC SERVICE
 DISTRICT PROCTOR, WV
 LAT:39.7136943
 LON:-80.8260157
 LOCATED S 61-41 W AT 29,691' FROM
 PENDLETON N-16HU
 SURFACE LOCATION

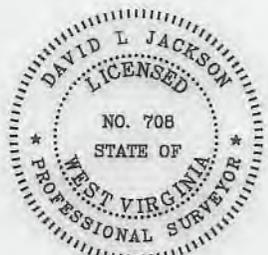
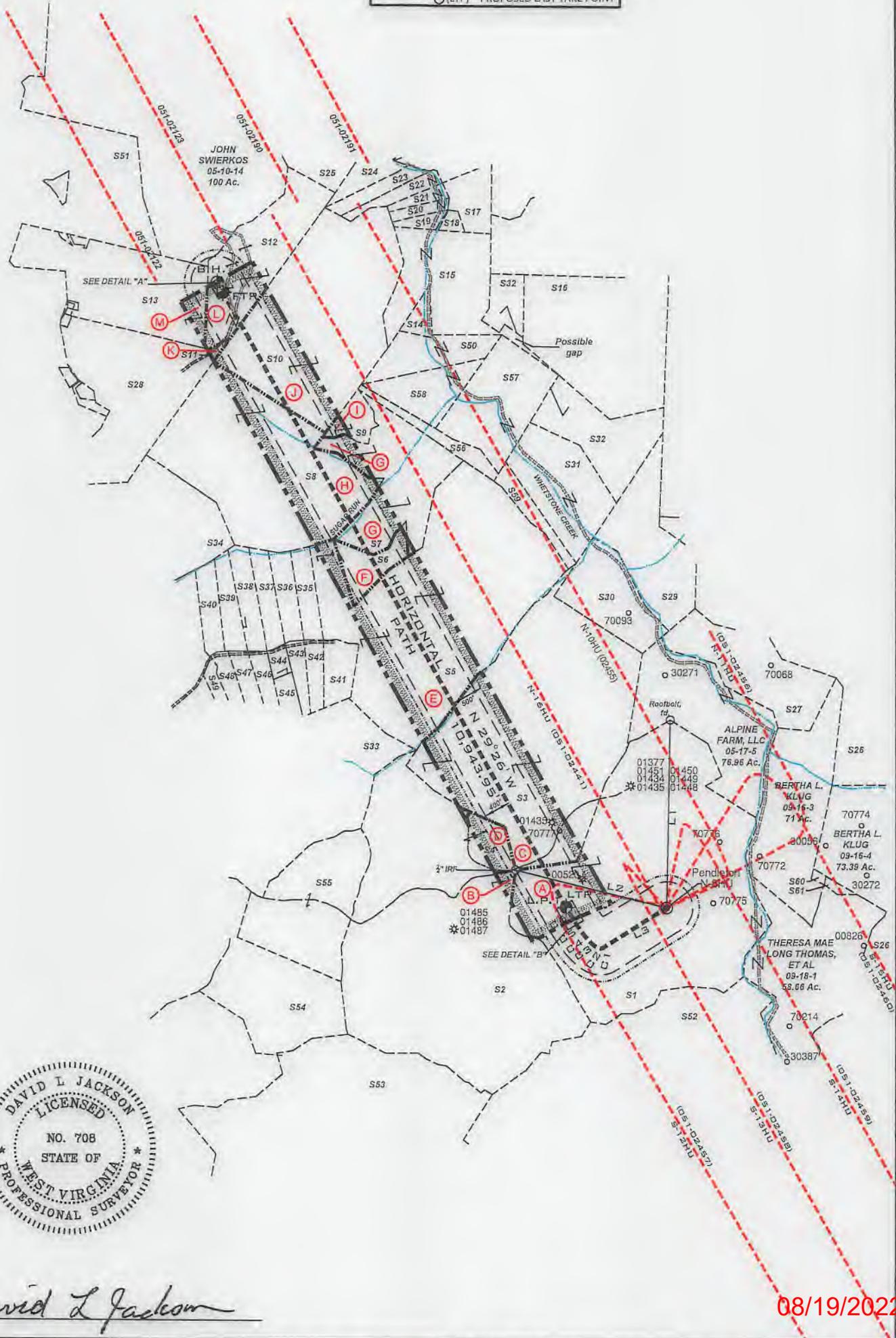
 TUG HILL OPERATING	OPERATOR 494510851	TOPO SECTION	LEASE NAME
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	GLEN EASTON 7.5'	PENDING RECEIVED <small>Office of Oil and Gas</small>
	SCALE: 1" = 1000'	DATE: JUN 06 2022 DATE: 03-16-2022	

PENDLETON LEASE WELL N-8HU 332.6022± ACRES

LEGEND

- LEASED 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

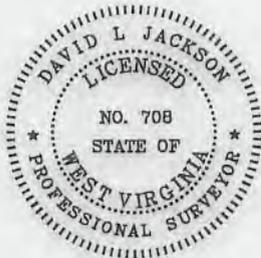
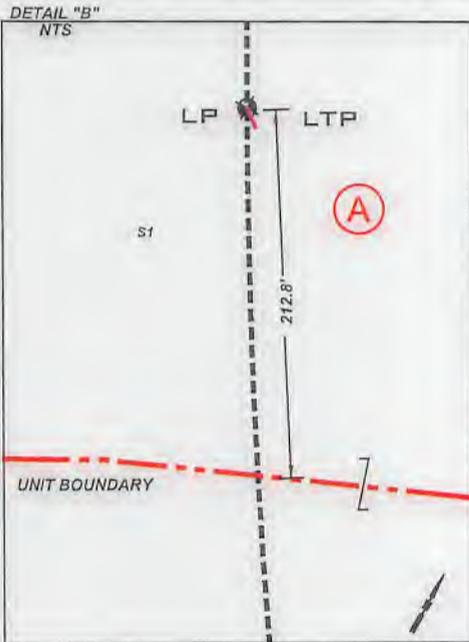
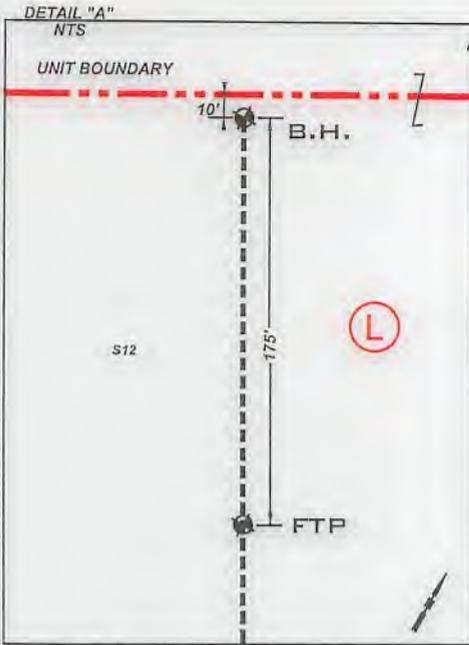


P.S. 708 *David L Jackson*

08/19/2022

	OPERATOR'S	WELL #:	PENDLETON N-8HU	WELL PLAT
	DISTRICT:	Franklin	PAGE 2 OF 4	
	COUNTY:	Marshall	DATE: 08/03/2022	
	STATE:	WV		
	API:	47-051-02454		

**PENDLETON LEASE
WELL N-8HU
332.6022± ACRES**



P.S. 708 *David L Jackson*

Parcels within Unit Boundary				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
A	S1	05-17-6	ALPINE FARM LLC	249.07
B	S2	05-17-8	ROGER H HALL JR.	257.50
C	S3	05-17-4	ALPINE FARM LLC	212
D	S4	05-17-07	ALPINE FARM LLC	10.8
E	S5	05-17-3	SOUTHERN COUNTRY FARMS, INC	180.132
F	S6	05-16-16	SOUTHERN COUNTRY FARMS, INC	9.75
G	S7	05-16-17	RICHARD D & JULIA M REPASKY; BRIAN L TESLOVICH & CARA C DAVIS	55.34
H	S8	05-16-19	BETHANY A REDO & ROBERT W RAHM	129.16
I	S9	05-16-18	JOHN SWIERKOS	10.0
J	S10	05-16-6	JOHN SWIERKOS	134.05
K	S11	05-16-04	JOHN SWIERKOS	0.96
L	S12	05-16-5	JOHN SWIERKOS	52.07
M	S13	05-16-03	DONNA VIVIAN YOHO	71.205
Adjoining Parcels Ownership Table				
Number	Tax Map -Parcel	Surface Owner	Acres	
S14	05-16-10	FRANK P LAUTAR, EST.	5.0	
S15	05-16-07	LOUIS AULENBACHER	50.0	
S16	09-13-04	LOUIS AULENBACHER	100.191	
S17	05-10-13	JOSEPH LEE CROW	12.18	
S18	05-10-13.1	DAVID LEE QUIGLEY, JR	2.88	
S19	05-10-19	LOUIS AULENBACHER	3.209	
S20	05-10-20	LOUIS AULENBACHER	3.554	
S21	05-10-21	LOUIS AULENBACHER	3.677	
S22	05-10-22	LOUIS AULENBACHER	4.276	
S23	05-10-12.1	JOHN PAUL SMITH, JR ET AL	8.86	
S24	05-10-10	LOUIS DELBERT VAN SCYOC	24.50	
S25	05-10-09	HERBERT M AULENBACHER, JR	141.43	
S26	09-16-05	ROBERT M & NANCY R MCCARDLE	133.0	
S27	09-16-02	ROBERT & NANCY MCCARDLE	53.40	
S28	05-16-25	JOHN SWIERKOS	79.04	
S29	09-16-01	ROBERT M & NANCY R MCCARDLE	46.80	
S30	05-16-13	DAVID ALAN RUBCICH ET AL	33.31	
S31	09-13-01	LOUIS VAN SCYOC	46.81	
S32	09-13-02	SYLVIA VAN SCYOC & WONETTA V & NORMAN G JOHNSON (LIFE)	41.5	
S33	05-17-02	COLBY HOMER & BELLE M YOHO	104.08	
S34	05-16-21	JAMES M RUCKMAN ET UX	60.75	
S35	05-17-16	GLEN A GUNTO	9.702	
S36	05-16.15.1	GLEN A GUNTO	10.17	
S37	05-17-15	GLEN A GUNTO	10.220	
S38	05-18-13	SOUTHERN COUNTRY FARMS, INC	11.054	
S39	05-18-13.9	ROY & RENEE BUTLER (LIFE)	9.603	
S40	05-18-13.4	RENEE D STREIGHT BUTLER (LIFE)	9.938	
S41	05-17-3.1	WILBUR L RIDDLE, ET UX	10.148	
S42	05-17-1.6	LOLA M SLAUGHTER	6.347	
S43	05-17-1.5	DONNIE R & LOLA M SLAUGHTER	5.607	
S44	05-17-1.2	DONNIE R & LOLA M SLAUGHTER	5.073	
S45	05-17-1.3	JODY & MICHELLE ANDERSON	5.00	
S46	05-17-1.1	DONNIE R & LOLA M SLAUGHTER	8.076	
S47	05-17-1.4	DONNIE R & LOLA M SLAUGHTER	8.844	
S48	05-17-14	SOUTHERN COUNTRY FARMS, INC	7.314	
S49	05-17-13	ROY E & RENEE D BUTLER	5.433	
S50	05-16-8	LOUIS AULENBACHER	21.0	
S51	05-10-15	TERRY A & JODI L HARDING	120.805	
S52	05-24-02	ROY FRIEND YOHO	316.80	
S53	05-24-1	LINDA L HENDRICKSON	175	
S54	05-17-9.4	VICKI L BOWEN	60.3	
S55	05-17-9	LLOYD RICHARD OLIVER ET UX	61.6	
S56	05-16-11	GERTRUDE HOLTZ	9.93	
S57	09-13-03	LOUIS VAN SCYOC	52.40	
S58	05-16-09	LOUIS AULENBACHER	20.0	
S59	05-16-12	LOUIS VAN SCYOC	10.80	
S60	09-18-4	BERTHA L KLUG	1	
S61	09-18-3	BERTHA L KLUG	1.33	

08/19/2022



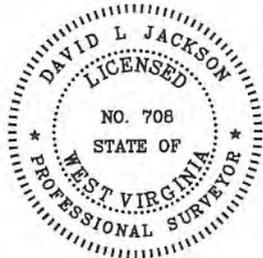
**TUG HILL
OPERATING**

OPERATOR'S
WELL #: PENDLETON N-8HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API: 47-051-02454

WELL PLAT
PAGE 3 OF 4
DATE: 08/03/2022

**PENDLETON LEASE
WELL N-8HU
332.6022± ACRES**

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, ET AL	735	515
✓ 10*14125	5-17-4	C	SHIBEN ESTATES INC	695	460
✓ 10*14125	5-17-7	D	SHIBEN ESTATES INC	695	460
✓ 10*14099	5-17-3	E	SOUTHERN COUNTRY FARMS INC	666	489
✓ 10*21953	5-16-16	F	LORNA MARIE LEW, ET AL	959	480
✓ 10*18126	5-16-17	G	BARBARA ANN ADKINS JOHNSON, ET AL	929	556
✓ 10*19129	5-16-19	H	VERLA FLORENCE SHUTLER, ET AL	761	366
10*21468	5-16-18	I	JOHN A SWIERKOS	953	317
✓ 10*21468	5-16-6	J	JOHN A SWIERKOS	953	317
10*21468	5-16-4	K	JOHN A SWIERKOS	953	317
✓ 10*14919	5-16-5	L	CHESTNUT HOLDINGS INC	836	117
10*19340	5-16-3	M	DONNA V YOHO	665	407



P.S. 708 *David L Jackson*

08/19/2022



TUG HILL
OPERATING

OPERATOR'S
WELL #: PENDLETON N-8HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API: 47-051-02454

WELL PLAT
PAGE 4 OF 4
DATE: 08/03/2022

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	DEED BOOK/PAGE	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	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc & 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*14125	5-17-4	C	SHIBEN ESTATES INC	GASTAR EXPLORATION USA INC	1/8+	695 460	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 Inc & 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*14099	5-17-3	E	SOUTHERN COUNTRY FARMS INC	GASTAR EXPLORATION USA INC	1/8+	666 489	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 Inc & 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*21952	5-16-16	F	VICTORIA A AND STEPHEN W PAKROVSKY	TH EXPLORATION LLC	1/8+	959 478	N/A	N/A	N/A	N/A						
10*21953	5-16-16	F	LORNA MARIE LEW	TH EXPLORATION LLC	1/8+	959 480	N/A	N/A	N/A	N/A						
10*21954	5-16-16	F	CHARLES E BLUE IV AND ALLA RABINOVICH	TH EXPLORATION LLC	1/8+	959 482	N/A	N/A	N/A	N/A						
10*21955	5-16-16	F	DWG OIL & GAS ACQUISITIONS LLC	TH EXPLORATION LLC	1/8+	959 484	N/A	N/A	N/A	N/A						
10*22132	5-16-16	F	WILLIAM H WILD	TH EXPLORATION LLC	1/8+	959 486	N/A	N/A	N/A	N/A						
10*22133	5-16-16	F	LAURENCE MYERS EVANS II AND PENNY EVANS	TH EXPLORATION LLC	1/8+	961 439	N/A	N/A	N/A	N/A						
10*22267	5-16-16	F	MARJORIE B KIDD AND ROBERT C KIDD	TH EXPLORATION LLC	1/8+	959 488	N/A	N/A	N/A	N/A						
10*22270	5-16-16	F	ARTHUR ALVIN ANDERSON	TH EXPLORATION LLC	1/8+	961 437	N/A	N/A	N/A	N/A						
10*22433	5-16-16	F	TERESA RANDOLPH	TH EXPLORATION LLC	1/8+	964 218	N/A	N/A	N/A	N/A						
10*22583	5-16-16	F	THE RANDOLPH FAMILY TRUST MARY MARIE SPITLER RANDOLPH TRUSTEE	TH EXPLORATION LLC	1/8+	965 602	N/A	N/A	N/A	N/A						
10*22584	5-16-16	F	RICHARD P BACHMAN AND JEANETTE M BACHMAN	TH EXPLORATION LLC	1/8+	965 604	N/A	N/A	N/A	N/A						
10*22612	5-16-16	F	KATHARINE EVANS COFFEY	TH EXPLORATION LLC	1/8+	966 525	N/A	N/A	N/A	N/A						
10*22747	5-16-16	F	MARY E MUMFORD AIF LISA ANN FISHER	TH EXPLORATION LLC	1/8+	968 208	N/A	N/A	N/A	N/A						
10*23109	5-16-16	F	MARTHA C HYRE AND RICHARD D HYRE JR	TH EXPLORATION LLC	1/8+	983 584	N/A	N/A	N/A	N/A						
10*23129	5-16-16	F	BONNIE S SMITH	TH EXPLORATION LLC	1/8+	983 582	N/A	N/A	N/A	N/A						
10*23130	5-16-16	F	HOLLINS RANDOLPH III & AMY J RANDOLPH	TH EXPLORATION LLC	1/8+	983 586	N/A	N/A	N/A	N/A						
10*24149	5-16-16	F	GENERAL RECEIVER OF MARSHALL COUNTY	TH EXPLORATION LLC	1/8+	1021 222	N/A	N/A	N/A	N/A						
10*24931	5-16-16	F	WILLIAM LEARNED SLADE	TH EXPLORATION LLC	1/8+	1027 121	N/A	N/A	N/A	N/A						
10*24933	5-16-16	F	THE ELLEN HOGE TRUST FBO JANE B MARTIN	TH EXPLORATION LLC	1/8+	1026 247	N/A	N/A	N/A	N/A						
10*25166	5-16-16	F	CHRISTIAN CHURCH FACILITIES FOR THE AGING BETHANY HOUSE	TH EXPLORATION LLC	1/8+	1025 592	N/A	N/A	N/A	N/A						
10*25185	5-16-16	F	LAWRENCE RANDOLPH SLADE	TH EXPLORATION LLC	1/8+	1025 604	N/A	N/A	N/A	N/A						
10*25201	5-16-16	F	LYELL LANDRY SLADE AND ROBERT E VAN DYCK	TH EXPLORATION LLC	1/8+	1025 598	N/A	N/A	N/A	N/A						
10*27959	5-16-16	F	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063 594	N/A	N/A	N/A	N/A						
10*28059	5-16-16	F	VANITA AND CORDOVA HOLDING COMPANY	TH EXPLORATION LLC	1/8+	1065 315	N/A	N/A	N/A	N/A						
10*18126	5-16-17	G	BARBARA ANN ADKINS JOHNSON	TH EXPLORATION LLC	1/8+	929 556	N/A	N/A	N/A	N/A						
10*18689	5-16-17	G	THE ESTATE OF ROY JOSEPH LEACH	TH EXPLORATION LLC	1/8+	936 141	N/A	N/A	N/A	N/A						
10*19057	5-16-17	G	JACK MICHAEL FOREMAN	CHEVRON USA INC	1/8+	817 640	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127						
10*19063	5-16-17	G	JULIE SPRINGWATER	CHEVRON USA INC	1/8+	818 120	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127						
10*19121	5-16-17	G	JOE PAUL WELLMAN MARGARET ANN BONNETT ET AL	CHEVRON USA INC	1/8+	773 518	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127						
10*19132	5-16-17	G	KLOVA ANN MORRIS	CHEVRON USA INC	1/8+	764 28	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127						
10*19134	5-16-17	G	REVA JUNE ICARD	CHEVRON USA INC	1/8+	763 626	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127						
10*19136	5-16-17	G	WILLIAM L LITMAN	CHEVRON USA INC	1/8+	772 90	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127						

| LEASE ID | TMP | TAG | GRANTOR, LESSOR, ETC. | GRANTEE, LESSEE, ETC. | ROYALTY | DEED BOOK/PAGE | ASSIGNMENT | |
|------------|---------|-----|---|------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---|
| 10*19138 | 5-16-17 | G | AARON DEAN LITMAN | CHEVRON USA INC | 1/8+ | 769 52 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*19142 | 5-16-17 | G | GLEN Y MILLER | CHEVRON USA INC | 1/8+ | 772 518 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*19165 | 5-16-17 | G | VICKI LYNN WOOD | CHEVRON USA INC | 1/8+ | 775 73 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*19207 | 5-16-17 | G | MARY VOLTZ | CHEVRON USA INC | 1/8+ | 782 296 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*19642 | 5-16-17 | G | NOEL A PARKS | TH EXPLORATION LLC | 1/8+ | 944 92 | N/A |
| 10*21939 | 5-16-17 | G | ULA F NELSON | TH EXPLORATION LLC | 1/8+ | 960 96 | N/A |
| 10*22550 | 5-16-17 | G | SHARON L WILLIAMS AND HERVY WILLIAMS | TH EXPLORATION LLC | 1/8+ | 966 124 | N/A |
| 10*27959 | 5-16-17 | G | STONE HILL MINERALS HOLDINGS LLC | TH EXPLORATION LLC | 1/8+ | 1063 594 | N/A |
| 10*18280 | 5-16-19 | H | DEBRA L RICHEY AND JAMES F RICHEY SR | TH EXPLORATION LLC | 1/8+ | 929 108 | N/A |
| ✓ 10*19129 | 5-16-19 | H | VERLA FLORENCE SHUTLER | CHEVRON USA INC | 1/8+ | 761 366 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*19130 | 5-16-19 | H | FRANCES O HALL | CHEVRON USA INC | 1/8+ | 763 641 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*19152 | 5-16-19 | H | BETTY J PARRIOTT | CHEVRON USA INC | 1/8+ | 772 192 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*19211 | 5-16-19 | H | PATRICIA F PARRIOTT | CHEVRON USA INC | 1/8+ | 784 1 | N/A | Chevron USA Inc to TH Exploration LLC: 40/127 |
| 10*21017 | 5-16-19 | H | CATHERINE R KLUG PAUL FOX - POWER OF ATTORNEY | TH EXPLORATION LLC | 1/8+ | 938 299 | N/A |
| 10*21917 | 5-16-19 | H | ROBERT W RAHM AND BETHANY A RAHM | FOSSIL CREEK OHIO, LLC | 1/8+ | 827 142 | N/A | Fossil Creek Ohio LLC to Gulfport Energy Corporation: 34/398
Fossil Creek Ohio LLC & Gulfport Energy Corporation to American Petroleum Partners Operating LLC: 36/588
American Petroleum Partners Operating LLC to TH Exploration LLC: 41/224 |
| 10*22533 | 5-16-19 | H | HARRY LEROY AND NANCY S PARRIOTT | NOBLE ENERGY INC | 1/8+ | 829 153 | N/A | Noble Energy Inc to HG Energy II Appalachia LLC: 38/297
HG Energy II Appalachia LLC to TH Exploration LLC: 41/398 |
| 10*22534 | 5-16-19 | H | DEBORAH D MERCER AND CALVIN P MERCER | NOBLE ENERGY INC | 1/8+ | 828 639 | N/A | Noble Energy Inc to HG Energy II Appalachia LLC: 38/297
HG Energy II Appalachia LLC to TH Exploration LLC: 41/398 |
| 10*22535 | 5-16-19 | H | TRUDY B SAMPSON AND DANNY SAMPSON | NOBLE ENERGY INC | 1/8+ | 828 637 | N/A | Noble Energy Inc to HG Energy II Appalachia LLC: 38/297
HG Energy II Appalachia LLC to TH Exploration LLC: 41/398 |
| 10*22536 | 5-16-19 | H | TIMOTHY SCOTT AND AMY C LEMASTERS | NOBLE ENERGY INC | 1/8+ | 829 630 | N/A | Noble Energy Inc to HG Energy II Appalachia LLC: 38/297
HG Energy II Appalachia LLC to TH Exploration LLC: 41/398 |
| 10*22537 | 5-16-19 | H | BRIAN EDWIN AND BEVERLY J LEMASTERS | NOBLE ENERGY INC | 1/8+ | 831 44 | N/A | Noble Energy Inc to HG Energy II Appalachia LLC: 38/297
HG Energy II Appalachia LLC to TH Exploration LLC: 41/398 |

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	DEED BOOK/PAGE		ASSIGNMENT	ASSIGNMENT								
10*22538	5-16-19	H	RANDY K PARRIOTT	NOBLE ENERGY INC	1/8+	836	455	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 38/297	HG Energy II Appalachia LLC to TH Exploration LLC: 41/398						
10*25566	5-16-19	H	H3 LLC MICHAEL E HOEFT MANAGING MEMBER	TH EXPLORATION LLC	1/8+	1034	628	N/A	N/A	N/A	N/A						
10*21468	5-16-6	J	JOHN A SWIERKOS	TH EXPLORATION LLC	1/8+	953	317	N/A	N/A	N/A	N/A						
10*14919	5-16-5	L	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION USA INC	1/8+	836	117	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 32/428	Merger of Gastar Exploration Inc & 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

STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

Marshall County
Jan Pest, Clerk
Instrument 1428356
08/16/2017 @ 12:08:49 PM
ASSIGNMENTS
Book 40 @ Page 127
Pages Recorded 25
Recording Cost \$ 33.00

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "**Assignment**") is made and entered into this 1 day of August, 2017 (the "**Effective Date**"), by and between **CHEVRON U.S.A. INC.** (hereinafter "**Assignor**") and **TH EXPLORATION, LLC** (hereinafter "**Assignee**") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated the 1st day of August, 2017 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to those certain Oil and Gas Leases situated in Marshall County, West Virginia, as described in **Exhibit "A"**, attached hereto and made a part hereof (hereinafter the "**Leases**"), less and except certain overriding royalty interests and exclusions; and

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below, subject to certain overriding royalty interests and less and except certain exclusions.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and subject to the limited warranties, restrictions and conditions hereinafter mentioned, the parties hereto, intending to be legally bound, do covenant and agree as follows:

1. **Assignment**. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon, except that Assignor excepts and reserves from this Assignment the following:

A. The Chevron ORRI previously conveyed to Assignor and as described in that certain Memorandum of Assignment of Oil and Gas Lease Interests dated November 6, 2012 by and between Cornell Holdings Incorporated and Chevron U.S.A. Inc., which is recorded at Book 0028, Page 0239 in the Office of the County Clerk of Marshall County, West Virginia, and

B. As to each of the Leases and all oil, gas, and associated hydrocarbons produced, saved and sold thereunder, an overriding royalty interest equal to the difference between 82% and the



August 3, 2022

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

RE: Pendleton N-8HU

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,

A handwritten signature in blue ink that reads "Amy L. Morris".

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

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

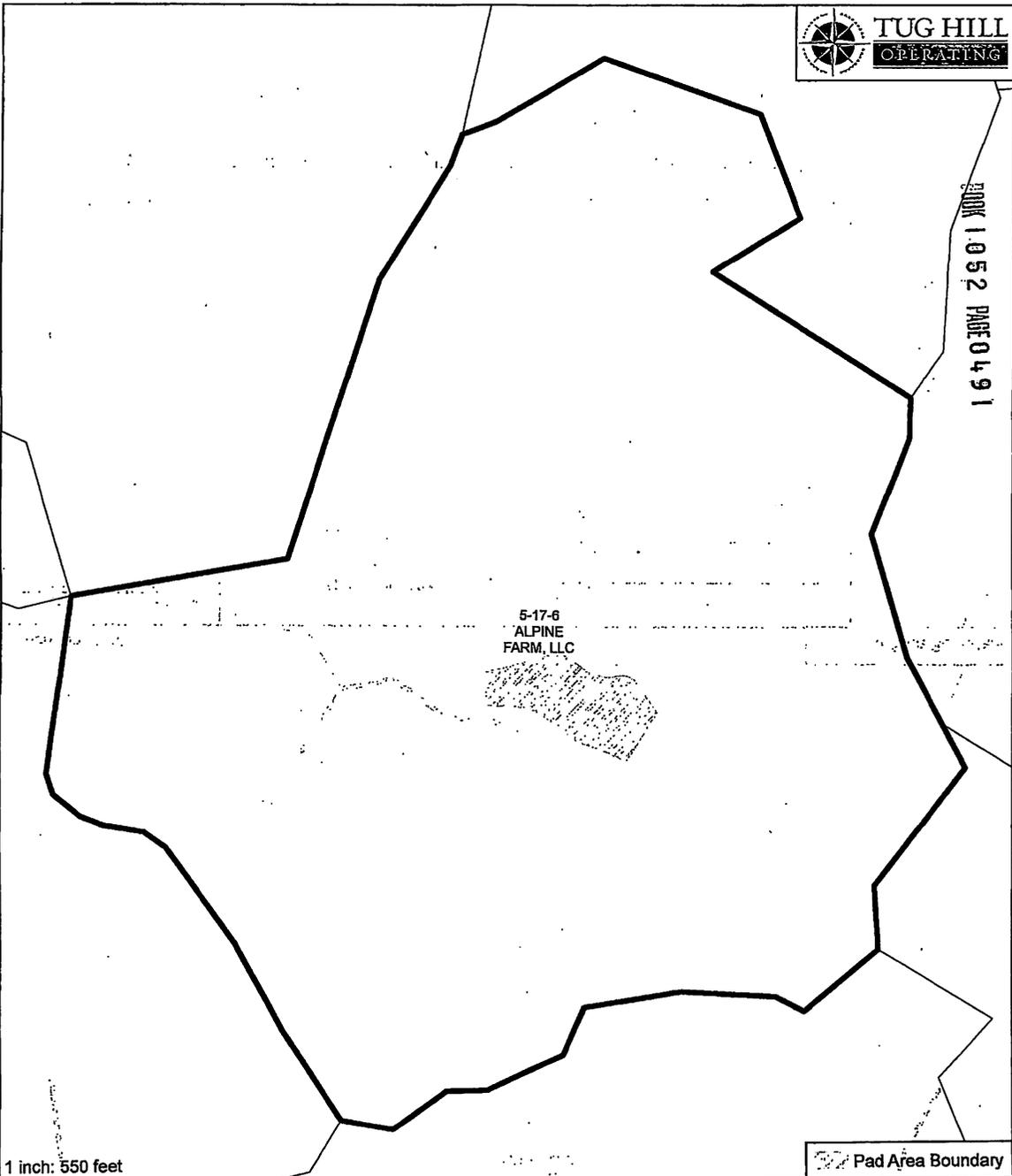
This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304



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



BOOK 1052 PAGE 0491



1 inch: 550 feet

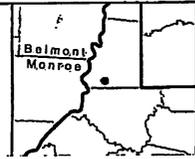
Pad Area Boundary

0 162.5 325 650
Feet

NOTE: THE APPROVED SITE LOCATION FOR THE SURFACE SITE, ACCESS ROAD, EASEMENT OF WAY AND THE LOCATION OF THE PROPERTY TO A PUBLIC AREA OR HIGHWAY IS SHOWN. HOWEVER, THESE ACTUAL LOCATIONS MAY VARY AS THIS COUNTY IS NOT AN EASEMENT JURISDICTION. THEREFORE, THE PARTIES SHALL BE AS SHOWN AND DESCRIBED IN THE DEED AS FILED IN THE COUNTY RECORD AND THE APPROVED SITE LOCATION FOR THE SURFACE SITE, ACCESS ROAD AND EASEMENT OF WAY SHALL BE AS SHOWN AS ACTUALLY CONSTRUCTED.

"PLAT"
ALPINE FARM, LLC
Marshall, WV

Date: 7-1-19
Name: *Eli W. Goad*
Name: *Fannie Mae Wengert*



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

**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 *amyllorris*
 Its: Permitting Specialist - Appalachia Region



June 1, 2022

WV Department of Environmental Protection
Office of Oil & Gas
601 57th Street, SE
Charleston, WV 25304
Attention: Charles T. Brewer

RE: Pendleton N-8HU

Subject: Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC will not be drilling, extracting or producing any minerals under any WV County or State Routes in the area reflected on the Pendleton N-8HU well plat.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-376-0111, or by email at amorris@tug-hillop.com.

Sincerely,

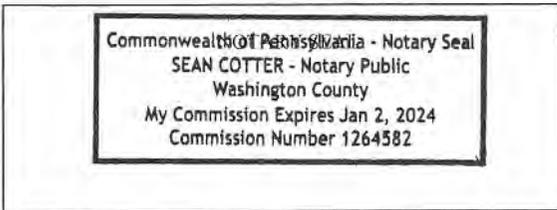
Amy L. Morris
Permitting Specialist – Appalachia Region

RECEIVED
Office of Oil and Gas
JUN 06 2022
WV Department of
Environmental Protection

Certification of Notice is hereby given:

THEREFORE, I Amy L. Morris, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
By:	<u>Amy L. Morris <i>Amy L. Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permitting Specialist - Appalachia Region</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hilop.com</u>



Subscribed and sworn before me this 1 day of June.

[Signature] _____ Notary Public

My Commission Expires 1/2/2024

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 6/2/2022 **Date Permit Application Filed:** 6/5/2022

Notice of:

- PERMIT FOR ANY WELL WORK CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE REGISTERED MAIL METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: Alpine Farm, LLC (Well Pad and Access Road)
Address: 7932 TWP Road 662
Dundee, OH 44624-9602
Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Consol Energy, LLC Attn: Casey Saunders
Address: 275 Technology Drive, Suite 101
Canonsburg, PA 15317-9565

COAL OPERATOR

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: Ray J. Miller
Address: 1538 Township Road 660
Dundee, OH 44624
Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: No water purveyors within 2000'
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

WW-6A
(8-13)

API NO. 47- 051 -
OPERATOR WELL NO. Pendleton N-8HU
Well Pad Name: Pendleton

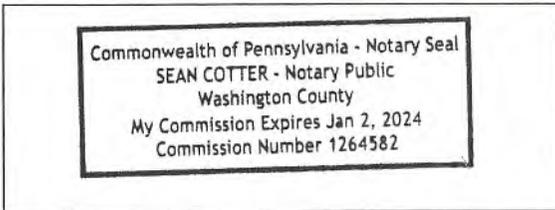
Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC
Telephone: 724-749-8388
Email: amorris@tug-hillop.com *any Morris*

Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-338-2030

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

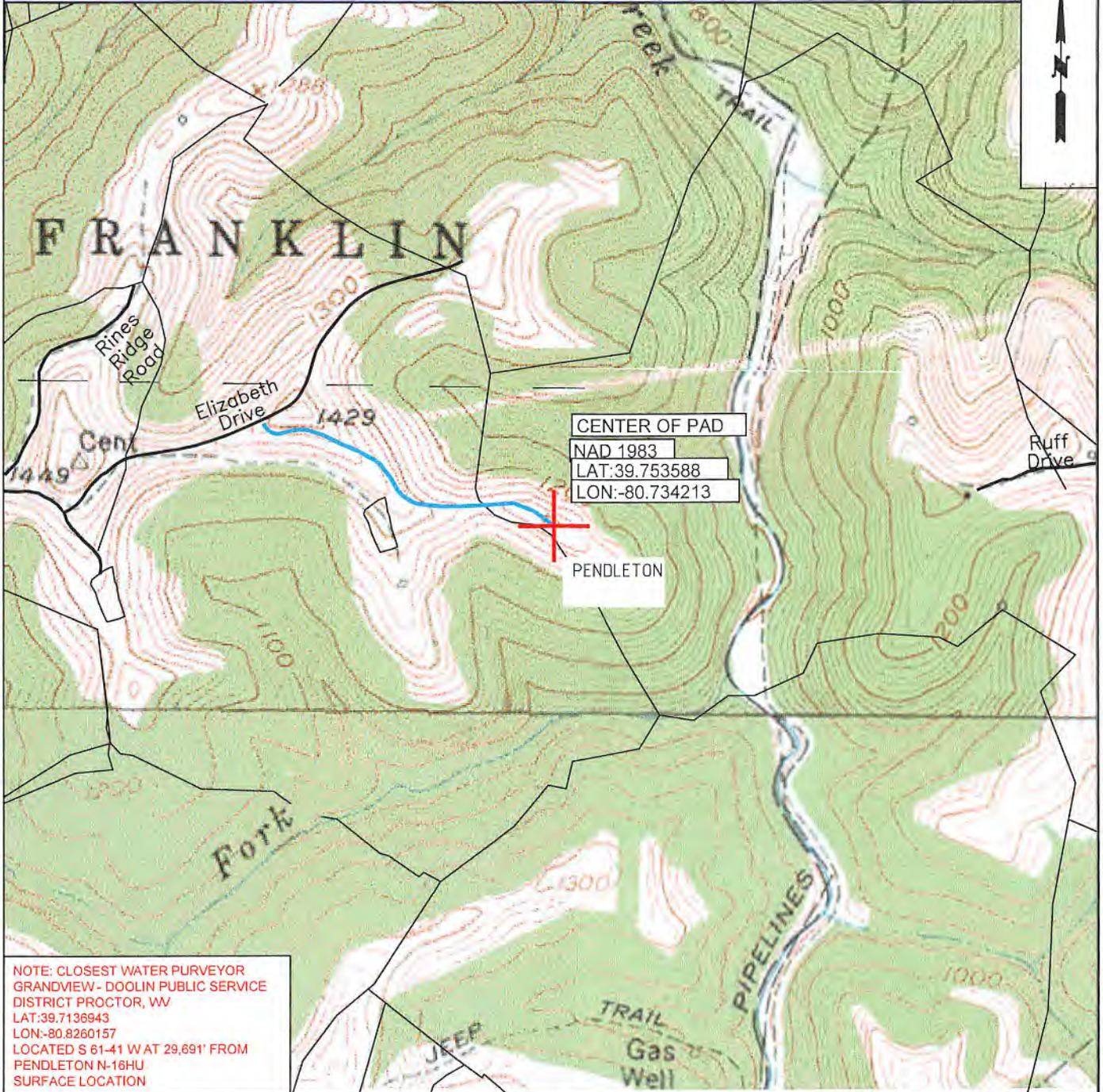


Subscribed and sworn before me this 1 day of June 2022.
[Signature]

Notary Public
My Commission Expires 1/2/2024

Pendleton Pad

THERE APPEAR TO BE NO (0) RESIDENCES WITHIN 2,000'.



NOTE: CLOSEST WATER PURVEYOR
 GRANDVIEW - DOOLIN PUBLIC SERVICE
 DISTRICT PROCTOR, WV
 LAT: 39.7136943
 LON: -80.8260157
 LOCATED S 61-41 W AT 29,691' FROM
 PENDLETON N-16HU
 SURFACE LOCATION

 TUG HILL OPERATING	OPERATOR	494510851	TOPO SECTION	LEASE NAME
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		GLEN EASTON 7.5'	PENDLETON
			SCALE:	DATE:
			1" = 1000'	DATE: 03-15-2022

08/19/2022

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: 1/28/2019 **Date of Planned Entry:** 2/8/2019

Delivery method pursuant to West Virginia Code § 22-6A-10a

- PERSONAL SERVICE
 REGISTERED MAIL
 METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(s)

Name: Eli and Fannie Mae Wengerd (Well Pad and Access Road)
Address: 7932 TWP Road 662
Dundee, OH 44624-9602

Name: Ray J. Miller (Access Road)
Address: 1538 Township Road 660
Dundee, OH 44624

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: CONSOL Energy, LLC Attn: Casey Saunders
Address: 1000 CONSOL Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: Eli and Fannie Mae Wengerd
Address: 7932 TWP Road 662
Dundee, OH 44624-9602

*please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.75344; -80.73397</u>
County: <u>Marshall</u>	Public Road Access: <u>Rines Ridge Road (County Route 76)</u>
District: <u>Franklin</u>	Watershed: <u>Fish Creek</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>Eli and Fannie Mae Wengerd</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC
Telephone: 724-749-8388
Email: amiller@tug-hillop.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-338-2030

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

08/19/2022

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 06/02/2022 **Date Permit Application Filed:** 06/06/2022

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Alpine Farm, LLC (Well Pad and Access Road)
Address: 7932 TWP Road 662
Dundee, OH 44624-9602

Name: Ray J. Miller (Access Road)
Address: 1538 Township Road 660
Dundee, OH 44624

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>522,802.29</u>
County:	<u>Marshall</u>		Northing:	<u>4,400,420.44</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Rines Ridge Road (County Route 76)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>Alpine Farm, LLC</u>	
Watershed:	<u>Fish Creek</u>			

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Tug Hill Operating, LLC
Telephone: 724-749-8388
Email: amarris@tug-hilltop.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-338-2030

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

D. Alan Reed, P.E.
State Highway Engineer

Jimmy Wriston, P. E.
Secretary of Transportation
Commissioner of Highways

May 23, 2022

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Pendleton Pad, Marshall County
Pendleton N-8HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2010-0110 which has been issued to Tug Hill Operating LLC for access to the State Road for a well site located off Marshall County Route 76 SLS MP 1.91.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

A handwritten signature in blue ink that reads "Gary K. Clayton".

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

Cc: Amy Morris
Tug Hill Operating LLC
CH, OM, D-6
File

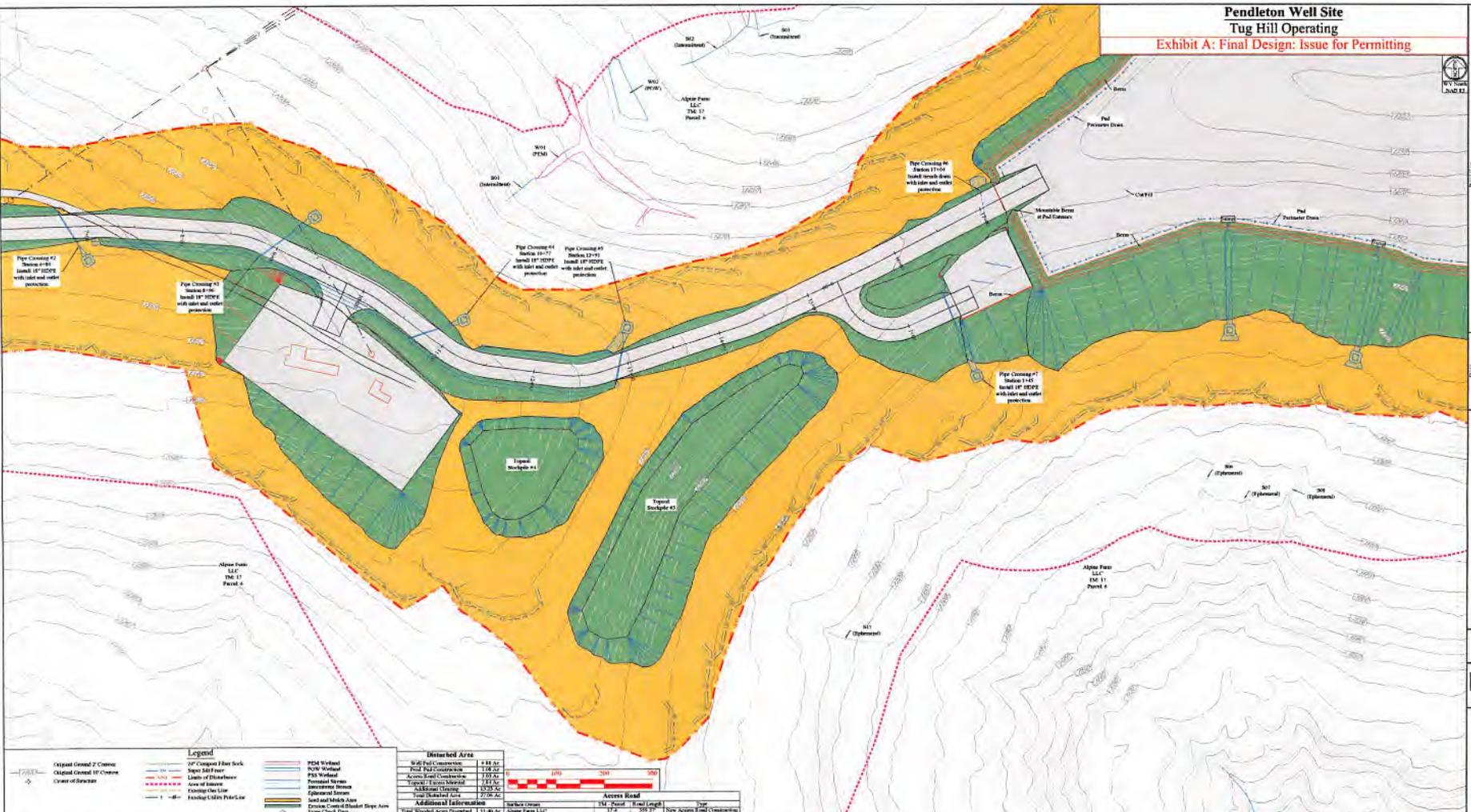


PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Pendleton Wells

PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS# 000064-17-5 Water – CAS# 007732-18-5
FRAC SAND	Silica Sand (various Mesh sizes)	Proppant	Crystalline silica (quartz) CAS# 14808-60-7
S-8C, Sand	Silica Sand (100 mesh)	Sand	Silica – CAS# 14808-60-7
GW-3LDF		Gellant - Water	Petroleum Distillate Blend – Proprietary, (Not Associated with Diesel Fuel) Guar gum – CAS# 009000-30-0
FRW-18		Friction Reducer	Hydrotreated light distillate CAS# 064742-47-8
Scaletrol		Scale Inhibitor	Ethylene glycol – CAS# 000107-21-1 Diethylene glycol – CAS# 000111-46-6

Pendleton Well Site
Tug Hill Operating
Exhibit A: Final Design: Issue for Permitting



- Legend**
- Original Ground 2' Contour
 - Original Ground 10' Contour
 - Corner of Structure
 - 10' Contour Elevation Mark
 - 20' Contour Elevation Mark
 - 30' Contour Elevation Mark
 - 40' Contour Elevation Mark
 - 50' Contour Elevation Mark
 - 60' Contour Elevation Mark
 - 70' Contour Elevation Mark
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 - 980' Contour Elevation Mark
 - 990' Contour Elevation Mark
 - 1000' Contour Elevation Mark

Disturbed Area

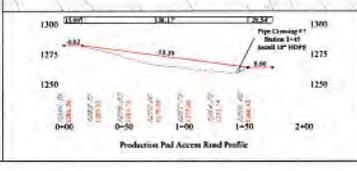
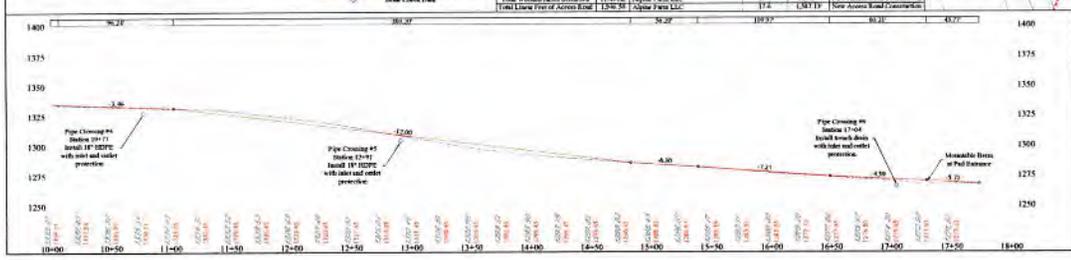
Well Pad Construction	1.42 AC
Prod. Pad Construction	1.06 AC
Access Road Construction	1.07 AC
Topsoil 12" Layer Material	7.81 AC
Additional Clearing	12.29 AC
Total Disturbed Area	23.65 AC

Additional Information

Topsoil Stockpile #1	11.86 AC
Topsoil Stockpile #2	11.86 AC
Total Topsoil Stockpiles	23.72 AC

Access Road

1/4" Panel	11.86 AC
3/4" Panel	11.86 AC
Total Access Road Construction	23.72 AC

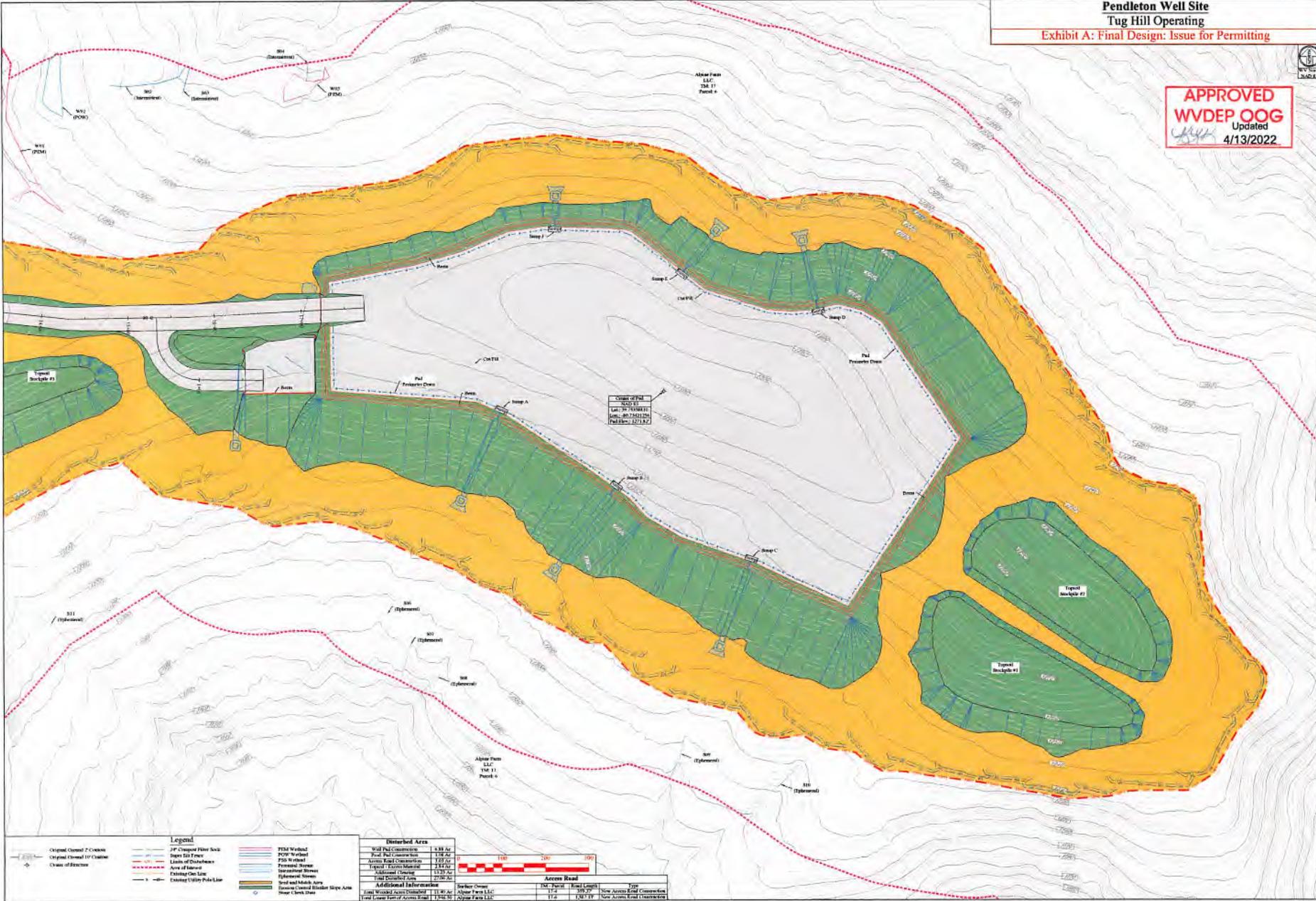


APPROVED
WVDEP OOG
 Updated
 4/13/2022

DATE: 4/13/2022
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 TUG HILL OPERATING
 THIS DOCUMENT PREPARED FOR TUG HILL OPERATING
 K&S SURVEYING
 Erosion and Sediment Control Plan
 Pendleton Well Site
 Franklin District
 Mingo County, WV
 Date: 12/17/2021
 Scale: As Shown
 Designed By: ZS
 Drawn By: [Name]
 Sheet 7 of 20

Pendleton Well Site
Tug Hill Operating
Exhibit A: Final Design: Issue for Permitting

APPROVED
WVDEP OOG
 Updated
 4/13/2022



Legend

Original Contour 2' Contour	2" Crimper Filter Sock	FDM Washout
Original Contour 10' Contour	Super Silt Fence	POW Washout
Contour of Structure	Line of Disturbance	FDM Washout
	Area of Interest	FDM Washout
	Existing Utility Pole Line	POW Washout
	Soil and Mulch Area	POW Washout
	Stream, Creek or Shallow Slope Area	POW Washout
	Shore Creek Drain	POW Washout

Demarcated Area

Well Pad Construction	1.88 Ac
Pool Pad Construction	1.58 Ac
Access Road Construction	1.09 Ac
Topsoil - Exposed Material	2.82 Ac
Additional Grading	11.75 Ac
Total Demarcated Area	20.12 Ac
Additional Fabrication	
Total Mined Area Estimated	11.87 Ac
Total Lower Level Access Road	1.98 Ac

Access Road

SW Type	100' Length	20'
SW Type	100' Length	20'
SW Type	100' Length	20'

Surface Cover

Alpine Farm LLC	1.0	100%	New Access Road Construction
Alpine Farm LLC	1.0	100%	New Access Road Construction

REVISIONS

NO.	DATE	DESCRIPTION
1	12-11-2021	ISSUE FOR PERMITTING

TUG HILL OPERATING

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

K&S SURVEYING

Ernest and Sediment Control Plan
Pendleton Well Site
 Franklin District
 Marshall County, WV

Date: 12/17/2021
 Scale: As Shown
 Designed By: ZS
 File No:
 Sheet 1 of 20