



west virginia department of environmental protection

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

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

Thursday, April 21, 2022
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for PENDLETON N-16HU
47-051-02441-00-00

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.

A blue ink signature of James A. Martin is written over the text of his name and title.

James A. Martin
Chief

Operator's Well Number: PENDLETON N-16HU
Farm Name: ALPINE FARM, LLC
U.S. WELL NUMBER: 47-051-02441-00-00
Horizontal 6A: New Drill
Date Issued: 4/21/2022

Promoting a healthy environment.

04/22/2022



west virginia department of environmental protection

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

Randall M. Albert, Chairman
dep.wv.gov

March 28, 2022

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

RE: Application for Deep Well Permit – API #47-051-02441

COMPANY: Tug Hill Operating, LLC

FARM: Alpine Farm, LLC Pendleton N-16HU

COUNTY: Marshall DISTRICT: Franklin QUAD: Glen Easton

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

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

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

Sincerely,

Susan Rose
Administrator

**Old Crow N-18HU 47-051-02123; Old Crow N-17HU 47-051-02122; Old Crow N-19HU 47-051-02190, Old Crow N-20HU 47-051-02191; Old Crow N-21HU 47-051-02335; Bryan N-14HU 47-051-02031; Bryan N-13HU 47-051-02030; Van Winkle N-16HU 47-051-02349; Van Winkle N-17HU 47-051-02350; Van Winkle S-20HU 47-051-02353; Van Winkle S-21HU 47-051-02354

04/22/2022

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.

04/22/2022

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

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

2) Operator's Well Number: Pendleton N-16HU 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

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,510' - 11,627', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,777'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 23,470'

11) Proposed Horizontal Leg Length: 11,462.29'

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

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

14) Approximate Saltwater Depths: 1,427'

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

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

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

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

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18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120' ✓	FT^3(CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	1,040'	1,040' ✓	1,674FT^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,800'	2,800' ✓	1,974FT^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,448'	10,448'	3,411FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	23,470'	23,470'	5,554FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,164'	
Liners							

MSJK 1/19/2022

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	20"	26"	.5	2,410	1,928	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

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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 (10,664'). 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 28,700,000 lb. proppant and 520,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

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

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

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

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*Note: Attach additional sheets as needed.

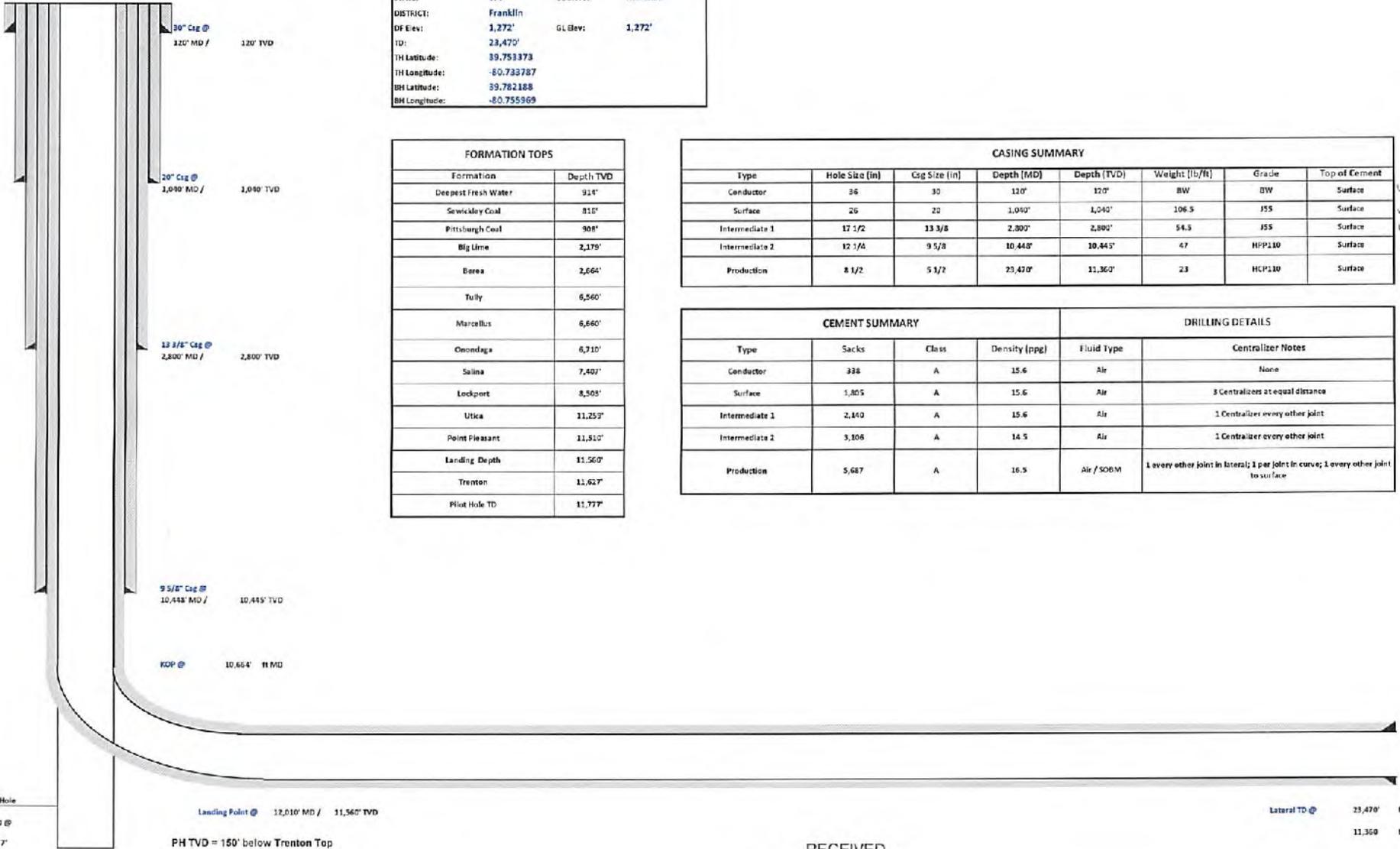


WELL NAME: Pendleton N-16HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Franklin
DE Elev: 1,272' **GL Elev:** 1,272'
ID: 23,470'
TH Latitude: 39.753373
TH Longitude: -80.733787
BH Latitude: 39.782188
BH Longitude: -80.755969

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	914'
Sewickley Coal	810'
Pittsburgh Coal	908'
Big Lime	2,379'
Berea	2,664'
Tully	6,560'
Marcellus	6,660'
Onondaga	6,710'
Salina	7,407'
Lockport	8,505'
Utica	11,253'
Point Pleasant	11,510'
Landing Depth	11,560'
Trenton	11,627'
Pilot Hole TD	11,777'

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	0W	Surface
Surface	26	22	1,040'	1,040'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,300'	2,800'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,448'	10,445'	47	HFP110	Surface
Production	8 1/2	5 1/2	23,470'	11,360'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	336	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	3,106	A	14.5	Air	1 Centralizer every other joint
Production	5,687	A	16.5	Air / SOB M	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



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Tug Hill Operating, LLC Casing and Cement Program

Pendleton N-16HU

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"	10,448'	CTS
Production	5 1/2"	HCP110	8 1/2"	23,470'	CTS

Cement

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

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

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

Intermediate 2: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 14.5 ppg, Y=1.35

Kick Off Plug: Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug

Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 16.5 ppg, Y = 1.03

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**Operators wihtin 500' Well Boreholes
Pendleton N - 16HU**

County	District	TMP	Mineral Owner/Lessor	Address
Marshall	Franklin	5-10-14	TH EXPLORATION II	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-11	TH EXPLORATION	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-17	TH EXPLORATION	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-18	TH EXPLORATION	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-19	TH EXPLORATION	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-5	TH EXPLORATION II	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-6	TH EXPLORATION	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-8	TH EXPLORATION	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-16-9	TH EXPLORATION	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-17-3	TH EXPLORATION II	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-17-4	TH EXPLORATION II	1320 S. University Blvd Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-17-6	TH EXPLORATION II	1320 S. University Blvd Suite 500 Fort Worth, TX 76107

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Well: Pendleton N-16 HU (slot D)
 Site: Pendleton
 Project: Marshall County, West Virginia NAD83 UTM 17N
 Design: rev2
 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: 14437039.589 Easting: 1715237.440 Latitude: 39.75337300 Longitude: -80.73370700

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



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

Magnetic Field
 Strength: 51695.5nT
 Dip Angle: 66.45°
 Date: 10/25/2021
 Model: IGRF2020



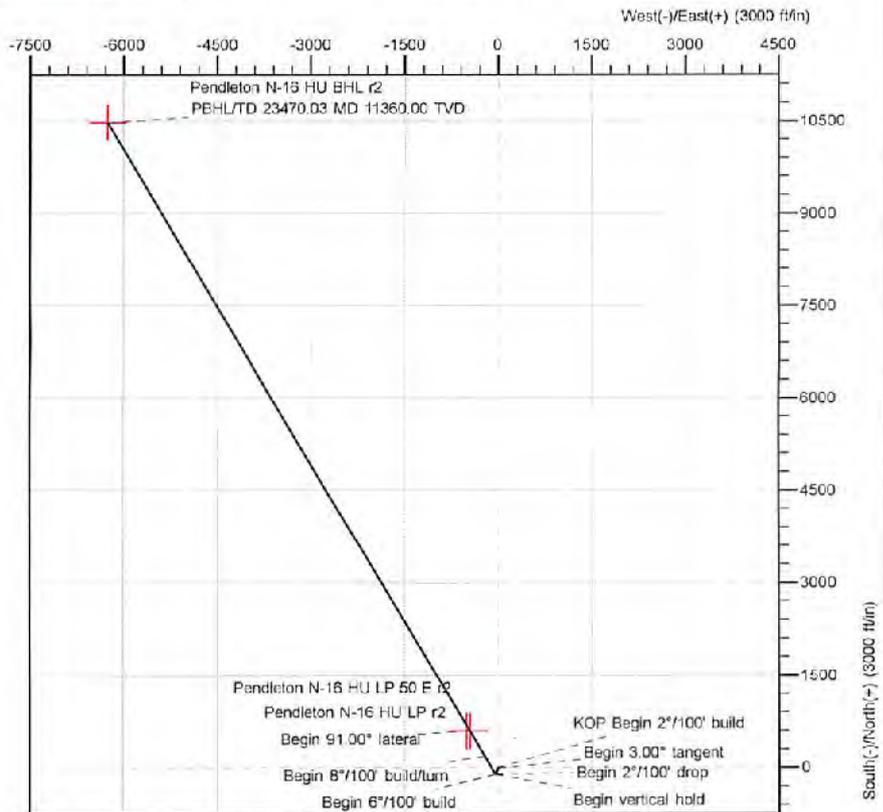
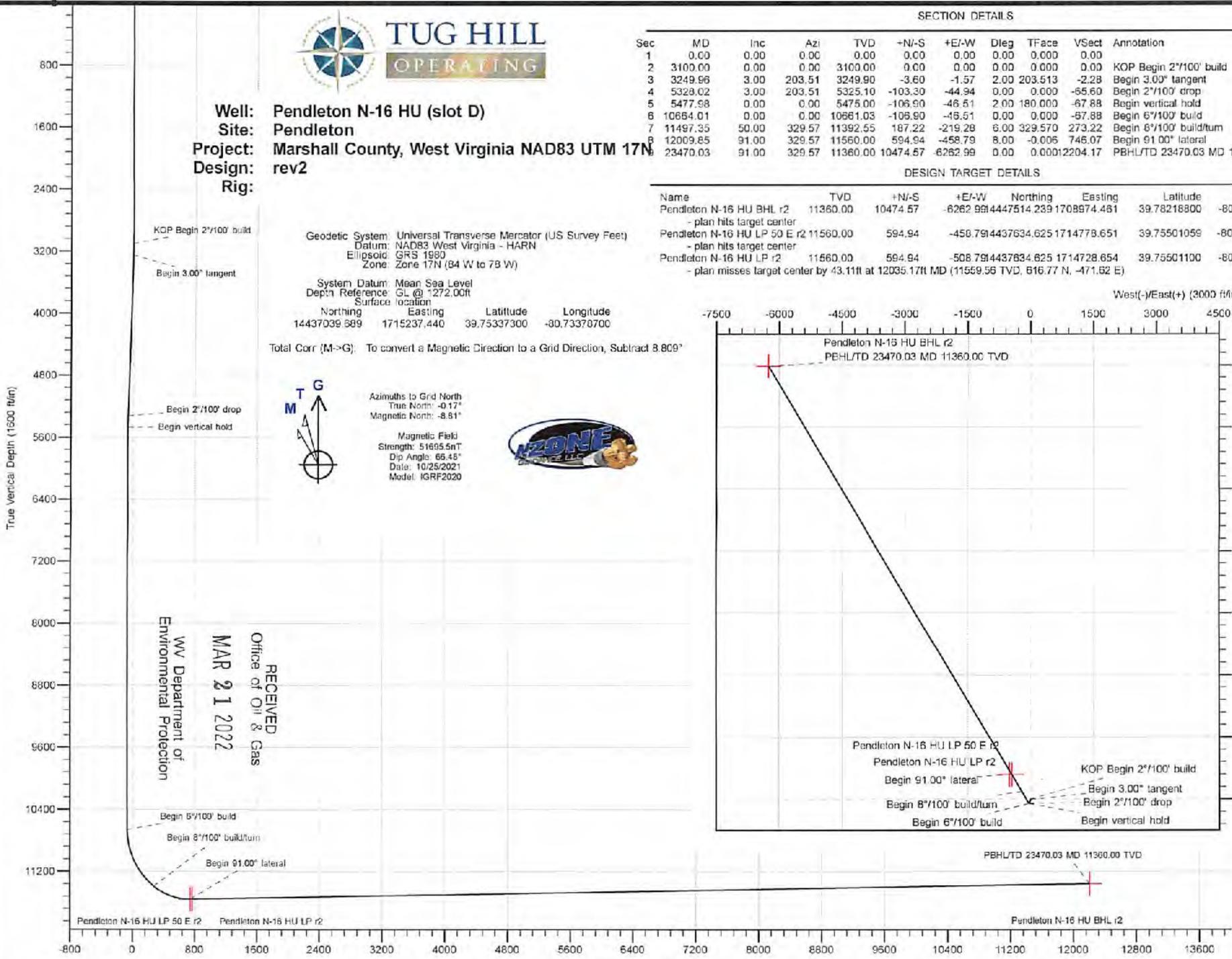
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2'/100' build
3	3249.96	3.00	203.51	3249.90	-3.60	-1.57	2.00	203.513	-2.28	Begin 3.00° tangent
4	5329.02	3.00	203.51	5325.10	-103.30	-44.94	0.00	0.000	-65.60	Begin 2'/100' drop
5	5477.98	0.00	0.00	5475.00	-106.90	-46.51	2.00	180.000	-67.88	Begin vertical hold
6	10664.01	0.00	0.00	10661.03	-108.90	-46.51	0.00	0.000	-67.88	Begin 6'/100' build
7	11497.35	50.00	329.57	11392.55	187.22	-219.29	6.00	329.570	273.22	Begin 8'/100' build/turn
8	12009.85	91.00	329.57	11560.00	594.94	-458.79	8.00	-0.006	746.07	Begin 91.00° lateral
9	23470.03	91.00	329.57	11360.00	10474.67	-6262.99	0.00	0.000	12204.17	PBHL/TD 23470.03 MD 11360.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
Pendleton N-16 HU BHL r2	11360.00	10474.67	-6262.99	14447514.239	1708974.481	39.78218800	-80.75596900
- plan hits target center							
Pendleton N-16 HU LP 50 E r2	11560.00	594.94	-450.79	14437634.625	1714778.651	39.75501059	-80.73541311
- plan hits target center							
Pendleton N-16 HU LP r2	11660.00	594.94	-508.79	14437834.625	1714728.654	39.75501100	-80.73559100
- plan misses target center by 43.11ft at 12035.17ft MD (11559.56 TVD, 616.77 N, -471.62 E)							

True Vertical Depth (1500 ft/m)



South(-)/North(+) (3000 ft/m)

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Planning Report - Geographic

Database:	DB_Dec2220_v18	Local Co-ordinate Reference:	Well Pendleton N-16 HU (slot D)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-16 HU (slot D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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:	14,437,086.243 usft	Latitude:	39.75350685
From:	Lat/Long	Easting:	1,715,175.249 usft	Longitude:	-80.73400775
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Pendleton N-16 HU (slot D)					
Well Position	+N/-S	0.00 ft	Northing:	14,437,039.689 usft	Latitude:	39.75337300
	+E/-W	0.00 ft	Easting:	1,715,237.439 usft	Longitude:	-80.73378700
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,272.00 ft	
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	10/25/2021	-8.638	66.480	51,695,50326424

Design	rev2			
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	329.12

Plan Survey Tool Program	Date				
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	23,469.99	rev2 (Original Hole)		

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-16 HU (slot D)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-16 HU (slot D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,249.96	3.00	203.51	3,249.90	-3.60	-1.57	2.00	2.00	0.00	203.513	
5,328.02	3.00	203.51	5,325.10	-103.30	-44.94	0.00	0.00	0.00	0.000	
5,477.98	0.00	0.00	5,475.00	-106.90	-46.51	2.00	-2.00	0.00	180.000	
10,664.01	0.00	0.00	10,661.03	-106.90	-46.51	0.00	0.00	0.00	0.000	
11,497.35	50.00	329.57	11,392.55	167.22	-219.28	6.00	6.00	0.00	329.570	
12,009.85	91.00	329.57	11,560.00	594.94	-458.79	8.00	8.00	0.00	-0.006	
23,470.03	91.00	329.57	11,360.00	10,474.57	-6,262.99	0.00	0.00	0.00	0.000	Pendleton N-16 HU B



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia NAD83 UTM
 17N
 Site: Pendleton
 Well: Pendleton N-16 HU (slot D)
 Wellbore: Original Hole
 Design: rev2

Local Co-ordinate Reference: Well Pendleton N-16 HU (slot D)
 TVD Reference: GL @ 1272.00ft
 MD Reference: GL @ 1272.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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WV Department of
 Environmental Protection

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
100.00	0.00	0.00	100.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
200.00	0.00	0.00	200.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
300.00	0.00	0.00	300.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
400.00	0.00	0.00	400.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
500.00	0.00	0.00	500.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
600.00	0.00	0.00	600.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
700.00	0.00	0.00	700.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
800.00	0.00	0.00	800.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
900.00	0.00	0.00	900.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,437,039.689	1,715,237.439	39.75337300	-80.73378700	
KOP Begin 2°/100' build										
3,200.00	2.00	203.51	3,199.98	-1.60	-0.70	14,437,038.089	1,715,236.743	39.75336861	-80.73378949	
3,249.96	3.00	203.51	3,249.90	-3.80	-1.57	14,437,036.091	1,715,235.874	39.75336313	-80.73379261	
Begin 3.00° tangent										
3,300.00	3.00	203.51	3,299.88	-6.00	-2.61	14,437,033.690	1,715,234.829	39.75335655	-80.73379635	
3,400.00	3.00	203.51	3,399.73	-10.80	-4.70	14,437,028.892	1,715,232.742	39.75334339	-80.73380383	
3,500.00	3.00	203.51	3,499.59	-15.59	-6.79	14,437,024.095	1,715,230.654	39.75333023	-80.73381131	
3,600.00	3.00	203.51	3,599.45	-20.39	-8.87	14,437,019.297	1,715,228.567	39.75331707	-80.73381878	
3,700.00	3.00	203.51	3,699.32	-25.19	-10.96	14,437,014.499	1,715,226.480	39.75330391	-80.73382626	
3,800.00	3.00	203.51	3,799.18	-29.99	-13.05	14,437,009.701	1,715,224.392	39.75329075	-80.73383374	
3,900.00	3.00	203.51	3,899.04	-34.79	-15.13	14,437,004.903	1,715,222.305	39.75327759	-80.73384122	
4,000.00	3.00	203.51	3,998.90	-39.58	-17.22	14,437,000.105	1,715,220.217	39.75326443	-80.73384870	
4,100.00	3.00	203.51	4,098.77	-44.38	-19.31	14,436,995.307	1,715,218.130	39.75325127	-80.73385617	
4,200.00	3.00	203.51	4,198.63	-49.18	-21.40	14,436,990.509	1,715,216.042	39.75323811	-80.73386365	
4,300.00	3.00	203.51	4,298.49	-53.98	-23.48	14,436,985.711	1,715,213.955	39.75322495	-80.73387113	
4,400.00	3.00	203.51	4,398.36	-58.78	-25.57	14,436,980.913	1,715,211.867	39.75321179	-80.73387861	
4,500.00	3.00	203.51	4,498.22	-63.57	-27.66	14,436,976.116	1,715,209.780	39.75319864	-80.73388608	
4,600.00	3.00	203.51	4,598.08	-68.37	-29.75	14,436,971.318	1,715,207.692	39.75318548	-80.73389356	
4,700.00	3.00	203.51	4,697.95	-73.17	-31.83	14,436,966.520	1,715,205.605	39.75317232	-80.73390104	
4,800.00	3.00	203.51	4,797.81	-77.97	-33.92	14,436,961.722	1,715,203.517	39.75315916	-80.73390852	
4,900.00	3.00	203.51	4,897.67	-82.77	-36.01	14,436,956.924	1,715,201.430	39.75314600	-80.73391600	



Planning Report - Geographic

Database:	DB_Dec2220_v18	Local Co-ordinate Reference:	Well Pendleton N-16 HU (slot D)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-16 HU (slot D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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	3.00	203.51	4,997.53	-87.56	-38.10	14,436,952.126	1,715,199.342	39.75313264	-80.73392347	
5,100.00	3.00	203.51	5,097.40	-92.36	-40.18	14,436,947.326	1,715,197.255	39.75311968	-80.73393095	
5,200.00	3.00	203.51	5,197.26	-97.16	-42.27	14,436,942.530	1,715,195.167	39.75310652	-80.73393843	
5,300.00	3.00	203.51	5,297.12	-101.96	-44.36	14,436,937.732	1,715,193.080	39.75309336	-80.73394591	
5,328.02	3.00	203.51	5,325.10	-103.30	-44.94	14,436,936.388	1,715,192.495	39.75308967	-80.73394800	
Begin 2°/100' drop										
5,400.00	1.56	203.51	5,397.03	-105.93	-46.09	14,436,933.763	1,715,191.353	39.75308247	-80.73395209	
5,477.98	0.00	0.00	5,475.00	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
Begin vertical hold										
5,500.00	0.00	0.00	5,497.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
5,600.00	0.00	0.00	5,597.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
5,700.00	0.00	0.00	5,697.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
5,800.00	0.00	0.00	5,797.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
5,900.00	0.00	0.00	5,897.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,000.00	0.00	0.00	5,997.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,100.00	0.00	0.00	6,097.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,200.00	0.00	0.00	6,197.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,300.00	0.00	0.00	6,297.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,400.00	0.00	0.00	6,397.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,500.00	0.00	0.00	6,497.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,600.00	0.00	0.00	6,597.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,700.00	0.00	0.00	6,697.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,800.00	0.00	0.00	6,797.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
6,900.00	0.00	0.00	6,897.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,000.00	0.00	0.00	6,997.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,100.00	0.00	0.00	7,097.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,200.00	0.00	0.00	7,197.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,300.00	0.00	0.00	7,297.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,400.00	0.00	0.00	7,397.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,500.00	0.00	0.00	7,497.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,600.00	0.00	0.00	7,597.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,700.00	0.00	0.00	7,697.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,800.00	0.00	0.00	7,797.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
7,900.00	0.00	0.00	7,897.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,000.00	0.00	0.00	7,997.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,100.00	0.00	0.00	8,097.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,200.00	0.00	0.00	8,197.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,300.00	0.00	0.00	8,297.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,400.00	0.00	0.00	8,397.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,500.00	0.00	0.00	8,497.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,600.00	0.00	0.00	8,597.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,700.00	0.00	0.00	8,697.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,800.00	0.00	0.00	8,797.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
8,900.00	0.00	0.00	8,897.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,000.00	0.00	0.00	8,997.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,100.00	0.00	0.00	9,097.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,200.00	0.00	0.00	9,197.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,300.00	0.00	0.00	9,297.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,400.00	0.00	0.00	9,397.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,500.00	0.00	0.00	9,497.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,600.00	0.00	0.00	9,597.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,700.00	0.00	0.00	9,697.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	
9,800.00	0.00	0.00	9,797.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307960	-80.73395361	

04/22/2022



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia NAD83 UTM
 17N
 Site: Pendleton
 Well: Pendleton N-16 HU (slot D)
 Wellbore: Original Hole
 Design: rev2

Local Co-ordinate Reference: Well Pendleton N-16 HU (slot D)
 TVD Reference: GL @ 1272.00ft
 MD Reference: GL @ 1272.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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Planned Survey										WV Department of Environmental Protection
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	0.00	0.00	9,897.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,000.00	0.00	0.00	9,997.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,100.00	0.00	0.00	10,097.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,200.00	0.00	0.00	10,197.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,300.00	0.00	0.00	10,297.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,400.00	0.00	0.00	10,397.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,500.00	0.00	0.00	10,497.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,600.00	0.00	0.00	10,597.02	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
10,664.01	0.00	0.00	10,661.03	-106.90	-46.51	14,436,932.790	1,715,190.930	39.75307980	-80.73395361	
Begin 6°/100' build										
10,700.00	2.16	329.57	10,697.01	-106.32	-46.65	14,436,933.374	1,715,190.586	39.75308141	-80.73395483	
10,750.00	5.16	329.57	10,746.90	-103.56	-48.47	14,436,936.125	1,715,188.970	39.75308898	-80.73396055	
10,800.00	8.16	329.57	10,796.56	-98.57	-51.41	14,436,941.124	1,715,186.034	39.75310273	-80.73397094	
10,850.00	11.16	329.57	10,845.04	-91.33	-55.65	14,436,948.357	1,715,181.785	39.75312263	-80.73398598	
10,900.00	14.16	329.57	10,894.62	-81.89	-61.20	14,436,957.804	1,715,176.236	39.75314662	-80.73400563	
10,950.00	17.16	329.57	10,942.76	-70.25	-68.04	14,436,969.439	1,715,169.401	39.75318063	-80.73402982	
11,000.00	20.16	329.57	10,990.13	-56.46	-76.14	14,436,983.231	1,715,161.300	39.75321857	-80.73405850	
11,050.00	23.16	329.57	11,036.59	-40.55	-85.49	14,436,999.141	1,715,151.954	39.75326234	-80.73409158	
11,100.00	26.16	329.57	11,082.03	-22.56	-96.05	14,437,017.127	1,715,141.390	39.75331182	-80.73412898	
11,150.00	29.16	329.57	11,126.31	-2.55	-107.80	14,437,037.138	1,715,129.635	39.75336687	-80.73417059	
11,200.00	32.16	329.57	11,169.31	19.43	-120.72	14,437,059.119	1,715,116.723	39.75342735	-80.73421630	
11,250.00	35.16	329.57	11,210.93	43.32	-134.75	14,437,083.012	1,715,102.689	39.75349308	-80.73425598	
11,300.00	38.16	329.57	11,251.03	69.06	-149.87	14,437,108.749	1,715,087.571	39.75356388	-80.73431950	
11,350.00	41.16	329.57	11,289.52	96.57	-166.03	14,437,136.261	1,715,071.410	39.75363957	-80.73437671	
11,400.00	44.16	329.57	11,326.29	125.78	-183.19	14,437,165.472	1,715,054.252	39.75371993	-80.73443745	
11,450.00	47.16	329.57	11,361.23	156.61	-201.30	14,437,196.303	1,715,036.142	39.75380475	-80.73450166	
11,497.35	50.00	329.57	11,392.55	187.22	-219.28	14,437,226.913	1,715,018.161	39.75388896	-80.73456521	
Begin 8°/100' build/turn										
11,500.00	50.21	329.57	11,394.25	188.98	-220.31	14,437,228.668	1,715,017.130	39.75389379	-80.73456866	
11,550.00	54.21	329.57	11,424.88	223.04	-240.32	14,437,262.732	1,714,997.121	39.75398750	-80.73463970	
11,600.00	58.21	329.57	11,452.68	258.87	-261.36	14,437,298.555	1,714,975.078	39.75408605	-80.73471419	
11,650.00	62.21	329.57	11,477.52	296.27	-283.34	14,437,335.963	1,714,954.103	39.75418896	-80.73479198	
11,700.00	66.21	329.57	11,499.26	335.09	-306.14	14,437,374.774	1,714,931.304	39.75429573	-80.73487269	
11,750.00	70.21	329.57	11,517.82	375.11	-329.65	14,437,414.797	1,714,907.793	39.75440584	-80.73495593	
11,800.00	74.21	329.57	11,533.09	416.15	-353.76	14,437,455.839	1,714,883.682	39.75451875	-80.73504123	
11,850.00	78.21	329.57	11,545.00	458.01	-378.85	14,437,497.700	1,714,859.091	39.75463391	-80.73512834	
11,900.00	82.21	329.57	11,553.50	500.49	-403.30	14,437,540.175	1,714,834.138	39.75475076	-80.73521667	
11,950.00	86.21	329.57	11,558.54	543.37	-428.49	14,437,583.057	1,714,808.946	39.75486873	-80.73530586	
12,000.00	90.21	329.57	11,560.10	586.45	-453.80	14,437,626.138	1,714,783.636	39.75498725	-80.73539546	
12,009.85	91.00	329.57	11,560.00	594.94	-458.79	14,437,634.627	1,714,778.649	39.75501060	-80.73541311	
Begin 91.00° lateral										
12,100.00	91.00	329.57	11,558.42	672.65	-504.45	14,437,712.347	1,714,732.989	39.75522441	-80.73557476	
12,200.00	91.00	329.57	11,556.68	758.87	-555.10	14,437,798.555	1,714,682.343	39.75546157	-80.73575406	
12,300.00	91.00	329.57	11,554.93	845.08	-605.74	14,437,884.783	1,714,631.698	39.75569873	-80.73593336	
12,400.00	91.00	329.57	11,553.19	931.28	-656.39	14,437,970.971	1,714,581.049	39.75593590	-80.73611266	
12,500.00	91.00	329.57	11,551.44	1,017.49	-707.04	14,438,057.179	1,714,530.403	39.75617306	-80.73629196	
12,600.00	91.00	329.57	11,549.70	1,103.70	-757.88	14,438,143.398	1,714,479.756	39.75641022	-80.73647127	
12,700.00	91.00	329.57	11,547.95	1,189.91	-808.33	14,438,229.596	1,714,429.110	39.75664738	-80.73665057	
12,800.00	91.00	329.57	11,546.21	1,276.12	-858.98	14,438,315.804	1,714,378.463	39.75688454	-80.73682988	
12,900.00	91.00	329.57	11,544.46	1,362.33	-909.52	14,438,402.012	1,714,327.817	39.75712170	-80.73700919	
13,000.00	91.00	329.57	11,542.72	1,448.53	-960.27	14,438,488.220	1,714,277.170	39.75735866	-80.73716850	
13,100.00	91.00	329.57	11,540.97	1,534.74	-1,010.92	14,438,574.428	1,714,226.524	39.75759602	-80.73736781	
13,200.00	91.00	329.57	11,539.23	1,620.95	-1,061.56	14,438,660.636	1,714,175.877	39.75783318	-80.73754712	



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-16 HU (slot D)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-16 HU (slot D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,300.00	91.00	329.57	11,537.48	1,707.16	-1,112.21	14,438,746.844	1,714,125.231	39.75807034	-80.73772643	
13,400.00	91.00	329.57	11,535.74	1,793.37	-1,162.86	14,438,833.053	1,714,074.584	39.75830750	-80.73790574	
13,500.00	91.00	329.57	11,533.89	1,879.58	-1,213.50	14,438,919.281	1,714,023.937	39.75854465	-80.73808506	
13,600.00	91.00	329.57	11,532.25	1,965.78	-1,264.15	14,439,005.469	1,713,973.291	39.75878181	-80.73826438	
13,700.00	91.00	329.57	11,530.50	2,051.99	-1,314.80	14,439,091.677	1,713,922.644	39.75901897	-80.73844369	
13,800.00	91.00	329.57	11,528.76	2,138.20	-1,365.44	14,439,177.885	1,713,871.998	39.75925613	-80.73862301	
13,900.00	91.00	329.57	11,527.01	2,224.41	-1,416.09	14,439,264.093	1,713,821.351	39.75949328	-80.73880233	
14,000.00	91.00	329.57	11,525.27	2,310.62	-1,466.74	14,439,350.301	1,713,770.705	39.75973044	-80.73898165	
14,100.00	91.00	329.57	11,523.52	2,396.83	-1,517.38	14,439,436.509	1,713,720.058	39.75996760	-80.73916098	
14,200.00	91.00	329.57	11,521.78	2,483.03	-1,568.03	14,439,522.718	1,713,669.412	39.76020475	-80.73934030	
14,300.00	91.00	329.57	11,520.03	2,569.24	-1,618.68	14,439,608.926	1,713,618.765	39.76044191	-80.73951962	
14,400.00	91.00	329.57	11,518.29	2,655.45	-1,669.32	14,439,695.134	1,713,568.119	39.76067907	-80.73969895	
14,500.00	91.00	329.57	11,516.54	2,741.66	-1,719.97	14,439,781.342	1,713,517.472	39.76091622	-80.73987828	
14,600.00	91.00	329.57	11,514.80	2,827.87	-1,770.62	14,439,867.550	1,713,466.826	39.76115338	-80.74005761	
14,700.00	91.00	329.57	11,513.05	2,914.07	-1,821.26	14,439,953.758	1,713,416.179	39.76139053	-80.74023694	
14,800.00	91.00	329.57	11,511.31	3,000.28	-1,871.91	14,440,039.966	1,713,365.532	39.76162769	-80.74041627	
14,900.00	91.00	329.57	11,509.56	3,086.49	-1,922.56	14,440,126.175	1,713,314.886	39.76186484	-80.74059560	
15,000.00	91.00	329.57	11,507.82	3,172.70	-1,973.20	14,440,212.383	1,713,264.239	39.76210200	-80.74077493	
15,100.00	91.00	329.57	11,506.07	3,258.91	-2,023.85	14,440,298.591	1,713,213.593	39.76233915	-80.74095427	
15,200.00	91.00	329.57	11,504.32	3,345.12	-2,074.50	14,440,384.799	1,713,162.946	39.76257630	-80.74113360	
15,300.00	91.00	329.57	11,502.58	3,431.32	-2,125.14	14,440,471.007	1,713,112.300	39.76281346	-80.74131294	
15,400.00	91.00	329.57	11,500.83	3,517.53	-2,175.79	14,440,557.215	1,713,061.653	39.76305061	-80.74149228	
15,500.00	91.00	329.57	11,499.09	3,603.74	-2,226.44	14,440,643.423	1,713,011.007	39.76328776	-80.74167162	
15,600.00	91.00	329.57	11,497.34	3,689.95	-2,277.08	14,440,729.631	1,712,960.360	39.76352491	-80.74185096	
15,700.00	91.00	329.57	11,495.60	3,776.16	-2,327.73	14,440,815.840	1,712,909.714	39.76376207	-80.74203030	
15,800.00	91.00	329.57	11,493.85	3,862.37	-2,378.38	14,440,902.048	1,712,859.067	39.76399922	-80.74220965	
15,900.00	91.00	329.57	11,492.11	3,948.57	-2,429.02	14,440,988.256	1,712,808.420	39.76423637	-80.74238899	
16,000.00	91.00	329.57	11,490.36	4,034.78	-2,479.67	14,441,074.464	1,712,757.774	39.76447352	-80.74256834	
16,100.00	91.00	329.57	11,488.62	4,120.99	-2,530.32	14,441,160.672	1,712,707.127	39.76471067	-80.74274768	
16,200.00	91.00	329.57	11,486.87	4,207.20	-2,580.96	14,441,246.880	1,712,656.481	39.76494782	-80.74292703	
16,300.00	91.00	329.57	11,485.13	4,293.41	-2,631.61	14,441,333.088	1,712,605.834	39.76518497	-80.74310638	
16,400.00	91.00	329.57	11,483.38	4,379.62	-2,682.26	14,441,419.296	1,712,555.188	39.76542212	-80.74328573	
16,500.00	91.00	329.57	11,481.64	4,465.82	-2,732.90	14,441,505.505	1,712,504.541	39.76565927	-80.74346508	
16,600.00	91.00	329.57	11,479.89	4,552.03	-2,783.55	14,441,591.713	1,712,453.895	39.76589642	-80.74364444	
16,700.00	91.00	329.57	11,478.15	4,638.24	-2,834.20	14,441,677.921	1,712,403.248	39.76613357	-80.74382379	
16,800.00	91.00	329.57	11,476.40	4,724.45	-2,884.84	14,441,764.129	1,712,352.602	39.76637072	-80.74400315	
16,900.00	91.00	329.57	11,474.66	4,810.66	-2,935.49	14,441,850.337	1,712,301.955	39.76660787	-80.74418250	
17,000.00	91.00	329.57	11,472.91	4,896.87	-2,986.14	14,441,936.545	1,712,251.309	39.76684502	-80.74436186	
17,100.00	91.00	329.57	11,471.17	4,983.07	-3,036.78	14,442,022.753	1,712,200.662	39.76708217	-80.74454122	
17,200.00	91.00	329.57	11,469.42	5,069.28	-3,087.43	14,442,108.961	1,712,150.015	39.76731932	-80.74472058	
17,300.00	91.00	329.57	11,467.68	5,155.49	-3,138.08	14,442,195.170	1,712,099.369	39.76755646	-80.74489994	
17,400.00	91.00	329.57	11,465.93	5,241.70	-3,188.72	14,442,281.378	1,712,048.722	39.76779361	-80.74507931	
17,500.00	91.00	329.57	11,464.19	5,327.91	-3,239.37	14,442,367.586	1,711,998.076	39.76803076	-80.74525867	
17,600.00	91.00	329.57	11,462.44	5,414.12	-3,290.02	14,442,453.794	1,711,947.429	39.76826790	-80.74543804	
17,700.00	91.00	329.57	11,460.70	5,500.32	-3,340.66	14,442,540.002	1,711,896.783	39.76850505	-80.74561740	
17,800.00	91.00	329.57	11,458.95	5,586.53	-3,391.31	14,442,626.210	1,711,846.136	39.76874220	-80.74579677	
17,900.00	91.00	329.57	11,457.21	5,672.74	-3,441.96	14,442,712.418	1,711,795.490	39.76897934	-80.74597614	
18,000.00	91.00	329.57	11,455.46	5,758.95	-3,492.60	14,442,798.626	1,711,744.843	39.76921649	-80.74615551	
18,100.00	91.00	329.57	11,453.72	5,845.16	-3,543.25	14,442,884.835	1,711,694.197	39.76945363	-80.74633488	
18,200.00	91.00	329.57	11,451.97	5,931.37	-3,593.90	14,442,971.043	1,711,643.550	39.76969078	-80.74651426	
18,300.00	91.00	329.57	11,450.23	6,017.57	-3,644.54	14,443,057.251	1,711,592.903	39.76992792	-80.74669363	
18,400.00	91.00	329.57	11,448.48	6,103.78	-3,695.19	14,443,143.459	1,711,542.257	39.77016507	-80.74687301	
18,500.00	91.00	329.57	11,446.73	6,189.99	-3,745.84	14,443,229.667	1,711,491.610	39.77040221	-80.74705238	
18,600.00	91.00	329.57	11,444.99	6,276.20	-3,796.48	14,443,315.875	1,711,440.964	39.77063936	-80.74723176	



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia NAD83 UTM 17N
 Site: Pendleton
 Well: Pendleton N-16 HU (slot D)
 Wellbore: Original Hole
 Design: rev2

Local Co-ordinate Reference: Well Pendleton N-16 HU (slot D)
 TVD Reference: GL @ 1272.00ft
 MD Reference: GL @ 1272.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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 Office of Oil & Gas
 MAR 21 2022

Planned Survey										WV Department of Environmental Protection
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,700.00	91.00	329.57	11,443.24	6,362.41	-3,847.13	14,443,402.083	1,711,390.317	39.77087650	-80.74741114	
18,800.00	91.00	329.57	11,441.50	6,448.62	-3,867.78	14,443,488.291	1,711,339.671	39.77111364	-80.74759052	
18,900.00	91.00	329.57	11,439.75	6,534.82	-3,948.42	14,443,574.500	1,711,289.024	39.77135079	-80.74776990	
19,000.00	91.00	329.57	11,438.01	6,621.03	-3,999.07	14,443,660.708	1,711,238.378	39.77158793	-80.74794928	
19,100.00	91.00	329.57	11,436.26	6,707.24	-4,049.72	14,443,746.916	1,711,187.731	39.77182507	-80.74812867	
19,200.00	91.00	329.57	11,434.52	6,793.45	-4,100.36	14,443,833.124	1,711,137.085	39.77206222	-80.74830805	
19,300.00	91.00	329.57	11,432.77	6,879.66	-4,151.01	14,443,919.332	1,711,086.438	39.77229936	-80.74848744	
19,400.00	91.00	329.57	11,431.03	6,965.87	-4,201.66	14,444,005.540	1,711,035.792	39.77253650	-80.74866683	
19,500.00	91.00	329.57	11,429.28	7,052.07	-4,252.30	14,444,091.748	1,710,985.145	39.77277364	-80.74884621	
19,600.00	91.00	329.57	11,427.54	7,138.28	-4,302.95	14,444,177.957	1,710,934.498	39.77301078	-80.74902560	
19,700.00	91.00	329.57	11,425.79	7,224.49	-4,353.60	14,444,264.165	1,710,883.852	39.77324792	-80.74920500	
19,800.00	91.00	329.57	11,424.05	7,310.70	-4,404.24	14,444,350.373	1,710,833.205	39.77348506	-80.74938439	
19,900.00	91.00	329.57	11,422.30	7,396.91	-4,454.89	14,444,436.581	1,710,782.559	39.77372220	-80.74956378	
20,000.00	91.00	329.57	11,420.55	7,483.12	-4,505.54	14,444,522.789	1,710,731.912	39.77395934	-80.74974316	
20,100.00	91.00	329.57	11,418.81	7,569.32	-4,556.18	14,444,608.997	1,710,681.266	39.77419648	-80.74992257	
20,200.00	91.00	329.57	11,417.07	7,655.53	-4,606.83	14,444,695.205	1,710,630.619	39.77443362	-80.75010197	
20,300.00	91.00	329.57	11,415.32	7,741.74	-4,657.48	14,444,781.413	1,710,579.973	39.77467076	-80.75028137	
20,400.00	91.00	329.57	11,413.58	7,827.95	-4,708.12	14,444,867.622	1,710,529.326	39.77490790	-80.75046077	
20,500.00	91.00	329.57	11,411.83	7,914.16	-4,758.77	14,444,953.830	1,710,478.680	39.77514504	-80.75064017	
20,600.00	91.00	329.57	11,410.09	8,000.36	-4,809.42	14,445,040.038	1,710,428.033	39.77538218	-80.75081957	
20,700.00	91.00	329.57	11,408.34	8,086.57	-4,860.06	14,445,126.246	1,710,377.386	39.77561932	-80.75099898	
20,800.00	91.00	329.57	11,406.60	8,172.78	-4,910.71	14,445,212.454	1,710,326.740	39.77585645	-80.75117838	
20,900.00	91.00	329.57	11,404.85	8,258.99	-4,961.36	14,445,298.662	1,710,276.093	39.77609359	-80.75135779	
21,000.00	91.00	329.57	11,403.11	8,345.20	-5,012.00	14,445,384.870	1,710,225.447	39.77633073	-80.75153719	
21,100.00	91.00	329.57	11,401.36	8,431.41	-5,062.65	14,445,471.078	1,710,174.800	39.77656786	-80.75171660	
21,200.00	91.00	329.57	11,399.62	8,517.61	-5,113.30	14,445,557.287	1,710,124.154	39.77680500	-80.75189601	
21,300.00	91.00	329.57	11,397.87	8,603.82	-5,163.94	14,445,643.495	1,710,073.507	39.77704214	-80.75207542	
21,400.00	91.00	329.57	11,396.13	8,690.03	-5,214.59	14,445,729.703	1,710,022.861	39.77727927	-80.75225484	
21,500.00	91.00	329.57	11,394.38	8,776.24	-5,265.24	14,445,815.911	1,709,972.214	39.77751641	-80.75243425	
21,600.00	91.00	329.57	11,392.64	8,862.45	-5,315.88	14,445,902.119	1,709,921.568	39.77775354	-80.75261366	
21,700.00	91.00	329.57	11,390.89	8,948.66	-5,366.53	14,445,988.327	1,709,870.921	39.77799068	-80.75279308	
21,800.00	91.00	329.57	11,389.14	9,034.86	-5,417.18	14,446,074.535	1,709,820.274	39.77822781	-80.75297250	
21,900.00	91.00	329.57	11,387.40	9,121.07	-5,467.82	14,446,160.743	1,709,769.628	39.77846495	-80.75315191	
22,000.00	91.00	329.57	11,385.65	9,207.28	-5,518.47	14,446,246.952	1,709,718.981	39.77870209	-80.75333133	
22,100.00	91.00	329.57	11,383.91	9,293.49	-5,569.12	14,446,333.160	1,709,668.335	39.77893922	-80.75351074	
22,200.00	91.00	329.57	11,382.16	9,379.70	-5,619.76	14,446,419.368	1,709,617.688	39.77917635	-80.75369016	
22,300.00	91.00	329.57	11,380.42	9,465.91	-5,670.41	14,446,505.576	1,709,567.042	39.77941349	-80.75386958	
22,400.00	91.00	329.57	11,378.67	9,552.11	-5,721.06	14,446,591.784	1,709,516.395	39.77965062	-80.75404902	
22,500.00	91.00	329.57	11,376.93	9,638.32	-5,771.70	14,446,677.992	1,709,465.749	39.77988775	-80.75422845	
22,600.00	91.00	329.57	11,375.18	9,724.53	-5,822.35	14,446,764.200	1,709,415.102	39.78012488	-80.75440788	
22,700.00	91.00	329.57	11,373.44	9,810.74	-5,873.00	14,446,850.408	1,709,364.456	39.78036202	-80.75458731	
22,800.00	91.00	329.57	11,371.69	9,896.95	-5,923.64	14,446,936.617	1,709,313.809	39.78059915	-80.75476673	
22,900.00	91.00	329.57	11,369.95	9,983.16	-5,974.29	14,447,022.825	1,709,263.163	39.78083628	-80.75494617	
23,000.00	91.00	329.57	11,368.20	10,069.36	-6,024.94	14,447,109.033	1,709,212.516	39.78107341	-80.75512560	
23,100.00	91.00	329.57	11,366.46	10,155.57	-6,075.58	14,447,195.241	1,709,161.869	39.78131054	-80.75530503	
23,200.00	91.00	329.57	11,364.71	10,241.78	-6,126.23	14,447,281.449	1,709,111.223	39.78154767	-80.75548448	
23,300.00	91.00	329.57	11,362.97	10,327.99	-6,176.88	14,447,367.657	1,709,060.576	39.78178480	-80.75566390	
23,400.00	91.00	329.57	11,361.22	10,414.20	-6,227.52	14,447,453.865	1,709,009.930	39.78202193	-80.75584334	
23,470.03	91.00	329.57	11,350.00	10,474.57	-6,262.89	14,447,514.239	1,708,974.461	39.78218800	-80.75596900	

PBHL/TD 23470.03 MD 11360.00 TVD - 20" Casing



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Pendleton N-16 HU (slot D)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton N-16 HU (slot D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Pendleton N-16 HU BHL - plan hits target center - Point	0.00	0.01	11,360.00	10,474.57	-6,262.99	14,447,514.239	1,708,974.461	39.78218800	-80.75596900
Pendleton N-16 HU LP Ɛ - plan hits target center - Point	0.00	0.01	11,560.00	594.94	-458.79	14,437,634.625	1,714,778.650	39.75501060	-80.73541311
Pendleton N-16 HU LP r - plan misses target center by 43.11ft at 12035.17ft MD (11559.56 TVD, 616.77 N, -471.62 E) - Point	0.00	0.01	11,560.00	594.94	-508.79	14,437,634.625	1,714,728.654	39.75501100	-80.73559100

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(")	(")
23,470.03	11,360.00	20" Casing	20	24

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	
3,249.96	3,249.90	-3.60	-1.57	Begin 3.00° tangent	
5,328.02	5,325.10	-103.30	-44.94	Begin 2°/100' drop	
5,477.98	5,475.00	-106.90	-46.51	Begin vertical hold	
10,664.01	10,661.03	-106.90	-46.51	Begin 6°/100' build	
11,497.35	11,392.55	187.22	-219.28	Begin 8°/100' build/turn	
12,009.85	11,560.00	594.94	-458.79	Begin 91.00° lateral	
23,470.03	11,360.00	10,474.57	-6,262.99	PBHL/TD 23470.03 MD 11360.00 TVD	

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WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Pendleton N-16HU

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.? AST Tanks will be used with proper contain

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 a 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) / WV0109195 and Westmoreland Sanitary Landfill, LLC (SAN1405) / PA DEP ECR1386429, Cheatbot 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 Jim Pancake
Company Official (Typed Name) Jim Pancake
Company Official Title Vice President - Geosciences

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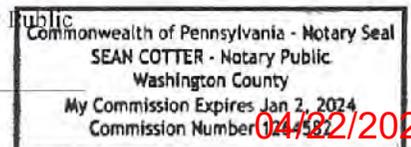
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WV Department of
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Subscribed and sworn before me this 17 day of March, 2022

Notary Public

My commission expires 1/21/2024



04/22/2022

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: *Maureen J. Kuhl*

Comments: _____

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Title: Oil and Gas Inspector

Date: 1/19/2022

Field Reviewed? (X) 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

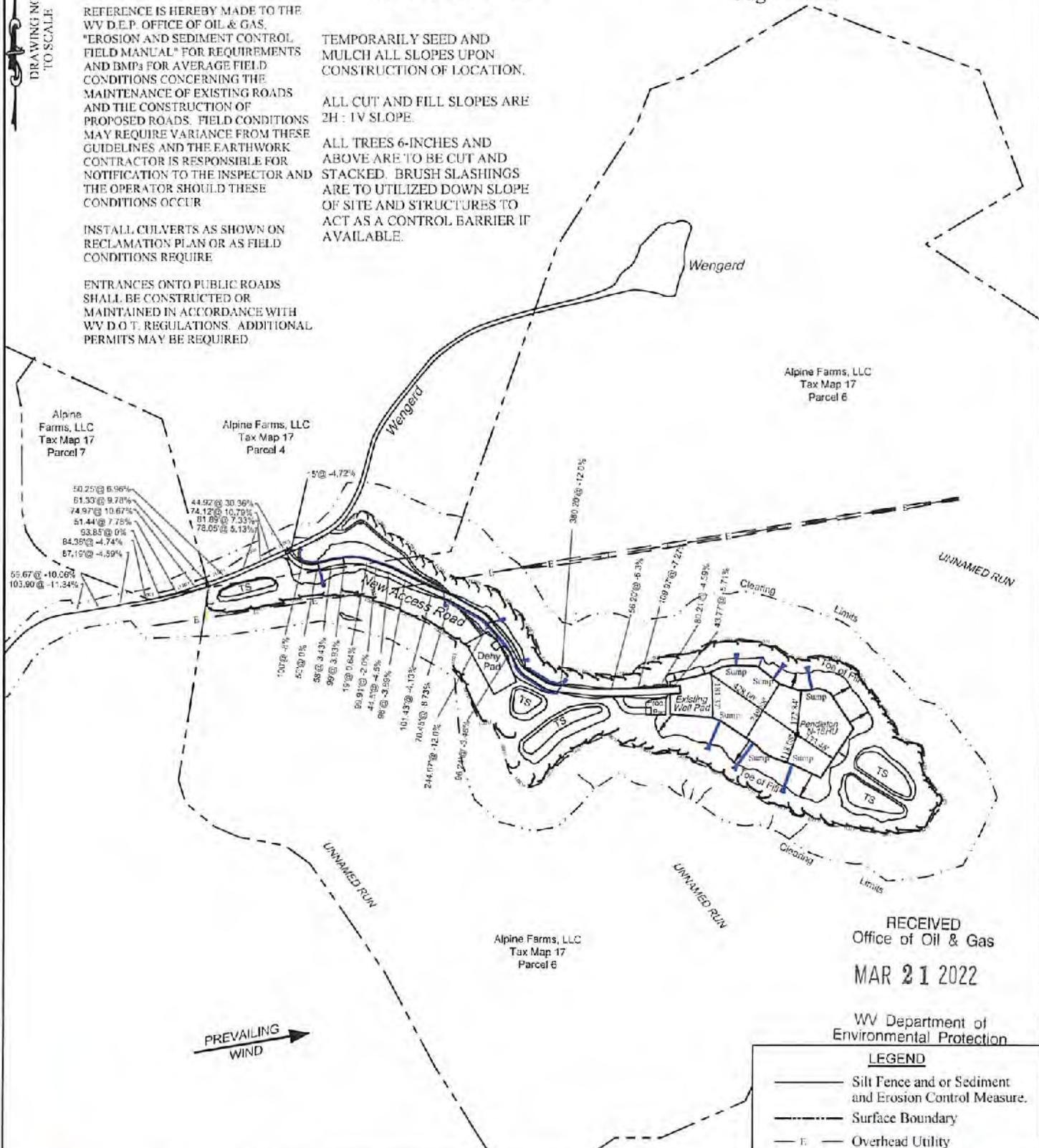
INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE

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 SLASHERS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.



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LEGEND

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

Jackson Surveying Inc.
2415 E. Pike St.
Clarksburg, WV 26301
Phone: 304-623-6861

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	FRANKLIN	300 SOUTHPOINTE BLVD	
DRAWN BY	JOB NO	SUITE 200	
J.D.C.	494510851	CANONSBURG, PA 15317	
		DATE	SCALE
		03-16-2022	NONE

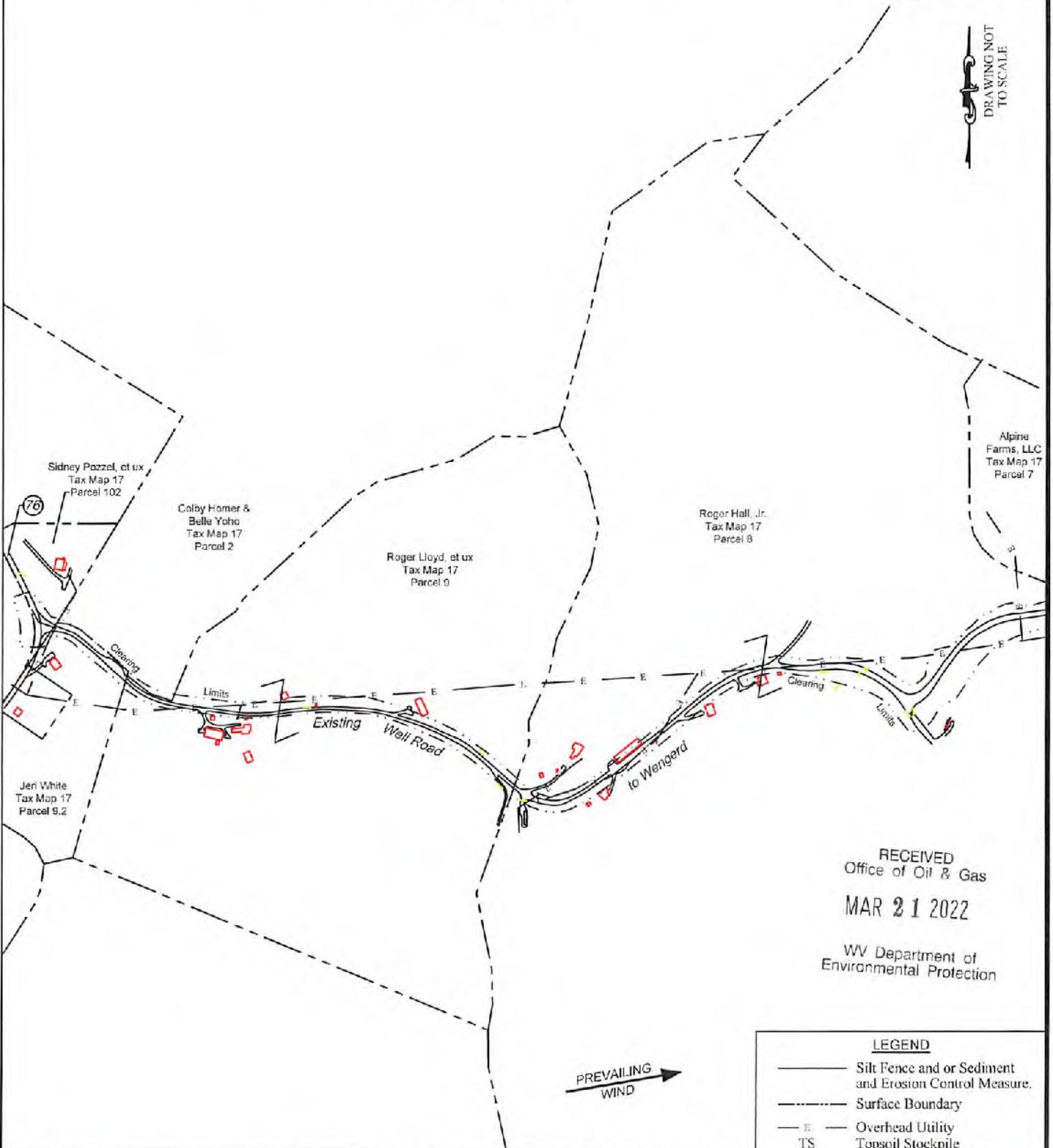
**TUG HILL
OPERATING**

04/22/2022

PROPOSED PENDLETON N16-HU

Exhibit 1
Page 2 of 2

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LEGEND

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



Jackson Surveying Inc.
2418 E. Pike St.
Clarksburg, WV 26301
Phone: 304-823-6851

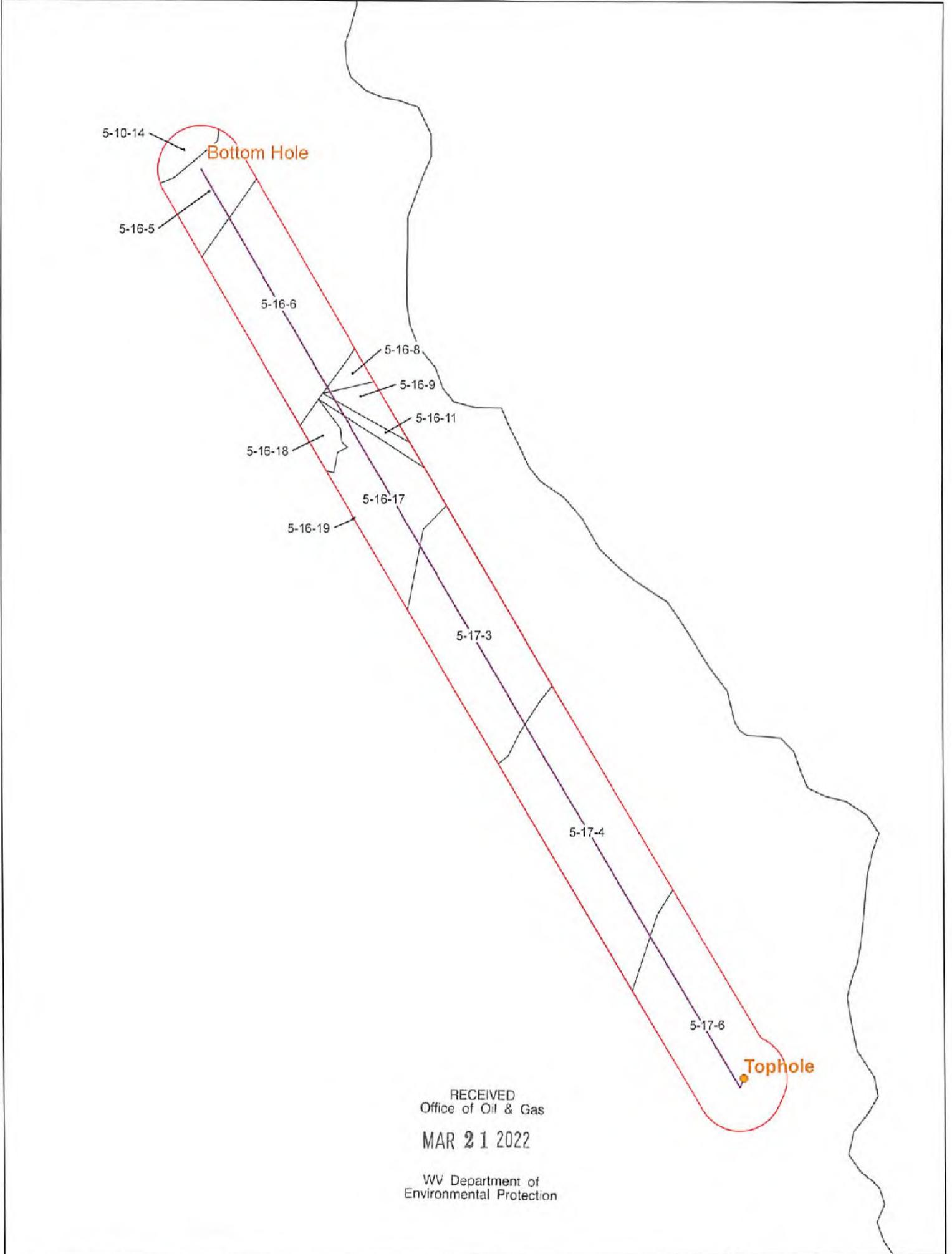
TOPO SECTION:	
GLEN EASTON 7.5'	
COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.D.C.	494510851

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



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Pendleton N-16HU



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Coordinate System: NAD 83 / UTM Zone 18N
 Projection: UTM
 Datum: North American 1983
 Spheroid: GRS 1912
 Prime Meridian: 0
 Central Meridian: 84
 Scale Factor: 0.999603
 False Easting: 500000
 False Northing: 0

CONFIDENTIAL

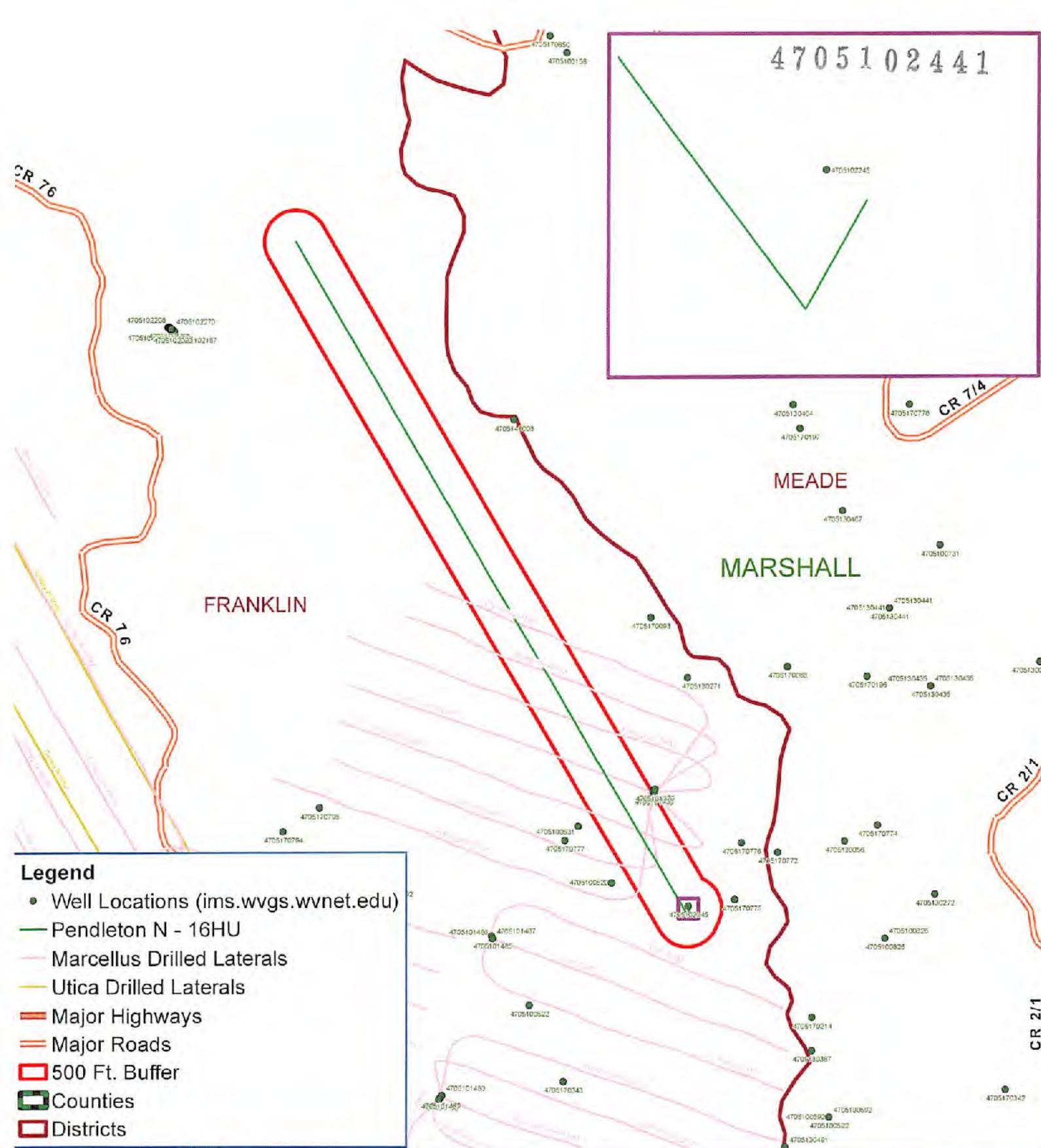
0 11,250 22,500 45,000 Feet

TUG HILL OPERATING

-  Utica Well
-  Force Pool
-  500' Buffer

Pendleton N-16HU
Operators within 500 Feet of Well Borehole





Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Pendleton N - 16HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Counties
- Districts



Pendleton N - 16HU Franklin District Marshall County, WV

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Prepared by:
DPS
LAND SERVICES

04/22/2022



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



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

March 22, 2022

TH Exploration II
1320 S. University Blvd Ste 500
Ft Worth TX 76107

9489 0090 0027 6362 2642 47

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – Pendleton N-16HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose".

Susan Rose
Administrator

encl:

04/22/2022



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

March 22, 2022

TH Exploration, LLC
1320 S. University Blvd Ste 500
Ft Worth TX 76107

9489 0090 0027 6362 2642 47

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Sincerely,

A handwritten signature in cursive script that reads "Susan Rose".
Susan Rose
Administrator

encl:

04/22/2022

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 (1/04/2022) 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

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Page 1 of 12

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Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
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. ✓
4705101377	Tug Hill Operating, LLC.	11640' MD / 6691' TVD	Marcellus	none	No, this producing Marcellus well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC. ✓
4705101435	Tug Hill Operating, LLC.	12769' MD / 6683' TVD	Marcellus	none	No, this producing Marcellus well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC. ✓
4705101448	Tug Hill Operating, LLC.	11756' MD / 6689' TVD	Marcellus	none	No, this producing Marcellus well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC. ✓

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101449	Tug Hill Operating, LLC.	12880' MD / 6674' TVD	Marcellus	none	No, this producing Marcellus well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC. ✓
4705101450	Tug Hill Operating, LLC.	11956' MD / 6679' TVD	Marcellus	none	No, this producing Marcellus well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC. ✓
4705101451	Tug Hill Operating, LLC.	12905' MD / 6693' TVD	Marcellus	none	No, this producing Marcellus well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC. ✓
4705101434	Tug Hill Operating, LLC.	12055' MD / 6696' TVD	Marcellus	none	No, this producing Marcellus well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC. ✓

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Cancelled

WV Geological & Economic Survey

Well: County = 51 Permit = 02245

Report Time: Monday, January 10, 2022 3:15:45 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_46	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

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
4705102245	--	Dvld Orgnl Loc	Cancelled	Alpine Farm LLC		N-9HU	Pendleton		EE A & Fannie Mae Wengerd et al	Tug Hill Operating, LLC	11787	Pl Pleasant Fm	

Completion Information:

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

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WV Geological & Economic Survey

Well: County = 51 Permit = 01377

Report Time: Monday, January 10, 2022 3:16:27 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101377	Marshall	1377	Franklin	Glen Easton	Cameron	39.750491	-80.73578	522633	4400986

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101377	1	As Proposed	521126	4401507	-80.753356 39.763224

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
4705101377	10/21/2011	Drill Orgnl Loc	Completed	Eli A & Fannie Mae Wengerd	1H		Wengerd	WV16-0031-000/WV16-0037-000/WV16-0021-001	Eli A & Fannie Mae Wengerd et al	Gastar Exploration USA, Inc.		Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL
4705101377	10/21/2011	9/10/2010	1329	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6730	12055	12055	1356	3256	0	35		

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
4705101377	10/21/2011	Water	Fresh Water	Vertical			60	Pennsylvanian System					
4705101377	10/21/2011	Water	Fresh Water	Vertical			1600	Mississippian					
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	6864	Marcellus Fm		7074	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	7184	Marcellus Fm		7374	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	7464	Marcellus Fm		7674	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	7764	Marcellus Fm		7974	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	8064	Marcellus Fm		8274	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	8364	Marcellus Fm		8574	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	8664	Marcellus Fm		8874	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	8964	Marcellus Fm		9174	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	9264	Marcellus Fm		9474	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	9564	Marcellus Fm		9774	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	9864	Marcellus Fm		10074	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	10180	Marcellus Fm		10450	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	10464	Marcellus Fm		10674	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	10764	Marcellus Fm		10974	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	11064	Marcellus Fm		11274	Marcellus Fm				
4705101377	10/21/2011	Pay	Oil & Gas	Deviated	11364	Marcellus Fm		11574	Marcellus Fm				

Production Gas Information. (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101377	Gastar Exploration USA, Inc.	2011	231,475	0	0	0	0	0	0	0	59,792	45,262	3,972	73,027	49,422
4705101377	Gastar Exploration USA, Inc.	2012	227,195	52,316	43,064	46,508	40,935	0	0	0	0	0	0	0	44,372
4705101377	Gastar Exploration USA, Inc.	2013	376,691	42,447	14,687	40,145	40,778	36,692	31,661	32,634	29,027	30,784	26,418	27,071	24,347
4705101377	Gastar Exploration USA, Inc.	2014	260,040	28,404	23,209	27,451	21,219	24,777	23,729	24,202	20,743	19,019	15,941	16,613	14,733
4705101377	Gastar Exploration USA, Inc.	2015	197,182	21,260	15,738	17,729	17,329	16,943	14,337	13,294	16,840	17,576	16,743	15,692	13,701
4705101377	Tug Hill Operating, LLC	2016	203,057	20,031	17,470	18,871	17,974	18,848	17,304	16,533	16,941	15,685	14,880	14,888	15,566
4705101377	Tug Hill Operating, LLC	2017	149,505	14,794	12,286	13,365	13,145	13,433	12,000	12,708	12,428	12,236	7,842	13,190	12,071
4705101377	Tug Hill Operating, LLC	2018	131,348	10,712	8,335	13,380	11,822	10,003	11,936	11,464	6,378	12,398	11,094	11,689	12,127
4705101377	Tug Hill Operating, LLC	2019	128,773	10,132	9,188	7,861	11,366	11,008	11,033	11,041	12,259	10,723	11,358	11,781	10,963
4705101377	Tug Hill Operating, LLC	2020	178,597	12,771	14,482	20,043	19,364	17,602	17,516	14,168	13,661	12,582	12,488	12,396	11,924

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API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101435	Marshall	1435	Franklin	Glen Easton	Cameron	39.75937	-80.73581	522630.5	4400972.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101435	1	As Proposed	521141.3	4401344.4	-80.753183

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_TRGT_FM
4705101435	11/29/2012	Divd Orqnl Loc	Completed	Eli A & Fannie Mae Wengerd	3H		Wengerd	WV16-0031-001/WV16-0037-000/1-256200-001	Eli A & Fannie Mae Wengerd et al	Gaslar Exploration USA, Inc.	6700	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGI
4705101435	11/29/2012	5/8/2012	1315	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6741	12769	12769		1072	3072	11	113		

Comment: 11/29/2012 Lease: WV16-0021-001

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
4705101435	11/29/2012	Water	Fresh Water	Vertical			60	Pennsylvanian System					
4705101435	11/29/2012	Water	Salt Water	Vertical			1600						
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	7139	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	7309	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	7609	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	7909	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	8209	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	8509	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	8809	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	9109	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	9409	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	9709	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	10009	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	10309	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	10609	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	10909	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	11209	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	11509	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	11809	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	12109	Marcellus Fm		Marcellus Fm					
4705101435	11/29/2012	Pay	Oil & Gas	Deviated	12394	Marcellus Fm		Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101435	Gaslar Exploration USA, Inc.	2012	80,674	0	0	0	0	0	0	0	0	0	0	0	2,672
4705101435	Gaslar Exploration USA, Inc.	2013	527,131	57,722	27,482	54,123	58,532	50,618	43,902	44,158	40,973	40,100	38,841	30,133	32,547
4705101435	Gaslar Exploration USA, Inc.	2014	344,904	35,576	30,413	33,182	27,615	34,993	31,920	31,189	27,354	26,225	22,287	23,672	20,278
4705101435	Gaslar Exploration USA, Inc.	2015	271,972	30,293	22,262	25,417	23,490	23,324	19,995	18,572	23,220	24,651	21,172	21,677	17,899
4705101435	Tug Hill Operating, LLC	2016	279,445	24,836	25,411	25,248	25,220	23,757	23,847	22,431	23,507	21,750	21,910	21,115	20,406
4705101435	Tug Hill Operating, LLC	2017	215,339	21,907	18,384	22,952	19,058	18,861	17,201	18,019	17,558	16,976	11,694	17,681	15,044
4705101435	Tug Hill Operating, LLC	2018	201,784	16,122	15,881	19,733	18,514	19,001	20,960	15,565	11,470	17,849	15,881	15,736	15,072
4705101435	Tug Hill Operating, LLC	2019	170,416	14,222	12,980	13,157	15,300	15,133	14,727	14,283	13,598	13,885	13,625	14,941	13,565
4705101435	Tug Hill Operating, LLC	2020	168,371	15,055	13,345	13,298	13,638	12,161	14,284	13,304	15,908	11,852	13,851	16,179	15,486

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API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101448	Marshall	1448	Franklin	Glen Easton	Cameron	39.758481	-80.735941	522627.8	4400986

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101448	1 As Proposed	521563.7	4401961.7	-80.748231	39.76731

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	TFI
4705101448	11/29/2012	David Origin Loc	Completed	Eli A & Fannie Mae Wengerd	4H		Wengerd	WV16-0031-001/WV16-0037-000/WV16-0021-001	Eli A & Fannie Mae Wengerd	Gastar Exploration USA, Inc	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL
4705101448	11/29/2012	5/8/2012	1313	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary/	Fractured	6725	11756	11756		2520	3216	63	105		

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
4705101448	11/29/2012	Water	Fresh Water	Vertical			60	Pennsylvanian System					
4705101448	11/29/2012	Water	Salt Water	Vertical			1500						
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	7313	Marcellus Fm	7418	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	7485	Marcellus Fm	7718	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	7768	Marcellus Fm	8010	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	8085	Marcellus Fm	8318	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	8368	Marcellus Fm	8618	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	8668	Marcellus Fm	8918	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	8968	Marcellus Fm	9218	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	9268	Marcellus Fm	9510	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	9568	Marcellus Fm	9818	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	9868	Marcellus Fm	10118	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	10168	Marcellus Fm	10418	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	10468	Marcellus Fm	10593	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	10768	Marcellus Fm	11018	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	11068	Marcellus Fm	11318	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	11353	Marcellus Fm	11443	Marcellus Fm					
4705101448	11/29/2012	Pay	Oil & Gas	Deviated	11580	Marcellus Fm	11584	Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101448	Gastar Exploration USA, Inc.	2012	73,760	0	0	0	0	0	0	0	0	0	0	3,093	70,667
4705101448	Gastar Exploration USA, Inc.	2013	461,117	53,397	38,054	55,576	60,188	40,578	34,508	33,493	31,929	29,776	26,356	26,692	28,560
4705101448	Gastar Exploration USA, Inc.	2014	284,740	31,960	25,187	28,683	24,287	35,014	30,425	22,987	20,427	19,528	15,793	16,622	13,827
4705101448	Gastar Exploration Inc.	2015	172,039	20,761	13,253	14,653	15,185	14,825	11,929	11,561	14,840	16,882	14,227	13,194	10,729
4705101448	Tug Hill Operating, LLC	2016	188,827	18,253	15,258	16,165	19,019	16,647	16,516	15,674	15,912	15,199	15,227	13,430	13,723
4705101448	Tug Hill Operating, LLC	2017	179,804	13,794	11,982	12,070	12,055	15,928	17,217	18,232	16,818	16,008	11,179	17,951	16,465
4705101448	Tug Hill Operating, LLC	2018	123,066	15,134	14,089	20,792	12,253	9,184	10,340	7,315	5,723	6,350	7,508	7,400	6,976
4705101448	Tug Hill Operating, LLC	2019	74,773	5,923	5,416	4,825	8,028	7,373	7,252	6,121	5,828	5,951	5,839	6,403	5,814
4705101448	Tug Hill Operating, LLC	2020	72,150	6,452	5,715	5,708	5,842	5,212	6,101	5,702	6,818	5,079	6,940	6,944	6,637

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101449	Marshall	1449	Franklin	Glen Easton	Cameron	39.759316	-80.735822	522629.5	4400966.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101449	1	As Proposed	520912.8	4401085.9	-80.755859

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
4705101449	11/29/2012	Dvtd Crqnl Loc	Completed	Eli A & Fannie Mae Wengerd	5H		Wengerd	WV16-0031-001/WV16-0037-000	Eli A & Fannie Mae Wengerd et al	Gastar Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NG
4705101449	11/29/2012	5/8/2012	1313	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6720	12880	12880	1872	3408	11	114		

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
4705101449	11/29/2012	Water	Fresh Water	Vertical			80		Pennsylvanian System				
4705101449	11/29/2012	Water	Salt Water	Vertical			1600						
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	7449	Marcellus Fm	7559	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	7644	Marcellus Fm	7834	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	7884	Marcellus Fm	8134	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	8184	Marcellus Fm	8434	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	8484	Marcellus Fm	8734	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	8784	Marcellus Fm	9034	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	9084	Marcellus Fm	9334	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	9384	Marcellus Fm	9634	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	9684	Marcellus Fm	9934	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	9984	Marcellus Fm	10234	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	10284	Marcellus Fm	10534	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	10584	Marcellus Fm	10834	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	10884	Marcellus Fm	11134	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	11184	Marcellus Fm	11434	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	11484	Marcellus Fm	11734	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	11784	Marcellus Fm	12034	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	12084	Marcellus Fm	12334	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	12384	Marcellus Fm	12634	Marcellus Fm					
4705101449	11/29/2012	Pay	Oil & Gas	Deviated	12688	Marcellus Fm	12759	Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101449	Gastar Exploration USA, Inc.	2012	87,759	0	0	0	0	0	0	0	0	0	0	2,664	85,095
4705101449	Gastar Exploration USA, Inc.	2013	566,503	67,820	29,098	60,564	66,840	57,388	48,779	47,777	46,764	46,345	38,597	40,088	36,523
4705101449	Gastar Exploration USA, Inc.	2014	385,234	38,057	33,242	42,094	31,030	38,563	35,946	34,941	30,738	28,576	24,347	25,399	22,301
4705101449	Gastar Exploration Inc.	2015	292,286	31,821	23,378	27,419	26,467	25,390	21,038	19,437	23,511	27,631	22,104	23,818	20,272
4705101449	Tug Hill Operating, LLC	2016	301,433	29,831	26,328	27,050	24,948	27,079	24,753	25,451	25,647	23,424	23,562	22,056	21,290
4705101449	Tug Hill Operating, LLC	2017	225,060	21,182	18,901	21,076	20,438	19,041	18,506	18,944	18,955	17,819	11,928	19,862	18,404
4705101449	Tug Hill Operating, LLC	2018	217,333	17,392	17,627	22,026	19,064	18,190	22,927	18,099	12,303	17,218	17,641	17,620	17,036
4705101449	Tug Hill Operating, LLC	2019	173,400	15,234	13,842	9,850	12,758	19,020	20,569	14,047	13,017	13,630	13,625	14,600	13,208
4705101449	Tug Hill Operating, LLC	2020	168,188	14,672	13,345	13,296	13,638	12,161	14,284	13,304	15,908	11,852	13,851	16,179	15,486

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Well: County = 51 Permit = 01450

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101450	Marshall	1450	Franklin	Glen Easton	Cameron	39.758433	-80.735961	522626.1	4400980.1

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101450	1	As Proposed	521117.4	4401158.3	-80.753468 39.760092

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
4705101450	11/29/2012	Dvld Orgnl Loc	Completed	Eli A & Fannie Mae Wengerd	6H		Wengerd	WV16-0031-001/WV16-0031-000	Eli A & Fannie Mae Wengerd	Gastar Exploration USA, Inc.	8700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT
4705101450	11/29/2012	5/8/2012	1326	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6728	11956	11956		1944	2800	33	107	

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
4705101450	11/29/2012	Water	Fresh Water	Vertical			60	Pennsylvanian System					
4705101450	11/29/2012	Water	Salt Water	Vertical			1600						
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	7300	Marcellus Fm	7470	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	7520	Marcellus Fm	7770	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	7820	Marcellus Fm	8070	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	8120	Marcellus Fm	8370	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	8420	Marcellus Fm	8670	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	8720	Marcellus Fm	8970	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	9020	Marcellus Fm	9270	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	9320	Marcellus Fm	9570	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	9620	Marcellus Fm	9870	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	9920	Marcellus Fm	10170	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	10220	Marcellus Fm	10470	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	10520	Marcellus Fm	10770	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	10820	Marcellus Fm	11070	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	11120	Marcellus Fm	11370	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	11420	Marcellus Fm	11650	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	11705	Marcellus Fm	11781	Marcellus Fm					
4705101450	11/29/2012	Pay	Oil & Gas	Deviated	11818	Marcellus Fm	11820	Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101450	Gastar Exploration USA, Inc.	2012	72,059	0	0	0	0	0	0	0	0	0	0	2,377	69,682
4705101450	Gastar Exploration USA, Inc.	2013	440,078	48,046	23,003	48,209	49,817	42,838	35,768	37,424	34,694	31,943	31,169	20,914	27,252
4705101450	Gastar Exploration USA, Inc.	2014	278,331	25,428	25,734	28,498	22,869	29,281	26,208	26,084	23,648	21,030	17,221	17,137	15,193
4705101450	Gastar Exploration Inc.	2015	200,091	22,221	15,787	19,030	16,662	17,028	14,936	14,387	17,201	17,964	16,483	14,326	14,006
4705101450	Tug Hill Operating, LLC	2016	195,817	18,904	18,244	17,115	15,920	16,989	18,680	15,616	14,438	13,968	14,776	14,527	16,658
4705101450	Tug Hill Operating, LLC	2017	169,157	15,064	15,097	15,441	14,962	15,828	15,078	14,496	15,232	13,768	10,098	12,646	11,442
4705101450	Tug Hill Operating, LLC	2018	135,004	11,604	10,820	14,436	11,160	12,201	15,321	11,119	7,187	11,529	9,653	10,264	10,710
4705101450	Tug Hill Operating, LLC	2019	97,385	10,161	9,059	9,997	11,278	11,576	9,458	6,121	5,828	5,951	5,839	6,403	5,814
4705101450	Tug Hill Operating, LLC	2020	72,167	6,452	5,719	5,699	5,853	5,212	8,122	5,702	6,818	5,079	5,940	6,934	6,637

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Well: County = 51 Permit = 01451

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101451	Marshall	1451	Franklin	Glen Easton	Cameron	39.758423	-80.735792	522632	4400978.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101451	1	As Proposed	521139.8	4401724.8	-80.753188 39.765166

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	TR
4705101451	10/21/2011	Divd Orqnl Loc	Completed	Eli A & Fannie Mae Wengerd	7H		Wengerd	WV16-0031-001/WV16-0037-000/WV16-0021-001	Eli A & Fannie Mae Wengerd	Gastar Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF
4705101451	10/21/2011	4/25/2011	1313	Ground Level	Marcellus Fm	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Gas	Rotary	Fractured	6743	12870	12870		227	748					

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
4705101451	10/21/2011	Water	Fresh Water	Vertical			60	Pennsylvanian System					
4705101451	10/21/2011	Water	Salt Water	Vertical			1600						
4705101451	10/21/2011	Pay	Gas	Deviated	7494	Marcellus Fm	7704	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	7794	Marcellus Fm	8004	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	8094	Marcellus Fm	8304	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	8394	Marcellus Fm	8604	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	8694	Marcellus Fm	8904	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	8994	Marcellus Fm	9204	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	9294	Marcellus Fm	9504	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	9594	Marcellus Fm	9804	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	9894	Marcellus Fm	10104	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	10194	Marcellus Fm	10404	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	10494	Marcellus Fm	10704	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	10794	Marcellus Fm	11004	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	11094	Marcellus Fm	11304	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	11394	Marcellus Fm	11604	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	11694	Marcellus Fm	11904	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	11994	Marcellus Fm	12204	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	12294	Marcellus Fm	12504	Marcellus Fm					
4705101451	10/21/2011	Pay	Gas	Deviated	12594	Marcellus Fm	12804	Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101451	Gastar Exploration USA Inc.	2011	339,194	0	0	0	0	0	0	0	93,551	74,562	4,094	94,937	72,050
4705101451	Gastar Exploration USA Inc.	2012	338,559	73,072	63,967	72,302	62,757	0	0	0	0	0	0	0	65,560
4705101451	Gastar Exploration USA Inc.	2013	584,958	63,875	22,028	80,124	81,160	55,040	47,492	48,948	43,537	46,179	39,637	40,615	36,521
4705101451	Gastar Exploration USA Inc.	2014	389,665	42,601	34,819	41,185	31,825	37,166	35,584	36,304	31,118	28,132	23,909	24,918	22,105
4705101451	Gastar Exploration USA Inc.	2015	295,750	31,888	23,604	26,587	25,985	25,408	21,501	19,937	25,267	26,359	25,119	23,531	20,553
4705101451	Tug Hill Operating, LLC	2016	303,561	30,121	26,205	28,307	26,962	25,273	24,982	24,800	25,412	23,528	22,263	22,270	23,435
4705101451	Tug Hill Operating, LLC	2017	223,836	22,192	18,375	20,004	19,599	20,183	17,933	19,028	18,615	19,276	11,790	19,750	10,106
4705101451	Tug Hill Operating, LLC	2018	197,889	16,110	12,490	20,083	17,654	15,005	17,904	17,196	10,384	15,570	16,756	17,546	18,191
4705101451	Tug Hill Operating, LLC	2019	200,784	15,205	13,685	11,792	17,078	16,553	16,749	17,744	19,819	17,233	18,255	18,933	17,618
4705101451	Tug Hill Operating, LLC	2020	162,534	20,524	6,609	0	0	2,118	9,179	22,770	21,958	20,222	20,070	19,922	19,164

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Well: County = 51 Permit = 01434

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101434	Marshall	1434	Franklin	Glen Easton	Cameron	39.758928	-80.735747	522635.6	4400990.1

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101434	1	As Proposed	521435.6	4401817.5	-80.749729

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_TRGT_FM
4705101434	11/29/2012	Divd Orgrn Loc	Completed	Eli A & Fannie Mae Wengerd	2H		Wengerd	WV16-0031-001/WV16-0037-000/WV16-0021-001	Eli A & Fannie Mae Wengerd et al	Gaslar Exploration USA, Inc.	6700	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL
4705101434	11/29/2012	5/8/2012	1326	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	6730	12055	12055		2326	3024	69	106		

Comment: 11/29/2012 Completion information straight from operator

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
4705101434	11/29/2012	Water	Fresh Water	Vertical			60	Pennsylvanian System					
4705101434	11/29/2012	Water	Salt Water	Vertical			1600	Mississippian					
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	7286	Marcellus Fm		7536	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	7586	Marcellus Fm		7836	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	7886	Marcellus Fm		8136	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	8186	Marcellus Fm		8436	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	8486	Marcellus Fm		8736	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	8786	Marcellus Fm		9036	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	9086	Marcellus Fm		9336	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	9386	Marcellus Fm		9636	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	9686	Marcellus Fm		9936	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	9986	Marcellus Fm		10236	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	10286	Marcellus Fm		10536	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	10586	Marcellus Fm		10836	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	10886	Marcellus Fm		11136	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	11186	Marcellus Fm		11436	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	11486	Marcellus Fm		11736	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	11771	Marcellus Fm		11861	Marcellus Fm				
4705101434	11/29/2012	Pay	Oil & Gas	Deviated	11880	Marcellus Fm		11886	Marcellus Fm				

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101434	Gaslar Exploration USA, Inc.	2012	68,815	0	0	0	0	0	0	0	0	0	0	2,693	66,122
4705101434	Gaslar Exploration USA, Inc.	2013	411,430	48,876	21,469	42,138	43,060	38,422	33,951	34,243	32,057	30,927	29,411	29,873	28,973
4705101434	Gaslar Exploration USA, Inc.	2014	314,605	31,586	27,190	30,483	25,964	30,300	30,584	29,484	26,031	24,013	19,891	20,848	17,931
4705101434	Gaslar Exploration USA, Inc.	2015	247,121	25,792	18,682	22,602	22,230	21,971	18,125	16,807	21,455	24,233	19,226	19,793	16,205
4705101434	Tug Hill Operating, LLC	2016	235,775	23,339	21,568	22,584	21,253	20,585	19,057	19,968	19,486	16,663	16,641	15,192	16,484
4705101434	Tug Hill Operating, LLC	2017	168,177	15,572	13,415	14,809	13,916	14,673	14,625	14,611	15,007	14,432	10,154	14,132	12,746
4705101434	Tug Hill Operating, LLC	2018	157,073	12,701	12,634	17,726	13,904	15,735	17,671	11,745	3,344	15,689	12,914	10,639	12,391
4705101434	Tug Hill Operating, LLC	2019	133,289	10,679	9,762	7,202	12,012	12,216	11,641	11,195	12,436	10,845	11,470	12,144	11,466
4705101434	Tug Hill Operating, LLC	2020	179,685	13,067	14,756	20,151	19,364	17,602	17,516	14,168	13,661	12,582	12,488	12,396	11,924

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TUG HILL
OPERATING

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

Well Name: Pendleton N-16HU

Pad Name: Pendleton

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,400,418.55

Easting: 522,805.42

*James J. Kirk
1/19/2022*



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

Jerry V. DeRosa, Director EH&S Affairs

(724) 338-2029 (office)

(412) 736-5767 (cellular)

24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

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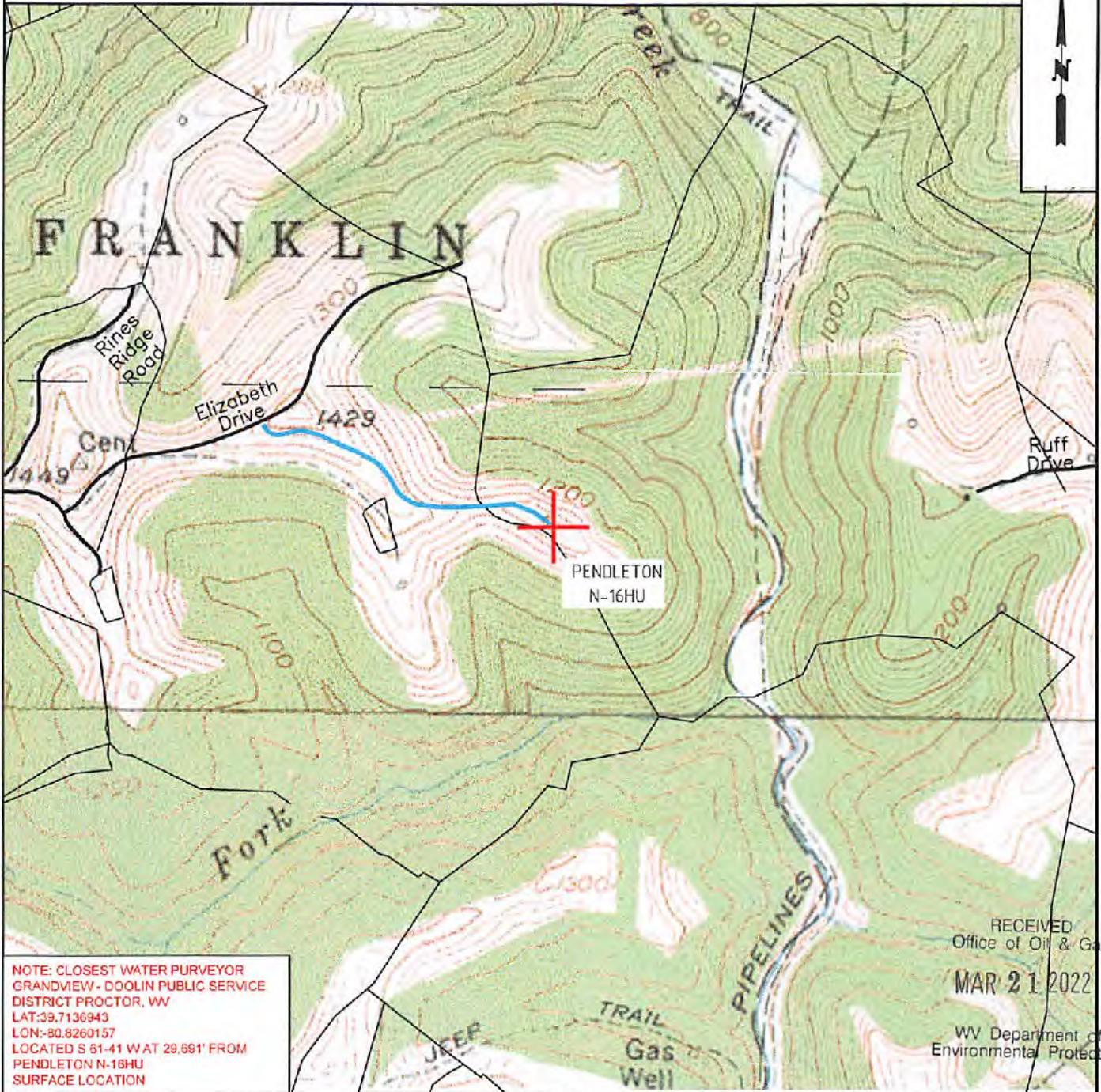
04/22/2022

WW-9

SUPPLEMENT PG. 2

PROPOSED PENDLETON N-16HU

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 51-41 W AT 29,691' FROM
 PENDLETON N-16HU
 SURFACE LOCATION

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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: 03-16-2022

04/22/2022

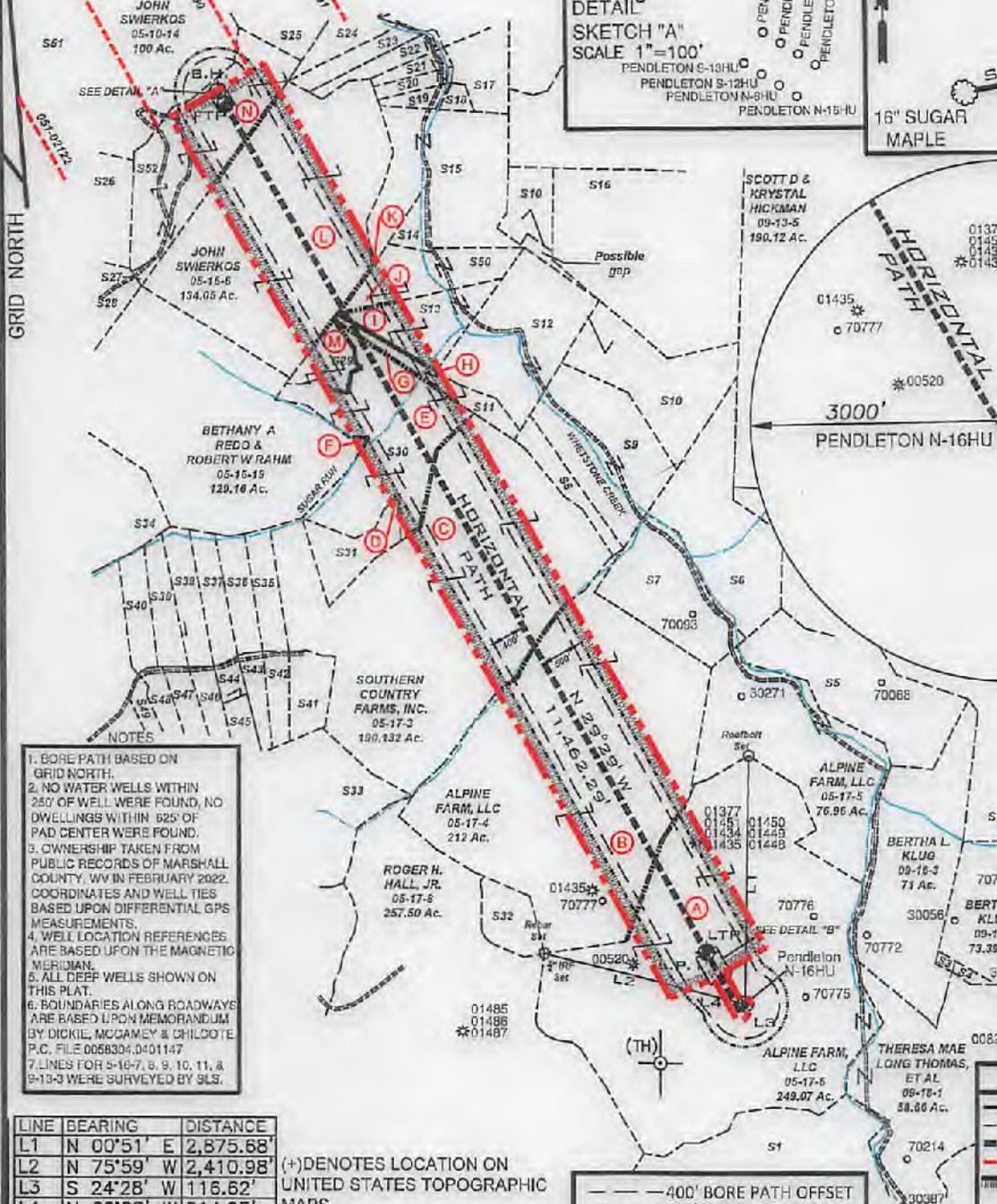
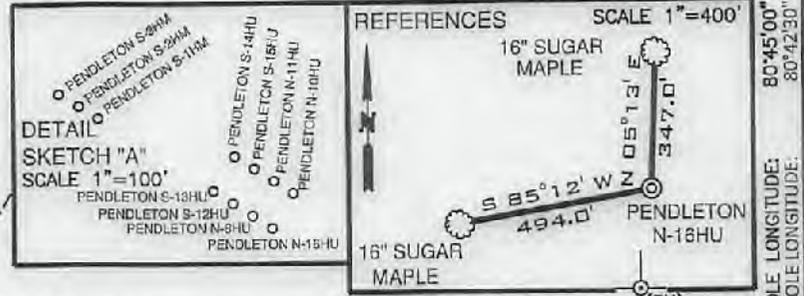
**PENDLETON LEASE
WELL N-16HU
339.5145± ACRES**

(TH) 7,200'
(BH) 1,733'
TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°47'30"

GRID NORTH

(BH) BOTTOM HOLE LONGITUDE: 80°45'00"
(TH) TOP HOLE LONGITUDE: 80°42'30"

(TH) 13,965'



- NOTES**
1. BORE PATH BASED ON GRID NORTH.
 2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
 3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN FEBRUARY 2022. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 4. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
 5. ALL DEEP WELLS SHOWN ON THIS PLAT.
 6. BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCGAMEY & CHILLOPTE P.C. FILE 0058304.0401147
 7. LINES FOR 5-16-7, 8, 9, 10, 11, & 9-13-3 WERE SURVEYED BY SLS.

LINE	BEARING	DISTANCE
L1	N 00°51' E	2,875.88'
L2	N 75°59' W	2,410.98'
L3	S 24°28' W	116.62'
L4	N 29°28' W	814.25'

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

--- 400' BORE PATH OFFSET
--- 500' WELL BORE OFFSET

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,418.55
E) 522,806.42

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,599.84
E) 522,665.58

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,403,611.15
E) 520,896.46

LEGEND

- LEASE TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- (A) LEASE # (SEE GA1 FORM)

FILE NUMBER _____
DRAWING NUMBER: **PENDLETON N-16HU REV 2**
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 1480
Clarksburg, WV 26302
304-623-5861



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

DATE: MARCH 23, 2022
OPERATORS WELL NO. PENDLETON N-16HU
API WELL NO. 47-051-02441
STATE COUNTY PERMIT

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

SURFACE OWNER ALPINE FARM, LLC ACREAGE 249.07
OIL & GAS ROYALTY OWNER ELI A. & FANNIE MAE WENGERD, ET AL LEASE ACREAGE 249.07
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) _____
TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,777' TMD: 23,470'
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

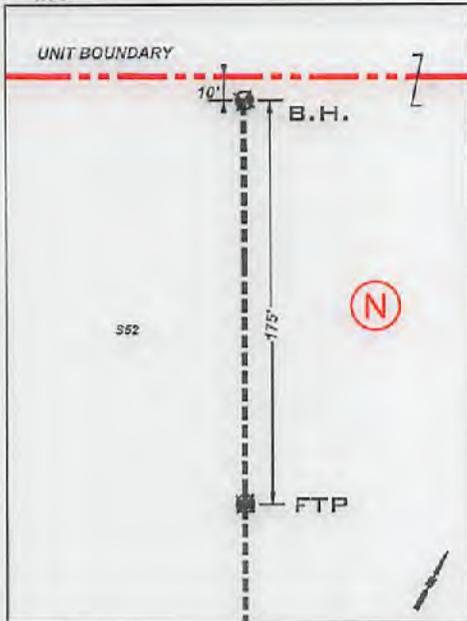
04/22/2022

COPY NAME PERMIT

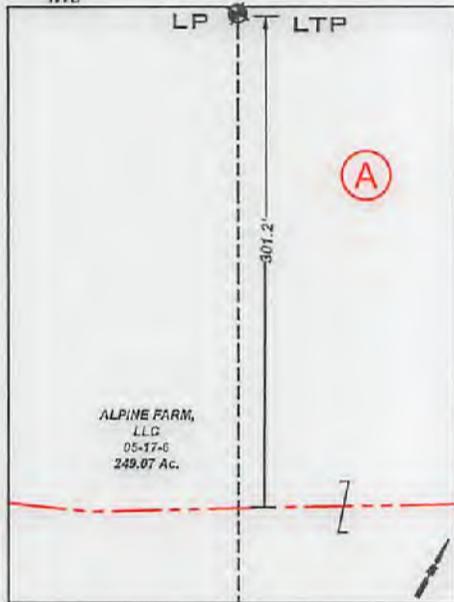
FORM: WVG

**PENDLETON LEASE
WELL N-16HU
339.5145± ACRES**

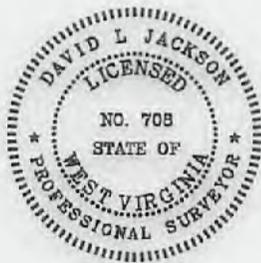
DETAIL "A"
NTS



DETAIL "B"
NTS



Tags	Number	Tax Map -Parcel	Surface Owner	Acres
	S1	05-24-01	LINDA L HENDRICKSON	175.0
	S2	09-16-05	ROBERT M & NANCY R MCCARDLE	133.0
	S3	09-18-03	BERTHA L KLUG	1.33
	S4	09-18-04	BERTHA L KLUG	1.0
	S5	09-16-02	ROBERT & NANCY MCCARDLE	53.40
	S6	09-16-01	ROBERT M & NANCY R MCCARDLE	46.80
	S7	05-16-13	DAVID ALAN RUBCICH ET AL	33.31
	S8	05-16-12	LOUIS VAN SCYOC	10.80
	S9	09-13-01	LOUIS VAN SCYOC	46.81
	S10	09-13-02	SYLVIA VAN SCYOC & WONETTA V & NORMAN G JOHNSON (LIFE)	41.5
G	S11	05-16-11	GERTRUDE HOLTZ	9.93
H	S12	09-13-03	LOUIS VAN SCYOC	52.40
I	S13	05-16-09	LOUIS AULENBACHER	20.0
	S14	05-16-10	FRANK P LAUTAR, EST.	5.0
K	S15	05-16-07	LOUIS AULENBACHER	50.0
	S16	09-13-04	LOUIS AULENBACHER	100.191
	S17	05-10-13	JOSEPH LEE CROW	12.18
	S18	05-10-13.1	DAVID LEE QUIGLEY, JR	2.88
	S19	05-10-19	LOUIS AULENBACHER	3.209
	S20	05-10-20	LOUIS AULENBACHER	3.554
	S21	05-10-21	LOUIS AULENBACHER	3.677
	S22	05-10-22	LOUIS AULENBACHER	4.276
	S23	05-10-12.1	JOHN PAUL SMITH, JR ET AL	8.86
	S24	05-10-10	LOUIS DELBERT VAN SCYOC	24.50
	S25	05-10-09	HERBERT M AULENBACHER, JR	141.43
	S26	05-16-03	DONNA VIVIAN YOHO	71.205
	S27	05-16-04	JOHN SWIERKOS	0.96
	S28	05-16-25	JOHN SWIERKOS	79.04
M	S29	05-16-18	JOHN SWIERKOS	10.0
E	S30	05-16-17	RICHARD D & JULIA M REPASKY; BRIAN L TESLOVICH & CARA C DAVIS	55.34
D	S31	05-16-16	SOUTHERN COUNTRY FARMS, INC	9.75
	S32	05-17-07	ALPINE FARM LLC	10.8
	S33	05-17-02	COLBY HOMER & BELLE M YOHO	104.08
	S34	05-16-21	JAMES M RUCKMAN ET UX	60.75
	S35	05-17-16	GLEN A GUNTO	9.702
	S36	05-16-15.1	GLEN A GUNTO	10.17
	S37	05-17-15	GLEN A GUNTO	10.220
	S38	05-18-13	SOUTHERN COUNTRY FARMS, INC	11.054
G	S39	05-18-13.9	ROY & RENEE BUTLER (LIFE)	9.603
	S40	05-18-13.4	RENEE D STREIGHT BUTLER (LIFE)	9.938
	S41	05-17-3.1	WILBUR L RIDDLE, ET UX	10.148
	S42	05-17-1.6	LOLA M SLAUGHTER	6.347
	S43	05-17-1.5	DONNIE R & LOLA M SLAUGHTER	5.607
	S44	05-17-1.2	DONNIE R & LOLA M SLAUGHTER	5.073
	S45	05-17-1.3	JODY & MICHELLE ANDERSON	5.00
	S46	05-17-1.1	DONNIE R & LOLA M SLAUGHTER	8.076
	S47	05-17-1.4	DONNIE R & LOLA M SLAUGHTER	8.844
	S48	05-17-14	SOUTHERN COUNTRY FARMS, INC	7.314
	S49	05-17-13	ROY E & RENEE D BUTLER	5.433
J	S50	05-16-8	LOUIS AULENBACHER	21.0
	S51	05-10-15	TERRY A & JODI L HARDING	120.805
N	S52	05-16-5	JOHN SWIERKOS	52.07



P.S. 708 *David L Jackson*

04/22/2022



TUG HILL
OPERATING

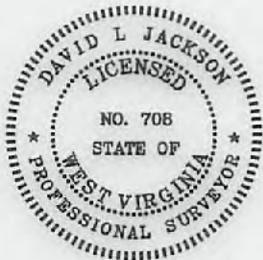
OPERATOR'S
WELL #: PENDLETON N-16HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API: 47-051-02441

WELL PLAT
PAGE 2 OF 3
DATE: 03/23/2022

form wv6

**PENDLETON LEASE
WELL N-16HU
339.5145± ACRES**

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Deed Book/Page		
10*14114	5-17-6	A	ELI & FANNIE MAE WENGERD	671	323	
10*14125	5-17-4	B	SHIBEN ESTATES INC ATTN J MARLIN WITT	695	460	
10*14099	5-17-3	C	SOUTHERN COUNTRY FARMS INC	666	489	
10*21952	5-16-16	D	VICTORIA A PAKROVSKY AND STEPHEN W PAKROVSKY, ET AL	959	478	MVD
10*18126	5-16-17	E	BARBARA ANN ADKINS JOHNSON, ET AL	929	556	
10*18280	5-16-19	F	DEBRA L RICHEY AND JAMES F RICHEY SR, ET AL	929	108	MVD
10*22310	5-16-11	G	ROMAN CATHOLIC DIOCESE OF WHEELING MARK E BRENNAN BISHOP	964	520	
10*18526	9-13-3	H	ANN TURNER YOUNG SHRIVER, ET AL	933	591	MVD
10*18339	5-16-9	I	RESOURCE MINERALS HEADWATER I LP, ET AL	940	448	
10*18339	5-16-8	J	RESOURCE MINERALS HEADWATER I LP, ET AL	940	448	
10*18339	5-16-7	K	RESOURCE MINERALS HEADWATER I LP, ET AL	940	448	MVD
10*21468	5-16-6	L	JOHN A SWIERKOS	953	317	
10*21468	5-16-18	M	JOHN A SWIERKOS	953	317	MVD
10*14919	5-16-5	N	CHESTNUT HOLDINGS INC	836	117	



P.S. 708 *David L Jackson*

04/22/2022



TUG HILL
OPERATING

OPERATOR'S
WELL #: PENDLETON N-16HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API: 47-051-02441

WELL PLAT
PAGE 3 OF 3
DATE: 03/23/2022

**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
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*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

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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
10*14114	5-17-6	A	ELI & FANNIE MAE WENGERD	GASTAR EXPLORATION USA INC	1/8+	671	323	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc & Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14125	5-17-4	B	SHIBEN ESTATES INC ATTN J MARLIN WITT	GASTAR EXPLORATION USA INC	1/8+	695	460	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc & Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14099	5-17-3	C	SOUTHERN COUNTRY FARMS INC	GASTAR EXPLORATION USA INC	1/8+	666	489	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc & Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*18126	5-16-17	E	BARBARA ANN ADKINS JOHNSON	TH EXPLORATION LLC	1/8+	929	556	N/A	N/A	N/A	N/A	N/A	N/A
10*18689	5-16-17	E	THE ESTATE OF ROY JOSEPH LEACH	TH EXPLORATION LLC	1/8+	936	141	N/A	N/A	N/A	N/A	N/A	N/A
10*19057	5-16-17	E	JACK MICHAEL FOREMAN	CHEVRON USA INC	1/8+	817	640	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19063	5-16-17	E	JULIE SPRINGWATER	CHEVRON USA INC	1/8+	818	120	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19121	5-16-17	E	JOE PAUL WELLMAN MARGARET ANN BONNETT ET AL	CHEVRON USA INC	1/8+	773	518	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19132	5-16-17	E	KLOVA ANN MORRIS	CHEVRON USA INC	1/8+	764	28	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19134	5-16-17	E	REVA JUNE ICARD	CHEVRON USA INC	1/8+	763	626	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19136	5-16-17	E	WILLIAM L LITMAN	CHEVRON USA INC	1/8+	772	90	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19138	5-16-17	E	AARON DEAN LITMAN	CHEVRON USA INC	1/8+	769	52	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19142	5-16-17	E	GLEN Y MILLER	CHEVRON USA INC	1/8+	772	518	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19165	5-16-17	E	VICKI LYNN WOOD	CHEVRON USA INC	1/8+	775	73	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19207	5-16-17	E	MARY VOLTZ	CHEVRON USA INC	1/8+	782	296	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19642	5-16-17	E	NOEL A PARKS	TH EXPLORATION LLC	1/8+	944	92	N/A	N/A	N/A	N/A	N/A	N/A
10*21939	5-16-17	E	ULA F NELSON	TH EXPLORATION LLC	1/8+	960	96	N/A	N/A	N/A	N/A	N/A	N/A
10*22550	5-16-17	E	SHARON L WILLIAMS AND HERVY WILLIAMS	TH EXPLORATION LLC	1/8+	966	124	N/A	N/A	N/A	N/A	N/A	N/A
10*27959	5-16-17	E	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	N/A	N/A	N/A	N/A	N/A	N/A
10*22310	5-16-11	G	ROMAN CATHOLIC DIOCESE OF WHEELING MARK E BRENNAN BISHOP	TH EXPLORATION LLC	1/8+	964	520	N/A	N/A	N/A	N/A	N/A	N/A
10*18339	5-16-9	I	RESOURCE MINERALS HEADWATER I LP	TH EXPLORATION LLC	1/8+	940	448	N/A	N/A	N/A	N/A	N/A	N/A
10*18526	5-16-9	I	ANN TURNER YOUNG SHRIVER	TH EXPLORATION LLC	1/8+	933	591	N/A	N/A	N/A	N/A	N/A	N/A
10*18597	5-16-9	I	MARK ALLEN LENENBERG	TH EXPLORATION LLC	1/8+	934	638	N/A	N/A	N/A	N/A	N/A	N/A
10*18636	5-16-9	I	CHERYL STEFFEN AND GREGORY STEFFEN	TH EXPLORATION LLC	1/8+	936	240	N/A	N/A	N/A	N/A	N/A	N/A

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Office of Oil & Gas
MAR 21 2022

WV Department of
Environmental Protection

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*18637	5-16-9	I	THOMAS RICHMOND YOUNG ANITA A YOUNG	TH EXPLORATION LLC	1/8+	936 244	N/A	N/A	N/A	N/A	N/A	N/A
10*19467	5-16-9	I	ROBERT R FISHER AND AUDREY L IRVIN	TH EXPLORATION LLC	1/8+	942 592	N/A	N/A	N/A	N/A	N/A	N/A
10*19788	5-16-9	I	REX B FISHER AND DEBORAH FISHER	TH EXPLORATION LLC	1/8+	948 295	N/A	N/A	N/A	N/A	N/A	N/A
10*21014	5-16-9	I	JAMES P MCLAUGHLIN & ALICE W MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946 29	N/A	N/A	N/A	N/A	N/A	N/A
10*21015	5-16-9	I	ROBERT L MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946 339	N/A	N/A	N/A	N/A	N/A	N/A
10*21189	5-16-9	I	NATALIE GIBBS	TH EXPLORATION LLC	1/8+	941 261	N/A	N/A	N/A	N/A	N/A	N/A
10*21267	5-16-9	I	JAMES E NICHOLAS AND BEVERLY D NICHOLAS	TH EXPLORATION LLC	1/8+	943 513	N/A	N/A	N/A	N/A	N/A	N/A
10*21504	5-16-9	I	PAULETA LINDA CHEATHAM AND CARL WOHLERS	TH EXPLORATION LLC	1/8+	951 142	N/A	N/A	N/A	N/A	N/A	N/A
10*21638	5-16-9	I	THE MILDRED Y MILLS TRUST JULY 5TH 2007	TH EXPLORATION LLC	1/8+	956 172	N/A	N/A	N/A	N/A	N/A	N/A
10*21709	5-16-9	I	THOMAS YOUNG AND JANE CLAIRE YOUNG	TH EXPLORATION LLC	1/8+	959 350	N/A	N/A	N/A	N/A	N/A	N/A
10*21710	5-16-9	I	PENELOPE A JONES	TH EXPLORATION LLC	1/8+	959 355	N/A	N/A	N/A	N/A	N/A	N/A
10*22295	5-16-9	I	RACHEL B OSTRANDER	FOSSIL CREEK OHIO, LLC	1/8+	822 210	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/54	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 34/266	Fossil Creek Ohio LLC & Gulfport Energy Corporation to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*22319	5-16-9	I	SHARON G VAN SCYOC	FOSSIL CREEK OHIO, LLC	1/8+	822 204	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/54	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 34/266	Fossil Creek Ohio LLC & Gulfport Energy Corporation to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*22865	5-16-9	I	JAMES H CAMPBELL	TH EXPLORATION LLC	1/8+	977 60	N/A	N/A	N/A	N/A	N/A	N/A
10*22866	5-16-9	I	MARGARET R DONOFRIO	TH EXPLORATION LLC	1/8+	977 57	N/A	N/A	N/A	N/A	N/A	N/A
10*27946	5-16-9	I	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063 591	N/A	N/A	N/A	N/A	N/A	N/A
10*18339	5-16-8	J	RESOURCE MINERALS HEADWATER I LP	TH EXPLORATION LLC	1/8+	940 448	N/A	N/A	N/A	N/A	N/A	N/A
10*18526	5-16-8	J	ANN TURNER YOUNG SHRIVER	TH EXPLORATION LLC	1/8+	933 591	N/A	N/A	N/A	N/A	N/A	N/A
10*18597	5-16-8	J	MARK ALLEN LENENBERG	TH EXPLORATION LLC	1/8+	934 638	N/A	N/A	N/A	N/A	N/A	N/A
10*18636	5-16-8	J	CHERYL STEFFEN AND GREGORY STEFFEN	TH EXPLORATION LLC	1/8+	936 240	N/A	N/A	N/A	N/A	N/A	N/A
10*18637	5-16-8	J	THOMAS RICHMOND YOUNG ANITA A YOUNG	TH EXPLORATION LLC	1/8+	936 244	N/A	N/A	N/A	N/A	N/A	N/A
10*19467	5-16-8	J	ROBERT R FISHER AND AUDREY L IRVIN	TH EXPLORATION LLC	1/8+	942 592	N/A	N/A	N/A	N/A	N/A	N/A
10*19788	5-16-8	J	REX B FISHER AND DEBORAH FISHER	TH EXPLORATION LLC	1/8+	948 295	N/A	N/A	N/A	N/A	N/A	N/A
10*21014	5-16-8	J	JAMES P MCLAUGHLIN & ALICE W MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946 29	N/A	N/A	N/A	N/A	N/A	N/A
10*21015	5-16-8	J	ROBERT L MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946 339	N/A	N/A	N/A	N/A	N/A	N/A
10*21189	5-16-8	J	NATALIE GIBBS	TH EXPLORATION LLC	1/8+	941 261	N/A	N/A	N/A	N/A	N/A	N/A
10*21267	5-16-8	J	JAMES E NICHOLAS AND BEVERLY D NICHOLAS	TH EXPLORATION LLC	1/8+	943 513	N/A	N/A	N/A	N/A	N/A	N/A
10*21504	5-16-8	J	PAULETA LINDA CHEATHAM AND CARL WOHLERS	TH EXPLORATION LLC	1/8+	951 142	N/A	N/A	N/A	N/A	N/A	N/A
10*21638	5-16-8	J	THE MILDRED Y MILLS TRUST JULY 5TH 2007	TH EXPLORATION LLC	1/8+	956 172	N/A	N/A	N/A	N/A	N/A	N/A
10*21709	5-16-8	J	THOMAS YOUNG AND JANE CLAIRE YOUNG	TH EXPLORATION LLC	1/8+	959 350	N/A	N/A	N/A	N/A	N/A	N/A
10*21710	5-16-8	J	PENELOPE A JONES	TH EXPLORATION LLC	1/8+	959 355	N/A	N/A	N/A	N/A	N/A	N/A
10*22295	5-16-8	J	RACHEL B OSTRANDER	FOSSIL CREEK OHIO, LLC	1/8+	822 210	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/54	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 34/266	Fossil Creek Ohio LLC & Gulfport Energy Corporation to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109

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10*22865	5-16-8	J	JAMES H CAMPBELL	TH EXPLORATION LLC	1/8+	977	60	N/A	N/A	N/A	N/A	N/A	N/A
10*22866	5-16-8	J	MARGARET R DONOFRIO	TH EXPLORATION LLC	1/8+	977	57	N/A	N/A	N/A	N/A	N/A	N/A
10*27946	5-16-8	J	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	591	N/A	N/A	N/A	N/A	N/A	N/A
10*21468	5-16-6	L	JOHN A SWIERKOS	TH EXPLORATION LLC	1/8+	953	317	N/A	N/A	N/A	N/A	N/A	N/A
10*14919	5-16-5	N	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION USA INC	1/8+	836	117	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 32/428	Merger of Gastar Exploration Inc & Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67

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Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	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	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc & Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*21952	5-16-16	D	VICTORIA A PAKROVSKY AND STEPHEN W PAKROVSKY	TH EXPLORATION LLC	1/8+	959 478	N/A	N/A	N/A	N/A	N/A	N/A
10*21953	5-16-16	D	LORNA MARIE LEW	TH EXPLORATION LLC	1/8+	959 480	N/A	N/A	N/A	N/A	N/A	N/A
10*21954	5-16-16	D	CHARLES E BLUE IV AND ALLA RABINOVICH	TH EXPLORATION LLC	1/8+	959 482	N/A	N/A	N/A	N/A	N/A	N/A
10*21955	5-16-16	D	DWVG OIL & GAS ACQUISITIONS LLC	TH EXPLORATION LLC	1/8+	959 484	N/A	N/A	N/A	N/A	N/A	N/A
10*22132	5-16-16	D	WILLIAM H WILD	TH EXPLORATION LLC	1/8+	959 486	N/A	N/A	N/A	N/A	N/A	N/A
10*22133	5-16-16	D	LAURENCE MYERS EVANS II AND PENNY EVANS	TH EXPLORATION LLC	1/8+	961 439	N/A	N/A	N/A	N/A	N/A	N/A
10*22267	5-16-16	D	MARJORIE B KIDD AND ROBERT C KIDD	TH EXPLORATION LLC	1/8+	959 488	N/A	N/A	N/A	N/A	N/A	N/A
10*22270	5-16-16	D	ARTHUR ALVIN ANDERSON	TH EXPLORATION LLC	1/8+	961 437	N/A	N/A	N/A	N/A	N/A	N/A
10*22433	5-16-16	D	TERESA RANDOLPH	TH EXPLORATION LLC	1/8+	964 218	N/A	N/A	N/A	N/A	N/A	N/A
10*22583	5-16-16	D	THE RANDOLPH FAMILY TRUST MARY MARIE SPITLER RANDOLPH TR	TH EXPLORATION LLC	1/8+	965 602	N/A	N/A	N/A	N/A	N/A	N/A
10*22584	5-16-16	D	RICHARD P BACHMAN AND JEANETTE M BACHMAN	TH EXPLORATION LLC	1/8+	965 604	N/A	N/A	N/A	N/A	N/A	N/A
10*22612	5-16-16	D	KATHARINE EVANS COFFEY	TH EXPLORATION LLC	1/8+	966 525	N/A	N/A	N/A	N/A	N/A	N/A
10*22747	5-16-16	D	MARY E MUMFORD AIF LISA ANN FISHER	TH EXPLORATION LLC	1/8+	968 208	N/A	N/A	N/A	N/A	N/A	N/A
10*23109	5-16-16	D	MARTHA C HYRE AND RICHARD D HYRE JR	TH EXPLORATION LLC	1/8+	983 584	N/A	N/A	N/A	N/A	N/A	N/A
10*23129	5-16-16	D	BONNIE S SMITH	TH EXPLORATION LLC	1/8+	983 582	N/A	N/A	N/A	N/A	N/A	N/A
10*23130	5-16-16	D	HOLLINS RANDOLPH III & AMY J RANDOLPH	TH EXPLORATION LLC	1/8+	983 586	N/A	N/A	N/A	N/A	N/A	N/A
10*24149	5-16-16	D	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	1021 222	N/A	N/A	N/A	N/A	N/A	N/A
10*24931	5-16-16	D	WILLIAM LEARNED SLADE	TH EXPLORATION LLC	1/8+	1027 121	N/A	N/A	N/A	N/A	N/A	N/A
10*24933	5-16-16	D	THE ELLEN HOGE TRUST FBO JANE B MARTIN	TH EXPLORATION LLC	1/8+	1026 247	N/A	N/A	N/A	N/A	N/A	N/A
10*25166	5-16-16	D	CHRISTIAN CHURCH FACILITIES FOR THE AGING BETHANY HOUSE	TH EXPLORATION LLC	1/8+	1025 592	N/A	N/A	N/A	N/A	N/A	N/A
10*25185	5-16-16	D	LAWRENCE RANDOLPH SLADE	TH EXPLORATION LLC	1/8+	1025 604	N/A	N/A	N/A	N/A	N/A	N/A
10*25201	5-16-16	D	LYELL LANDRY SLADE AND ROBERT E VAN DYCK	TH EXPLORATION LLC	1/8+	1025 598	N/A	N/A	N/A	N/A	N/A	N/A
10*27959	5-16-16	D	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063 594	N/A	N/A	N/A	N/A	N/A	N/A
10*28059	5-16-16	D	VANITA AND CORDOVA HOLDING COMPANY	TH EXPLORATION LLC	1/8+	1065 315	N/A	N/A	N/A	N/A	N/A	N/A
10*18280	5-16-19	F	DEBRA L RICHEY AND JAMES F RICHEY SR	TH EXPLORATION LLC	1/8+	929 108	N/A	N/A	N/A	N/A	N/A	N/A
10*19129	5-16-19	F	VERLA FLORENCE SHUTLER	CHEVRON USA INC	1/8+	761 366	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19130	5-16-19	F	FRANCES O HALL	CHEVRON USA INC	1/8+	763 641	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19152	5-16-19	F	BETTY J PARRIOTT	CHEVRON USA INC	1/8+	772 192	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*19211	5-16-19	F	PATRICIA F PARRIOTT	CHEVRON USA INC	1/8+	784 1	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*21017	5-16-19	F	CATHERINE R KLUG PAUL FOX - POWER OF ATTORNEY	TH EXPLORATION LLC	1/8+	938 299	N/A	N/A	N/A	N/A	N/A	N/A
10*21917	5-16-19	F	ROBERT W RAHM AND BETHANY A RAHM	FOSSIL CREEK OHIO, LLC	1/8+	827 142	N/A	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 34/398	Fossil Creek Ohio LLC & Gulfport Energy Corporation to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 41/224
10*22533	5-16-19	F	HARRY LEROY AND NANCY S PARRIOTT	NOBLE ENERGY INC	1/8+	829 153	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 38/297	HG Energy II Appalachia LLC to TH Exploration LLC: 41/398

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10*22534	5-16-19	F	DEBORAH D MERCER AND CALVIN P MERCER	NOBLE ENERGY INC	1/8+	828	639	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 38/297	HG Energy II Appalachia LLC to TH Exploration LLC: 41/398
10*22535	5-16-19	F	TRUDY B SAMPSON AND DANNY SAMPSON	NOBLE ENERGY INC	1/8+	828	637	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 38/297	HG Energy II Appalachia LLC to TH Exploration LLC: 41/398
10*22536	5-16-19	F	TIMOTHY SCOTT AND AMY C LEMASTERS	NOBLE ENERGY INC	1/8+	829	630	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 38/297	HG Energy II Appalachia LLC to TH Exploration LLC: 41/398
10*22537	5-16-19	F	BRIAN EDWIN LEMASTERS AND BEVERLY J LEMASTERS	NOBLE ENERGY INC	1/8+	831	44	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 38/297	HG Energy II Appalachia LLC to TH Exploration LLC: 41/398
10*22538	5-16-19	F	RANDY K PARRIOTT	NOBLE ENERGY INC	1/8+	836	455	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 38/297	HG Energy II Appalachia LLC to TH Exploration LLC: 41/398
10*25566	5-16-19	F	H3 LLC MICHAEL E HOEFT MANAGING MEMBER	TH EXPLORATION LLC	1/8+	1034	628	N/A	N/A	N/A	N/A	N/A	N/A
10*18526	9-13-3	H	ANN TURNER YOUNG SHRIVER	TH EXPLORATION LLC	1/8+	933	591	N/A	N/A	N/A	N/A	N/A	N/A
10*18597	9-13-3	H	MARK ALLEN LENENBERG	TH EXPLORATION LLC	1/8+	934	638	N/A	N/A	N/A	N/A	N/A	N/A
10*18636	9-13-3	H	CHERYL STEFFEN AND GREGORY STEFFEN	TH EXPLORATION LLC	1/8+	936	240	N/A	N/A	N/A	N/A	N/A	N/A
10*18637	9-13-3	H	THOMAS RICHMOND YOUNG ANITA A YOUNG	TH EXPLORATION LLC	1/8+	936	244	N/A	N/A	N/A	N/A	N/A	N/A
10*19467	9-13-3	H	ROBERT R FISHER AND AUDREY L IRVIN	TH EXPLORATION LLC	1/8+	942	592	N/A	N/A	N/A	N/A	N/A	N/A
10*19788	9-13-3	H	REX B FISHER AND DEBORAH FISHER	TH EXPLORATION LLC	1/8+	948	295	N/A	N/A	N/A	N/A	N/A	N/A
10*21014	9-13-3	H	JAMES P MCLAUGHLIN & ALICE W MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946	29	N/A	N/A	N/A	N/A	N/A	N/A
10*21015	9-13-3	H	ROBERT L MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946	339	N/A	N/A	N/A	N/A	N/A	N/A
10*21189	9-13-3	H	NATALIE GIBBS	TH EXPLORATION LLC	1/8+	941	261	N/A	N/A	N/A	N/A	N/A	N/A
10*21267	9-13-3	H	JAMES E NICHOLAS AND BEVERLY D NICHOLAS	TH EXPLORATION LLC	1/8+	943	513	N/A	N/A	N/A	N/A	N/A	N/A
10*21504	9-13-3	H	PAULETA LINDA CHEATHAM AND CARL WOHLERS	TH EXPLORATION LLC	1/8+	951	142	N/A	N/A	N/A	N/A	N/A	N/A
10*21638	9-13-3	H	THE MILDRED Y MILLS TRUST JULY 5TH 2007	TH EXPLORATION LLC	1/8+	956	172	N/A	N/A	N/A	N/A	N/A	N/A
10*21709	9-13-3	H	THOMAS YOUNG AND JANE CLAIRE YOUNG	TH EXPLORATION LLC	1/8+	959	350	N/A	N/A	N/A	N/A	N/A	N/A
10*21710	9-13-3	H	PENELOPE A JONES	TH EXPLORATION LLC	1/8+	959	355	N/A	N/A	N/A	N/A	N/A	N/A
10*22865	9-13-3	H	JAMES H CAMPBELL	TH EXPLORATION LLC	1/8+	977	60	N/A	N/A	N/A	N/A	N/A	N/A
10*22866	9-13-3	H	MARGARET R DONOFRIO	TH EXPLORATION LLC	1/8+	977	57	N/A	N/A	N/A	N/A	N/A	N/A
10*26004	9-13-3	H	LOUIS VAN SCYOC AND PATRICIA VAN SCYOC	AB RESOURCES LLC	1/8+	697	461	AB Resources LLC to Chief Exploration & Development LL & Radler 2000 Limited Partnership: 24/382	AB Resources LLC & NPAR LLC to Chief Exploration & Development LL & Radler 2000 Limited Partnership: 24/490	Chief Expl & Devel LL, Chiel O&G LLC, Radler 2000 Ltd P'ship & Enerplus Resc. (USA) Corp to Chevron USA Inc: 25/1 & 25/105	AB Resources LLC to NPAR LLC: 25/484	NPAR LLC to Chevron USA Inc: 756/332	Chevron USA Inc to TH Exploration LLC: 43/164
10*18339	5-16-7	K	RESOURCE MINERALS HEADWATER I LP	TH EXPLORATION LLC	1/8+	940	448	N/A	N/A	N/A	N/A	N/A	N/A
10*18526	5-16-7	K	ANN TURNER YOUNG SHRIVER	TH EXPLORATION LLC	1/8+	933	591	N/A	N/A	N/A	N/A	N/A	N/A
10*18597	5-16-7	K	MARK ALLEN LENENBERG	TH EXPLORATION LLC	1/8+	934	638	N/A	N/A	N/A	N/A	N/A	N/A
10*18636	5-16-7	K	CHERYL STEFFEN AND GREGORY STEFFEN	TH EXPLORATION LLC	1/8+	936	240	N/A	N/A	N/A	N/A	N/A	N/A
10*18637	5-16-7	K	THOMAS RICHMOND YOUNG ANITA A YOUNG	TH EXPLORATION LLC	1/8+	936	244	N/A	N/A	N/A	N/A	N/A	N/A
10*19467	5-16-7	K	ROBERT R FISHER AND AUDREY L IRVIN	TH EXPLORATION LLC	1/8+	942	592	N/A	N/A	N/A	N/A	N/A	N/A
10*19788	5-16-7	K	REX B FISHER AND DEBORAH FISHER	TH EXPLORATION LLC	1/8+	948	295	N/A	N/A	N/A	N/A	N/A	N/A
10*21014	5-16-7	K	JAMES P MCLAUGHLIN & ALICE W MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946	29	N/A	N/A	N/A	N/A	N/A	N/A

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10*21015	5-16-7	K	ROBERT L MCLAUGHLIN	TH EXPLORATION LLC	1/8+	946	339	N/A	N/A	N/A	N/A	N/A	N/A
10*21189	5-16-7	K	NATALIE GIBBS	TH EXPLORATION LLC	1/8+	941	261	N/A	N/A	N/A	N/A	N/A	N/A
10*21267	5-16-7	K	JAMES E NICHOLAS AND BEVERLY D NICHOLAS	TH EXPLORATION LLC	1/8+	943	513	N/A	N/A	N/A	N/A	N/A	N/A
10*21468	5-16-7	K	JOHN A SWIERKOS	TH EXPLORATION LLC	1/8+	953	317	N/A	N/A	N/A	N/A	N/A	N/A
10*21504	5-16-7	K	PAULETA LINDA CHEATHAM AND CARL WOHLERS	TH EXPLORATION LLC	1/8+	951	142	N/A	N/A	N/A	N/A	N/A	N/A
10*21638	5-16-7	K	THE MILDRED Y MILLS TRUST JULY 5TH 2007	TH EXPLORATION LLC	1/8+	956	172	N/A	N/A	N/A	N/A	N/A	N/A
10*21709	5-16-7	K	THOMAS YOUNG AND JANE CLAIRE YOUNG	TH EXPLORATION LLC	1/8+	959	350	N/A	N/A	N/A	N/A	N/A	N/A
10*21710	5-16-7	K	PENELOPE A JONES	TH EXPLORATION LLC	1/8+	959	355	N/A	N/A	N/A	N/A	N/A	N/A
10*22295	5-16-7	K	RACHEL B OSTRANDER	FOSSIL CREEK OHIO, LLC	1/8+	822	210	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/54	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 34/266	Fossil Creek Ohio LLC & Gulfport Energy Corporation to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*22319	5-16-7	K	SHARON G VAN SCYOC	FOSSIL CREEK OHIO, LLC	1/8+	822	204	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/54	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 34/266	Fossil Creek Ohio LLC & Gulfport Energy Corporation to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*22865	5-16-7	K	JAMES H CAMPBELL	TH EXPLORATION LLC	1/8+	977	60	N/A	N/A	N/A	N/A	N/A	N/A
10*22866	5-16-7	K	MARGARET R DONOFRIO	TH EXPLORATION LLC	1/8+	977	57	N/A	N/A	N/A	N/A	N/A	N/A
10*27946	5-16-7	K	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	591	N/A	N/A	N/A	N/A	N/A	N/A
10*21468	5-16-18	M	JOHN A SWIERKOS	TH EXPLORATION LLC	1/8+	953	317	N/A	N/A	N/A	N/A	N/A	N/A

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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;



March 17, 2022

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

RE: Pendleton N-16HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

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

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

Sincerely,

Amy L. Morris
Permitting Specialist
Tug Hill Operating

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4705 102245

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
COUNTY OF HOLMES

SS:

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.

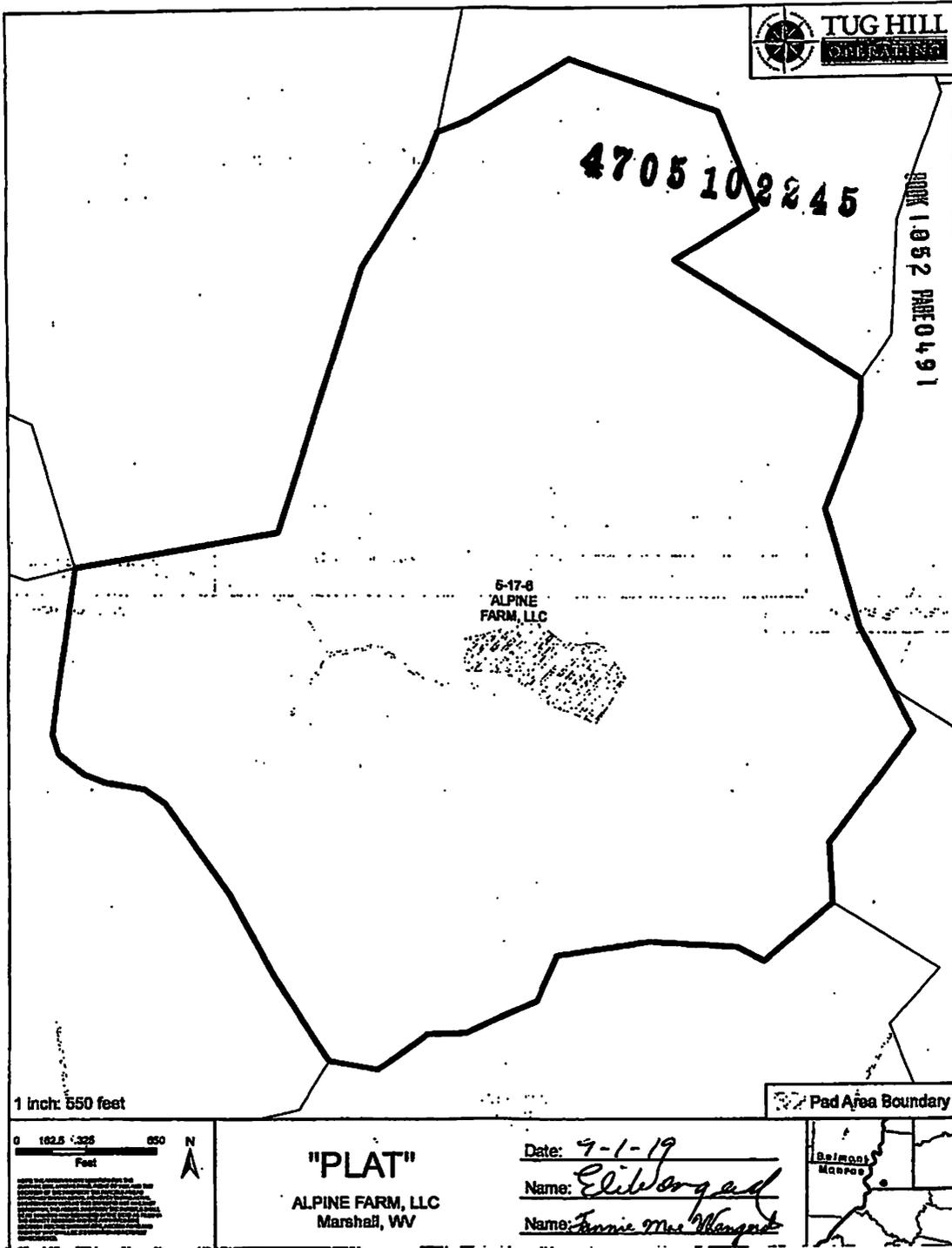
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

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



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 13th 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



March 17, 2022

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

RE: Pendleton N-16HU

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-16HU 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,

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

Amy L. Morris
Permitting Specialist – Appalachia Region

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WV Department of
Environmental Protection

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

Date of Notice Certification: 03/17/2022

API No. 47- 051 -
Operator's Well No. Pendleton N-16HU
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	Easting: <u>522,806.42</u>
County: <u>Marshall</u>		Northing: <u>4,400,418.50</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
RECEIVED Office of Oil & Gas MAR 21 2022 WV Department of Environmental Protection		

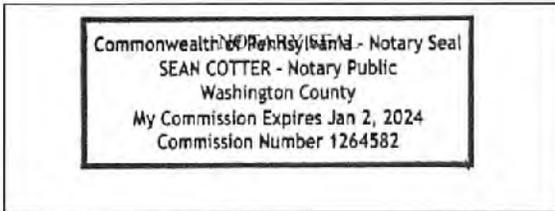
Required Attachments:

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.

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 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-hilltop.com</u>



Subscribed and sworn before me this 17 day of March, 2022.
[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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WW-6A
(9-13)

API NO. 47- 051 -
OPERATOR WELL NO. Pendleton N-16HU
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: 3/17/2022 **Date Permit Application Filed:** 3/18/2022

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: 1000 Consol Energy Drive

Canonsburg, PA 15317

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

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API NO. 47-051
OPERATOR WELL NO. Pendleton N-16HU
Well Pad Name: Pendleton

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 identified 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 the secretary shall address the Permit

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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

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WV Department of
Environmental Protection

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.**

04/22/2022

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.

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API NO. 47- 051 -
OPERATOR WELL NO. Pendleton N-16HU
Well Pad Name: Pendleton

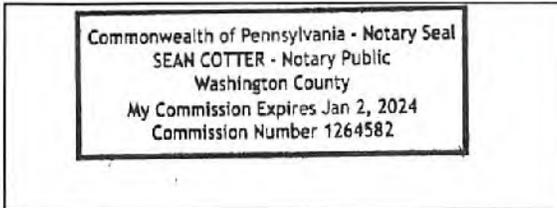
Notice is hereby given by:

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 17 day of March 2022.
[Signature] Notary Public
My Commission Expires 1/2/2022

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MAR 21 2022
WV Department of
Environmental Protection

04/22/2022

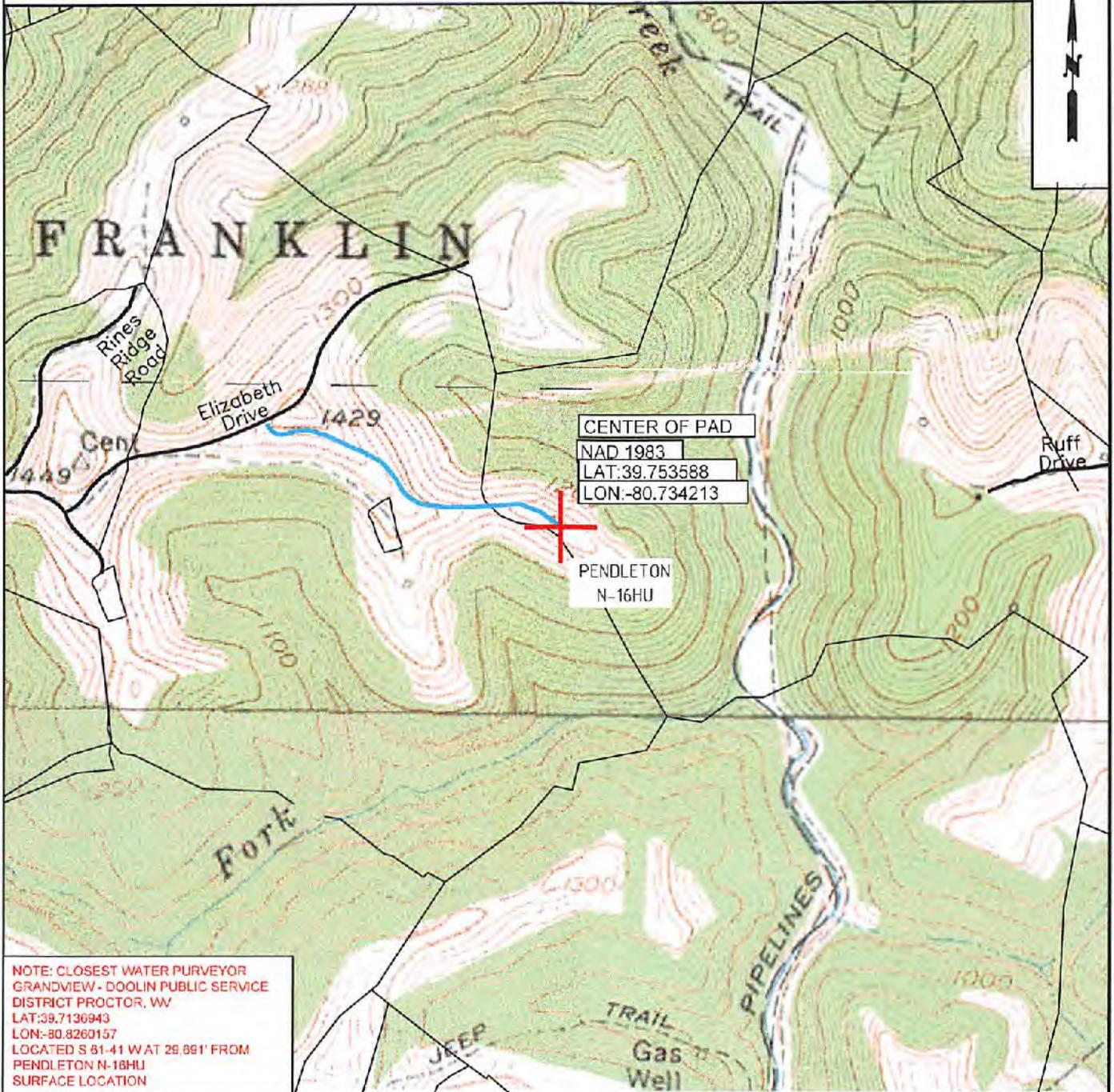
PROPOSED PENDLETON N-16HU

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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 29,891' FROM
PENDLETON N-16HU
SURFACE LOCATION

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

04/22/2022

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

Date of Notice: 02/07/2022 **Date Permit Application Filed:** 02/17/2022

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

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HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail, return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Alpine Farm, LLC (Access Road & Well Pad)
Address: 7932 Twp. Rd. 662
Dundee, OH 44624

Name: Ray J. Miller (Access Road)
Address: 1536 Twp. Rd. 660
Dundee, OH 44624

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 522,805.42
County: Marshall Northing: 4,400,418.55
District: Franklin Public Road Access: Rines Ridge Road (CR 76)
Quadrangle: Glen Easton 7.5' Generally used farm name: Alpine Farm, LLC
Watershed: Middle Fish Creek - HUC 10

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. 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.

Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC
Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
Telephone: 724-749-8388
Email: amorris@tug-hillop.com
Facsimile: 724-338-2030

Authorized Representative: Darren Brown
Address: 5098 Washington Street West, Suite 407
Charleston, WV 25313-1561
Telephone: 877-467-3525
Email: cl-statecommunications@wolterskluwer.com
Facsimile: _____

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.

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: 03/17/2022 **Date Permit Application Filed:** 03/19/2022

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

- CERTIFIED MAIL RETURN RECEIPT REQUESTED
- HAND 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 44624-9802

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:	West Virginia	UTM NAD 83	Easting:	522,606.42
County:	Marshall		Northing:	4,400,418.55
District:	Franklin	Public Road Access:	Rines Ridge Road (County Route 76)	
Quadrangle:	Glen Easton 7.5'	Generally used farm name:	Alpine Farm, LLC	
Watershed:	Fish Creek			

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-hillop.com

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

Oil and Gas Privacy Notice:

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

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Office of Oil & Gas

MAR 21 2022



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

January 24, 2022

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

Subject: DOH Permit for the Pendleton Pad, Marshall County
 Pendleton N-16HU Well Site

Dear Mr. Martin,

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

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

Very Truly Yours,

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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 Office of Oil & Gas

MAR 21 2022

WV Department of
 Environmental Protection



TUG HILL

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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Office of Oil & Gas

MAR 21 2022

WV Department of
Environmental Protection



Pendleton Well Site

Site Design, Construction Plan, & Erosion and Sediment Control Plans

Tug Hill Operating

Marshall County

Franklin District

Latitude 39.75358810°
Longitude -80.73421256°
Middle Fish Creek Watershed

Pertinent Site Information
Pendleton Site
Emergency Number: 304-843-1130
Franklin District, Marshall County, WV
Watershed: Middle Fish Creek Watershed
Site 911 Address:

Tug Hill Contact Number: 1-817-632-3400

Property Owner Information - Pendleton Well Site
Owner: Tug Hill Operating
Address: 1177 S.W. 10th St., Tug Hill, WV 26040
Phone: 817-632-3400
Fax: 817-632-3400
Website: www.tughill.com
County: Marshall
City: Tug Hill
State: WV
Zip: 26040

Exhibit A: Final Design: Issue for Permitting

Section	Notes
SECTION 1	...
SECTION 2	...
SECTION 3	...
SECTION 4	...
SECTION 5	...
SECTION 6	...
SECTION 7	...
SECTION 8	...
SECTION 9	...
SECTION 10	...
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SECTION 47	...
SECTION 48	...
SECTION 49	...
SECTION 50	...



Area		Acres	Notes
Well Pad	1.17	1.17	Well Pad
Access Road	0.15	0.15	Access Road
Drainage Basin	0.15	0.15	Drainage Basin
Other	0.15	0.15	Other
Total	1.57	1.57	

Franklin Well Site Quantities	
Excavation	1,170 cu yd
Fill	1,170 cu yd
Gravel	1,170 cu yd
Asphalt	1,170 cu yd
Concrete	1,170 cu yd
Rebar	1,170 cu yd
Steel	1,170 cu yd
Paint	1,170 cu yd
Other	1,170 cu yd
Total	11,700 cu yd

APPROVED WVDEP OOG
Updated
4/13/2022

Project Contacts

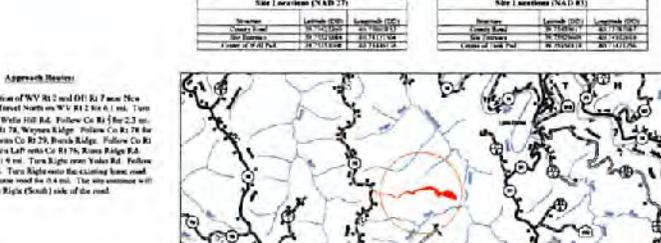
Tug Hill Operating
Jonathan White - Site Development Lead
724-483-2000 ext. 304-843-1130

Client Contact
John P. Hill
800-442-2776

Lead Draftsman
Christopher Morgan
304-238-4447 ext. 202

The Hill Grouping, LLC
380 Southwestern Blvd.
Martinsburg, WV 26151
304-271-1111

Approach Route:
From the intersection of WV Rt 2 and OH Rt 7 east 1/2 mile, turn North on WV Rt 2 for 0.1 mile, turn Right onto Co Rd 1, Follow Co Rd 1 for 2.3 mi, Turn Right onto Co Rd 78, West on Ridge, Follow Co Rd 78 for 0.8 mi, Turn Right onto Co Rd 29, Bank Ridge, Follow Co Rd 29 for 2.1 mi, Turn Left onto Co Rd 76, Run Ridge Rd, Follow Co Rd 76 for 1.8 mi, Turn Right onto Yule Rd, Follow Yule Rd for 0.4 mi, Turn Right onto the existing base road, Follow the existing road for 0.4 mi. The site entrance will be on the Right (OH) side of the road.



Sheet	Description
1	Cover Sheet
1-1	Schedule of Quantities
1-1-1	Site Notes
1-1-2	Pre-Construction Site Conditions
1-1-3	Site Map
1-1-4	Construction Erosion
1-1-5	Overall Plan View
1-1-6	E.R.S. Plan View
1-1-7	Top View Exhibit
1-1-8	Plan View
1-1-9	Cross Sections - Well Pad
1-1-10	Cross Sections - Access Road
1-1-11	Geotechnical Exhibit
1-1-12	Site Rehabilitation
1-1-13	Landowner Diminished Area Exhibit
1-1-14	Production Exhibit
1-1-15	Erosion and Sediment Control Details
1-1-16	Access Road Details
1-1-17	Pad Details

MISS HILLITY OF WEST VIRGINIA
1-800-245-4848
www.miss-hillity.com

Tug Hill Operating will obtain an Encroachment Permit (from M&M) from the WV Department of Transportation, Division of Highways prior to the commencement of any construction activities.

The WV Mines Website was consulted. Pre-construction activities are not within the AOR.

WVDEP Website files show that there are no active and/or abandoned gas wells within the AOR.

Final Design:
This design is based on the information provided by the client and is subject to change without notice. The client is responsible for providing accurate information and for obtaining all necessary permits. The design is not to be used for any other purpose without the written consent of the engineer.

Professional Engineer:
Christopher Morgan
Professional Engineer
No. 12345
State of West Virginia

TUG HILL OPERATING

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

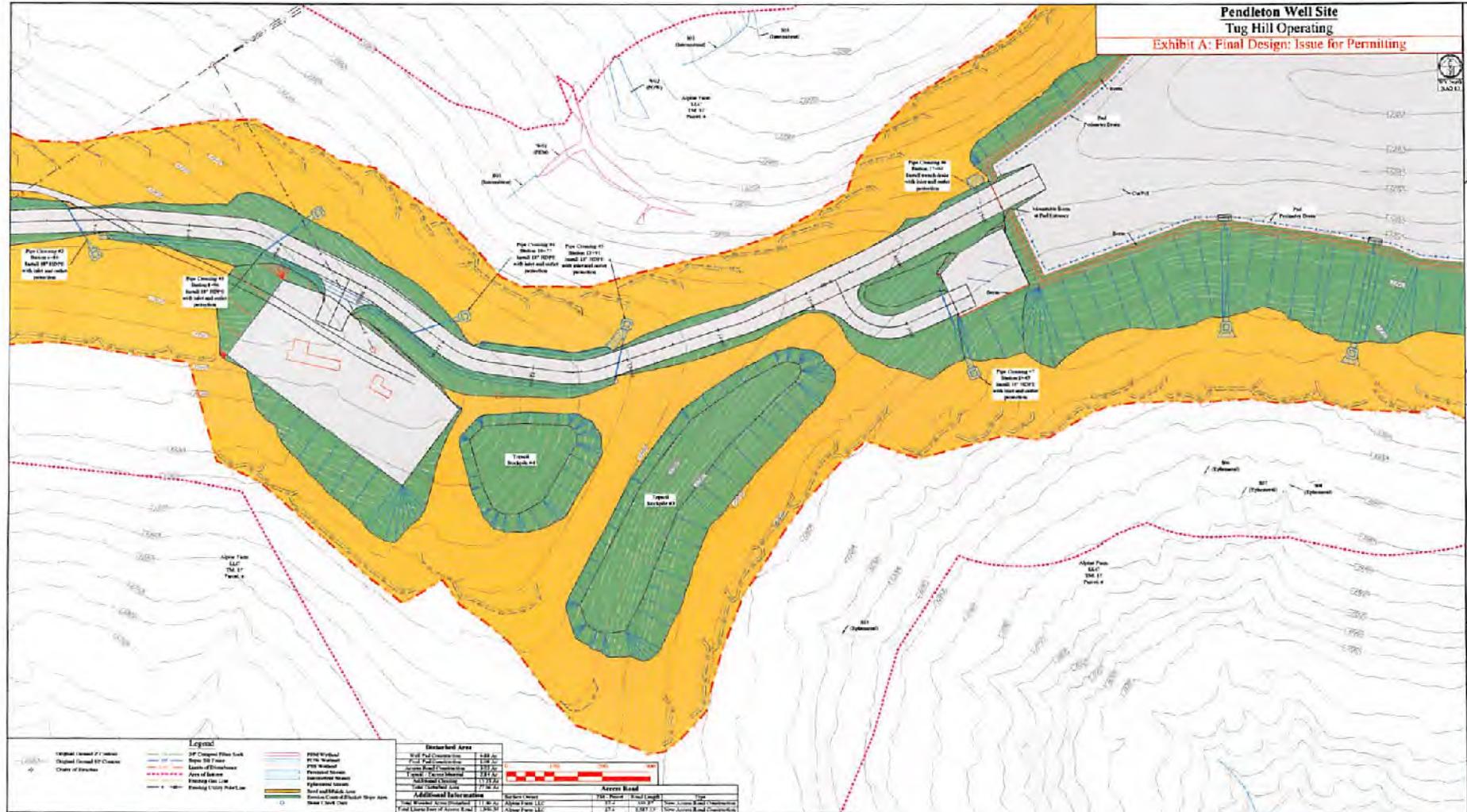
K&S CONSULTANTS

Pendleton Well Site
Franklin District
Marshall County, WV

Sheet 1 of 20

Pendleton Well Site
Tug Hill Operating

Exhibit A: Final Design: Issue for Permitting

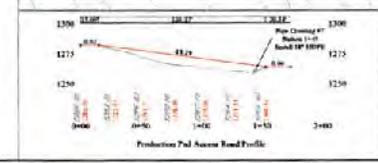
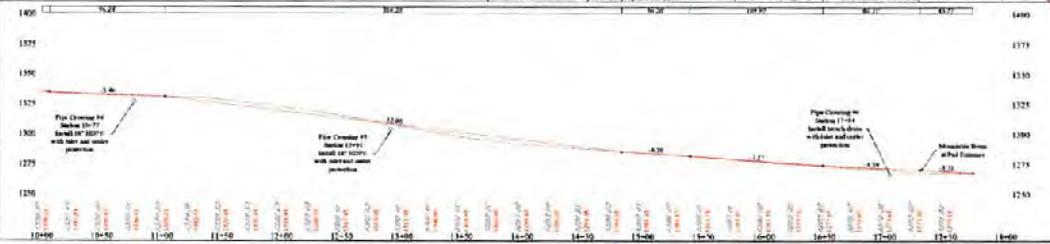


Legend

- Original Ground Elevation
- Original Ground Elevation
- Chain of Survey
- 2" Contour Interval
- 5' Contour Interval
- 10' Contour Interval
- Area of Buffer
- Production Pad
- Access Road
- 2" Contour Interval
- 5' Contour Interval
- 10' Contour Interval
- Area of Buffer
- Production Pad
- Access Road
- 2" Contour Interval
- 5' Contour Interval
- 10' Contour Interval
- Area of Buffer
- Production Pad
- Access Road

Area	Area (Acres)
Production Pad	1.28
Access Road	1.28
Area of Buffer	1.28
Production Pad	1.28
Access Road	1.28
Area of Buffer	1.28

Area	Area (Acres)
Production Pad	1.28
Access Road	1.28
Area of Buffer	1.28
Production Pad	1.28
Access Road	1.28
Area of Buffer	1.28



APPROVED
WVDEP OOG
Updated
4/13/2022

TUG HILL OPERATING
 THIS DOCUMENT PREPARED FOR TUG HILL OPERATING
 K&S CONSULTANTS
 Pendleton Well Site
 Franklin District
 Marshall County, WV
 Date: 12/17/2021
 Scale: As Shown
 Drawn By: JS
 File No:
 Sheet 7 of 20

