



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Wednesday, August 24, 2022
WELL WORK PERMIT
Horizontal 6A / New Drill

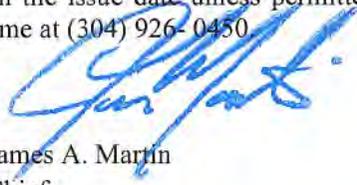
TUG HILL OPERATING, LLC
380 SOUTHPOINTE BOULEVARD, PLAZA II
SUITE 200
CANONSBURG, PA 15317

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

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 S-13HU
Farm Name: ALPINE FARM, LLC
U.S. WELL NUMBER: 47-051-02458-00-00
Horizontal 6A New Drill
Date Issued: 8/24/2022

Promoting a healthy environment.

08/26/2022

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.

08/26/2022

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

1) Well Operator: Tug Hill Operating, LLC

<u>494510851</u>	<u>Marshall</u>	<u>Franklin</u>	<u>Glen Easton 7.5'</u>
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Operator ID County District Quadrangle

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

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

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

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No HJK 7/28/2022

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

8) Proposed Total Vertical Depth: 11,785'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 18,163'

11) Proposed Horizontal Leg Length: 6,106.06'

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

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

14) Approximate Saltwater Depths: 1,427'

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

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

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

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

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#	10,485'	10,485'	3,423FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	18,163'	18,163'	4,339FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,051'	
Liners							

MLK 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 (10,551'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 15,300,000 lb. proppant and 280,000 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.

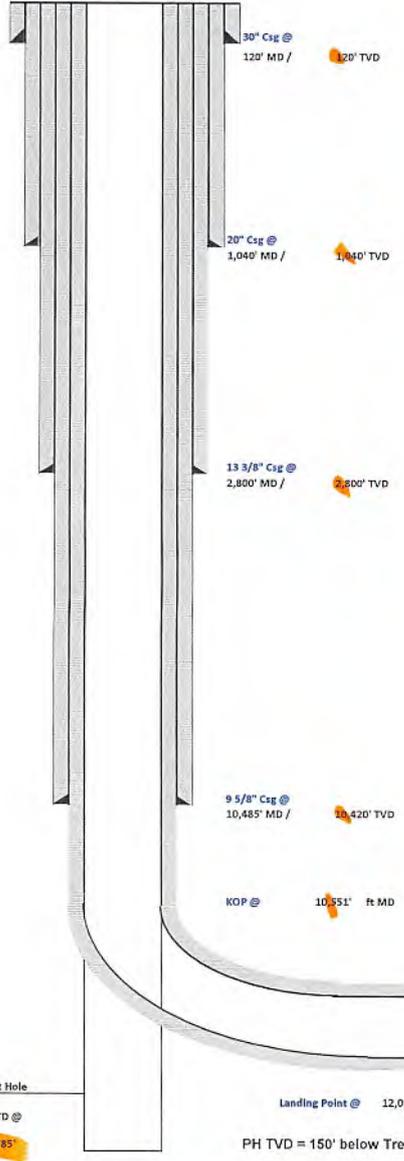


WELL NAME: Pendleton S-13HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Franklin
DF Elev: 1,272' **GL Elev:** 1,272'
TD: 18,163'
TH Latitude: 39.753425
TH Longitude: -80.733896
BH Latitude: 39.738866
BH Longitude: -80.723884

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	914'
Sewickley Coal	816'
Pittsburgh Coal	908'
Big Lime	2,171'
Berea	2,656'
Tully	6,552'
Marcellus	6,652'
Onondaga	6,702'
Salina	7,404'
Lockport	8,497'
Utica	11,247'
Point Pleasant	11,518'
Landing Depth	11,568'
Trenton	11,635'
Pilot Hole TD	11,785'

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	10,485'	10,420'	47	HPP110	Surface
Production	8 1/2	5 1/2	18,163'	11,675'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,805	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,140	A	15.6	Air	1 Centralizer every other joint
Intermediate 2	3,117	A	14.5	Air	1 Centralizer every other joint
Production	4,388	A	16.5	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



Pilot Hole
 PH TD @ 11,785'
 Landing Point @ 12,058' MD / 11,568' TVD
 PH TVD = 150' below Trenton Top

Lateral TD @ 11,675' ft MD
 11,675' ft TVD



Tug Hill Operating, LLC Casing and Cement Program

Pendleton S-13HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,040'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,800'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,485'	CTS
Production	5 1/2"	HCP110	8 1/2"	18,163'	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



Well: Pendleton S-13 HU (slot A)
Site: Pendleton
Project: Marshall County, West Virginia NAD83 UTM 17N
Design: rev5
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
 14437058.533 1715206.749 39.753425000 -80.733896000

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.81°



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

Magnetic Field
 Strength: 51619.1nT
 Dip Angle: 66.41°
 Date: 7/20/2022
 Model: IGRF2020

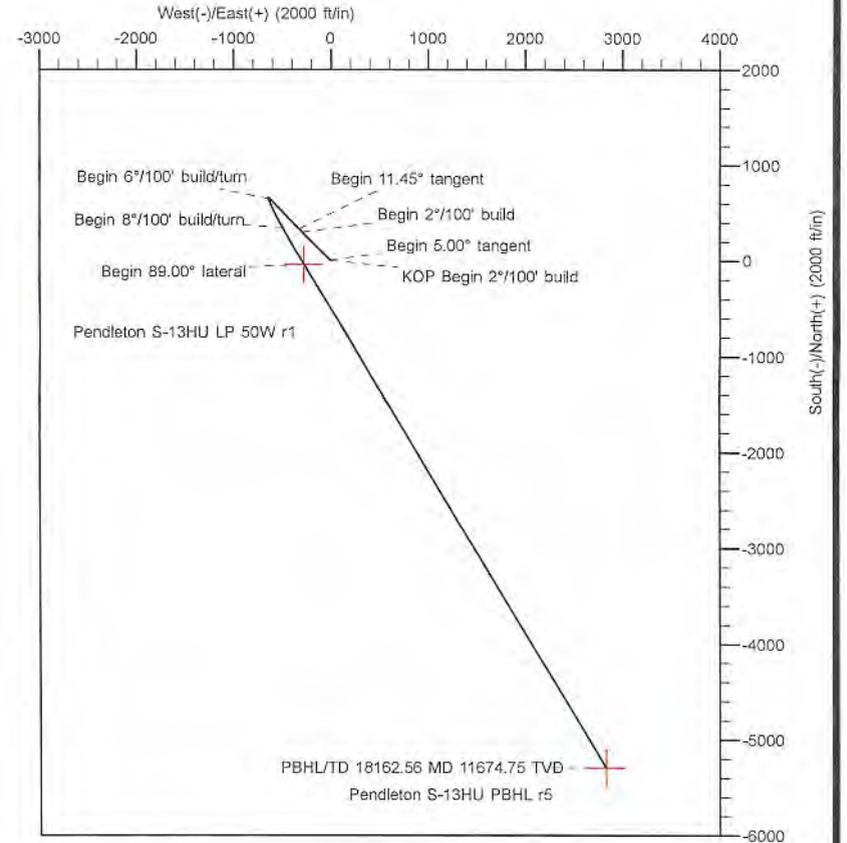
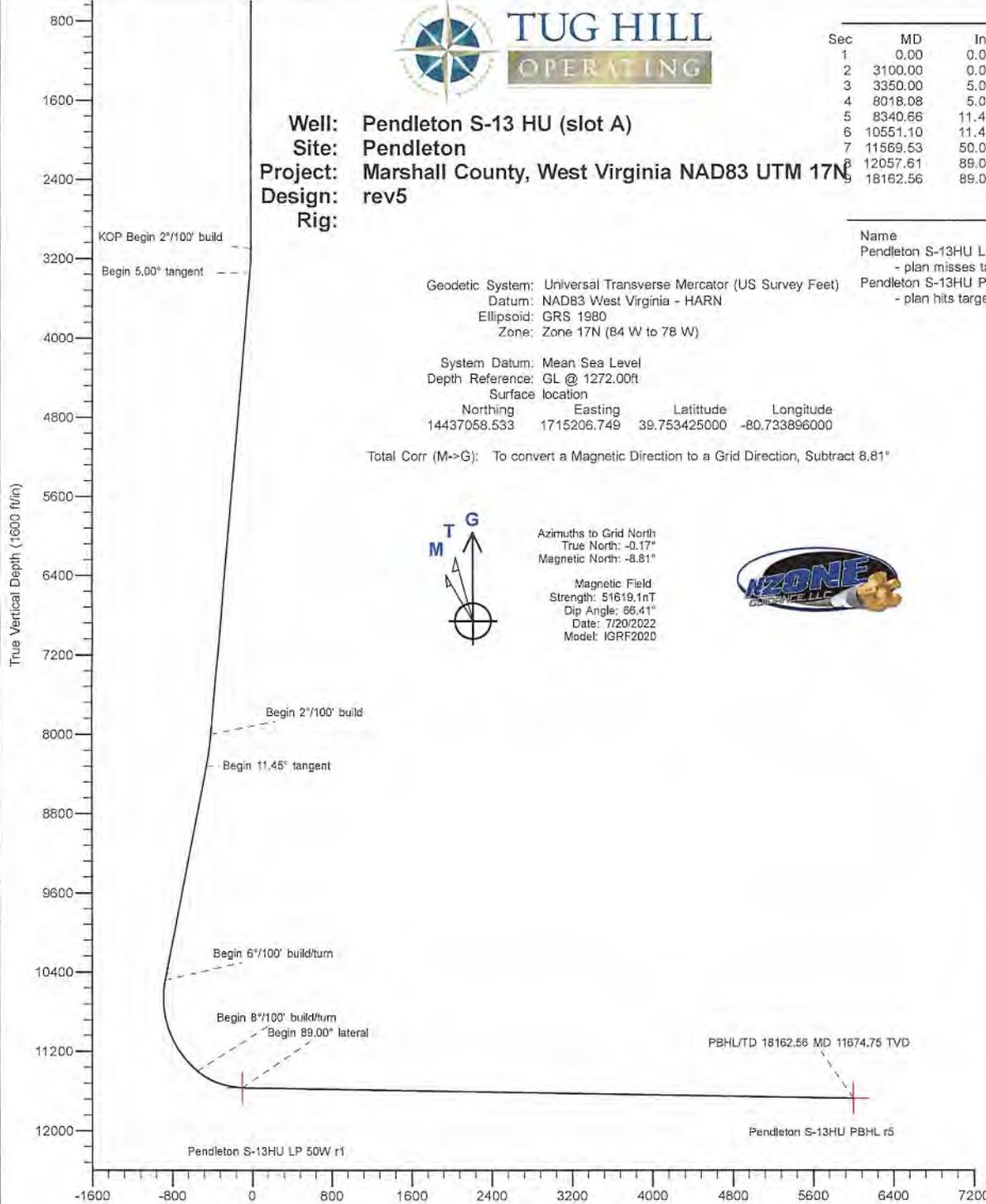


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	3100.00	0.00	0.000	3100.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	3350.00	5.00	315.700	3349.68	7.80	-7.61	2.00	315.70	-10.47	Begin 5.00° tangent
4	8018.08	5.00	315.700	8000.00	298.98	-291.76	0.00	0.00	-401.24	Begin 2°/100' build
5	8340.66	11.45	316.385	8319.09	332.26	-323.70	2.00	1.21	-445.64	Begin 11.45° tangent
6	10551.10	11.45	316.385	10485.54	649.98	-626.42	0.00	0.00	-868.56	Begin 6°/100' build/turn
7	11569.53	50.00	151.533	11400.33	351.40	-497.79	6.00	-166.78	-544.61	Begin 8°/100' build/turn
8	12057.61	89.00	149.412	11568.00	-38.18	-275.86	8.00	-3.37	-96.42	Begin 89.00° lateral
9	18162.56	89.00	149.412	11674.75	-5292.79	2830.28	0.00	0.00	6002.01	PBHL/TD 18162.56 MD 11674.75 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Pendleton S-13HU LP 50W r1	11568.00	-38.18	-275.86	14437020.358	1714930.889	39.753322406	-80.734877903
- plan misses target center by 0.01ft at 12057.60ft MD (11568.00 TVD, -38.18 N, -275.87 E)							
Pendleton S-13HU PBHL r5	11674.75	-5292.79	2830.28	14431765.748	1718037.018	39.738866000	-80.723884000
- plan hits target center							





Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-13 HU (slot A)
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 S-13 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

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:	39.753506850
From:	Lat/Long	Easting:	1,715,175.249 usft	Longitude:	-80.734007760
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Pendleton S-13 HU (slot A)					
Well Position	+N/-S	0.00 ft	Northing:	14,437,058.533 usft	Latitude:	39.753425000
	+E/-W	0.00 ft	Easting:	1,715,206.748 usft	Longitude:	-80.733896000
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	7/20/2022	-8.64	66.41	51,619.14542276

Design	rev5				
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	151.865	

Plan Survey Tool Program		Date			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,162.56 rev5 (Original Hole)			



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-13 HU (slot A)
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 S-13 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	0.00	0.000	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,350.00	5.00	315.700	3,349.68	7.80	-7.61	2.00	2.00	0.00	315.70	
8,018.08	5.00	315.700	8,000.00	298.98	-291.76	0.00	0.00	0.00	0.00	
8,340.66	11.45	316.385	8,319.09	332.26	-323.70	2.00	2.00	0.21	1.21	
10,551.10	11.45	316.385	10,485.54	649.98	-626.42	0.00	0.00	0.00	0.00	
11,569.53	50.00	151.533	11,400.33	351.40	-497.79	6.00	3.79	-16.19	-166.78	
12,057.61	89.00	149.412	11,568.00	-38.18	-275.86	8.00	7.99	-0.43	-3.37	
18,162.56	89.00	149.412	11,674.75	-5,292.79	2,830.28	0.00	0.00	0.00	0.00	Pendleton S-13HU PE



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-13 HU (slot A)
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 S-13 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

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	0.000	0.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
100.00	0.00	0.000	100.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
200.00	0.00	0.000	200.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
300.00	0.00	0.000	300.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
400.00	0.00	0.000	400.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
500.00	0.00	0.000	500.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
600.00	0.00	0.000	600.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
700.00	0.00	0.000	700.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
800.00	0.00	0.000	800.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
900.00	0.00	0.000	900.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,300.00	0.00	0.000	1,300.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,400.00	0.00	0.000	1,400.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,600.00	0.00	0.000	1,600.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,700.00	0.00	0.000	1,700.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,800.00	0.00	0.000	1,800.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
1,900.00	0.00	0.000	1,900.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,000.00	0.00	0.000	2,000.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,100.00	0.00	0.000	2,100.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,200.00	0.00	0.000	2,200.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,300.00	0.00	0.000	2,300.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,400.00	0.00	0.000	2,400.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,500.00	0.00	0.000	2,500.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,600.00	0.00	0.000	2,600.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,700.00	0.00	0.000	2,700.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,800.00	0.00	0.000	2,800.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
2,900.00	0.00	0.000	2,900.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
3,000.00	0.00	0.000	3,000.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
3,100.00	0.00	0.000	3,100.00	0.00	0.00	14,437,058.533	1,715,206.748	39.753425000	-80.733896000	
KOP Begin 2°/100' build										
3,200.00	2.00	315.700	3,199.98	1.25	-1.22	14,437,059.782	1,715,205.529	39.753428440	-80.733900324	
3,300.00	4.00	315.700	3,299.84	4.99	-4.87	14,437,063.527	1,715,201.874	39.753438756	-80.733913289	
3,350.00	5.00	315.700	3,349.68	7.80	-7.61	14,437,066.335	1,715,199.134	39.753446489	-80.733923007	
Begin 5.00° tangent										
3,400.00	5.00	315.700	3,399.49	10.92	-10.66	14,437,069.454	1,715,196.091	39.753455079	-80.733933803	
3,500.00	5.00	315.700	3,499.11	17.16	-16.74	14,437,075.691	1,715,190.004	39.753472259	-80.733955395	
3,600.00	5.00	315.700	3,598.73	23.40	-22.83	14,437,081.929	1,715,183.917	39.753489439	-80.733976987	
3,700.00	5.00	315.700	3,698.35	29.63	-28.92	14,437,088.167	1,715,177.830	39.753506619	-80.733998578	
3,800.00	5.00	315.700	3,797.97	35.87	-35.01	14,437,094.404	1,715,171.743	39.753523799	-80.734020170	
3,900.00	5.00	315.700	3,897.59	42.11	-41.09	14,437,100.642	1,715,165.655	39.753540979	-80.734041762	
4,000.00	5.00	315.700	3,997.21	48.35	-47.18	14,437,106.880	1,715,159.568	39.753558159	-80.734063354	
4,100.00	5.00	315.700	4,096.83	54.58	-53.27	14,437,113.117	1,715,153.481	39.753575339	-80.734084946	
4,200.00	5.00	315.700	4,196.45	60.82	-59.35	14,437,119.355	1,715,147.394	39.753592519	-80.734106538	
4,300.00	5.00	315.700	4,296.07	67.06	-65.44	14,437,125.593	1,715,141.307	39.753609699	-80.734128130	
4,400.00	5.00	315.700	4,395.69	73.30	-71.53	14,437,131.830	1,715,135.220	39.753626879	-80.734149721	
4,500.00	5.00	315.700	4,495.31	79.54	-77.62	14,437,138.068	1,715,129.133	39.753644059	-80.734171313	
4,600.00	5.00	315.700	4,594.93	85.77	-83.70	14,437,144.306	1,715,123.046	39.753661239	-80.734192905	
4,700.00	5.00	315.700	4,694.55	92.01	-89.79	14,437,150.543	1,715,116.959	39.753678419	-80.734214497	
4,800.00	5.00	315.700	4,794.17	98.25	-95.88	14,437,156.781	1,715,110.872	39.753695599	-80.734236089	
4,900.00	5.00	315.700	4,893.78	104.49	-101.96	14,437,163.019	1,715,104.785	39.753712779	-80.734257681	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-13 HU (slot A)
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 S-13 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

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	315.700	4,993.40	110.72	-108.05	14,437,169.256	1,715,098.698	39.753729959	-80.734279273	
5,100.00	5.00	315.700	5,093.02	116.96	-114.14	14,437,175.494	1,715,092.611	39.753747139	-80.734300865	
5,200.00	5.00	315.700	5,192.64	123.20	-120.22	14,437,181.732	1,715,086.523	39.753764319	-80.734322457	
5,300.00	5.00	315.700	5,292.26	129.44	-126.31	14,437,187.969	1,715,080.436	39.753781498	-80.734344049	
5,400.00	5.00	315.700	5,391.88	135.67	-132.40	14,437,194.207	1,715,074.349	39.753798678	-80.734365641	
5,500.00	5.00	315.700	5,491.50	141.91	-138.49	14,437,200.445	1,715,068.262	39.753815858	-80.734387233	
5,600.00	5.00	315.700	5,591.12	148.15	-144.57	14,437,206.682	1,715,062.175	39.753833038	-80.734408825	
5,700.00	5.00	315.700	5,690.74	154.39	-150.66	14,437,212.920	1,715,056.088	39.753850218	-80.734430417	
5,800.00	5.00	315.700	5,790.36	160.63	-156.75	14,437,219.158	1,715,050.001	39.753867398	-80.734452009	
5,900.00	5.00	315.700	5,889.98	166.86	-162.83	14,437,225.395	1,715,043.914	39.753884578	-80.734473601	
6,000.00	5.00	315.700	5,989.60	173.10	-168.92	14,437,231.633	1,715,037.827	39.753901758	-80.734495193	
6,100.00	5.00	315.700	6,089.22	179.34	-175.01	14,437,237.871	1,715,031.740	39.753918938	-80.734516785	
6,200.00	5.00	315.700	6,188.84	185.58	-181.10	14,437,244.108	1,715,025.653	39.753936118	-80.734538377	
6,300.00	5.00	315.700	6,288.46	191.81	-187.18	14,437,250.346	1,715,019.566	39.753953298	-80.734559969	
6,400.00	5.00	315.700	6,388.08	198.05	-193.27	14,437,256.584	1,715,013.479	39.753970477	-80.734581561	
6,500.00	5.00	315.700	6,487.70	204.29	-199.36	14,437,262.821	1,715,007.391	39.753987657	-80.734603153	
6,600.00	5.00	315.700	6,587.32	210.53	-205.44	14,437,269.059	1,715,001.304	39.754004837	-80.734624746	
6,700.00	5.00	315.700	6,686.94	216.76	-211.53	14,437,275.297	1,714,995.217	39.754022017	-80.734646338	
6,800.00	5.00	315.700	6,786.55	223.00	-217.62	14,437,281.534	1,714,989.130	39.754039197	-80.734667930	
6,900.00	5.00	315.700	6,886.17	229.24	-223.71	14,437,287.772	1,714,983.043	39.754056377	-80.734689522	
7,000.00	5.00	315.700	6,985.79	235.48	-229.79	14,437,294.010	1,714,976.956	39.754073557	-80.734711114	
7,100.00	5.00	315.700	7,085.41	241.71	-235.88	14,437,300.247	1,714,970.869	39.754090737	-80.734732706	
7,200.00	5.00	315.700	7,185.03	247.95	-241.97	14,437,306.485	1,714,964.782	39.754107916	-80.734754298	
7,300.00	5.00	315.700	7,284.65	254.19	-248.05	14,437,312.723	1,714,958.695	39.754125096	-80.734775891	
7,400.00	5.00	315.700	7,384.27	260.43	-254.14	14,437,318.960	1,714,952.608	39.754142276	-80.734797483	
7,500.00	5.00	315.700	7,483.89	266.67	-260.23	14,437,325.198	1,714,946.521	39.754159456	-80.734819075	
7,600.00	5.00	315.700	7,583.51	272.90	-266.32	14,437,331.435	1,714,940.434	39.754176636	-80.734840667	
7,700.00	5.00	315.700	7,683.13	279.14	-272.40	14,437,337.673	1,714,934.347	39.754193816	-80.734862260	
7,800.00	5.00	315.700	7,782.75	285.38	-278.49	14,437,343.911	1,714,928.259	39.754210996	-80.734883852	
7,900.00	5.00	315.700	7,882.37	291.62	-284.58	14,437,350.148	1,714,922.172	39.754228175	-80.734905444	
8,000.00	5.00	315.700	7,981.99	297.85	-290.66	14,437,356.386	1,714,916.085	39.754245355	-80.734927036	
8,018.08	5.00	315.700	8,000.00	298.98	-291.76	14,437,357.514	1,714,914.985	39.754248461	-80.734930940	
Begin 2°/100' build										
8,100.00	6.64	315.999	8,081.49	304.94	-297.55	14,437,363.475	1,714,909.202	39.754264880	-80.734951453	
8,200.00	8.64	316.212	8,180.60	314.52	-306.76	14,437,373.055	1,714,899.989	39.754291263	-80.734984130	
8,300.00	10.64	316.344	8,279.19	326.62	-318.33	14,437,385.155	1,714,888.420	39.754324588	-80.735025167	
8,340.66	11.45	316.385	8,319.09	332.26	-323.70	14,437,390.793	1,714,883.045	39.754340114	-80.735044233	
Begin 11.45° tangent										
8,400.00	11.45	316.385	8,377.25	340.79	-331.83	14,437,399.322	1,714,874.919	39.754363603	-80.735073056	
8,500.00	11.45	316.385	8,475.26	355.16	-345.52	14,437,413.695	1,714,861.224	39.754403188	-80.735121631	
8,600.00	11.45	316.385	8,573.27	369.54	-359.22	14,437,428.069	1,714,847.529	39.754442772	-80.735170206	
8,700.00	11.45	316.385	8,671.28	383.91	-372.91	14,437,442.442	1,714,833.835	39.754482357	-80.735218781	
8,800.00	11.45	316.385	8,769.29	398.28	-386.61	14,437,456.815	1,714,820.140	39.754521941	-80.735267356	
8,900.00	11.45	316.385	8,867.30	412.66	-400.30	14,437,471.189	1,714,806.445	39.754561526	-80.735315931	
9,000.00	11.45	316.385	8,965.31	427.03	-414.00	14,437,485.562	1,714,792.751	39.754601111	-80.735364506	
9,100.00	11.45	316.385	9,063.32	441.40	-427.69	14,437,499.936	1,714,779.056	39.754640695	-80.735413081	
9,200.00	11.45	316.385	9,161.33	455.78	-441.39	14,437,514.309	1,714,765.361	39.754680280	-80.735461656	
9,300.00	11.45	316.385	9,259.34	470.15	-455.08	14,437,528.683	1,714,751.667	39.754719864	-80.735510231	
9,400.00	11.45	316.385	9,357.35	484.52	-468.78	14,437,543.056	1,714,737.972	39.754759449	-80.735558806	
9,500.00	11.45	316.385	9,455.36	498.90	-482.47	14,437,557.429	1,714,724.277	39.754799033	-80.735607382	
9,600.00	11.45	316.385	9,553.37	513.27	-496.17	14,437,571.803	1,714,710.583	39.754838617	-80.735655957	
9,700.00	11.45	316.385	9,651.37	527.64	-509.86	14,437,586.176	1,714,696.888	39.754878202	-80.735704533	
9,800.00	11.45	316.385	9,749.38	542.02	-523.56	14,437,600.550	1,714,683.193	39.754917786	-80.735753108	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-13 HU (slot A)
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 S-13 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

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	11.45	316.385	9,847.39	556.39	-537.25	14,437,614.923	1,714,669.499	39.754957371	-80.735801684	
10,000.00	11.45	316.385	9,945.40	570.76	-550.95	14,437,629.297	1,714,655.804	39.754996955	-80.735850259	
10,100.00	11.45	316.385	10,043.41	585.14	-564.64	14,437,643.670	1,714,642.109	39.755036539	-80.735898835	
10,200.00	11.45	316.385	10,141.42	599.51	-578.33	14,437,658.043	1,714,628.415	39.755076124	-80.735947411	
10,300.00	11.45	316.385	10,239.43	613.89	-592.03	14,437,672.417	1,714,614.720	39.755115708	-80.735995986	
10,400.00	11.45	316.385	10,337.44	628.26	-605.72	14,437,686.790	1,714,601.025	39.755155292	-80.736044562	
10,500.00	11.45	316.385	10,435.45	642.63	-619.42	14,437,701.164	1,714,587.331	39.755194876	-80.736093138	
10,551.10	11.45	316.385	10,485.54	649.98	-626.42	14,437,708.509	1,714,580.332	39.755215105	-80.736117962	
Begin 6°/100' build/turn										
10,600.00	8.62	311.908	10,533.68	655.94	-632.49	14,437,714.472	1,714,574.255	39.755231531	-80.736139521	
10,650.00	5.83	302.935	10,583.28	659.83	-637.42	14,437,718.357	1,714,569.333	39.755242240	-80.736156993	
10,700.00	3.42	279.867	10,633.12	661.46	-641.02	14,437,719.994	1,714,565.731	39.755246765	-80.736169794	
10,750.00	2.72	222.684	10,683.06	660.85	-643.29	14,437,719.379	1,714,563.458	39.755245094	-80.736177888	
10,800.00	4.59	183.849	10,732.96	657.98	-644.23	14,437,716.513	1,714,562.520	39.755237231	-80.736181254	
10,850.00	7.26	170.249	10,782.69	652.87	-643.83	14,437,711.404	1,714,562.921	39.755223198	-80.736179881	
10,900.00	10.12	164.103	10,832.11	645.54	-642.09	14,437,704.067	1,714,564.659	39.755203033	-80.736173774	
10,950.00	13.04	160.666	10,881.09	635.99	-639.02	14,437,694.521	1,714,567.730	39.755176792	-80.736162949	
11,000.00	15.99	158.474	10,929.49	624.26	-634.63	14,437,682.792	1,714,572.124	39.755144546	-80.736147437	
11,050.00	18.95	156.952	10,977.18	610.38	-628.92	14,437,668.913	1,714,577.830	39.755106384	-80.736127279	
11,100.00	21.93	155.830	11,024.03	594.39	-621.92	14,437,652.922	1,714,584.833	39.755062411	-80.736102531	
11,150.00	24.91	154.964	11,069.91	576.33	-613.64	14,437,634.862	1,714,593.112	39.755012746	-80.736073261	
11,200.00	27.89	154.273	11,114.69	556.25	-604.10	14,437,614.783	1,714,602.646	39.754957527	-80.736039549	
11,250.00	30.88	153.706	11,158.25	534.21	-593.34	14,437,592.740	1,714,613.409	39.754896904	-80.736001488	
11,300.00	33.87	153.230	11,200.47	510.26	-581.38	14,437,568.794	1,714,625.370	39.754831044	-80.735959181	
11,350.00	36.86	152.823	11,241.24	484.48	-568.25	14,437,543.009	1,714,638.497	39.754760127	-80.735912745	
11,400.00	39.85	152.469	11,280.45	456.93	-554.00	14,437,515.458	1,714,652.754	39.754684347	-80.735862307	
11,450.00	42.84	152.156	11,317.98	427.68	-538.65	14,437,486.215	1,714,668.102	39.754603912	-80.735808005	
11,500.00	45.84	151.877	11,353.74	396.83	-522.25	14,437,455.360	1,714,684.498	39.754519044	-80.735749988	
11,550.00	48.83	151.625	11,387.62	364.45	-504.85	14,437,422.978	1,714,701.899	39.754429973	-80.735688416	
11,569.53	50.00	151.533	11,400.33	351.40	-497.79	14,437,409.932	1,714,708.959	39.754394088	-80.735663433	
Begin 8°/100' build/turn										
11,600.00	52.43	151.352	11,419.41	330.54	-486.44	14,437,389.074	1,714,720.312	39.754336713	-80.735623258	
11,650.00	56.43	151.080	11,448.49	294.90	-466.86	14,437,353.437	1,714,739.893	39.754238686	-80.735553962	
11,700.00	60.42	150.832	11,474.67	257.67	-446.18	14,437,316.205	1,714,760.571	39.754136268	-80.735480781	
11,750.00	64.42	150.602	11,497.81	219.03	-424.50	14,437,277.559	1,714,782.245	39.754029960	-80.735404071	
11,800.00	68.41	150.388	11,517.82	179.15	-401.94	14,437,237.687	1,714,804.809	39.753920278	-80.735324207	
11,850.00	72.41	150.185	11,534.58	138.25	-378.60	14,437,196.784	1,714,828.154	39.753807758	-80.735241577	
11,900.00	76.40	149.991	11,548.02	96.52	-354.58	14,437,155.049	1,714,852.165	39.753692947	-80.735156583	
11,950.00	80.40	149.803	11,558.07	54.15	-330.02	14,437,112.685	1,714,876.726	39.753576404	-80.735069641	
12,000.00	84.39	149.620	11,564.68	11.37	-305.03	14,437,069.899	1,714,901.717	39.753458698	-80.734981172	
12,050.00	88.39	149.439	11,567.83	-31.63	-279.73	14,437,026.899	1,714,927.017	39.753340402	-80.734891610	
12,057.61	89.00	149.412	11,568.00	-38.18	-275.86	14,437,020.352	1,714,930.885	39.753322391	-80.734877917	
Begin 89.00° lateral										
12,100.00	89.00	149.412	11,568.74	-74.67	-254.29	14,436,983.863	1,714,952.454	39.753222007	-80.734801557	
12,200.00	89.00	149.412	11,570.49	-160.74	-203.42	14,436,897.792	1,715,003.333	39.752985218	-80.734621439	
12,300.00	89.00	149.412	11,572.24	-246.81	-152.54	14,436,811.721	1,715,054.212	39.752748428	-80.734441322	
12,400.00	89.00	149.412	11,573.99	-332.88	-101.66	14,436,725.650	1,715,105.091	39.752511639	-80.734261206	
12,500.00	89.00	149.412	11,575.74	-418.95	-50.78	14,436,639.579	1,715,155.970	39.752274848	-80.734081092	
12,600.00	89.00	149.412	11,577.49	-505.03	0.10	14,436,553.508	1,715,206.849	39.752030558	-80.733909978	
12,700.00	89.00	149.412	11,579.23	-591.10	50.98	14,436,467.437	1,715,257.728	39.751801267	-80.733720866	
12,800.00	89.00	149.412	11,580.98	-677.17	101.86	14,436,381.365	1,715,308.607	39.751564476	-80.733540755	
12,900.00	89.00	149.412	11,582.73	-763.24	152.74	14,436,295.294	1,715,359.486	39.751327685	-80.733360645	
13,000.00	89.00	149.412	11,584.48	-849.31	203.62	14,436,209.223	1,715,410.364	39.751090894	-80.733180537	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-13 HU (slot A)
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 S-13 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,100.00	89.00	149.412	11,586.23	-935.38	254.50	14,436,123.152	1,715,461.243	39.750854102	-80.733000430	
13,200.00	89.00	149.412	11,587.98	-1,021.45	305.37	14,436,037.081	1,715,512.122	39.750617310	-80.732820324	
13,300.00	89.00	149.412	11,589.73	-1,107.53	356.25	14,435,951.010	1,715,563.001	39.750380517	-80.732640219	
13,400.00	89.00	149.412	11,591.47	-1,193.60	407.13	14,435,864.939	1,715,613.880	39.750143724	-80.732460115	
13,500.00	89.00	149.412	11,593.22	-1,279.67	458.01	14,435,778.867	1,715,664.759	39.749906931	-80.732280013	
13,600.00	89.00	149.412	11,594.97	-1,365.74	508.89	14,435,692.796	1,715,715.638	39.749670138	-80.732099912	
13,700.00	89.00	149.412	11,596.72	-1,451.81	559.77	14,435,606.725	1,715,766.517	39.749433345	-80.731919812	
13,800.00	89.00	149.412	11,598.47	-1,537.88	610.65	14,435,520.654	1,715,817.396	39.749196551	-80.731739714	
13,900.00	89.00	149.412	11,600.22	-1,623.95	661.53	14,435,434.583	1,715,868.274	39.748959757	-80.731559616	
14,000.00	89.00	149.412	11,601.97	-1,710.02	712.41	14,435,348.512	1,715,919.154	39.748722962	-80.731379520	
14,100.00	89.00	149.412	11,603.71	-1,796.10	763.29	14,435,262.441	1,715,970.033	39.748486168	-80.731199425	
14,200.00	89.00	149.412	11,605.46	-1,882.17	814.16	14,435,176.370	1,716,020.912	39.748249373	-80.731019331	
14,300.00	89.00	149.412	11,607.21	-1,968.24	865.04	14,435,090.298	1,716,071.791	39.748012577	-80.730839239	
14,400.00	89.00	149.412	11,608.96	-2,054.31	915.92	14,435,004.227	1,716,122.670	39.747775782	-80.730659148	
14,500.00	89.00	149.412	11,610.71	-2,140.38	966.80	14,434,918.156	1,716,173.549	39.747538986	-80.730479058	
14,600.00	89.00	149.412	11,612.46	-2,226.45	1,017.68	14,434,832.085	1,716,224.428	39.747302190	-80.730298969	
14,700.00	89.00	149.412	11,614.21	-2,312.52	1,068.56	14,434,746.014	1,716,275.307	39.747065394	-80.730118881	
14,800.00	89.00	149.412	11,615.95	-2,398.60	1,119.44	14,434,659.943	1,716,326.185	39.746828597	-80.729938795	
14,900.00	89.00	149.412	11,617.70	-2,484.67	1,170.32	14,434,573.872	1,716,377.064	39.746591800	-80.729758710	
15,000.00	89.00	149.412	11,619.45	-2,570.74	1,221.20	14,434,487.800	1,716,427.943	39.746355003	-80.729578626	
15,100.00	89.00	149.412	11,621.20	-2,656.81	1,272.08	14,434,401.729	1,716,478.822	39.746118205	-80.729398544	
15,200.00	89.00	149.412	11,622.95	-2,742.88	1,322.95	14,434,315.658	1,716,529.701	39.745881407	-80.729218462	
15,300.00	89.00	149.412	11,624.70	-2,828.95	1,373.83	14,434,229.587	1,716,580.580	39.745644609	-80.729038382	
15,400.00	89.00	149.412	11,626.45	-2,915.02	1,424.71	14,434,143.516	1,716,631.459	39.745407811	-80.728858303	
15,500.00	89.00	149.412	11,628.19	-3,001.09	1,475.59	14,434,057.445	1,716,682.338	39.745171012	-80.728678225	
15,600.00	89.00	149.412	11,629.94	-3,087.17	1,526.47	14,433,971.374	1,716,733.217	39.744934213	-80.728498149	
15,700.00	89.00	149.412	11,631.69	-3,173.24	1,577.35	14,433,885.303	1,716,784.096	39.744697414	-80.728318074	
15,800.00	89.00	149.412	11,633.44	-3,259.31	1,628.23	14,433,799.231	1,716,834.974	39.744460614	-80.728138000	
15,900.00	89.00	149.412	11,635.19	-3,345.38	1,679.11	14,433,713.160	1,716,885.853	39.744223815	-80.727957927	
16,000.00	89.00	149.412	11,636.94	-3,431.45	1,729.99	14,433,627.089	1,716,936.732	39.743987014	-80.727777855	
16,100.00	89.00	149.412	11,638.68	-3,517.52	1,780.87	14,433,541.018	1,716,987.611	39.743750214	-80.727597785	
16,200.00	89.00	149.412	11,640.43	-3,603.59	1,831.74	14,433,454.947	1,717,038.490	39.743513413	-80.727417716	
16,300.00	89.00	149.412	11,642.18	-3,689.66	1,882.62	14,433,368.876	1,717,089.369	39.743276612	-80.727237648	
16,400.00	89.00	149.412	11,643.93	-3,775.74	1,933.50	14,433,282.805	1,717,140.248	39.743039811	-80.727057581	
16,500.00	89.00	149.412	11,645.68	-3,861.81	1,984.38	14,433,196.733	1,717,191.127	39.742803010	-80.726877516	
16,600.00	89.00	149.412	11,647.43	-3,947.88	2,035.26	14,433,110.662	1,717,242.006	39.742566208	-80.726697452	
16,700.00	89.00	149.412	11,649.18	-4,033.95	2,086.14	14,433,024.591	1,717,292.884	39.742329406	-80.726517389	
16,800.00	89.00	149.412	11,650.92	-4,120.02	2,137.02	14,432,938.520	1,717,343.763	39.742092603	-80.726337327	
16,900.00	89.00	149.412	11,652.67	-4,206.09	2,187.90	14,432,852.449	1,717,394.642	39.741855801	-80.726157266	
17,000.00	89.00	149.412	11,654.42	-4,292.16	2,238.78	14,432,766.378	1,717,445.521	39.741618998	-80.725977207	
17,100.00	89.00	149.412	11,656.17	-4,378.24	2,289.66	14,432,680.307	1,717,496.400	39.741382195	-80.725797149	
17,200.00	89.00	149.412	11,657.92	-4,464.31	2,340.53	14,432,594.236	1,717,547.279	39.741145391	-80.725617092	
17,300.00	89.00	149.412	11,659.67	-4,550.38	2,391.41	14,432,508.164	1,717,598.158	39.740908587	-80.725437037	
17,400.00	89.00	149.412	11,661.42	-4,636.45	2,442.29	14,432,422.093	1,717,649.037	39.740671783	-80.725256982	
17,500.00	89.00	149.412	11,663.16	-4,722.52	2,493.17	14,432,336.021	1,717,699.916	39.740434979	-80.725076929	
17,600.00	89.00	149.412	11,664.91	-4,808.59	2,544.05	14,432,249.950	1,717,750.794	39.740198174	-80.724896877	
17,700.00	89.00	149.412	11,666.66	-4,894.66	2,594.93	14,432,163.879	1,717,801.673	39.739961369	-80.724716827	
17,800.00	89.00	149.412	11,668.41	-4,980.73	2,645.81	14,432,077.808	1,717,852.552	39.739724564	-80.724536777	
17,900.00	89.00	149.412	11,670.16	-5,066.81	2,696.69	14,431,991.737	1,717,903.431	39.739487758	-80.724356729	
18,000.00	89.00	149.412	11,671.91	-5,152.88	2,747.57	14,431,905.665	1,717,954.310	39.739250953	-80.724176682	
18,100.00	89.00	149.412	11,673.66	-5,238.95	2,798.45	14,431,819.594	1,718,005.189	39.739014147	-80.723996636	
18,162.56	89.00	149.412	11,674.75	-5,292.79	2,830.28	14,431,765.748	1,718,037.019	39.738866000	-80.723884000	

PBHL/TD 18162.56 MD 11674.75 TVD



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-13 HU (slot A)
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 S-13 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

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 S-13HU LP 5i	0.00	0.000	11,568.00	-38.18	-275.86	14,437,020.358	1,714,930.889	39.753322407	-80.734877904
- plan misses target center by 0.01ft at 12057.60ft MD (11568.00 TVD, -38.18 N, -275.87 E)									
- Point									
Pendleton S-13HU PBH	0.00	0.000	11,674.75	-5,292.79	2,830.28	14,431,765.748	1,718,037.019	39.738866000	-80.723884000
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
		+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
3,100.00	3,100.00	0.00	0.00	KOP Begin 2°/100' build	
3,350.00	3,349.68	7.80	-7.61	Begin 5.00° tangent	
8,018.08	8,000.00	298.98	-291.76	Begin 2°/100' build	
8,340.66	8,319.09	332.26	-323.70	Begin 11.45° tangent	
10,551.10	10,485.54	649.98	-626.42	Begin 6°/100' build/turn	
11,569.53	11,400.33	351.40	-497.79	Begin 8°/100' build/turn	
12,057.61	11,568.00	-38.18	-275.86	Begin 89.00° lateral	
18,162.56	11,674.75	-5,292.79	2,830.28	PBHL/TD 18162.56 MD 11674.75 TVD	

WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Pendleton S-13HU

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/WV0109165) and Westmoreland Sanitary Landfill, LLC (SAN1405/PADEP EC#135425), Chestnut Valley Landfill (100419)

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.

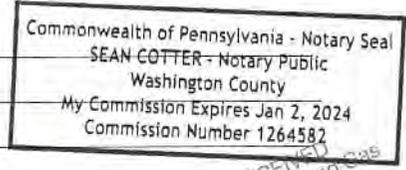
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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: *Stacy Lane* *MDL*

Comments: _____

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

Title: Oil and Gas Inspector Date: 5/26/22

Field Reviewed? (*d*) 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.

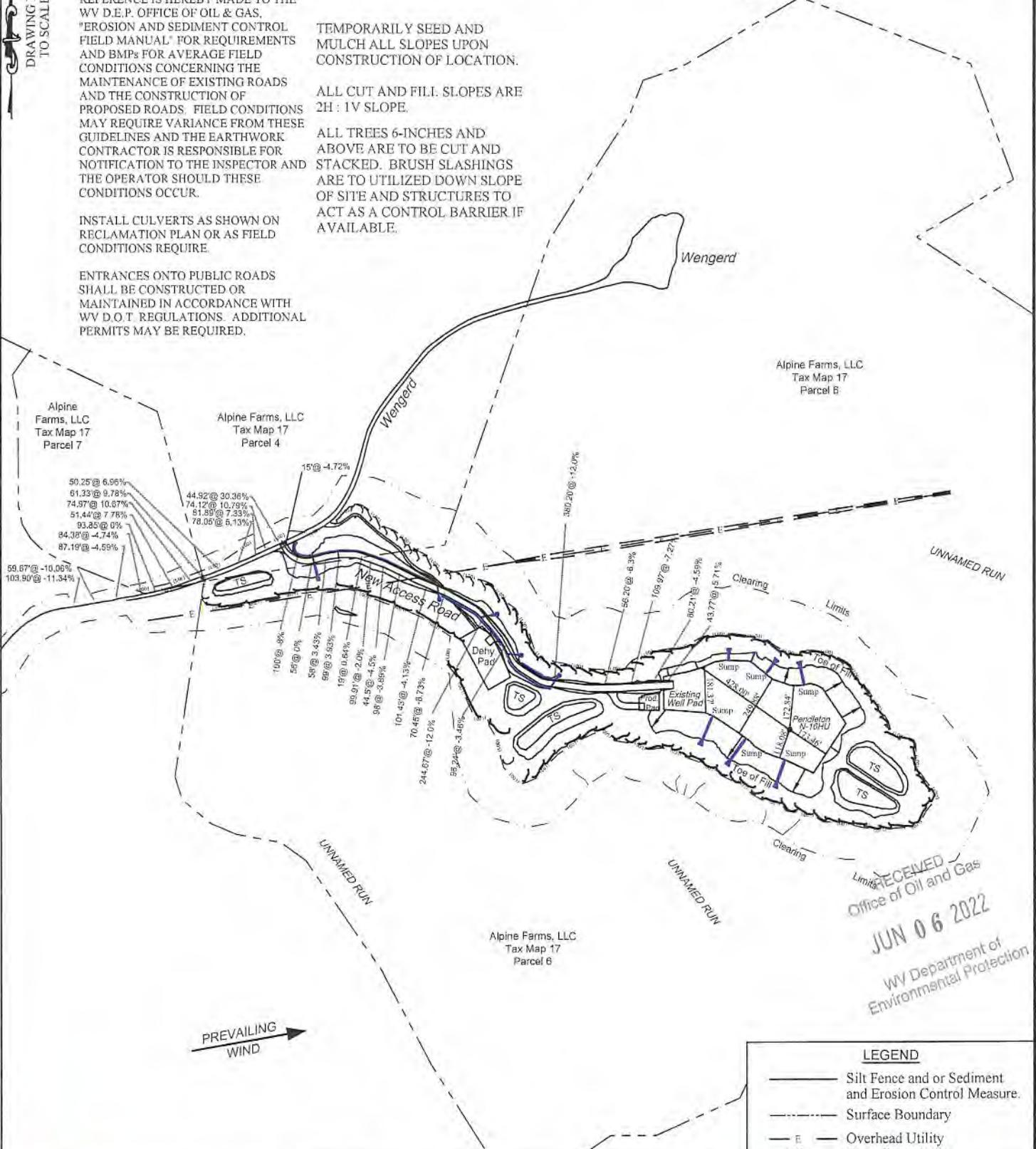
INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

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.



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

LEGEND

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

Jackson Surveying Inc.
2413 E. Pike St.
Clarksburg, WV 26301
Phone: 304-623-6861

TOPO SECTION:

GLEN EASTON 7.5'

COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.D.C.	494510851

OPERATOR:

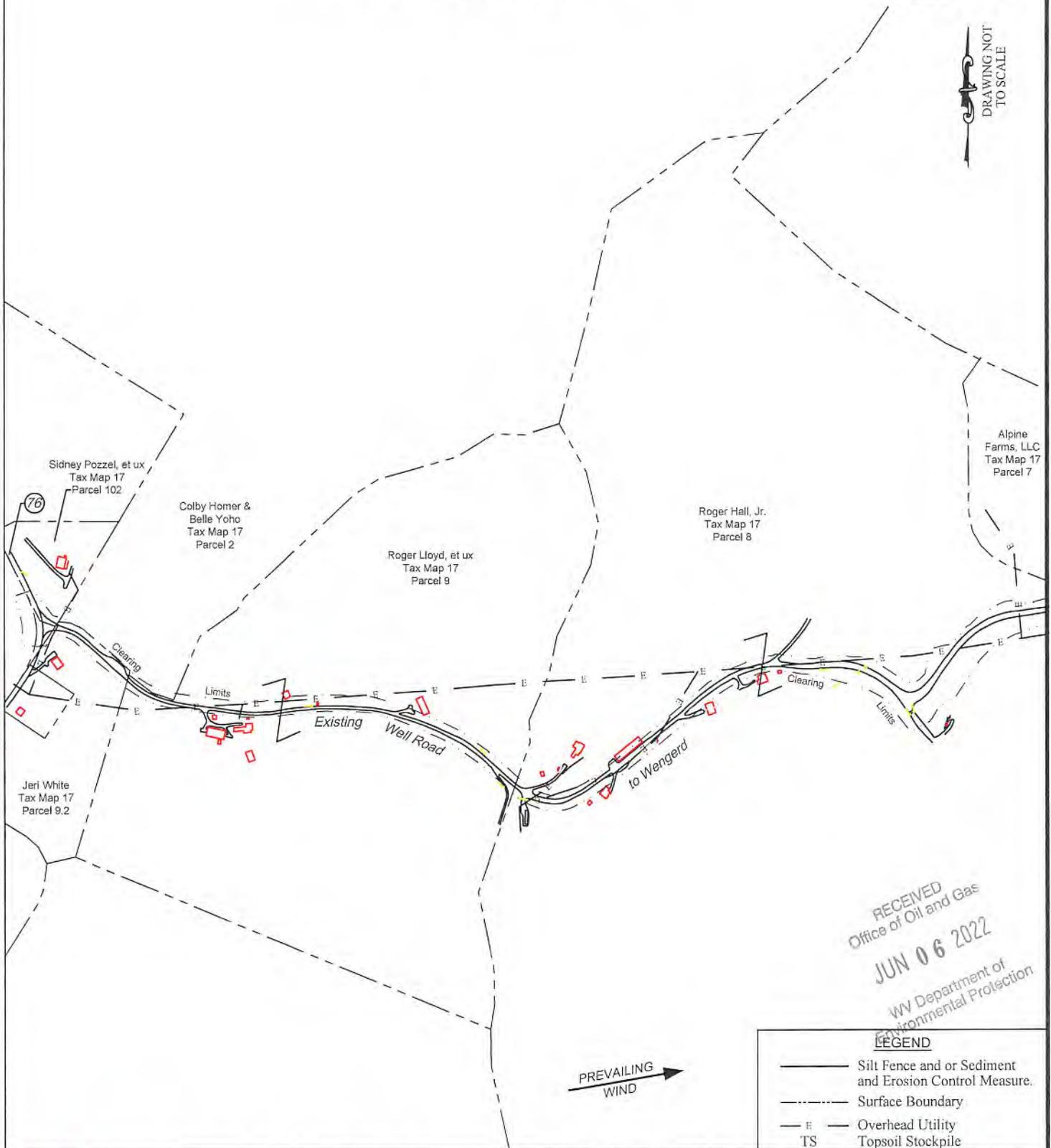
PREPARED FOR:
TUG HILL OPERATING, LLC
380 SOUTHPONTE BLVD
SUITE 200
CANDONSBURG, PA 15317

DATE	SCALE
03-16-2022	NONE

PROPOSED PENDLETON N16-HU

Exhibit 1
Page 2 of 2

DRAWING NOT
TO SCALE



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

LEGEND	
	Silt Fence and or Sediment and Erosion Control Measure.
	Surface Boundary
	Overhead Utility
	Topsoil Stockpile

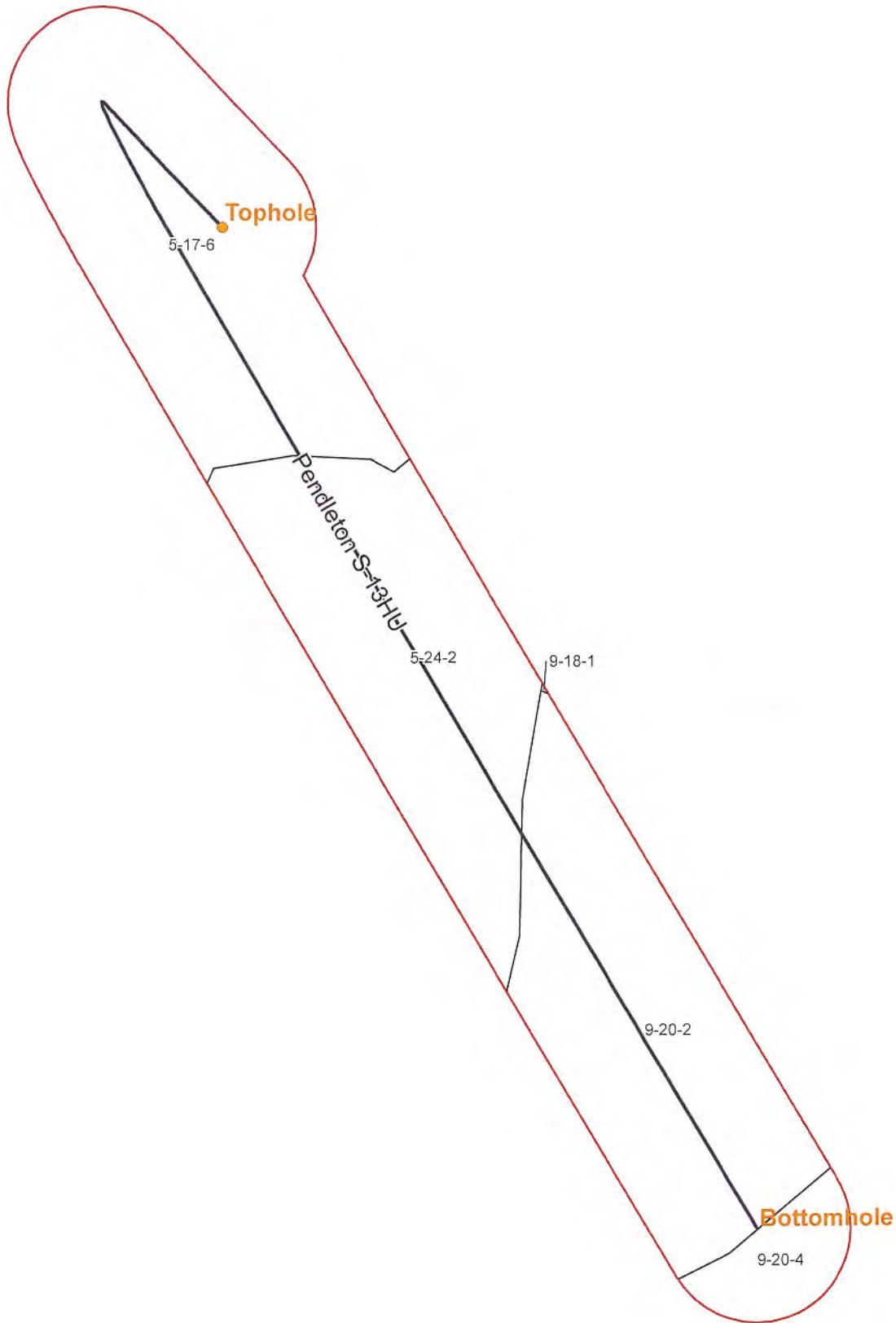
Jackson Surveying Inc.
2413 E. Pike St.
Clarksburg, WV 26301
Phone: 304-823-5851

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

08/26/2022

Pendleton S-13HU



Coordinate System: NAD 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 Spheroid: GRS 1980
 Prime Meridian: Greenwich
 Central meridian: 84.0000
 Scale factor: 0.9996
 False Easting: 500000
 Units: Feet US

CONFIDENTIAL



— Well of Interest
 □ 500' Buffer

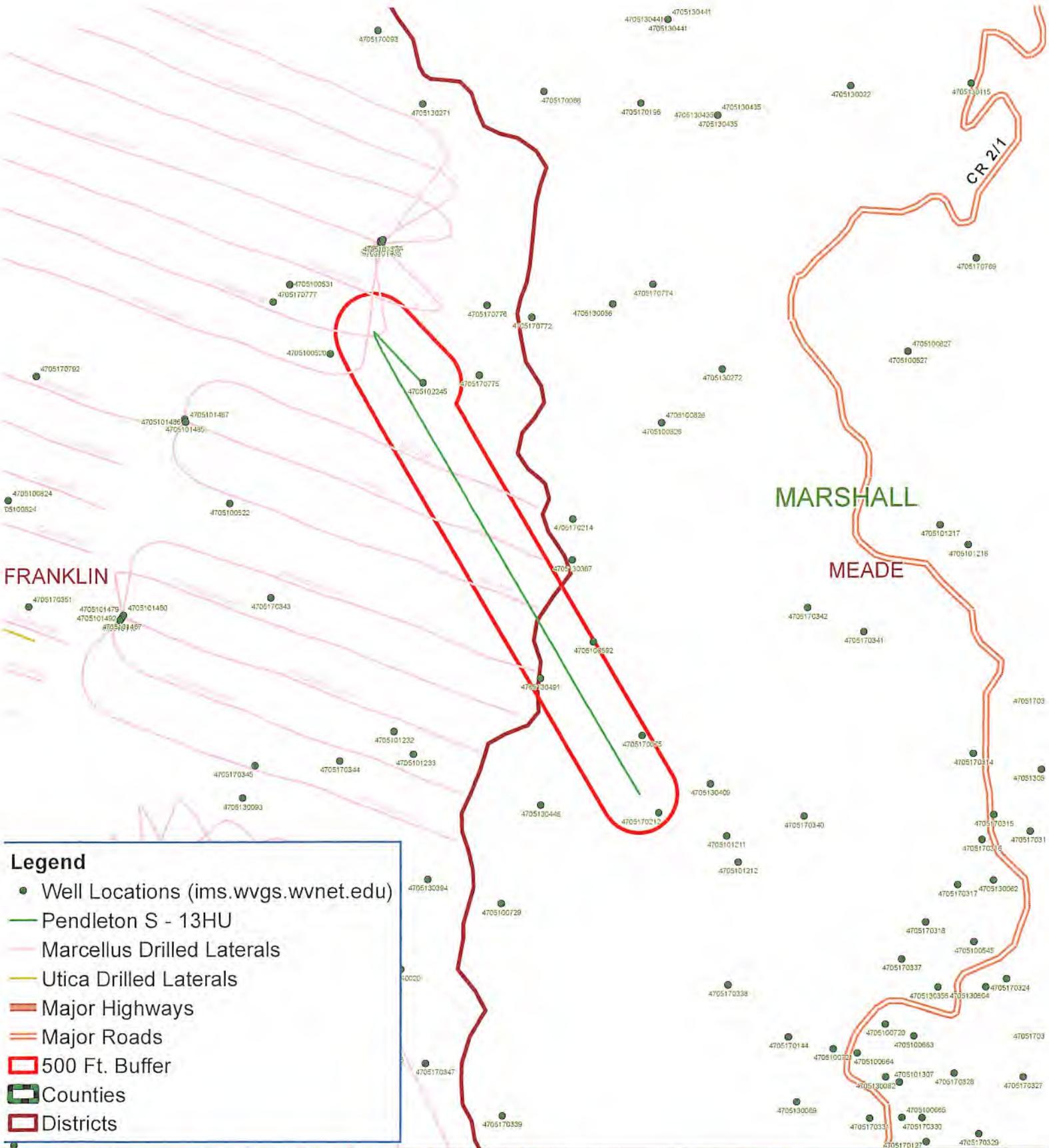
Pendleton S-13HU
 Operators within 500 Feet of Well Borehole



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

COUNTY	DISTRICT	TMP	MINERAL OWNER/LESSEE	OWNER
MARSHALL	FRANKLIN	5-17-6	TH EXPLORATION II, LLC	1320 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	FRANKLIN	5-24-2	TH EXPLORATION II, LLC	1321 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-18-1	TH EXPLORATION, LLC	1322 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-2	TH EXPLORATION, LLC	1323 S. University Dr. Suite 500 FT Worth, TX 76107
MARSHALL	MEADE	9-20-4	TH EXPLORATION, LLC	1325 S. University Dr. Suite 500 FT Worth, TX 76107

08/26/2022



- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
 - Pendleton S - 13HU
 - Marcellus Drilled Laterals
 - Utica Drilled Laterals
 - Major Highways
 - Major Roads
 - 500 Ft. Buffer
 - Counties
 - Districts



Pendleton S - 13HU Franklin District Marshall County, WV



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

Map Prepared by:

08/26/2022

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 (7/25/2022) 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
4705102245	Tug Hill Operating, LLC.	11787' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705100592	Frohnafel, Mary Jean	3702' TVD	Bayard	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	
4705130491	Manufacturers Light & Heat Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. Well is plugged.	Well was plugged 9/1/1967.
4705170075	South Penn Oil (S. Penn Nat. Gas)	2875' TVD	Gordon	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	

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

WV Geological & Economic Survey:

Well: County = 51 Permit = 02245

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

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_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-9HU	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 = 00592

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

Location Information: [View Map](#)

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

There is no Bottom Hole Location data for this well

Owner Information:

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

Completion Information:

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

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEFF	G_AFT	O_BEFF	O_AFT	WATER_QNTY
4705100592	12-/1911	Pay	Gas	Vertical	2819	Gordon	2834	Gordon	0	0			

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100592	Columbia Gas Transmission Corp.	1980	3,249	276	271	257	275	268	127	0	0	574	293	308	600
4705100592	Columbia Gas Transmission Corp.	1981	1,917	309	314	288	324	314	94	0	0	0	0	0	274
4705100592	Columbia Gas Transmission Corp.	1982	1,516	316	313	278	237	141	231	0	0	0	0	0	0
4705100592	Columbia Gas Transmission Corp.	1983	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100592	Columbia Gas Transmission Corp.	1984	320	28	55	52	28	27	28	53	20	0	0	2	27
4705100592	Columbia Gas Transmission Corp.	1985	438	110	55	25	28	27	28	27	28	28	27	28	27
4705100592	Columbia Gas Transmission Corp.	1986	1,578	28	28	25	28	27	55	107	28	28	1,089	103	52
4705100592	Columbia Gas Transmission Corp.	1987	1,469	28	110	100	110	27	110	107	110	0	107	553	107
4705100592	Columbia Gas Transmission Corp.	1988	994	103	110	103	110	107	110	107	110	28	53	28	25
4705100592	Columbia Gas Transmission Corp.	1989	1,360	28	110	140	110	139	133	46	47	46	41	434	86
4705100592	Columbia Gas Transmission Corp.	1990	1,631	88	437	392	103	49	100	100	104	104	51	53	50
4705100592	Columbia Gas Transmission Corp.	1991	1,631	88	437	392	103	49	100	100	104	104	51	53	50
4705100592	Columbia Natural Resources, Inc. (CNR)	1992	333	86	0	77	82	80	8	0	0	0	0	0	0
4705100592	Columbia Natural Resources, Inc. (CNR)	2002	60	5	5	5	5	5	5	5	5	5	5	5	5
4705100592	Frohnapef, Gerald A.	2008	4,383	171	158	270	443	578	493	526	542	228	440	331	203
4705100592	Frohnapef, Gerald A.	2009	4,617	225	182	321	465	410	520	582	451	404	409	417	231
4705100592	Frohnapef, Gerald A.	2010	4,041	201	211	278	423	462	438	470	473	175	391	349	170
4705100592	Frohnapef, Gerald A.	2011	6,056	146	120	0	485	727	723	776	553	763	608	515	640
4705100592	Frohnapef, Gerald A.	2014	5,730	327	88	178	472	646	649	650	585	681	564	431	459
4705100592	Frohnapef, Gerald A.	2016	4,139	380	138	14	130	285	271	72	552	577	651	542	527
4705100592	Frohnapef, Mary Jean	2018	5,338	542	457	402	639	461	465	316	364	465	508	278	441

WV Geological & Economic Survey:

Well: County = 51 Permit = 30491

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

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705130491	Marshall	30491	Franklin	Wileyville	Littleton	39.742973	-80.728461	523265.2	4399265.6

There is no Bottom Hole Location data for this well

Owner Information:

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

Completion Information:

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

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705130491	9/1/1967	0

WV Geological & Economic Survey:

Well: County = 51 Permit = 70075

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

Location Information: [View Map](#)

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

There is no Bottom Hole Location data for this well

Owner Information:

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

Completion Information:

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

Pay/Show/Water Information:

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

WV Geological & Economic Survey:

Well: County = 51 Permit = 70212

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

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170212	Marshall	70212	Meade	Wileyville	Littleton	39.738188	-80.722982	523736.3	4398736

There is no Bottom Hole Location data for this well

Owner Information:

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

Completion Information:

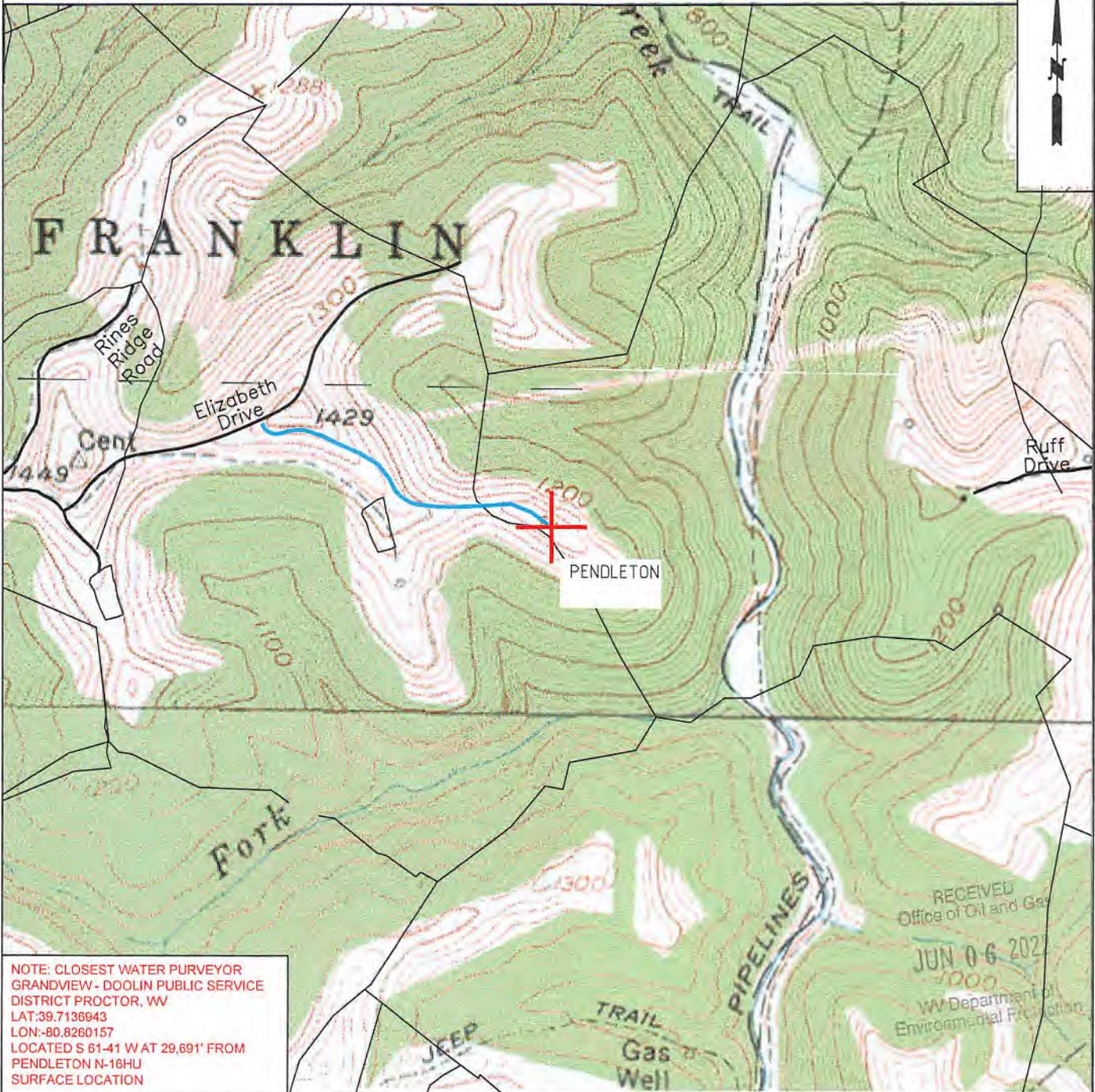
API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF
4705170212	-/-	-/-						unclassified	unclassified	not available	unknown	unknown							

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 SOUTHPONTE BLVD SUITE 200 CANONSBURG, PA 15317		GLEN EASTON 7.5'	PENDLETON
			SCALE:	DATE:
			1" = 1000'	DATE: 03-16-2022



TUG HILL
OPERATING

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

Well Name: Pendleton S-13HU

Pad Name: Pendleton

County: Marshall

Signature
5/26/22
ADK

UTM (meters), NAD83, Zone 17

Northing: 4,400,424.23

Easting: 522,796.03

**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)

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

24-HOUR EMERGENCY PHONE NUMBER

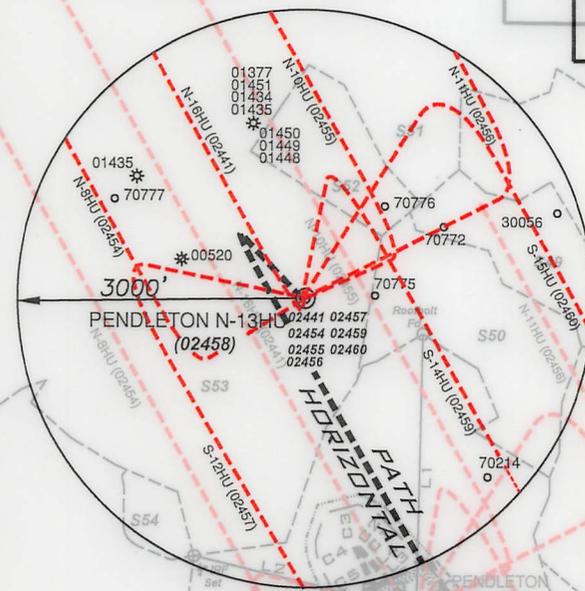
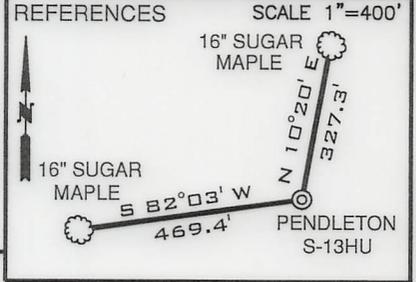
(800) 921-9745

08/26/2022

PENDLETON LEASE WELL S-13HU 186.1712± ACRES

LINE	BEARING	DISTANCE
L1	N 01°28' E	2,856.99'
L2	N 76°16' W	2,376.75'
L3	N 43°19' W	439.46'
L4	N 42°40' W	453.37'

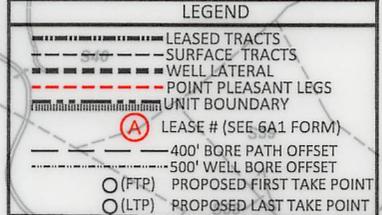
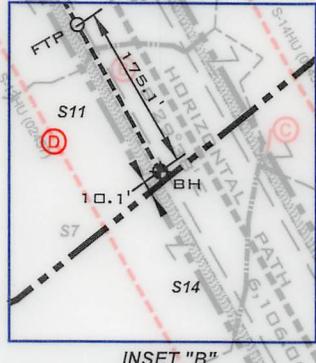
TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°45'00"



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

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

- NOTES
- BORE PATH BASED ON GRID NORTH.
 - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
 - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MAY, 2022. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
 - ALL DEEP WELLS SHOWN ON THIS PLAT.
 - L.P.1 AND (L.T.P.) ARE AT THE SAME POINT.
 - THE FTP IS OVER 500' PERPENDICULAR TO THE BOUNDARY.
 - BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147



SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,424.23
E) 522,796.06

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

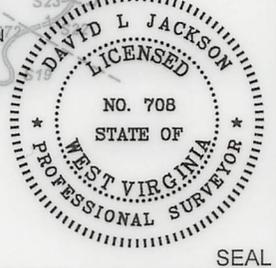
BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,398,811.00
E) 523,658.73

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 45°20' E	24.90'	99.48'	24.97'
C2	S 75°46' W	7.06'	3.72'	9.31'
C3	S 12°22' E	22.61'	80.59'	22.68'
C4	S 23°13' E	111.60'	910.94'	111.67'
C5	S 27°04' E	313.36'	5902.82'	313.39'
C6	S 28°58' E	341.49'	13570.85'	341.50'

FILE NUMBER _____
DRAWING NUMBER: PENDLETON_S-13HU REV 5
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY 1/200
PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
GRADE GPS

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

David L Jackson



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

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

DATE: AUGUST 3, 2022
OPERATORS WELL NO. PENDLETON S-13HU
API WELL NO. 47-051-02458
STATE WV COUNTY MARSHALL PERMIT _____
LOCATION ELEVATION 1271.82' WATERSHED (HUC 10) FISH CREEK
DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE GLEN EASTON 7.5' LEASE NUMBER SEE WW-6A1 Form

P.S. David L Jackson
SURFACE OWNER ALPINE FARM, LLC ACREAGE 249.07
OIL & GAS ROYALTY OWNER ELI A. & FANNIE MAE WENGERD, ET AL LEASE ACREAGE 249.07
PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION _____
PERFORATE NEW FORMATION _____ OTHER PHYSICAL CHANGE (SPECIFY) _____
TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,785' TMD: 18,163'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561

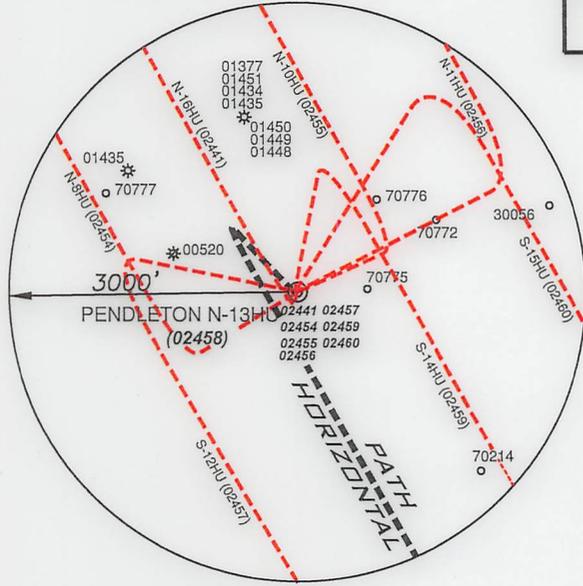
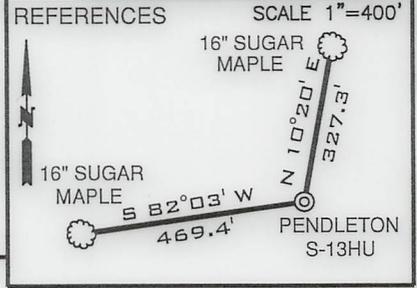
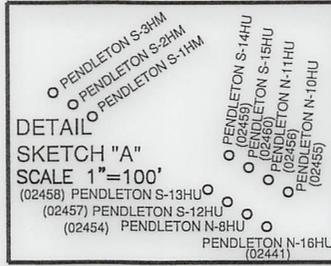
08/26/2022

COUNTY NAME PERMIT

**PENDLETON LEASE
WELL S-13HU
186.1712± ACRES**

LINE	BEARING	DISTANCE
L1	N 01°28' E	2,856.99'
L2	N 76°16' W	2,376.75'
L3	N 43°19' W	439.46'
L4	N 42°40' W	453.37'

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

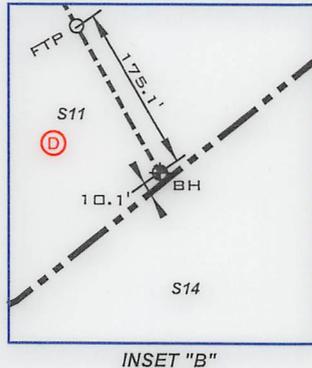


Deep Wells Within 2400' of Proposed Well's Surface Location and/or 500' of Well Lateral

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

NOTES

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
- OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MAY, 2022. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
- WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
- ALL DEEP WELLS SHOWN ON THIS PLAT.
- L.P.1 AND (L.T.P.) ARE AT THE SAME POINT.
- THE FTP IS OVER 500' PERPENDICULAR TO THE BOUNDARY.
- BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILDCOTE, P.C. FILE 0058304.0401147



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

SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,400,424.23 E) 522,796.06
LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS N) 4,400,412.60 E) 522,711.98
BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,398,811.00 E) 523,658.73

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 45°20' E	24.90'	99.48'	24.97'
C2	S 75°46' W	7.06'	3.72'	9.31'
C3	S 12°22' E	22.61'	80.59'	22.68'
C4	S 23°13' E	111.60'	910.94'	111.67'
C5	S 27°04' E	313.36'	5902.82'	313.39'
C6	S 28°58' E	341.49'	13570.85'	341.50'

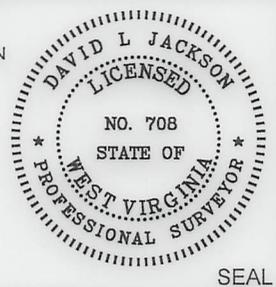
FILE NUMBER _____
DRAWING NUMBER: **PENDLETON_S-13HU REV 5**
SCALE: **1" = 2000'**
MINIMUM DEGREE OF ACCURACY: **1/200**
PROVEN SOURCE OF ELEVATION: **SUBMETER MAPPING**
GRADE GPS

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

P.S. 708

David L Jackson

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



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

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

LOCATION ELEVATION 1271.82' WATERSHED (HUC 10) FISH CREEK

DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE GLEN EASTON 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER ALPINE FARM, LLC ACREAGE 249.07

OIL & GAS ROYALTY OWNER ELI A. & FANNIE MAE WENGERD, ET AL LEASE ACREAGE 249.07

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

TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,785' TMD: 18,163'

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

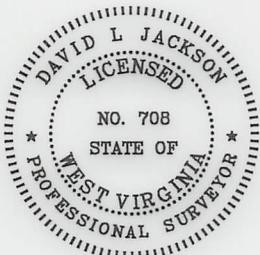
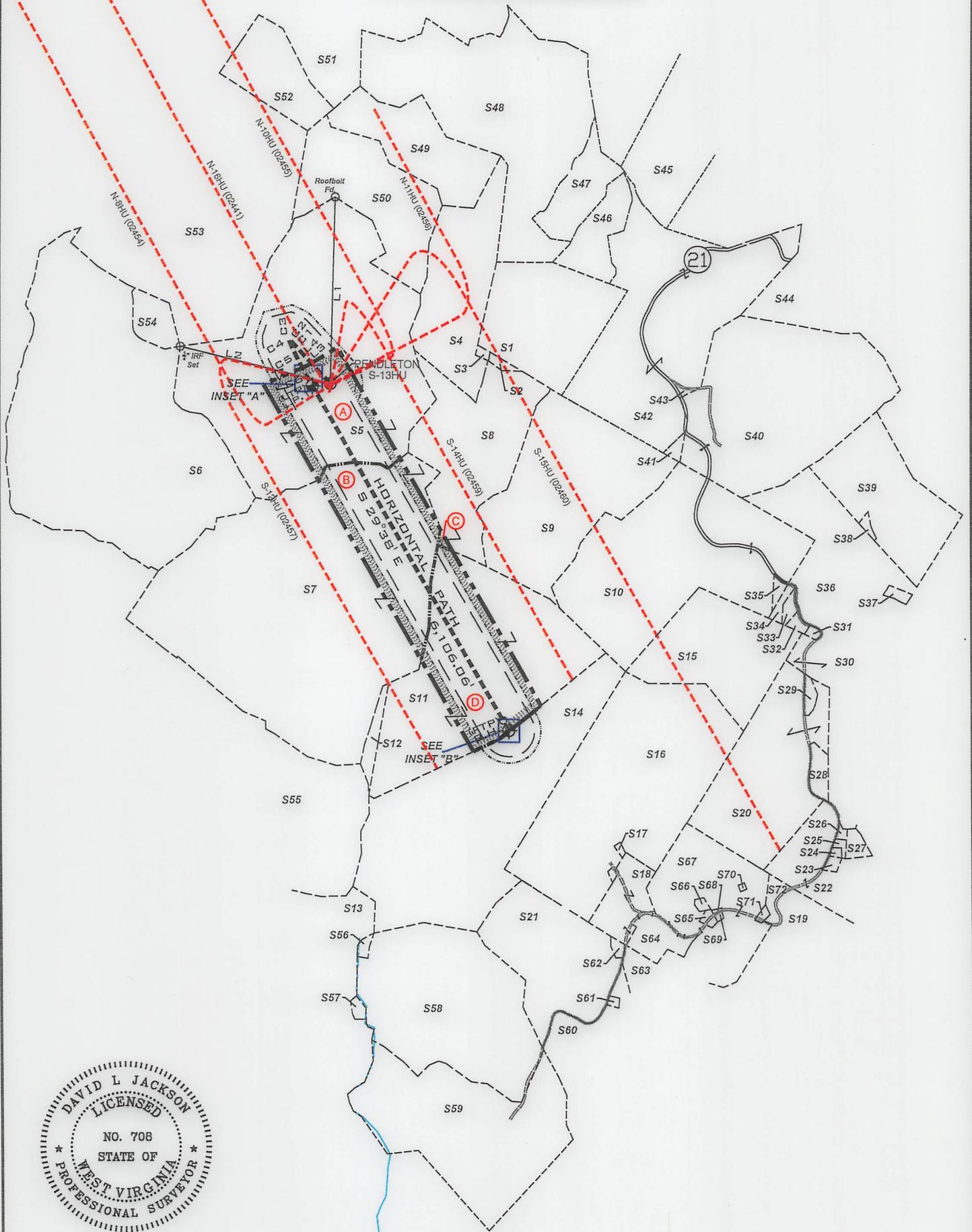
08/26/2022

COUNTY NAME
PERMIT

PENDLETON LEASE WELL S-13HU 186.1712± ACRES

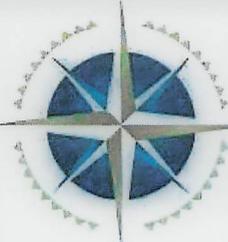
LEGEND

- LEASE TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- (A) LEASE # (SEE GA1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT



P.S. 708 *David L Jackson*

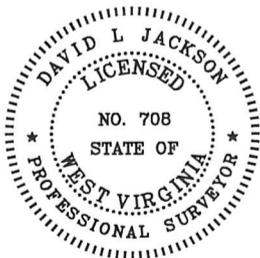
08/26/2022

	OPERATOR'S	WELL PLAT	
	WELL #:	PENDLETON S-13HU	PAGE 2 OF 4
	DISTRICT:	Franklin	DATE: 08/03/2022
	COUNTY:	Marshall	
	STATE:	WV	
API #:	047-051-02458		

**PENDLETON LEASE
WELL S-13HU
186.1712± ACRES**

Parcels within Unit Boundary				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
A	S5	05-17-06	ALPINE FARM LLC	249.07
B	S7	05-24-02	ROY FRIEND YOHO	316.80
C	S8	09-18-01	THERESA MAE LONG THOMAS ET AL	58.66
D	S11	09-20-02	MICHAEL JAMES PEKULA ET UX	138
Adjoining Parcels				
	Number	Tax Map -Parcel	Surface Owner	Acres
	S1	09-16-04	BERTHA L KLUG	73.39
	S2	09-18-03	BERTHA L KLUG	1.33
	S3	09-18-04	BERTHA L KLUG	1
	S4	09-16-03	BERTHA L KLUG	71
	S6	05-17-08	ROGER H HALL JR	257.50
	S9	09-18-02	BRIAN T KLUG	85
	S10	09-18-18	JAMES D. FROHNAPFEL ET UX	154.03
	S12	09-20-01	MICHAEL JAMES PEKULA ET UX	5
	S13	05-25-03	USA TIMBER AND LAND AUCTIONS LLC	181.548
	S14	09-20-04	SHELLIE J PEKULA	171
	S15	09-20-06	KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST	64.74
	S16	09-20-05	GERALD A ET UX FROHNAPFEL - TRUST	164.143
	S17	09-20-5.2	WHEELING CATHOLIC DIOCESE	.447
	S18	09-22-04	WHEELING CATHOLIC DIOCESE	20
	S19	09-20-17	MARTIN L KLUG	49.78
	S20	09-20-07	SONNY M & LINDA L TAGG	72.828
	S21	09-22-3.2	MARK H MILLER	75
	S22	09-20-9	JOHN G JR & MARILYN S WEIGAND	48.131
	S23	09-20-9.4	HELEN B SHUTLER - LIFE	.78
	S24	09-20-10	JAMES MILLER ET UX	.50
	S25	09-20-9.3	JAMES MILLER ET UX	.80
	S26	09-20-9.5	JAMES MILLER ET UX	.666
	S27	09-20-9.6	JAMES MILLER ET UX	2.919
	S28	09-20-7.1	DAVID PAUL FROHNAPFEL	4.930
	S29	09-20-7.2	MICKEY R DULANEY JR	2.242
	S30	09-18-15	KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST	29.5
	S31	09-18-15.1	NICHOLAS FROHNAPFEL ET UX	1.50
	S32	09-18-16.1	NICHOLAS C FROHNAPFEL ET UX	1.50
	S33	09-18-16.3	JOHN F WAYMAN EST	1.818
	S34	09-18-16.2	JOHN F WAYMAN EST	2.17
	S35	09-18-18.1	JOHN F WAYMAN EST	1.1
	S36	09-18-16	ROBERT F VILLERS	62.893
	S37	09-18-16.4	ROBERT F & APRIL L VILLERS	1.50
	S38	09-18-17.1	VINCENT JOHN WAYMAN	1.010
	S39	09-18-17	VINCENT J WAYMAN ET UX	68.99
	S40	09-18-06	LOUIS FOX	141.75
	S41	09-18-5.1	LOUIS FOX	1.583
	S42	09-18-05	BERTHA L KLUG	122.437
	S43	09-18-5.2	LOUIS FOX	0.933
	S44	09-16-20	LOUIS T FOX	83.174
	S45	09-16-11	JAMES G RICHMOND	67.88
	S46	09-16-07	BERTHA L KLUG	26.105
	S47	09-16-06	ROBERT M & NANCY R McCARDLE	31
	S48	09-16-05	ROBERT M & NANCY R McCARDLE	133
	S49	09-16-02	ROBERT M & NANCY R McCARDLE	53.40
	S50	05-17-05	ALPINE FARM LLC	76.96
	S51	09-16-01	ROBERT M & NANCY R McCARDLE	46.80
	S52	05-16-13	DAVID ALAN RUBCICH ET AL	33.31
	S53	05-17-04	ALPINE FARM LLC	212
	S54	05-17-07	ALPINE FARM LLC	10.8
	S55	05-24-3.3	CHARLES E BERTRAND & DEBRA K BERTRANO	120.43
	S56	09-22-1.1	CNG TRANSMISSION CO	1.43
	S57	05-25-3.2	CONSOL ENERGY HOLDINGS LLC XVI	1.43
	S58	09-22-01	LOUIS T FOX	124.57
	S59	09-22-02	MARK H J MILLER ETAL	124.80
	S60	09-22-03	MARK HILARY MILLER	63.73
	S61	09-22-3.3	MARY C WRIGHT	.617
	S62	09-22-3.1	MARGARET ANN MYSLIWIEC - LIFE	1.1
	S63	09-20-22.6	MARY MARGARET STINE	0.1185
	S64	09-22-5.1	HILARY G MILLER EST	10.62
	S65	09-20-22.7	JOAN L KLUG	1.06
	S66	09-20-22.8	JOAN LOUISE KLUG	.80
	S67	09-20-22	JOAN L KLUG	70.2398
	S68	09-20-22.4	JOAN L KLUG	0.165
	S69	09-20-22.5	JOAN L KLUG	.3767
	S70	09-20-22.3	GRANDVIEW-DOOLIN PSD	0.23
	S71	09-20-22.1	MARY MARGARET STINE	
	S72	09-20-21	MARY MARGARET STINE	3.25

08/26/2022



P.S. 708 *David L Jackson*



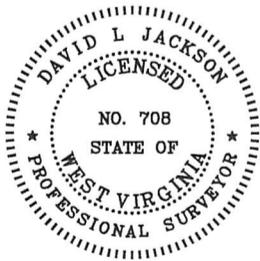
TUG HILL
OPERATING

OPERATOR'S
WELL #: PENDLETON S-13HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 047-051-02458

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

**PENDLETON LEASE
WELL S-13HU
186.1712± ACRES**

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	DEED BOOK/PAGE	
10*14114	5-17-6	A	ELI & FANNIE MAE WENGERD	671	323
10*14024	5-24-2	B	ROY FRIEND & DARLENE J YOHO, ET AL	665	508
10*28262	9-18-1	C	JAMES W MESSEY ET AL	67	487
10*39661	9-20-2	D	SHELLIE J & MICHAEL PEKULA	1126	542



P.S. 708 *David L Jackson*

08/26/2022



TUG HILL
OPERATING

OPERATOR'S
WELL #: PENDLETON S-13HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 047-051-02458

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

**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 *Amy L. Morris*
 Its: Permitting Specialist - Appalachia Region

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	DEED BOOK/PAGE		ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT
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	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14024	5-24-2	B	ROY FRIEND & DARLENE J YOHO	GASTAR EXPLORATION USA INC	1/8+	665	508	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14025	5-24-2	B	NANCY CAROL GIBSON	GASTAR EXPLORATION USA INC	1/8+	697	87	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14026	5-24-2	B	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	697	91	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14027	5-24-2	B	HILDA R CONNER RUNYAN	GASTAR EXPLORATION USA INC	1/8+	697	89	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14028	5-24-2	B	WILDA L CLARK	GASTAR EXPLORATION USA INC	1/8+	697	83	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	DEED BOOK/PAGE		ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT
10*14029	5-24-2	B	MARY MAXINE CLARKE	GASTAR EXPLORATION USA INC	1/8+	697	85	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc with and into Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*39661	9-20-2	D	SHELLIE J & MICHAEL PEKULA	TH EXPLORATION LLC	1/8+	1126	542	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	DEED BOOK/PAGE		ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	
10*28262	9-18-1	C	JAMES W MESSEY ET AL	ECLIPSE OIL COMPANY	1/8+	67	487	Eclipse Oil ompany to C.H. Stolzebach: DB	Wheeling Natural Gas Company to Manufacturers Light & Heat Company: DB	The Manufacturers Light & Heat Company to A.M. Snider & Duane M Snider dba Hundred Gas Company: AB	AM Snider, Duane M Snider & Kathleen Rinehart dba Hundred Gas Company to Hundred Gas Company: DB	Hundred Gas Company to Carl D Perkins: DB	Amendment - Hundred Gas Company to Carl D Perkins: DB	Carl D Perkins to Perkins Oil and Gas Inc: DB	Perkins Oil & Gas Inc to TH Exploration LLC: AB 45/87

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

ASSIGNMENT, BILL OF SALE AND CONVEYANCE

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

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

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

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

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

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

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



August 3, 2022

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

RE: Pendleton S-13HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

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

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

5-17-6
ALPINE
FARM, LLC

1 inch: 550 feet

Pad Area Boundary

0 162.5 325 650
Feet



NOTE: THE APPROVED SITE LOCATION FOR THE SURFACE SITE, ACCESS ROAD, BODY OF WATER AND THE LOCATION OF THE PROPERTY FOR MINERAL RIGHTS ADDITIONAL CONSENTS ARE REQUIRED. THESE FACTS LOCATIONS MAY VARY AS THE COUNTY IS NOT AN EQUAL OPPORTUNITY JURISDICTION. PROPERTY TAX PARCELS SHALL BE AS SHOWN AND DEPICTED IN THE DEED AS FILED IN THE COUNTY RECORDS AND THE APPROVED SITE LOCATION FOR THE SURFACE SITE, ACCESS ROAD AND BODY OF WATER SHALL BE AS SHOWN AS ACTUALLY CONSTRUCTED.

"PLAT"

ALPINE FARM, LLC
Marshall, WV

Date: 7-1-19
Name: Elieborgad
Name: Fannie Mae Mengard



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

08/26/2022



TUG HILL

4705102458

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-13HU

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-13HU 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-hilop.com.

Sincerely,

Amy L. Morris
Permitting Specialist – Appalachia Region

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

Date of Notice Certification: 06/01/2022

API No. 47- 051 - _____

Operator's Well No. Pendleton N-13HU

Well Pad Name: Pendleton

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Eastings:	<u>522,796.03</u>
County:	<u>Marshall</u>		Northing:	<u>4,400,424.23</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>Middle Fish Creek</u>			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
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Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

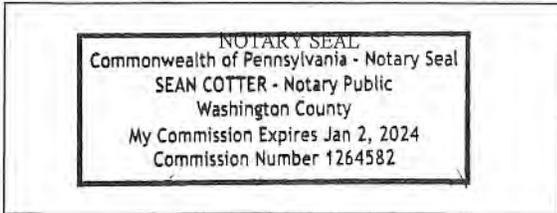
RECEIVED
Office of Oil and Gas

JUN 06 2022

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-hillop.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 depprivacyofficer@wv.gov.

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Office of Oil and Gas

JUN 06 2022

WV Department of
Environmental Protection
08/26/2022

WW-6A
(9-13)

API NO. 47- 051 -
OPERATOR WELL NO. Pendleton S-13HU
Well Pad Name: Pendleton

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: 6/1/2022 **Date Permit Application Filed:** 6/3/2022

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: _____

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

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

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

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 OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: No water purveyors within 2000'
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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

08/26/2022

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 S-13HU
Well Pad Name: Pendleton

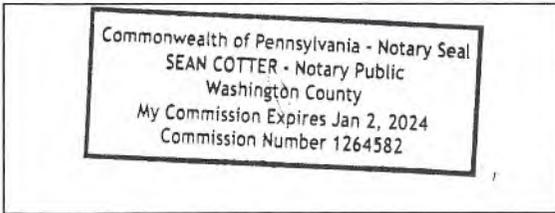
Notice is hereby given by:

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

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 deprivacyofficer@wv.gov.



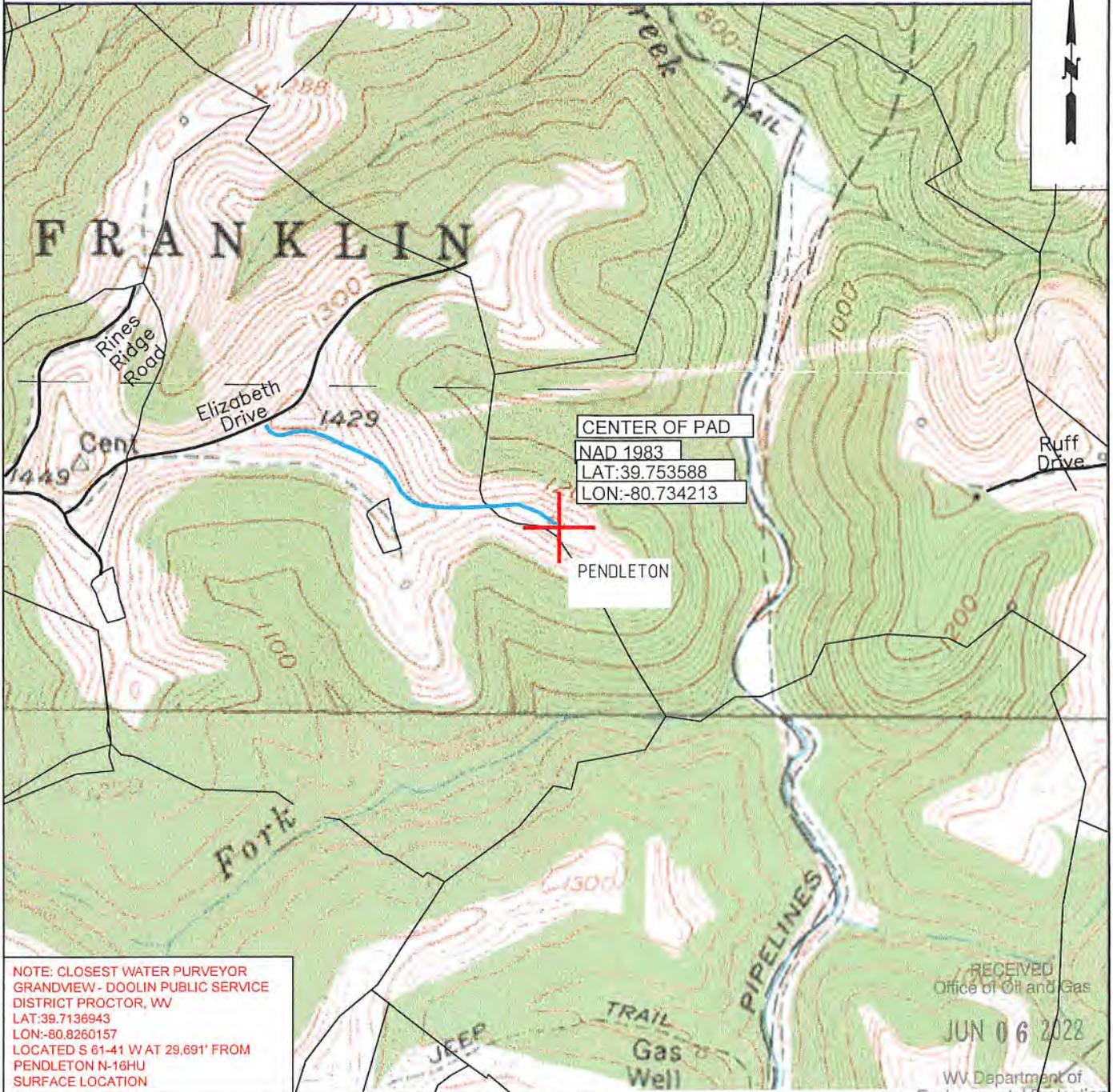
Subscribed and sworn before me this 1 day of June, 2022.
[Signature]

Notary Public
My Commission Expires 1/2/2024

RECEIVED
Office of Oil and Gas
JUN 06 2022
WV Department of
Environmental Protection
08/26/2022

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

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

 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

08/26/2022

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: Gasey 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

RECEIVED
Office of Oil and Gas

JUN 06 2022

WV Department of
Environmental Protection

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.

08/26/2022

WW-6A5
(1/12)

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>522,796.03</u>
County:	<u>Marshall</u>		Northing:	<u>4,400,424.23</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: amorris@tug-hill.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.

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Office of Oil and Gas

JUN 06 2022

08/26/2022
WV Department of
Environmental Protection



4705102458

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

November 22, 2021

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 S-13HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2010-0110 which has been transferred 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,

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

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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Pendleton Wells

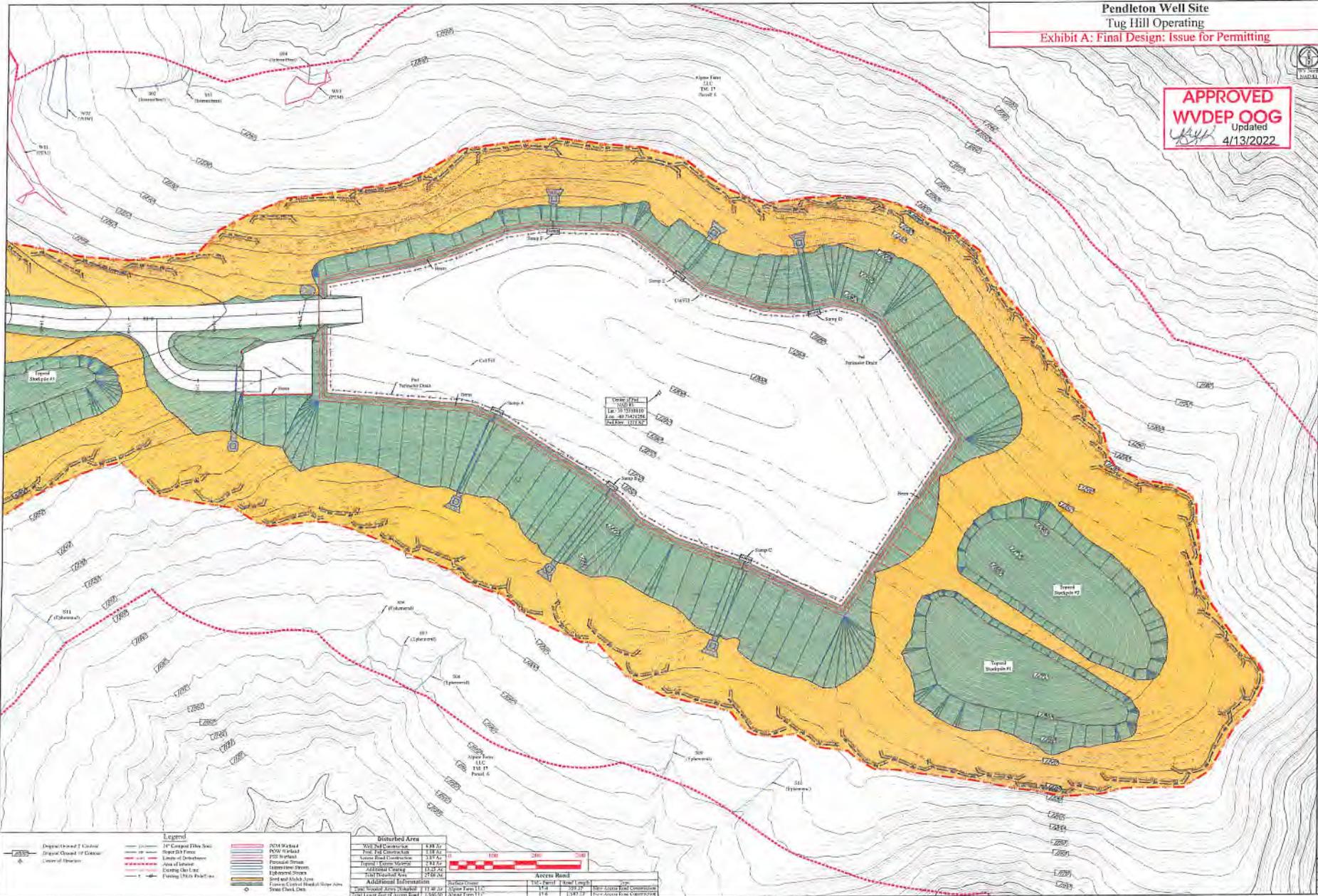
PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS# 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

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JUN 06 2022

WV Department of
Environmental Protection

APPROVED
WVDEP OOG
Updated
4/13/2022



Legend

Dependent 7' Contour	14" Concrete Filter Box	DCM Washed
Dependent 10' Contour	Super 200 Filter	PSI Washed
Contour Interval	Line of Construction	PSI Washed
	Area of Interest	12" Concrete Storm
	Existing Chute	Soil and Ashok Zone
	Existing Utility Right-of-Way	Franklin County Health Dept. Area
	State Check Dam	

Disturbed Area

DCM Washed	13,982.45
PSI Washed	1,184.42
12" Concrete Storm	1,184.42
Soil and Ashok Zone	1,184.42
Franklin County Health Dept. Area	1,184.42
Total Disturbed Area	18,620.53

Aspen Road

Aspen Road	11.0	11.0	11.0
Aspen Road	11.0	11.0	11.0
Aspen Road	11.0	11.0	11.0

TUG HILL OPERATING
 THIS DOCUMENT PREPARED FOR TUG HILL OPERATING
 Key Surveys
 Pendleton Well Site
 Franklin District
 Marshall County, WV
 Date: 04/13/2022
 Scale: As Shown
 Designed by: ZS
 For use:
 Sheet 8 of 20