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west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, February 11, 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 ELMER N-18HU  
47-103-03467-00-00

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, Chief, is written over the text. The signature is stylized and cursive.  
James A. Martin  
Chief

Operator's Well Number: ELMER N-18HU  
Farm Name: ELNORA TUTTLE  
U.S. WELL NUMBER: 47-103-03467-00-00  
Horizontal 6A New Drill  
Date Issued: 2/11/2022



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

February 7, 2022

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

RE: Application for Deep Well Permit – API #47-103-03467

COMPANY: Tug Hill Operating, LLC

FARM: Elnora Tuttle Elmer N-18HU

COUNTY: Wetzel DISTRICT: Proctor QUAD: Wileyville

The deep well review of the application for the above company is **Approved to drill to Trenton for Point Pleasant completion. Pooling Docket No. 305-309.**

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? Yes. Docket No. 305-309.
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



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west virginia department of environmental protection

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

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

**ORDER  
ISSUED UNDER  
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: Tug Hill Operating, LLC  
380 Southpointe Boulevard, Plaza II., Suite 200  
Canonsburg, PA 15317

DATE: February 11, 2022  
ORDER NO.: 2022-W-2

**INTRODUCTION**

This Order (hereinafter “Order”) is issued by the Office of Oil and Gas (hereinafter “OOG”), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to Tug Hill Operating, LLC (hereinafter “Tug Hill” or “Operator”), collectively the “Parties.”

**FINDINGS OF THE CHIEF**

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. Tug Hill is a “person” as defined by W. Va. Code §22-6-1(n), with a corporate address as 380 Southpointe Boulevard, Plaza II., Suite 200, Canonsburg, PA 15317.
3. On November 2, 2021, Tug Hill submitted a well work permit application identified as API# 47-103-03467. The well is located on the Elmer Pad in the Proctor District of Wetzel County, West Virginia.
4. On November 2, 2021, Tug Hill requested a waiver for ASE Wetland 01 as outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-103-03467.

02/11/2022

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
  
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
  
3. West Virginia Code §22-6A-12(b) requires, in part, that “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 Office of Oil and Gas 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 Office of Oil and Gas 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.”



## ORDER

West Virginia Code §22-6A-12(b) requires, in part, that “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. The Office of Oil and Gas grants the request for a waiver for ASE Wetland 01 from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-103-03467. The Office of Oil and Gas hereby **ORDERS** that Tug Hill shall meet the following site construction and operational requirements for the Elmer Well Pad:

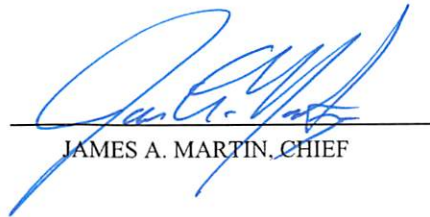
- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. The berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. ASE Wetland 01 shall be protected by a layer of both Super Silt Fence and twenty four inch (24”) compost filter sock. This along with temporary and permanent vegetative cover will prevent sediment from reaching the wetland;
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 11th day of February, 2022.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By:



\_\_\_\_\_

JAMES A. MARTIN, CHIEF

# 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

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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](mailto:DEPOOGNotify@wv.gov).

02/11/2022





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(11,505'). 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 28,000,000 lb. proppant and 510,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.44 acres

22) Area to be disturbed for well pad only, less access road (acres): 8.26 acres

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

\*Note: Attach additional sheets as needed.

4710303467

WW-6B  
(04/15)

API NO. 47- 103

OPERATOR WELL NO. Elmer N-18HU

Well Pad Name: Elmer

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259ft <sup>3</sup> (CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	1,125'	1,125'	1,802ft <sup>3</sup> (CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,950'	2,950'	2,079ft <sup>3</sup> (CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	11,460'	11,460'	3,735ft <sup>3</sup> (CTS)
Production	5 1/2"	NEW	P110	23#	24,489'	24,489'	5,805ft <sup>3</sup> (CTS)
Tubing	2 7/8"	NEW	P110	6.5#		12,005'	
Liners							

*Super Heavy*  
10-29-21 ✓ WS 2/1/22

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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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

February 7, 2022

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

RE: Application for Deep Well Permit – API #47-103-03467

COMPANY: Tug Hill Operating, LLC

FARM: Elnora Tuttle Elmer N-18HU

COUNTY: Wetzel DISTRICT: Proctor QUAD: Wileyville

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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



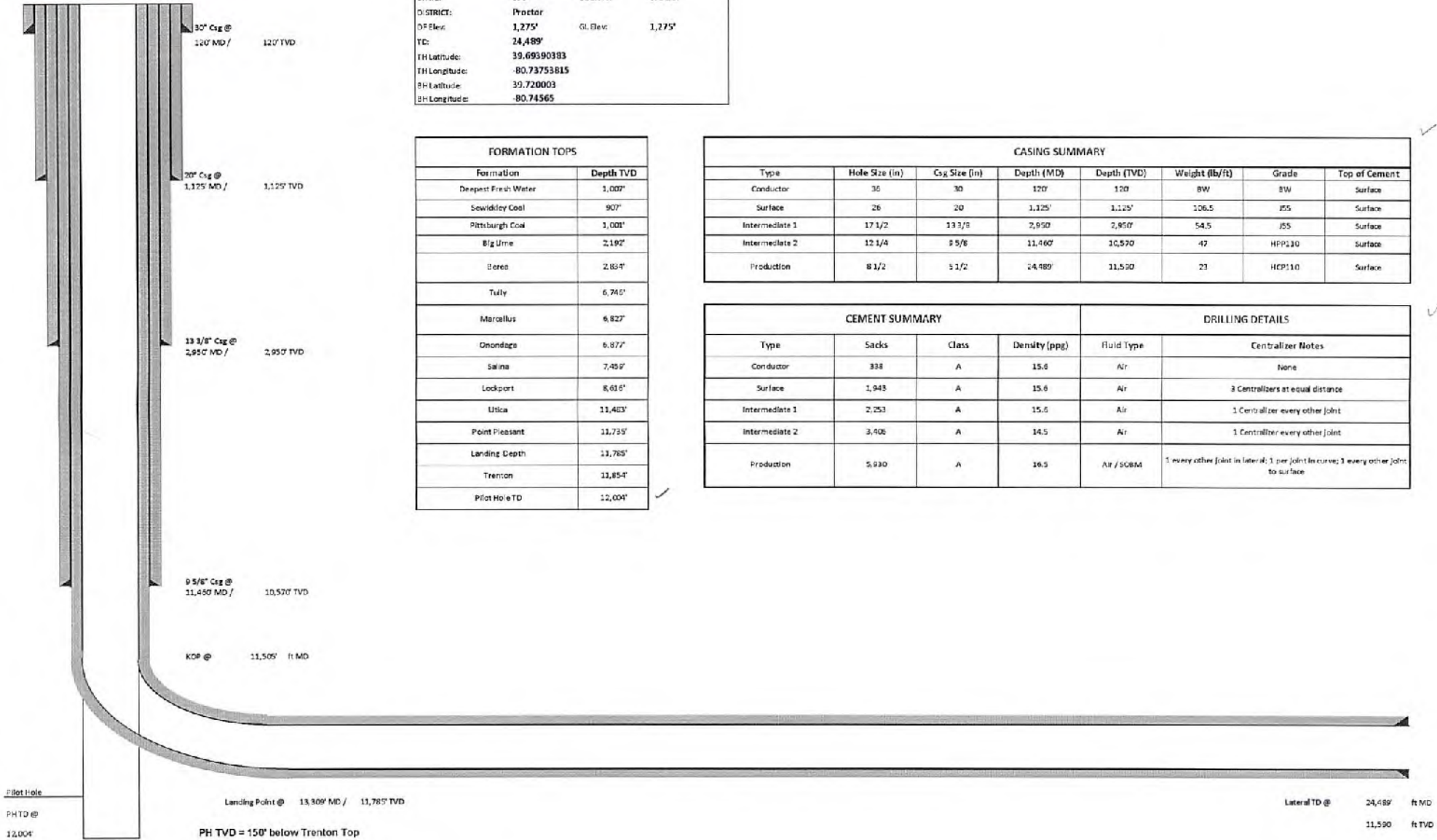


WELL NAME:	<b>Elmer N-18HU</b>		
STATE:	<b>WV</b>	COUNTY:	<b>Wetzel</b>
DISTRICT:	<b>Proctor</b>		
D <sup>F</sup> Elev:	<b>1,275'</b>	Gl. Elev:	<b>1,275'</b>
TD:	<b>24,489'</b>		
TH Latitude:	<b>39.69390383</b>		
TH Longitude:	<b>-80.73753815</b>		
BH Latitude:	<b>39.720003</b>		
BH Longitude:	<b>-80.74565</b>		

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1,007'
Sewickley Coal	907'
Pittsburgh Coal	1,001'
Big Lime	2,192'
Berea	2,834'
Tully	6,745'
Marcellus	6,827'
Onondaga	6,877'
Salina	7,459'
Lockport	8,616'
Utica	11,403'
Point Pleasant	11,735'
Landing Depth	11,785'
Trenton	11,854'
Pilot Hole TD	12,004'

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'	8W	8W	Surface
Surface	26	20	1,125'	1,125'	106.5	J55	Surface
Intermediate 1	17 1/2	13 7/8	2,950'	2,950'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	11,460'	10,570'	47	HPP130	Surface
Production	8 1/2	5 1/2	24,489'	11,590'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,943	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,253	A	15.5	Air	1 Centralizer every other joint
Intermediate 2	3,406	A	14.5	Air	1 Centralizer every other joint
Production	5,930	A	16.5	Air / SOBEM	1 every other joint in laterals; 1 per joint in curve; 1 every other joint to surface







**Tug Hill Operating, LLC Casing and Cement Program**

**Elmer N-18HU**

**Casing**

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,125'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,950'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	11,460'	CTS
Production	5 1/2"	HCP110	8 1/2"	24,489'	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

AMANDA WOSKO  
DPS LAND SERVICES  
6000 TOWN CENTER BLVD  
STE 145  
CANNONSBURG PA 15317-5841

## MEMORANDUM OF SURFACE USE AGREEMENT

This Memorandum of Surface Use Agreement ("Memorandum") made this 14 day of MAY 2021 by and between Elnora Tuttle, by her Power-of-Attorney whose address is 6768 Proctor Creek Road, Proctor, WV 26055, (hereinafter collectively called "Surface Owner"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address of 1320 S. University Drive, Suite 500, Fort Worth, TX 76107, (hereinafter called "Company").

### WITNESSETH

For and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, Surface Owner did make and execute in favor of Company a Surface Use Agreement (the "Agreement") dated MAY 14, 2021 and made effective MAY 24, 2021 which provides for a ten (10) year term ("Agreement Term") covering Surface Owner's interest in the following described lands (the "Lands"):

The Lands are located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including lands identified as: 12-8-15, and described for the purposes of this Memorandum as containing 39.2 acres, and Lands located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including all contiguous or appurtenant lands owned by Surface Owner, as described in that certain deed dated July 25, 1985 and recorded in the office of the County Clerk of the aforesaid County in Deed Book, 315-62.

The Company desires to use the portion of Land labeled as "Limit of Disturbance - Pad" and "Limit of Disturbance - Access Road" on the attached Exhibit A for the construction and installation of access roads, drilling pads, tanks, fences, pits and any other facilities or equipment necessary or convenient for the drilling, completion, production, operation, and maintenance of the Company's operations on or off the Land as well as to lay, maintain, excavate, construct, survey, re-construct, operate, tie into, inspect, enlarge, repair, replace, alter, clear trees and other obstructions, and remove, one or more above and/or below ground pipelines, whether permanent or temporary, with fittings and appliances, for the transportation of potable and non-potable fresh water, produced water, completion backflow water, oil, gas and other liquid or gaseous products/substances to and from wells drilled, or to be drilled, on or off the Lands and the Surface Owner is agreeable to the same on the terms and conditions set out in the Agreement.

The Agreement also grants unto Company, Surface Owner's consent to and an easement for the drilling, production, and operation of shallow and deep horizontal or vertical oil and gas wells at any legal location(s) upon the surface of the Lands pursuant to W. Va. Code §§ 22-6A and 22C-9-7(b)(4) and applicable regulations.

The Agreement, with all of its terms, covenants and other provisions, is referred to and incorporated into this Memorandum for all purposes. This Memorandum is placed of record for the purpose of giving notice of the Agreement. Nothing contained in this Memorandum will alter or amend any of the terms and provisions of the Agreement. In the event of any conflict between this Memorandum and the Agreement, the terms and conditions of the Agreement shall control.

IN WITNESS WHEREOF this Memorandum of Surface Use Agreement is executed as of the date first above written.

Surface Owner:   
Sandra Murriner  
Power-of-Attorney

Company: TH EXPLORATION, LLC

By:   
Name: Benjamin J. Irwin  
Title: Attorney-in-Fact

ACKNOWLEDGEMENT

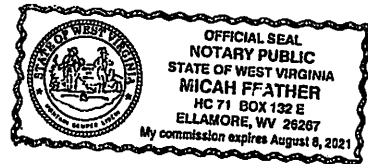
STATE OF West Virginia )  
 ) SS:  
COUNTY OF Netze l )

On this the 14 day of May, 2021, before me, a notary public, the undersigned authority, personally appeared Sandra Murriner, Power-of-Attorney for Elnora Tuttle, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he/she executed the same for the purposes therein contained.

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

My Commission Expires: August 8, 2021 Signature: [Signature]  
Notary Public

Name/Notary Public (print): Micah Feather



ACKNOWLEDGEMENT

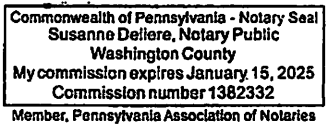
COMMONWEALTH OF PENNSYLVANIA )  
 ) SS:  
COUNTY OF WASHINGTON )

On this, the 19<sup>th</sup> day of May, 2021, before me a notary public, the undersigned authority, personally appeared Benjamin J. Irwin, who acknowledged himself to be the Attorney-In-Fact of TH EXPLORATION, LLC, a Texas limited liability company, and that he as such Attorney-In-Fact being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company by himself as Attorney-In-Fact.

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

My Commission Expires: 1/15/2025 Signature: [Signature]  
Notary Public

Name/Notary Public (print): Susanne Dellere



Prepared by and please return to:  
TH Exploration, LLC  
1320 S. University Drive, Suite 500  
Fort Worth, TX 76107



## MEMORANDUM OF SURFACE USE AGREEMENT

This Memorandum of Surface Use Agreement ("Memorandum") made this 25 day of May 2021 by and between Charles Lee & Betty Jean Huggins, husband and wife, whose address is 5352 Palmer Ridge Road, Proctor, WV 26055, (hereinafter collectively called "Surface Owner"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address of 1320 S. University Drive, Suite 500, Fort Worth, TX 76107, (hereinafter called "Company").

### WITNESSETH

For and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, Surface Owner did make and execute in favor of Company a Surface Use Agreement (the "Agreement") dated May 25, 2021 and made effective May 25, 2021 which provides for a five (5) year term ("Agreement Term") covering Surface Owner's interest in the following described lands (the "Lands"):

The Lands are located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including lands identified as: 12-8-16, and described for the purposes of this Memorandum as containing 39.19 acres, and Lands located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including all contiguous or appurtenant lands owned by Surface Owner, as described in that certain deed dated July 1, 1987 and recorded in the office of the County Clerk of the aforesaid County in Deed Book, 322-120.

The Company desires to use the portion of Land labeled as "Limit of Disturbance - Pad" and "Limit of Disturbance - Access Road" on the attached Exhibit A for the construction and installation of access roads, drilling pads, tanks, fences, pits and any other facilities or equipment necessary or convenient for the drilling, completion, production, operation, and maintenance of the Company's operations on or off the Land as well as to lay, maintain, excavate, construct, survey, re-construct, operate, tie into, inspect, enlarge, repair, replace, alter, clear trees and other obstructions, and remove, one or more above and/or below ground pipelines, whether permanent or temporary, with fittings and appliances, for the transportation of potable and non-potable fresh water, produced water, completion backflow water, oil, gas and other liquid or gaseous products/substances to and from wells drilled, or to be drilled, on or off the Lands and the Surface Owner is agreeable to the same on the terms and conditions set out in the Agreement.

The Agreement also grants unto Company, Surface Owner's consent to and an easement for the drilling, production, and operation of shallow and deep horizontal or vertical oil and gas wells at any legal location(s) upon the surface of the Lands pursuant to W. Va. Code §§ 22-6A and 22C-9-7(b)(4) and applicable regulations.

The Agreement, with all of its terms, covenants and other provisions, is referred to and incorporated into this Memorandum for all purposes. This Memorandum is placed of record for the purpose of giving notice of the Agreement. Nothing contained in this Memorandum will alter or amend any of the terms and provisions of the Agreement. In the event of any conflict between this Memorandum and the Agreement, the terms and conditions of the Agreement shall control.

IN WITNESS WHEREOF this Memorandum of Surface Use Agreement is executed as of the date first above written.

Surface Owner: Charles Lee Huggins  
Charles Lee Huggins

Betty Jean Huggins  
Betty Jean Huggins

Company: TH EXPLORATION, LLC

By: Benjamin J. Irwin  
Name: Benjamin J. Irwin  
Title: Attorney-in-Fact



ACKNOWLEDGEMENT

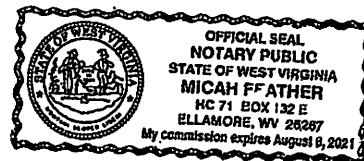
STATE OF WEST VIRGINIA )  
 ) SS:  
COUNTY OF WETZEL )

On this the 25 day of May, 2021, before me, a notary public, the undersigned authority, personally appeared Charles Lee Huggins, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he/she executed the same for the purposes therein contained.

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

My Commission Expires August 8, 2024 Signature: [Signature]  
Notary Public

Name/Notary Public (print): Micah Feather



ACKNOWLEDGEMENT

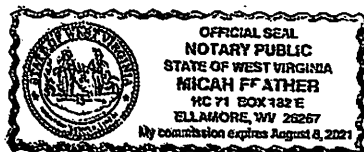
STATE OF WEST VIRGINIA )  
 ) SS:  
COUNTY OF WETZEL )

On this the 25 day of May, 2021, before me, a notary public, the undersigned authority, personally appeared Betty Jean Huggins, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he/she executed the same for the purposes therein contained.

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

My Commission Expires August 8, 2024 Signature: [Signature]  
Notary Public

Name/Notary Public (print): Micah Feather



ACKNOWLEDGEMENT

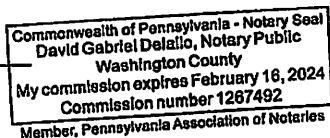
COMMONWEALTH OF PENNSYLVANIA )  
 ) SS:  
COUNTY OF WASHINGTON )

On this, the 25 day of May, 2021, before me a notary public, the undersigned authority, personally appeared Benjamin J. Irwin, who acknowledged himself to be the Attorney-in-Fact of TH EXPLORATION, LLC, a Texas limited liability company, and that he as such Attorney-in-Fact being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company by himself as Attorney-In-Fact.

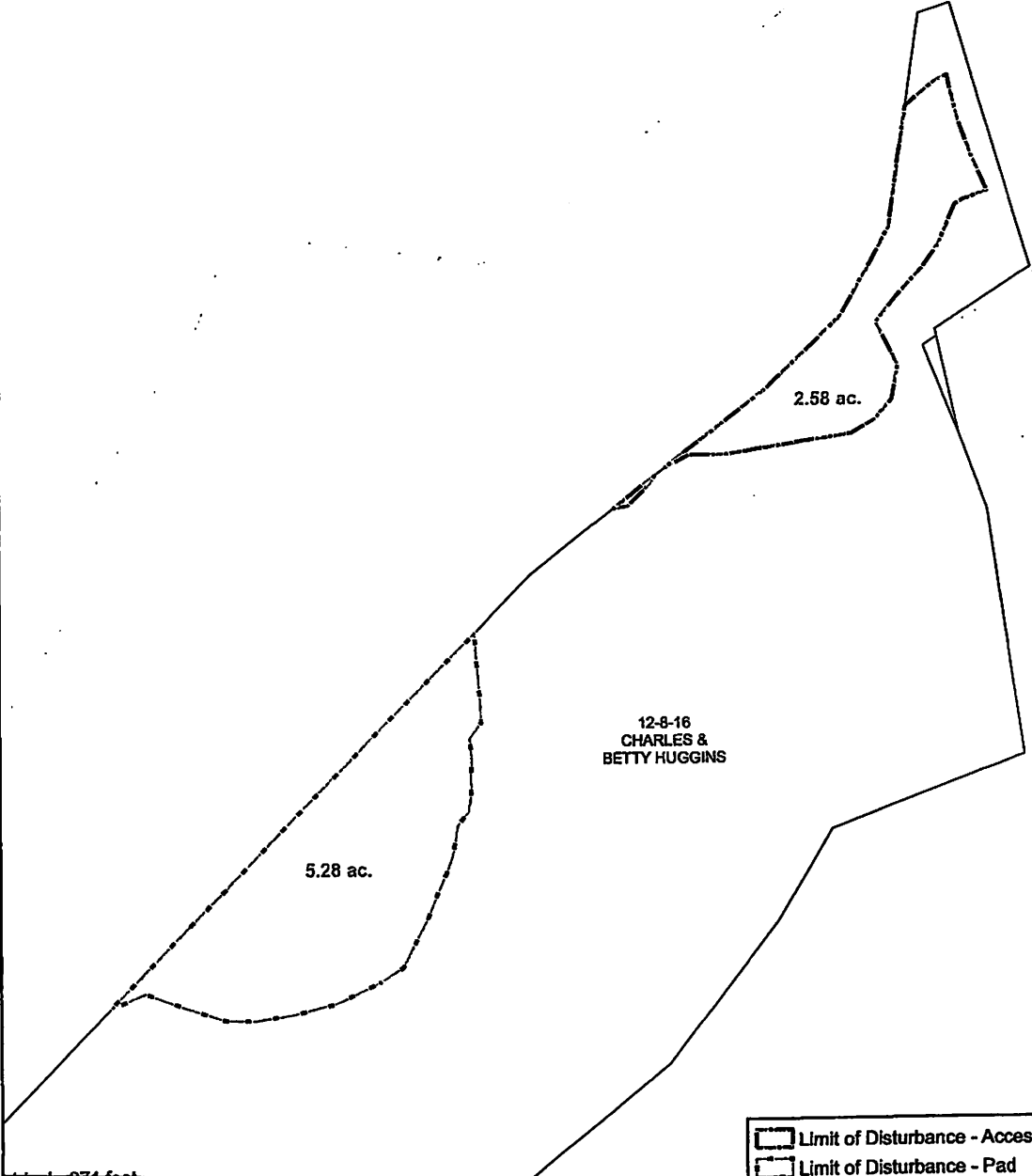
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: 2/16/24 Signature: [Signature]  
Notary Public

Name/Notary Public (print): DAVID G. DELALIO



Prepared by and please return to:  
TH Exploration, LLC  
1320 S. University Drive, Suite 500  
Fort Worth, TX 76107



Limit of Disturbance - Access Road  
 Limit of Disturbance - Pad

1 inch = 271 feet

0 90 180 320 Feet

N

NOTE: THE APPROVED SITE LOCATION FOR THE SERVICE PAD, ACCESS ROAD, ENTRY OF THE AREA THE LOCATION OF THE PROPERTY THAT THIS PLAN IS BEING SUBMITTED TO THE COUNTY RECORDS AND THE COUNTY RECORDS AND THE APPROVED AND LOCATION FOR THE SERVICE PAD, ACCESS ROAD AND ENTRY OF THE AREA AS THE LOCATION IS ACTUALLY CONSTRUCTED.

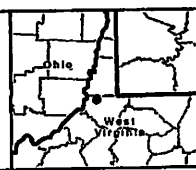
**Exhibit "A"**

CHARLES & BETTY HUGGINS  
Wetzel County, WV

Date: 5-25-21

Name: CLH

Name: Betty Huggins



Date: 4/14/2021  
PCS: NAD 1983 UTM Zone 17N Foot US

Wetzel County  
 Carol S Haupt, Clerk  
 Instrument 308767  
 06/11/2021 @ 03:59:54 PM  
 ASSESSMENT  
 Book 138 @ Page 714  
 Pages Recorded 3  
 Recording Cost \$ 11.00

02/11/2022



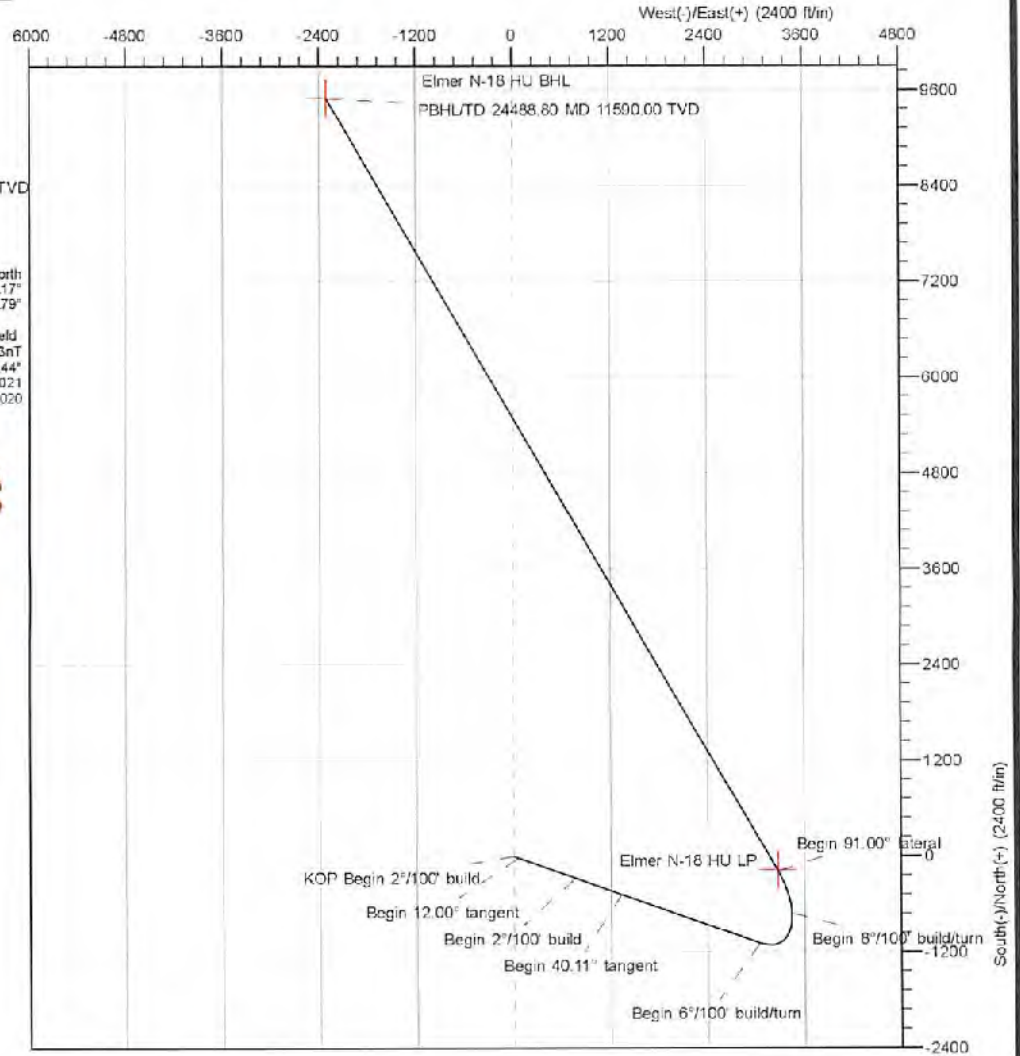
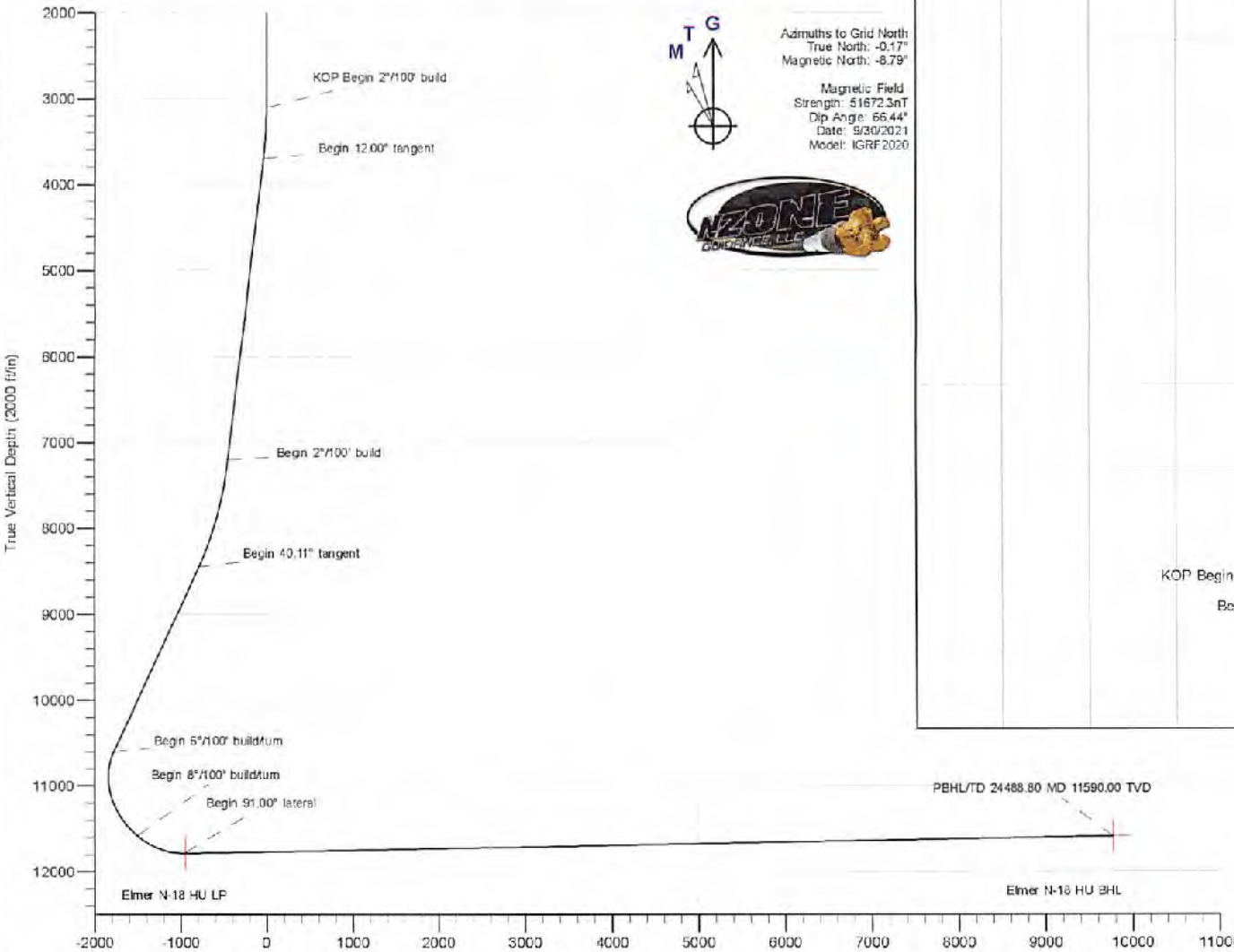
Well: Elmer N-18 HU (slot M)  
 Site: Elmer  
 Project: Wetzel County, West Virginia (UTM17 NAD83)  
 Design: rev0

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Elmer N-18 HU BHL	11590.00	9496.74	-2308.80	14424879.17	1711937.75	39.7200300	-80.74565000
- plan hits target center							
Elmer N-18 HU LP	11785.00	-175.85	3275.49	14415208.60	1717522.03	39.69339400	-80.72589600
- plan misses target center by 8.05ft at 19318.25ft MD (11784.73 TVD, -179.87 N, 3269.52 E)							

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	0.000	0.00	
2	3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	3700.00	12.00	109.71	3695.62	-21.11	58.93	2.00	109.710	-34.44	Begin 12.00° tangent
4	7282.87	12.00	109.71	7200.00	-272.33	780.17	0.00	0.000	-444.20	Begin 2°/100' build
5	8887.93	40.11	109.71	8449.85	-478.39	1335.39	2.00	-0.002	-780.31	Begin 40.11° tangent
6	11504.83	40.11	109.71	10604.40	-1080.34	3043.72	0.00	0.000	-1778.51	Begin 6°/100' build/turn
7	12708.73	50.00	357.50	11585.23	-708.45	3443.01	6.00	-131.864	-1501.75	Begin 6°/100' build/turn
8	13309.40	91.00	330.04	11784.89	-187.54	3272.93	8.00	-38.306	-955.41	Begin 91.00° lateral
9	24488.80	91.00	330.04	11590.00	9496.74	-2308.80	0.00	0.000	9773.37	PBHLTD 24488.80 MD 11590.00 TVD



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 @ 1275.00ft

Northing	Easting	Latitude	Longitude
14415382.44	1714246.55	39.69339383	-80.73753815

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.33





Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Elmer N-18 HU (slot M)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1275.00ft
<b>Project:</b>	Wetzel County, West Virginia (UTM17 NAD83)	<b>MD Reference:</b>	GL @ 1275.00ft
<b>Site:</b>	Elmer	<b>North Reference:</b>	Grid
<b>Well:</b>	Elmer N-18 HU (slot M)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev0		

<b>Project</b>	Wetzel County, West Virginia (UTM17 NAD83)		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD83 West Virginia - HARN		
<b>Map Zone:</b>	Zone 17N (84 W to 78 W)		

<b>Site</b>	Elmer				
<b>Site Position:</b>		<b>Northing:</b>	14,415,313.84 usft	<b>Latitude:</b>	39.69371572
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,714,207.74 usft	<b>Longitude:</b>	-80.73767681
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	Elmer N-18 HU (slot M)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,415,382.45 usft	<b>Latitude:</b>	39.69390383
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,714,248.55 usft	<b>Longitude:</b>	-80.73753815
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	1,275.00 ft	
<b>Grid Convergence:</b>						

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b> (°)	<b>Dip Angle</b> (°)	<b>Field Strength</b> (nT)
	IGRF2020	9/30/2021	-8.625	66.441	51,672.27897662

<b>Design</b>	rev0			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b> (ft)	<b>+N/-S</b> (ft)	<b>+E/-W</b> (ft)	<b>Direction</b> (°)
	0.00	0.00	0.00	346.34

Plan Survey Tool Program		Date		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	24,488.80 rev0 (Original Hole)		



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Elmer N-18 HU (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1275.00ft
Project:	Wetzel County, West Virginia (UTM17 NAD83)	MD Reference:	GL @ 1275.00ft
Site:	Elmer	North Reference:	Grid
Well:	Elmer N-18 HU (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

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	
3,700.00	12.00	109.71	3,695.62	-21.11	58.93	2.00	2.00	0.00	109.710	
7,282.67	12.00	109.71	7,200.00	-272.33	760.17	0.00	0.00	0.00	0.000	
8,887.93	40.11	109.71	8,449.85	-478.39	1,335.39	2.00	2.00	0.00	-0.002	
11,504.83	40.11	109.71	10,604.40	-1,090.34	3,043.72	0.00	0.00	0.00	0.000	
12,706.74	50.00	357.50	11,585.23	-708.45	3,443.01	6.00	0.82	-9.32	-131.864	
13,309.40	91.00	330.04	11,784.89	-187.54	3,272.93	8.00	6.83	-4.57	-38.306	
24,488.80	91.00	330.04	11,590.00	9,496.74	-2,308.80	0.00	0.00	0.00	0.000	Elmer N-18 HU BHL





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Elmer N-18 HU (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1275.00ft
Project:	Welzel County, West Virginia (UTM17 NAD83)	MD Reference:	GL @ 1275.00ft
Site:	Elmer	North Reference:	Grid
Well:	Elmer N-18 HU (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

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	14,415,362.45	1,714,246.55	39.69390383	-80.73753815	
100.00	0.00	0.00	100.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
200.00	0.00	0.00	200.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
300.00	0.00	0.00	300.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
400.00	0.00	0.00	400.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
500.00	0.00	0.00	500.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
600.00	0.00	0.00	600.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
700.00	0.00	0.00	700.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
800.00	0.00	0.00	800.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
900.00	0.00	0.00	900.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,415,382.45	1,714,246.55	39.69390383	-80.73753815	
<b>KOP Begin 2°/100' build</b>										
3,200.00	2.00	109.71	3,199.98	-0.59	1.54	14,415,381.86	1,714,248.19	39.69390220	-80.73753232	
3,300.00	4.00	109.71	3,299.84	-2.35	6.57	14,415,380.09	1,714,253.12	39.69389731	-80.73751482	
3,400.00	6.00	109.71	3,399.45	-5.29	14.77	14,415,377.15	1,714,261.32	39.69388918	-80.73748568	
3,500.00	8.00	109.71	3,498.70	-9.40	26.25	14,415,373.04	1,714,272.79	39.69387780	-80.73744494	
3,600.00	10.00	109.71	3,597.47	-14.68	40.97	14,415,367.77	1,714,287.52	39.69386319	-80.73739265	
3,700.00	12.00	109.71	3,695.62	-21.11	58.93	14,415,361.33	1,714,305.48	39.69384537	-80.73732886	
<b>Begin 12.00° tangent</b>										
3,800.00	12.00	109.71	3,793.44	-28.13	78.51	14,415,354.32	1,714,325.05	39.69382596	-80.73725936	
3,900.00	12.00	109.71	3,891.25	-35.14	98.08	14,415,347.31	1,714,344.63	39.69380654	-80.73718985	
4,000.00	12.00	109.71	3,989.07	-42.15	117.65	14,415,340.30	1,714,364.20	39.69378713	-80.73712034	
4,100.00	12.00	109.71	4,086.88	-49.16	137.23	14,415,333.28	1,714,383.77	39.69376772	-80.73705083	
4,200.00	12.00	109.71	4,184.70	-56.17	156.80	14,415,326.27	1,714,403.35	39.69374830	-80.73698133	
4,300.00	12.00	109.71	4,282.51	-63.19	176.37	14,415,319.26	1,714,422.92	39.69372889	-80.73691182	
4,400.00	12.00	109.71	4,380.33	-70.20	195.95	14,415,312.25	1,714,442.49	39.69370947	-80.73684231	
4,500.00	12.00	109.71	4,478.14	-77.21	215.52	14,415,305.24	1,714,462.07	39.69369006	-80.73677280	
4,600.00	12.00	109.71	4,575.96	-84.22	235.09	14,415,298.22	1,714,481.64	39.69367064	-80.73670330	
4,700.00	12.00	109.71	4,673.77	-91.23	254.67	14,415,291.21	1,714,501.21	39.69365123	-80.73663379	
4,800.00	12.00	109.71	4,771.59	-98.25	274.24	14,415,284.20	1,714,520.78	39.69363181	-80.73656428	
4,900.00	12.00	109.71	4,869.40	-105.26	293.81	14,415,277.19	1,714,540.36	39.69361240	-80.73649478	
5,000.00	12.00	109.71	4,967.22	-112.27	313.38	14,415,270.18	1,714,559.93	39.69359298	-80.73642527	
5,100.00	12.00	109.71	5,065.03	-119.28	332.96	14,415,263.16	1,714,579.50	39.69357357	-80.73635576	





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Elmer N-18 HU (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1275.00ft
Project:	Wetzel County, West Virginia (UTM17 NAD83)	MD Reference:	GL @ 1275.00ft
Site:	Elmer	North Reference:	Grid
Well:	Elmer N-18 HU (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,200.00	12.00	109.71	5,162.84	-126.29	352.53	14,415,256.15	1,714,599.08	39.69355415	-80.73628626
5,300.00	12.00	109.71	5,260.66	-133.31	372.10	14,415,249.14	1,714,618.65	39.69353474	-80.73621675
5,400.00	12.00	109.71	5,358.47	-140.32	391.68	14,415,242.13	1,714,638.22	39.69351532	-80.73614724
5,500.00	12.00	109.71	5,456.29	-147.33	411.25	14,415,235.12	1,714,657.80	39.69349591	-80.73607774
5,600.00	12.00	109.71	5,554.10	-154.34	430.82	14,415,228.10	1,714,677.37	39.69347649	-80.73600823
5,700.00	12.00	109.71	5,651.92	-161.35	450.40	14,415,221.09	1,714,696.94	39.69345707	-80.73593872
5,800.00	12.00	109.71	5,749.73	-168.37	469.97	14,415,214.08	1,714,716.52	39.69343766	-80.73586922
5,900.00	12.00	109.71	5,847.55	-175.38	489.54	14,415,207.07	1,714,736.09	39.69341824	-80.73579971
6,000.00	12.00	109.71	5,945.36	-182.39	509.11	14,415,200.06	1,714,755.66	39.69339883	-80.73573020
6,100.00	12.00	109.71	6,043.18	-189.40	528.69	14,415,193.04	1,714,775.23	39.69337941	-80.73566070
6,200.00	12.00	109.71	6,140.99	-196.41	548.26	14,415,186.03	1,714,794.81	39.69336000	-80.73559119
6,300.00	12.00	109.71	6,238.81	-203.43	567.83	14,415,179.02	1,714,814.38	39.69334058	-80.73552168
6,400.00	12.00	109.71	6,336.62	-210.44	587.41	14,415,172.01	1,714,833.95	39.69332117	-80.73545218
6,500.00	12.00	109.71	6,434.44	-217.45	606.98	14,415,165.00	1,714,853.53	39.69330175	-80.73538267
6,600.00	12.00	109.71	6,532.25	-224.46	626.55	14,415,157.98	1,714,873.10	39.69328233	-80.73531316
6,700.00	12.00	109.71	6,630.07	-231.47	646.13	14,415,150.97	1,714,892.67	39.69326292	-80.73524366
6,800.00	12.00	109.71	6,727.88	-238.48	665.70	14,415,143.96	1,714,912.25	39.69324350	-80.73517415
6,900.00	12.00	109.71	6,825.70	-245.50	685.27	14,415,136.95	1,714,931.82	39.69322409	-80.73510465
7,000.00	12.00	109.71	6,923.51	-252.51	704.85	14,415,129.94	1,714,951.39	39.69320467	-80.73503514
7,100.00	12.00	109.71	7,021.33	-259.52	724.42	14,415,122.92	1,714,970.96	39.69318526	-80.73496563
7,200.00	12.00	109.71	7,119.14	-266.53	743.99	14,415,115.91	1,714,990.54	39.69316584	-80.73489613
7,282.87	12.00	109.71	7,200.00	-272.33	760.17	14,415,110.12	1,715,006.72	39.69314979	-80.73483867
<b>Begin 2°/100' build</b>									
7,300.00	12.35	109.71	7,216.94	-273.56	763.61	14,415,108.88	1,715,010.16	39.69314638	-80.73482645
7,400.00	14.35	109.71	7,314.24	-281.35	785.34	14,415,101.10	1,715,031.89	39.69312482	-80.73474928
7,500.00	16.35	109.71	7,410.67	-290.27	810.26	14,415,092.17	1,715,056.80	39.69310011	-80.73466081
7,600.00	18.35	109.71	7,506.11	-300.33	838.32	14,415,082.12	1,715,084.87	39.69307227	-80.73456114
7,700.00	20.35	109.71	7,600.46	-311.50	869.51	14,415,070.95	1,715,116.06	39.69304133	-80.73445040
7,800.00	22.35	109.71	7,693.60	-323.78	903.78	14,415,058.87	1,715,150.32	39.69300734	-80.73432871
7,900.00	24.35	109.71	7,785.40	-337.14	941.08	14,415,045.31	1,715,187.63	39.69297033	-80.73419623
8,000.00	26.35	109.71	7,875.77	-351.58	981.38	14,415,030.87	1,715,227.93	39.69293036	-80.73405313
8,100.00	28.35	109.71	7,964.59	-367.07	1,024.63	14,415,015.38	1,715,271.17	39.69288747	-80.73389956
8,200.00	30.35	109.71	8,051.76	-383.59	1,070.76	14,414,998.85	1,715,317.31	39.69284170	-80.73373573
8,300.00	32.35	109.71	8,137.16	-401.14	1,119.73	14,414,981.31	1,715,366.28	39.69278312	-80.73356183
8,400.00	34.35	109.71	8,220.69	-419.67	1,171.48	14,414,962.77	1,715,418.03	39.69274179	-80.73337807
8,500.00	36.35	109.71	8,302.25	-439.18	1,225.94	14,414,943.26	1,715,472.49	39.69268777	-80.73318468
8,600.00	38.35	109.71	8,381.74	-459.64	1,283.05	14,414,922.81	1,715,529.59	39.69263113	-80.73298189
8,687.93	40.11	109.71	8,449.85	-478.39	1,335.39	14,414,904.06	1,715,581.94	39.69257920	-80.73279801
<b>Begin 40.11° tangent</b>									
8,700.00	40.11	109.71	8,459.09	-481.01	1,342.72	14,414,901.43	1,715,589.26	39.69257194	-80.73277001
8,800.00	40.11	109.71	8,535.57	-502.74	1,403.36	14,414,879.71	1,715,649.91	39.69251178	-80.73255465
8,900.00	40.11	109.71	8,612.06	-524.48	1,464.01	14,414,857.99	1,715,710.55	39.69245162	-80.73233930
9,000.00	40.11	109.71	8,688.55	-546.18	1,524.65	14,414,836.26	1,715,771.20	39.69239147	-80.73212394
9,100.00	40.11	109.71	8,765.03	-567.91	1,585.30	14,414,814.54	1,715,831.84	39.69233131	-80.73190859
9,200.00	40.11	109.71	8,841.52	-589.63	1,645.94	14,414,792.81	1,715,892.49	39.69227115	-80.73169324
9,300.00	40.11	109.71	8,918.01	-611.36	1,706.59	14,414,771.09	1,715,953.13	39.69221099	-80.73147788
9,400.00	40.11	109.71	8,994.49	-633.08	1,767.24	14,414,749.36	1,716,013.78	39.69215083	-80.73126253
9,500.00	40.11	109.71	9,070.98	-654.81	1,827.88	14,414,727.64	1,716,074.42	39.69209067	-80.73104718
9,600.00	40.11	109.71	9,147.47	-676.53	1,888.53	14,414,705.92	1,716,135.07	39.69203050	-80.73083182
9,700.00	40.11	109.71	9,223.95	-698.25	1,949.17	14,414,684.19	1,716,195.72	39.69197034	-80.73061647
9,800.00	40.11	109.71	9,300.44	-719.98	2,009.82	14,414,662.47	1,716,256.36	39.69191018	-80.73040112
9,900.00	40.11	109.71	9,376.92	-741.70	2,070.46	14,414,640.74	1,716,317.01	39.69185002	-80.73018577
10,000.00	40.11	109.71	9,453.41	-763.43	2,131.11	14,414,619.02	1,716,377.65	39.69178986	-80.72997042
10,100.00	40.11	109.71	9,529.90	-785.15	2,191.76	14,414,597.30	1,716,438.30	39.69172969	-80.72975507





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Elmer N-18 HU (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1275.00ft
Project:	Wetzel County, West Virginia (UTM17 NAD83)	MD Reference:	GL @ 1275.00ft
Site:	Elmer	North Reference:	Grid
Well:	Elmer N-18 HU (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,200.00	40.11	109.71	9,606.38	-806.68	2,252.40	14,414,575.57	1,716,498.94	39.69168953	-80.72953972	
10,300.00	40.11	109.71	9,682.87	-828.60	2,313.05	14,414,553.85	1,716,559.59	39.69160937	-80.72932437	
10,400.00	40.11	109.71	9,759.36	-850.32	2,373.69	14,414,532.12	1,716,620.23	39.69154920	-80.72910902	
10,500.00	40.11	109.71	9,835.84	-872.05	2,434.34	14,414,510.40	1,716,680.88	39.69148904	-80.72889367	
10,600.00	40.11	109.71	9,912.33	-893.77	2,494.98	14,414,488.67	1,716,741.53	39.69142887	-80.72867832	
10,700.00	40.11	109.71	9,988.81	-915.50	2,555.63	14,414,466.95	1,716,802.17	39.69136871	-80.72846297	
10,800.00	40.11	109.71	10,065.30	-937.22	2,616.27	14,414,445.23	1,716,862.82	39.69130854	-80.72824762	
10,900.00	40.11	109.71	10,141.79	-958.95	2,676.92	14,414,423.50	1,716,923.46	39.69124838	-80.72803227	
11,000.00	40.11	109.71	10,218.27	-980.67	2,737.57	14,414,401.78	1,716,984.11	39.69118821	-80.72781693	
11,100.00	40.11	109.71	10,294.76	-1,002.39	2,798.21	14,414,380.05	1,717,044.75	39.69112804	-80.72760158	
11,200.00	40.11	109.71	10,371.25	-1,024.12	2,858.86	14,414,358.33	1,717,105.40	39.69106787	-80.72738623	
11,300.00	40.11	109.71	10,447.73	-1,045.84	2,919.50	14,414,336.60	1,717,166.04	39.69100771	-80.72717089	
11,400.00	40.11	109.71	10,524.22	-1,067.57	2,980.15	14,414,314.88	1,717,226.69	39.69094754	-80.72695554	
11,504.83	40.11	109.71	10,604.40	-1,090.34	3,043.72	14,414,292.11	1,717,290.26	39.69088447	-80.72672980	
<b>Begin 6"/100' build/turn</b>										
11,550.00	38.34	106.45	10,639.39	-1,099.22	3,070.66	14,414,283.23	1,717,317.40	39.69085986	-80.72663342	
11,600.00	36.50	102.55	10,679.11	-1,106.84	3,100.26	14,414,275.60	1,717,346.80	39.69083867	-80.72652901	
11,650.00	34.80	98.31	10,719.74	-1,112.14	3,128.90	14,414,270.31	1,717,375.44	39.69082389	-80.72642726	
11,700.00	33.26	93.71	10,761.19	-1,115.09	3,156.70	14,414,267.36	1,717,403.24	39.69081555	-80.72632845	
11,750.00	31.90	88.74	10,803.32	-1,115.69	3,183.60	14,414,266.76	1,717,430.14	39.69081369	-80.72623284	
11,800.00	30.75	83.41	10,846.04	-1,113.93	3,209.51	14,414,268.52	1,717,456.05	39.69081830	-80.72614071	
11,850.00	29.83	77.74	10,889.22	-1,109.82	3,234.37	14,414,272.63	1,717,480.91	39.69082938	-80.72605230	
11,900.00	29.17	71.80	10,932.75	-1,103.37	3,258.10	14,414,279.08	1,717,504.65	39.69084689	-80.72596786	
11,950.00	28.78	65.66	10,976.50	-1,094.60	3,280.65	14,414,287.85	1,717,527.19	39.69087078	-80.72588762	
12,000.00	28.67	59.42	11,020.36	-1,083.54	3,301.95	14,414,298.91	1,717,548.49	39.69090099	-80.72581180	
12,050.00	28.85	53.19	11,064.20	-1,070.20	3,321.94	14,414,312.25	1,717,568.48	39.69093744	-80.72574060	
12,100.00	29.31	47.09	11,107.91	-1,054.64	3,340.56	14,414,327.81	1,717,587.10	39.69098003	-80.72567422	
12,150.00	30.04	41.21	11,151.36	-1,036.89	3,357.77	14,414,345.56	1,717,604.31	39.69102863	-80.72561285	
12,200.00	31.01	35.62	11,194.44	-1,017.00	3,373.52	14,414,365.45	1,717,620.06	39.69108313	-80.72555664	
12,250.00	32.22	30.38	11,237.02	-995.02	3,387.77	14,414,387.43	1,717,634.31	39.69114336	-80.72550576	
12,300.00	33.62	25.50	11,279.00	-971.02	3,400.47	14,414,411.43	1,717,647.01	39.69120916	-80.72546035	
12,350.00	35.21	20.99	11,320.25	-945.06	3,411.60	14,414,437.38	1,717,658.14	39.69128036	-80.72542052	
12,400.00	36.94	16.83	11,360.67	-917.22	3,421.11	14,414,465.23	1,717,667.65	39.69135675	-80.72538839	
12,450.00	38.81	13.01	11,400.14	-887.56	3,428.99	14,414,494.89	1,717,675.53	39.69143813	-80.72535806	
12,500.00	40.80	9.50	11,438.55	-856.17	3,435.22	14,414,526.27	1,717,681.76	39.69152428	-80.72533559	
12,550.00	42.88	6.26	11,475.81	-823.14	3,439.77	14,414,559.30	1,717,688.31	39.69161495	-80.72531905	
12,600.00	45.05	3.27	11,511.79	-788.56	3,442.63	14,414,593.89	1,717,693.17	39.69170990	-80.72530849	
12,650.00	47.29	0.50	11,546.42	-752.52	3,443.60	14,414,629.93	1,717,690.34	39.69180887	-80.72530394	
12,700.00	49.59	357.93	11,579.59	-715.12	3,443.28	14,414,667.33	1,717,689.82	39.69191160	-80.72530540	
12,708.74	50.00	357.50	11,585.23	-708.45	3,443.01	14,414,674.00	1,717,689.55	39.69192990	-80.72530627	
<b>Begin 8"/100' build/turn</b>										
12,750.00	52.62	354.93	11,611.03	-676.32	3,440.67	14,414,706.13	1,717,687.41	39.69201816	-80.72531353	
12,800.00	55.86	352.04	11,640.24	-636.02	3,436.24	14,414,746.42	1,717,682.79	39.69212887	-80.72532953	
12,850.00	59.17	349.37	11,667.10	-594.41	3,429.42	14,414,788.03	1,717,675.96	39.69224319	-80.72535336	
12,900.00	62.52	346.86	11,691.46	-551.70	3,420.41	14,414,830.75	1,717,666.95	39.69236058	-80.72538489	
12,950.00	65.92	344.53	11,713.20	-508.08	3,409.29	14,414,874.37	1,717,655.83	39.69248046	-80.72542398	
13,000.00	69.36	342.31	11,732.22	-463.78	3,396.08	14,414,918.67	1,717,642.62	39.69260224	-80.72547042	
13,050.00	72.81	340.19	11,748.43	-419.00	3,380.87	14,414,963.45	1,717,627.41	39.69272534	-80.72552401	
13,100.00	76.30	338.14	11,761.74	-373.97	3,363.73	14,415,008.48	1,717,610.27	39.69284915	-80.72558447	
13,150.00	79.79	336.16	11,772.10	-328.91	3,344.73	14,415,053.54	1,717,591.27	39.69297307	-80.72565151	
13,200.00	83.30	334.21	11,779.45	-284.03	3,323.98	14,415,098.42	1,717,570.52	39.69309650	-80.72572480	
13,250.00	86.82	332.30	11,783.76	-239.55	3,301.56	14,415,142.90	1,717,548.10	39.69321883	-80.72580399	
13,300.00	90.34	330.40	11,785.00	-195.69	3,277.60	14,415,186.75	1,717,524.14	39.69333948	-80.72588870	





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Elmer N-18 HU (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1275.00ft
Project:	Wetzel County, West Virginia (UTM17 NAD83)	MD Reference:	GL @ 1275.00ft
Site:	Elmer	North Reference:	Grid
Well:	Elmer N-18 HU (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,309.40	91.00	330.04	11,784.89	-187.54	3,272.93	14,415,194.91	1,717,519.48	39.69336192	-80.72590520	
<b>Begin 91.00° lateral</b>										
13,400.00	91.00	330.04	11,783.31	-109.05	3,227.70	14,415,273.39	1,717,474.24	39.69357784	-80.72606516	
13,500.00	91.00	330.04	11,781.56	-22.43	3,177.77	14,415,360.02	1,717,424.31	39.69381616	-80.72624171	
13,600.00	91.00	330.04	11,779.82	64.20	3,127.84	14,415,446.64	1,717,374.38	39.69405448	-80.72641826	
13,700.00	91.00	330.04	11,778.08	150.83	3,077.91	14,415,533.27	1,717,324.45	39.69429280	-80.72659482	
13,800.00	91.00	330.04	11,776.33	237.45	3,027.98	14,415,619.90	1,717,274.52	39.69453112	-80.72677137	
13,900.00	91.00	330.04	11,774.59	324.08	2,978.05	14,415,706.52	1,717,224.60	39.69476944	-80.72694793	
14,000.00	91.00	330.04	11,772.85	410.70	2,928.13	14,415,793.15	1,717,174.67	39.69500775	-80.72712449	
14,100.00	91.00	330.04	11,771.10	497.33	2,878.20	14,415,879.77	1,717,124.74	39.69524607	-80.72730104	
14,200.00	91.00	330.04	11,769.36	583.95	2,828.27	14,415,966.40	1,717,074.81	39.69548439	-80.72747760	
14,300.00	91.00	330.04	11,767.62	670.58	2,778.34	14,416,053.03	1,717,024.88	39.69572271	-80.72765417	
14,400.00	91.00	330.04	11,765.88	757.21	2,728.41	14,416,139.65	1,716,974.95	39.69596102	-80.72783073	
14,500.00	91.00	330.04	11,764.13	843.83	2,678.48	14,416,226.28	1,716,925.02	39.69619934	-80.72800729	
14,600.00	91.00	330.04	11,762.39	930.46	2,628.55	14,416,312.90	1,716,875.10	39.69643766	-80.72818386	
14,700.00	91.00	330.04	11,760.65	1,017.09	2,578.62	14,416,399.53	1,716,825.17	39.69667598	-80.72836042	
14,800.00	91.00	330.04	11,758.90	1,103.71	2,528.70	14,416,486.16	1,716,775.24	39.69691429	-80.72853699	
14,900.00	91.00	330.04	11,757.16	1,190.34	2,478.77	14,416,572.78	1,716,725.31	39.69715261	-80.72871356	
15,000.00	91.00	330.04	11,755.42	1,276.96	2,428.84	14,416,659.41	1,716,675.38	39.69739092	-80.72889013	
15,100.00	91.00	330.04	11,753.67	1,363.59	2,378.91	14,416,746.03	1,716,625.45	39.69762924	-80.72906670	
15,200.00	91.00	330.04	11,751.93	1,450.22	2,328.98	14,416,832.66	1,716,575.52	39.69786755	-80.72924327	
15,300.00	91.00	330.04	11,750.19	1,536.84	2,279.05	14,416,919.29	1,716,525.59	39.69810587	-80.72941985	
15,400.00	91.00	330.04	11,748.44	1,623.47	2,229.12	14,417,005.91	1,716,475.67	39.69834419	-80.72959642	
15,500.00	91.00	330.04	11,746.70	1,710.09	2,179.19	14,417,092.54	1,716,425.74	39.69858250	-80.72977300	
15,600.00	91.00	330.04	11,744.96	1,796.72	2,129.27	14,417,179.16	1,716,375.81	39.69882081	-80.72994957	
15,700.00	91.00	330.04	11,743.21	1,883.35	2,079.34	14,417,265.79	1,716,325.88	39.69905913	-80.73012615	
15,800.00	91.00	330.04	11,741.47	1,969.97	2,029.41	14,417,352.41	1,716,275.95	39.69929744	-80.73030273	
15,900.00	91.00	330.04	11,739.73	2,056.60	1,979.48	14,417,439.04	1,716,226.02	39.69953575	-80.73047931	
16,000.00	91.00	330.04	11,737.98	2,143.23	1,929.55	14,417,525.67	1,716,176.09	39.69977407	-80.73065589	
16,100.00	91.00	330.04	11,736.24	2,229.85	1,879.62	14,417,612.29	1,716,126.17	39.70001239	-80.73083248	
16,200.00	91.00	330.04	11,734.50	2,316.48	1,829.69	14,417,698.92	1,716,076.24	39.70025069	-80.73100906	
16,300.00	91.00	330.04	11,732.75	2,403.10	1,779.76	14,417,785.54	1,716,026.31	39.70048901	-80.73118565	
16,400.00	91.00	330.04	11,731.01	2,489.73	1,729.84	14,417,872.17	1,715,976.38	39.70072732	-80.73136223	
16,500.00	91.00	330.04	11,729.27	2,576.36	1,679.91	14,417,958.80	1,715,926.45	39.70096563	-80.73153882	
16,600.00	91.00	330.04	11,727.52	2,662.98	1,629.98	14,418,045.42	1,715,876.52	39.70120394	-80.73171541	
16,700.00	91.00	330.04	11,725.78	2,749.61	1,580.05	14,418,132.05	1,715,826.59	39.70144225	-80.73189200	
16,800.00	91.00	330.04	11,724.04	2,836.23	1,530.12	14,418,218.67	1,715,776.66	39.70168056	-80.73206859	
16,900.00	91.00	330.04	11,722.29	2,922.85	1,480.19	14,418,305.30	1,715,726.74	39.70191887	-80.73224518	
17,000.00	91.00	330.04	11,720.55	3,009.49	1,430.26	14,418,391.93	1,715,676.81	39.70215718	-80.73242178	
17,100.00	91.00	330.04	11,718.81	3,096.11	1,380.33	14,418,478.55	1,715,626.88	39.70239549	-80.73259837	
17,200.00	91.00	330.04	11,717.06	3,182.74	1,330.41	14,418,565.18	1,715,576.95	39.70263380	-80.73277497	
17,300.00	91.00	330.04	11,715.32	3,269.36	1,280.48	14,418,651.80	1,715,527.02	39.70287211	-80.73295157	
17,400.00	91.00	330.04	11,713.58	3,355.99	1,230.55	14,418,738.43	1,715,477.09	39.70311042	-80.73312817	
17,500.00	91.00	330.04	11,711.83	3,442.62	1,180.62	14,418,825.06	1,715,427.16	39.70334873	-80.73330477	
17,600.00	91.00	330.04	11,710.09	3,529.24	1,130.69	14,418,911.68	1,715,377.24	39.70358704	-80.73348137	
17,700.00	91.00	330.04	11,708.35	3,615.87	1,080.76	14,418,998.31	1,715,327.31	39.70382535	-80.73365797	
17,800.00	91.00	330.04	11,706.60	3,702.50	1,030.83	14,419,084.93	1,715,277.38	39.70406366	-80.73383457	
17,900.00	91.00	330.04	11,704.86	3,789.12	980.90	14,419,171.56	1,715,227.45	39.70430197	-80.73401118	
18,000.00	91.00	330.04	11,703.12	3,875.75	930.98	14,419,258.19	1,715,177.52	39.70454027	-80.73418778	
18,100.00	91.00	330.04	11,701.37	3,962.37	881.05	14,419,344.81	1,715,127.59	39.70477858	-80.73436439	
18,200.00	91.00	330.04	11,699.63	4,049.00	831.12	14,419,431.44	1,715,077.66	39.70501689	-80.73454100	
18,300.00	91.00	330.04	11,697.89	4,135.63	781.19	14,419,518.06	1,715,027.74	39.70525519	-80.73471761	
18,400.00	91.00	330.04	11,696.14	4,222.25	731.26	14,419,604.69	1,714,977.81	39.70549350	-80.73489422	
18,500.00	91.00	330.04	11,694.40	4,308.88	681.33	14,419,691.31	1,714,927.88	39.70573181	-80.73507083	





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Elmer N-18 HU (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1275.00ft
Project:	Wetzel County, West Virginia (UTM17 NAD83)	MD Reference:	GL @ 1275.00ft
Site:	Elmer	North Reference:	Grid
Well:	Elmer N-18 HU (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
16,600.00	91.00	330.04	11,692.66	4,395.50	631.40	14,419,777.94	1,714,877.95	39.70597011	-80.73524745	
18,700.00	91.00	330.04	11,690.91	4,482.13	581.47	14,419,864.57	1,714,828.02	39.70620842	-80.73542406	
18,800.00	91.00	330.04	11,689.17	4,568.76	531.55	14,419,951.19	1,714,778.09	39.70644672	-80.73560058	
18,900.00	91.00	330.04	11,687.43	4,655.38	481.62	14,420,037.82	1,714,728.16	39.70668503	-80.73577729	
19,000.00	91.00	330.04	11,685.68	4,742.01	431.69	14,420,124.44	1,714,678.23	39.70692333	-80.73595391	
19,100.00	91.00	330.04	11,683.94	4,828.63	381.76	14,420,211.07	1,714,628.31	39.70716164	-80.73613053	
19,200.00	91.00	330.04	11,682.20	4,915.26	331.83	14,420,297.70	1,714,578.38	39.70739994	-80.73630715	
19,300.00	91.00	330.04	11,680.46	5,001.89	281.90	14,420,384.32	1,714,528.45	39.70763825	-80.73648377	
19,400.00	91.00	330.04	11,678.71	5,088.51	231.97	14,420,470.95	1,714,478.52	39.70787655	-80.73666040	
19,500.00	91.00	330.04	11,676.97	5,175.14	182.04	14,420,557.57	1,714,428.59	39.70811485	-80.73683702	
19,600.00	91.00	330.04	11,675.23	5,261.76	132.12	14,420,644.20	1,714,378.66	39.70835316	-80.73701365	
19,700.00	91.00	330.04	11,673.48	5,348.39	82.19	14,420,730.83	1,714,328.73	39.70859146	-80.73719027	
19,800.00	91.00	330.04	11,671.74	5,435.02	32.26	14,420,817.45	1,714,278.81	39.70882976	-80.73736689	
19,900.00	91.00	330.04	11,670.00	5,521.64	-17.67	14,420,904.08	1,714,228.88	39.70906807	-80.73754353	
20,000.00	91.00	330.04	11,668.25	5,608.27	-67.60	14,420,990.70	1,714,178.95	39.70930637	-80.73772016	
20,100.00	91.00	330.04	11,666.51	5,694.90	-117.53	14,421,077.33	1,714,129.02	39.70954467	-80.73789679	
20,200.00	91.00	330.04	11,664.77	5,781.52	-167.46	14,421,163.96	1,714,079.09	39.70978297	-80.73807343	
20,300.00	91.00	330.04	11,663.02	5,868.15	-217.39	14,421,250.58	1,714,029.16	39.71002127	-80.73825006	
20,400.00	91.00	330.04	11,661.28	5,954.77	-267.31	14,421,337.21	1,713,979.23	39.71025957	-80.73842670	
20,500.00	91.00	330.04	11,659.54	6,041.40	-317.24	14,421,423.83	1,713,929.30	39.71049787	-80.73860333	
20,600.00	91.00	330.04	11,657.79	6,128.03	-367.17	14,421,510.46	1,713,879.38	39.71073616	-80.73877997	
20,700.00	91.00	330.04	11,656.05	6,214.65	-417.10	14,421,597.09	1,713,829.45	39.71097448	-80.73895661	
20,800.00	91.00	330.04	11,654.31	6,301.28	-467.03	14,421,683.71	1,713,779.52	39.71121278	-80.73913325	
20,900.00	91.00	330.04	11,652.56	6,387.90	-516.96	14,421,770.34	1,713,729.59	39.71145108	-80.73930989	
21,000.00	91.00	330.04	11,650.82	6,474.53	-566.89	14,421,856.96	1,713,679.66	39.71168937	-80.73948653	
21,100.00	91.00	330.04	11,649.08	6,561.16	-616.82	14,421,943.59	1,713,629.73	39.71192767	-80.73966318	
21,200.00	91.00	330.04	11,647.33	6,647.78	-666.74	14,422,030.21	1,713,579.80	39.71216597	-80.73983982	
21,300.00	91.00	330.04	11,645.59	6,734.41	-716.67	14,422,116.84	1,713,529.88	39.71240427	-80.74001647	
21,400.00	91.00	330.04	11,643.85	6,821.03	-766.60	14,422,203.47	1,713,479.95	39.71264257	-80.74019311	
21,500.00	91.00	330.04	11,642.10	6,907.66	-816.53	14,422,290.09	1,713,430.02	39.71288087	-80.74036976	
21,600.00	91.00	330.04	11,640.36	6,994.29	-866.46	14,422,376.72	1,713,380.09	39.71311917	-80.74054641	
21,700.00	91.00	330.04	11,638.62	7,080.91	-916.39	14,422,463.34	1,713,330.16	39.71335746	-80.74072306	
21,800.00	91.00	330.04	11,636.87	7,167.54	-966.32	14,422,549.97	1,713,280.23	39.71359576	-80.74089972	
21,900.00	91.00	330.04	11,635.13	7,254.17	-1,016.25	14,422,636.59	1,713,230.30	39.71383406	-80.74107637	
22,000.00	91.00	330.04	11,633.39	7,340.79	-1,066.17	14,422,723.22	1,713,180.37	39.71407235	-80.74125302	
22,100.00	91.00	330.04	11,631.64	7,427.42	-1,116.10	14,422,809.85	1,713,130.45	39.71431065	-80.74142968	
22,200.00	91.00	330.04	11,629.90	7,514.04	-1,166.03	14,422,896.47	1,713,080.52	39.71454895	-80.74160634	
22,300.00	91.00	330.04	11,628.16	7,600.67	-1,215.96	14,422,983.10	1,713,030.59	39.71478724	-80.74178299	
22,400.00	91.00	330.04	11,626.41	7,687.30	-1,265.89	14,423,069.73	1,712,980.66	39.71502554	-80.74195965	
22,500.00	91.00	330.04	11,624.67	7,773.92	-1,315.82	14,423,156.35	1,712,930.73	39.71526383	-80.74213631	
22,600.00	91.00	330.04	11,622.93	7,860.55	-1,365.75	14,423,242.98	1,712,880.80	39.71550213	-80.74231298	
22,700.00	91.00	330.04	11,621.18	7,947.17	-1,415.68	14,423,329.60	1,712,830.87	39.71574042	-80.74248964	
22,800.00	91.00	330.04	11,619.44	8,033.80	-1,465.60	14,423,416.23	1,712,780.95	39.71597872	-80.74266630	
22,900.00	91.00	330.04	11,617.70	8,120.43	-1,515.53	14,423,502.86	1,712,731.02	39.71621701	-80.74284297	
23,000.00	91.00	330.04	11,615.95	8,207.05	-1,565.46	14,423,589.48	1,712,681.09	39.71645531	-80.74301964	
23,100.00	91.00	330.04	11,614.21	8,293.68	-1,615.39	14,423,676.11	1,712,631.16	39.71669360	-80.74319630	
23,200.00	91.00	330.04	11,612.47	8,380.30	-1,665.32	14,423,762.73	1,712,581.23	39.71693189	-80.74337297	
23,300.00	91.00	330.04	11,610.72	8,466.93	-1,715.25	14,423,849.36	1,712,531.30	39.71717019	-80.74354964	
23,400.00	91.00	330.04	11,608.98	8,553.56	-1,765.18	14,423,935.99	1,712,481.37	39.71740848	-80.74372632	
23,500.00	91.00	330.04	11,607.24	8,640.18	-1,815.11	14,424,022.61	1,712,431.44	39.71764677	-80.74390299	
23,600.00	91.00	330.04	11,605.49	8,726.81	-1,865.03	14,424,109.24	1,712,381.52	39.71788506	-80.74407966	
23,700.00	91.00	330.04	11,603.75	8,813.43	-1,914.96	14,424,195.86	1,712,331.59	39.71812335	-80.74425634	
23,800.00	91.00	330.04	11,602.01	8,900.06	-1,964.89	14,424,282.49	1,712,281.66	39.71836165	-80.74443301	
23,900.00	91.00	330.04	11,600.26	8,986.69	-2,014.82	14,424,369.11	1,712,231.73	39.71859994	-80.74460969	
24,000.00	91.00	330.04	11,598.52	9,073.31	-2,064.75	14,424,455.74	1,712,181.80	39.71883823	-80.74478637	





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Elmer N-18 HU (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1275.00ft
Project:	Wetzel County, West Virginia (UTM17 NAD83)	MD Reference:	GL @ 1275.00ft
Site:	Elmer	North Reference:	Grid
Well:	Elmer N-18 HU (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
24,100.00	91.00	330.04	11,596.78	9,159.94	-2,114.68	14,424,542.37	1,712,131.87	39.71907652	-80.74496305	
24,200.00	91.00	330.04	11,595.03	9,246.57	-2,164.61	14,424,628.99	1,712,081.94	39.71931481	-80.74513973	
24,300.00	91.00	330.04	11,593.29	9,333.19	-2,214.54	14,424,715.62	1,712,032.02	39.71955310	-80.74531641	
24,400.00	91.00	330.04	11,591.55	9,419.82	-2,264.46	14,424,802.24	1,711,982.09	39.71979139	-80.74549310	
24,488.80	91.00	330.04	11,590.00	9,496.74	-2,308.80	14,424,879.17	1,711,937.75	39.72000300	-80.74565000	
PBHL/TD 24488.80 MD 11590.00 TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Elmer N-18 HU BHL - hit/miss target - Shape - Point	0.00	0.00	11,590.00	9,496.74	-2,308.80	14,424,879.17	1,711,937.75	39.72000300	-80.74565000	
Elmer N-18 HU LP - plan hits target center - Point	0.00	0.00	11,785.00	-175.85	3,275.49	14,415,206.60	1,717,522.03	39.69339400	-80.72589600	
- plan misses target center by 8.05ft at 13318.25ft MD (11784.73 TVD, -179.87 N, 3268.52 E)										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
3,100.00	3,100.00	0.00	0.00	KOP	Begin 2°/100' build
3,700.00	3,695.62	-21.11	58.93		Begin 12.00° tangent
7,262.67	7,200.00	-272.33	760.17		Begin 2°/100' build
8,687.93	8,449.85	-476.39	1,335.39		Begin 40.11° tangent
11,504.83	10,804.40	-1,090.34	3,043.72		Begin 6°/100' build/turn
12,708.74	11,585.23	-708.45	3,443.01		Begin 8°/100' build/turn
13,309.40	11,784.69	-187.54	3,272.93		Begin 91.00° lateral
24,488.80	11,590.00	9,496.74	-2,308.80		PBHL/TD 24488.80 MD 11590.00 TVD





Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 26.69 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 1/3 ton lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
<u>Annual Ryegrass</u>	<u>40</u>	<u>Fox Tail / Grassy</u>	<u>40</u>
		<u>Perennial Rye</u>	<u>30</u>
		<u>Crown Vetch</u>	<u>20</u>

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: Bryan Harris

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title: Oil and Gas Inspector Date: 10-29-21

Field Reviewed? ( ) Yes ( X ) No

# PROPOSED ELMER PAD

12-8-15  
ELNORA TUTTLE  
DB 315/ 62  
39.19 Ac.

12-8-16  
CHARLES + BETTY  
HUGGINS  
DB 322/ 120  
39.13 Ac.



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

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

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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

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

Ephemeral Stream

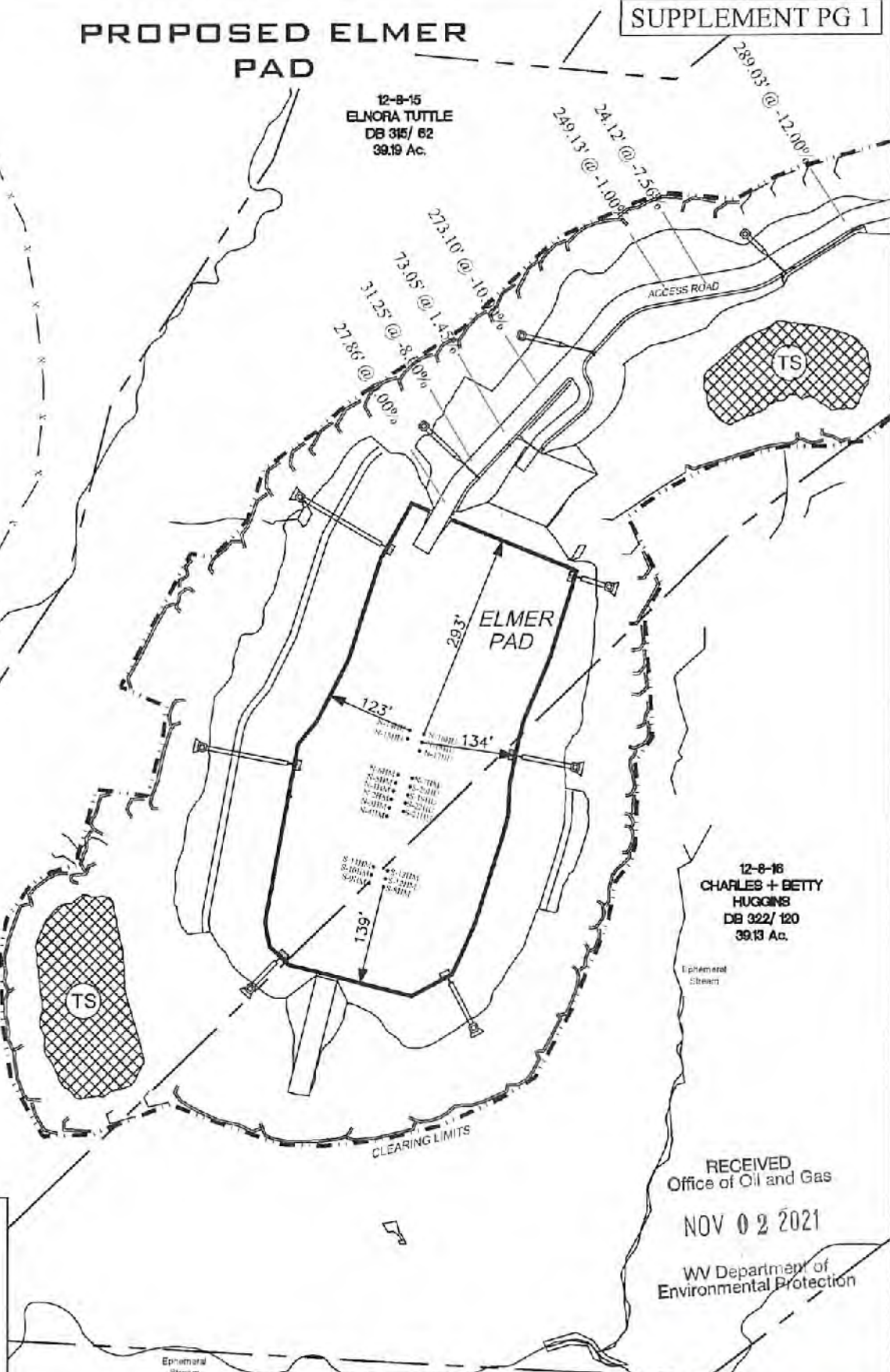
Ephemeral Stream

PREVAILING WIND

Pg. 1 of 2

**LEGEND**

- Note:  
 (C) - Denotes existing culvert with appropriate sediment outlet control (Rip Rap splash pad).  
 --- Silt Fence and or Sediment and Erosion Control Measure.  
 - - - Surface Boundary  
 - - - LOD  
 - - - Fenceline



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**TOPO SECTION:**

**OPERATOR:**

WILEYVILLE 75	
COUNTY	DISTRICT
WETZEL	PROCTOR
DRAWN BY	OPERATOR NO.
J.D.C.	494510851

PREPARED FOR:	
TUG HILL OPERATING LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
DATE	SCALE
10-19-2021	NONE



**Jackson Surveying Inc.**  
2413 E. Plaza St. #112  
Cranberry, WV 26301  
Phone: 304-823-6861

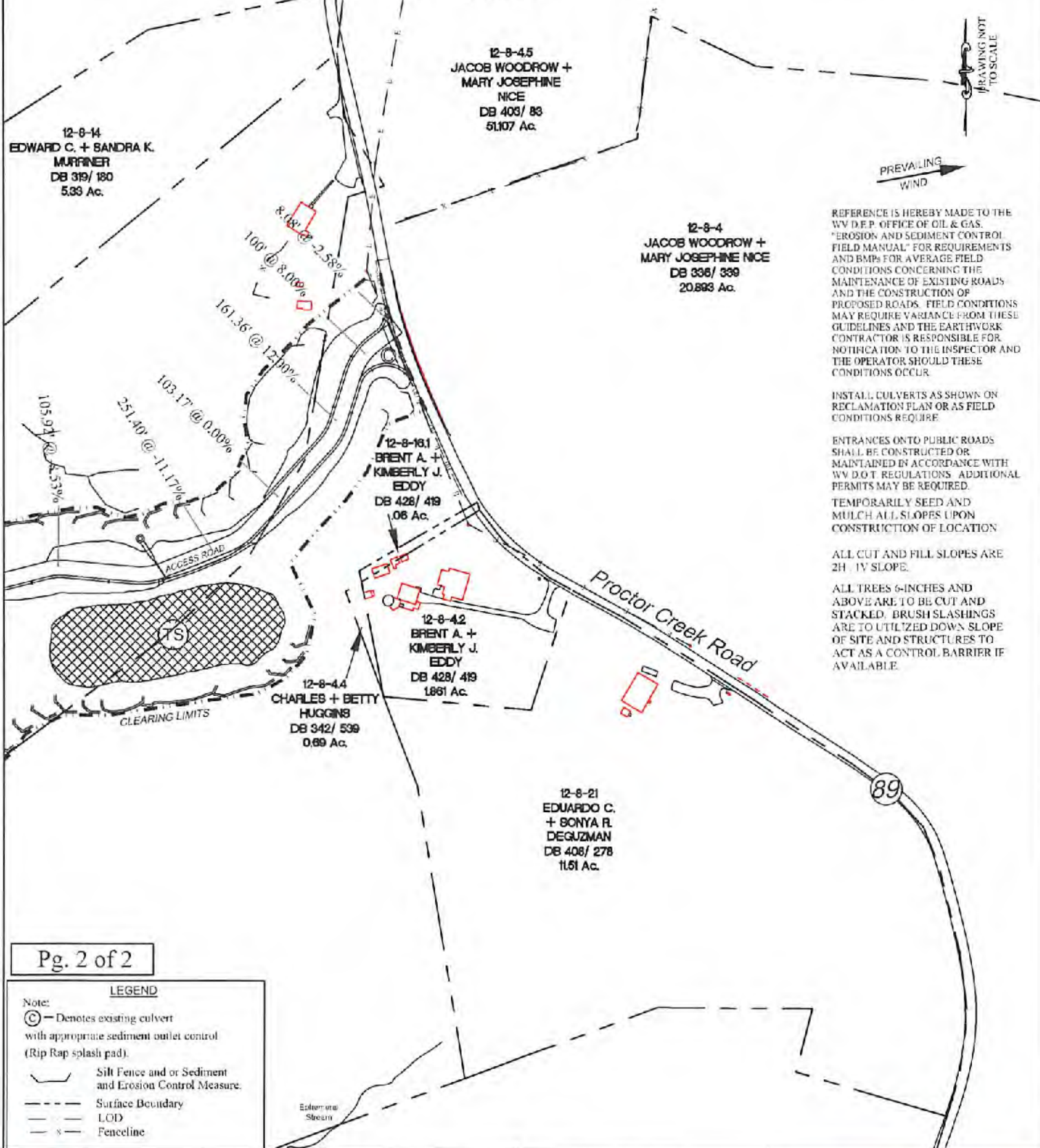


**TUG HILL  
OPERATING**

02/11/2022



# PROPOSED ELMER PAD



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.

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TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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Pg. 2 of 2

**LEGEND**

- Note:  
 (C) - Denotes existing culvert with appropriate sediment outlet control (Rip Rap splash pad).  
 --- Silt Fence and or Sediment and Erosion Control Measure.  
 - - - Surface Boundary  
 - - - LOD  
 - x - Fenceline



**Jackson Surveying Inc.**  
 2413 E. Pike St. #102  
 Clarkburg, WV 25801  
 Phone: 304-623-6861

TOPO SECTION:		OPERATOR:	
WILEYVILLE 75'		TUG HILL OPERATING, LLC	
COUNTY:	DISTRICT:	380 SOUTHPOINTE BLVD	
WETZEL	PROCTOR	SUITE 200	
DRAWN BY:		DATE:	SCALE:
J.D.C.	OPERATOR NO.:	10-19-2021	NONE
	194510851		

**TUG HILL OPERATING**  
 02/11/2022



## 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](mailto:apicard@dpslandservices.com), DPS GIS (10/15/2021) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

#### Request maps for:

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

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

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

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**Wells within 500' Buffer**

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4710300747	CNX Gas Co. LLC (North)	2940' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.	Well was plugged 6/21/2016.
4710373123	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4710373124	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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WV Geological & Economic Survey

Well: County = 103 Permit = 00747

Report Time: Tuesday, October 19, 2021 1:49:38 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4710300747	Wetzel	747	Proctor	Wileyville	Liteton	39.710827	-80.739705	522312.2	4395695.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4710300747	J/1901	Original Loc	Stat Book	MA Daugherty et al	1	1225	James Henry			Columbia Gas Transmission Corp.			
4710300747	6/21/2016	Plugging	Completed	Terry M Kirkland			Daugherty			CNX Gas Co. LLC (North)	2940	Gordon	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NFW_FTG	KOD	G_BEF	G_AFT
4710300747	J/1901	-/-	1210	Topo Estimation	Cameron-Gamer	Gordon	Gordon	Development Well	Development Well	Gas	unknown	Nat/Open H	2940				
4710300747	6/21/2016	5/12/2016	1242	Ground Level													

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
4710300747	J/1901	Pay	Gas	Vertical	2939	Gordon	2940	Gordon	0	0	0	0	

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
4710300747	Columbia Gas Transmission Corp.	1980	2,366	272	267	252	271	263	125	0	0	30	288	303	295
4710300747	Columbia Gas Transmission Corp.	1981	1,806	305	309	283	319	309	32	0	0	0	0	0	289
4710300747	Columbia Gas Transmission Corp.	1982	1,057	311	309	27	29	28	91	0	0	0	0	0	282
4710300747	Columbia Gas Transmission Corp.	1983	714	279	58	53	292	30	0	0	0	0	0	0	3
4710300747	Columbia Gas Transmission Corp.	1984	259	0	27	0	55	26	27	26	40	0	0	5	53
4710300747	Columbia Gas Transmission Corp.	1985	320	55	27	25	27	0	27	26	27	27	26	27	26
4710300747	Columbia Gas Transmission Corp.	1986	1,352	27	27	25	27	26	27	26	27	55	526	508	51
4710300747	Columbia Gas Transmission Corp.	1987	1,013	109	109	98	27	53	109	105	109	109	53	27	105
4710300747	Columbia Gas Transmission Corp.	1988	848	51	109	51	109	105	55	53	27	55	26	109	88
4710300747	Columbia Gas Transmission Corp.	1989	1,385	55	109	98	141	105	109	91	28	21	20	425	162
4710300747	Columbia Gas Transmission Corp.	1990	1,739	429	429	377	102	99	50	49	51	52	50	26	25
4710300747	Columbia Gas Transmission Corp.	1991	1,739	429	429	377	102	99	50	49	51	52	50	26	25
4710300747	Columbia Natural Resources, Inc. (CNR)	1992	552	42	20	38	20	20	39	20	123	98	78	39	
4710300747	Columbia Natural Resources, Inc. (CNR)	1993	607	75	31	77	38	42	41	43	82	19	40	39	80
4710300747	Columbia Natural Resources, Inc. (CNR)	1994	834	79	85	37	34	67	32	32	64	61	64	63	33
4710300747	Columbia Natural Resources, Inc. (CNR)	1995	900	67	82	71	71	74	38	113	75	74	75	71	110
4710300747	Columbia Natural Resources, Inc. (CNR)	1996	598	72	67	70	67	63	63	64	63	60	4	0	0
4710300747	Tustin & Harman Oil & Gas, LLC	1997	46	4	4	4	4	4	4	4	4	4	4	4	4
4710300747	Tustin & Harman Oil & Gas, LLC	1998	36	3	3	3	3	3	3	3	3	3	3	3	3
4710300747	Tr-County Oil & Gas, Inc.	2000	98	6	5	7	5	6	9	8	10	9	11	12	10
4710300747	Tr-County Oil & Gas, Inc.	2001	112	12	12	11	10	8	7	5	5	8	10	12	12
4710300747	Tr-County Oil & Gas, Inc.	2002	134	7	8	10	11	11	14	16	15	12	11	10	9
4710300747	Tr-County Oil & Gas, Inc.	2003	127	11	11	11	10	10	10	10	10	11	11	11	11
4710300747	Tr-County Oil & Gas, Inc.	2004	29	4	5	3	2	2	1	0	1	1	3	3	4
4710300747	Tr-County Oil & Gas, Inc.	2005	33	4	5	2	2	2	1	1	3	2	2	5	4
4710300747	Tr-County Oil & Gas, Inc.	2006	35	6	5	3	3	2	1	1	2	2	4	5	
4710300747	Leatherwood, Inc.	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2011	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2013	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information: (Volumes in Bbl) \*\* some operators may have reported NGL under Oil

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4710300747	Columbia Gas Transmission Corp.	1980	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1981	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1982	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1983	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1984	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1985	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1986	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1987	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1988	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1989	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1990	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Gas Transmission Corp.	1991	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Natural Resources, Inc. (CNR)	1992	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Natural Resources, Inc. (CNR)	1993	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Natural Resources, Inc. (CNR)	1994	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Natural Resources, Inc. (CNR)	1995	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Columbia Natural Resources, Inc. (CNR)	1996	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tustin & Harman Oil & Gas, LLC	1997	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tustin & Harman Oil & Gas, LLC	1998	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tr-County Oil & Gas, Inc.	2000	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tr-County Oil & Gas, Inc.	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tr-County Oil & Gas, Inc.	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tr-County Oil & Gas, Inc.	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tr-County Oil & Gas, Inc.	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tr-County Oil & Gas, Inc.	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Tr-County Oil & Gas, Inc.	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2011	0	0	0	0	0	0	0	0	0	0	0	0	0
4710300747	Leatherwood, Inc.	2013	0	0	0	0	0	0	0	0	0	0	0	0	0

Production NGL Information: (Volumes in Bbl) \*\* some operators may have reported NGL under Oil

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4710300747	Leatherwood, Inc.	2013	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
4710300747	Original Loc	Sewickley coal	Well Record	840	Reasonable	2	Reasonable	1210 Topo Estimation
4710300747	Original Loc	Pittsburgh coal	Well Record	920	Reasonable	5	Reasonable	1210 Topo Estimation
4710300747	Original Loc	Salt Sands (undiff)	Well Record	1720	Reasonable	50	Reasonable	1210 Topo Estimation
4710300747	Original Loc	Greenbrier Group	WVGES Staff Geologist	2040	Reasonable			1210 Topo Estimation
4710300747	Original Loc	Big Lime	Well Record	2040	Reasonable	40	Reasonable	1210 Topo Estimation
4710300747	Original Loc	Big Injun (undiff)	Well Record	2050	Reasonable	220	Reasonable	1210 Topo Estimation
4710300747	Original Loc	Gordon Stray	Well Record	2905	Reasonable	11	Reasonable	1210 Topo Estimation
4710300747	Original Loc	Gordon	Well Record	2930	Reasonable			1210 Topo Estimation

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4710300747	6/21/2016	0

There is no Sample data for this well

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WV Geological &amp; Economic Survey:

**Well: County = 103 Permit = 73123**

Report Time: Tuesday, October 19, 2021 1:50:38 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4710373123	Wetzel	73123	Proctor	Wileyville	Littleton	39.712923	-80.742304	522088.7	4395927

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4710373123	-/-		unknown	Prpty Map	Jacob Coffield	1				----- unknown -----			

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	
4710373123	-/-	-/-						unclassified	unclassified	not available	unknown	unknown										

WV Geological &amp; Economic Survey:

**Well: County = 103 Permit = 73124**

Report Time: Tuesday, October 19, 2021 1:51:30 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4710373124	Wetzel	73124	Proctor	Wileyville	Littleton	39.718003	-80.742304	522087.1	4396490.8

There is no Bottom Hole Location data for this well

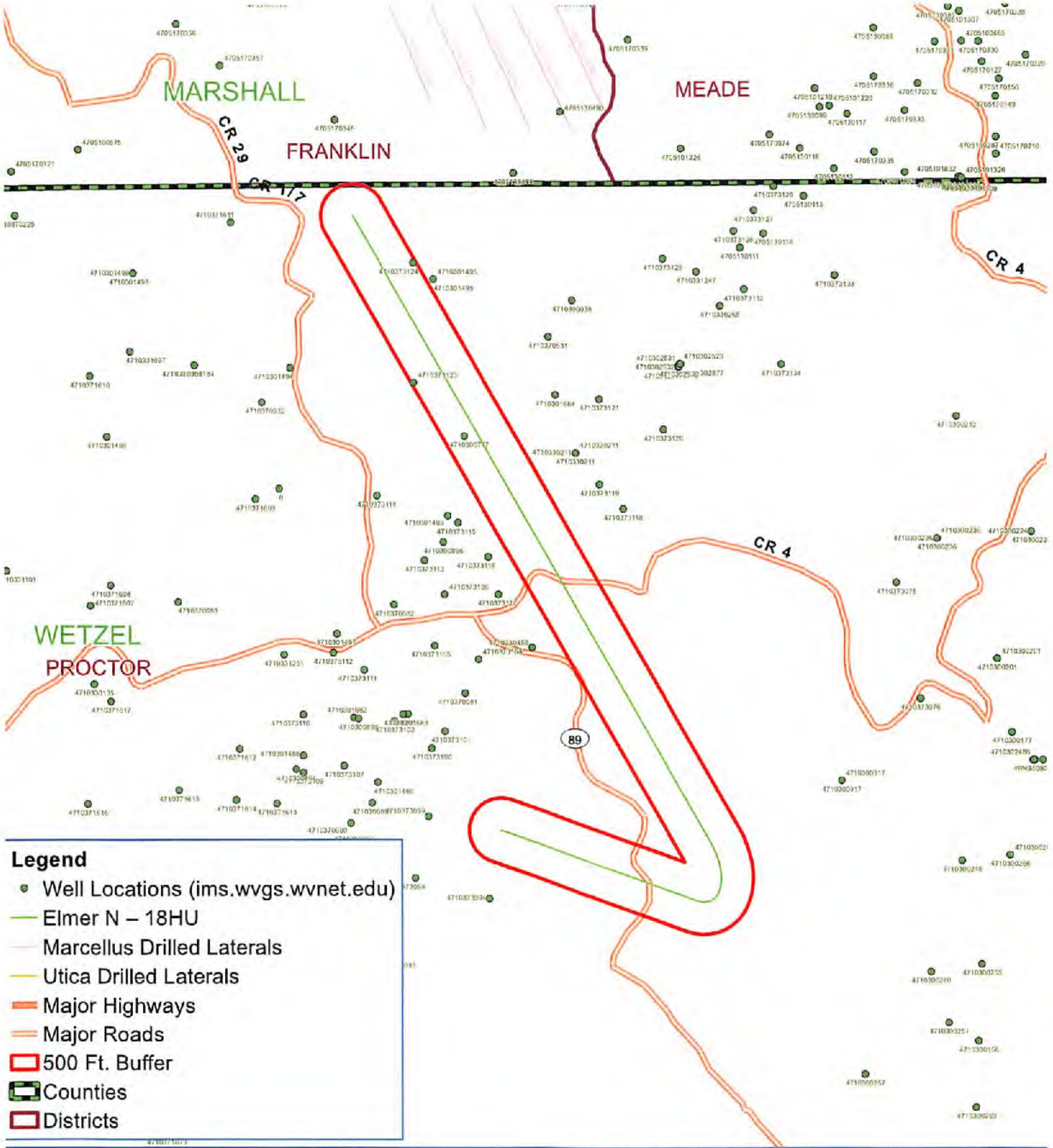
Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4710373124	-/-		unknown	Prpty Map	J P Cooper	2				----- unknown -----			

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	
4710373124	-/-	-/-						unclassified	unclassified	not available	unknown	unknown										

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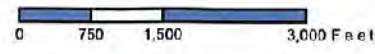
**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- Elmer N – 18HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Counties
- Districts



# Elmer N – 18HU Proctor District Wetzel County, WV

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Map Prepared by  
**DPS**  
LAND SERVICES

02/11/2022





*Bryan Ham  
10-29-21*

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

**Well Name: Elmer N-18HU**

**Pad Name: Elmer**

**County: Wetzel**

UTM (meters), NAD83, Zone 17

Northing: 4,393,817.36

Easting: 522,503.39

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

**Jerry V. DeRosa, Director EH&S Affairs**

**(724) 338-2029 (office)**

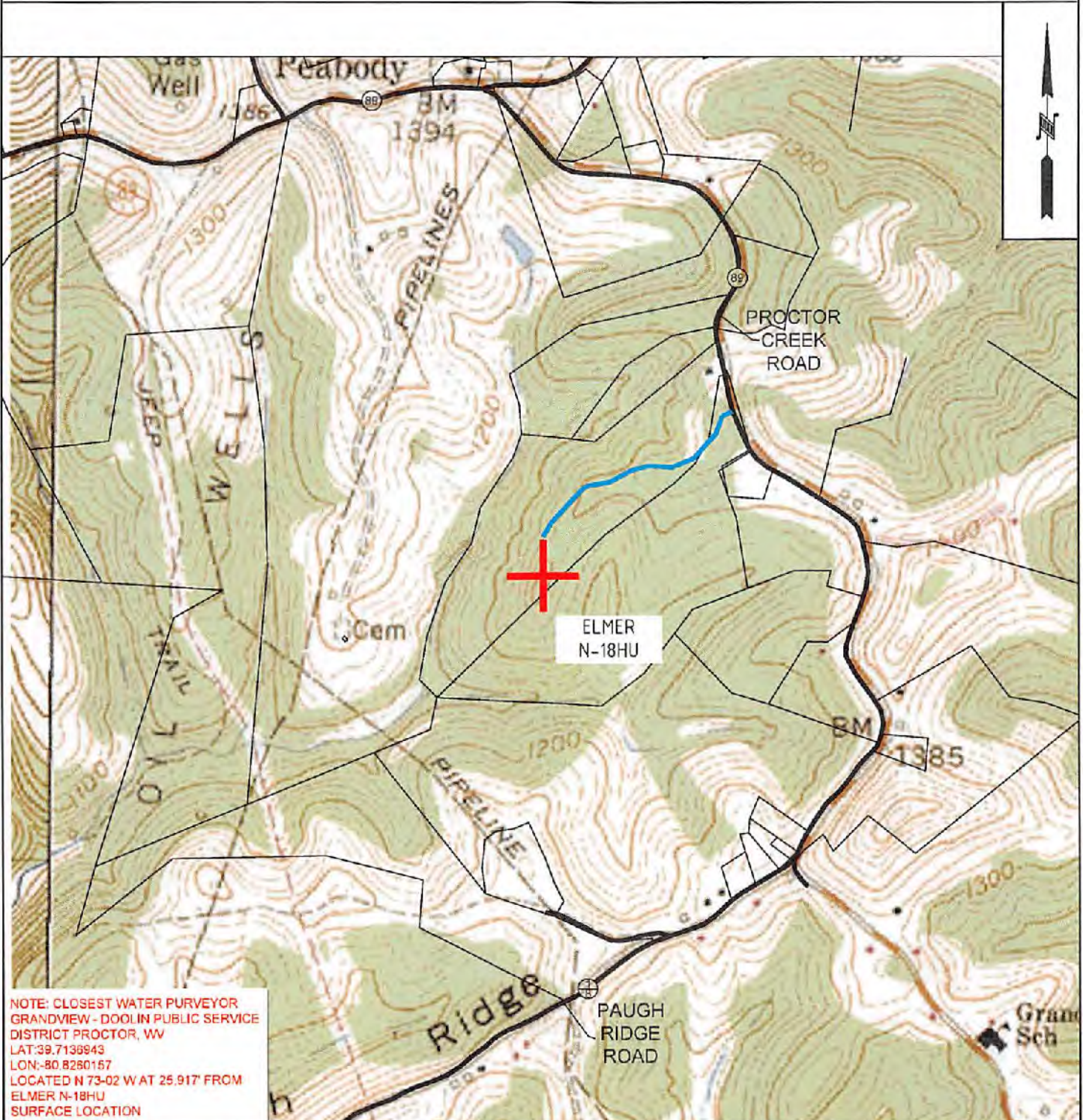
**(412) 736-5767 (cellular)**

**24-HOUR EMERGENCY PHONE NUMBER**

**(800) 921-9745**



# PROPOSED ELMER N-18HU



NOTE: CLOSEST WATER PURVEYOR  
 GRANDVIEW - DOOLIN PUBLIC SERVICE  
 DISTRICT PROCTOR, WV  
 LAT:39.7138943  
 LON:-80.8280157  
 LOCATED N 73-02 W AT 25.917' FROM  
 ELMER N-18HU  
 SURFACE LOCATION



OPERATOR **494510851**  
 TUG HILL OPERATING, LLC  
 380 SOUTHPOINTE BLVD  
 SUITE 200  
 CANONSBURG, PA 15317

TOPO SECTION  
 WILEYVILLE 7.5'  
 SCALE:  
 1" = 1000'

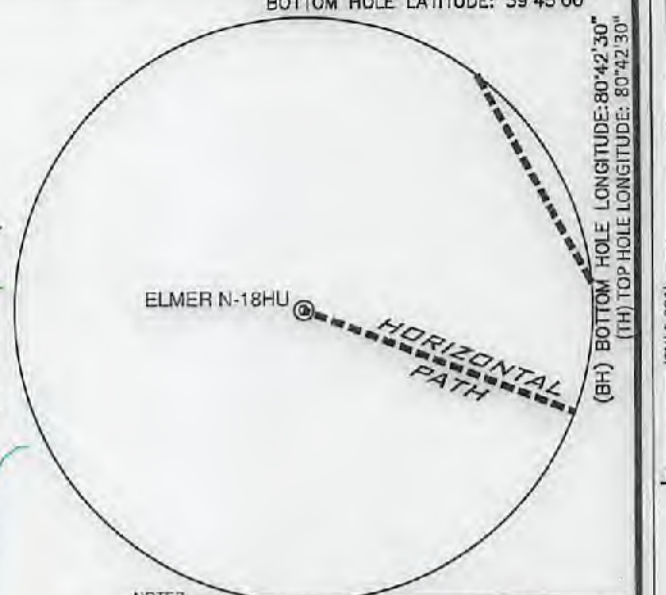
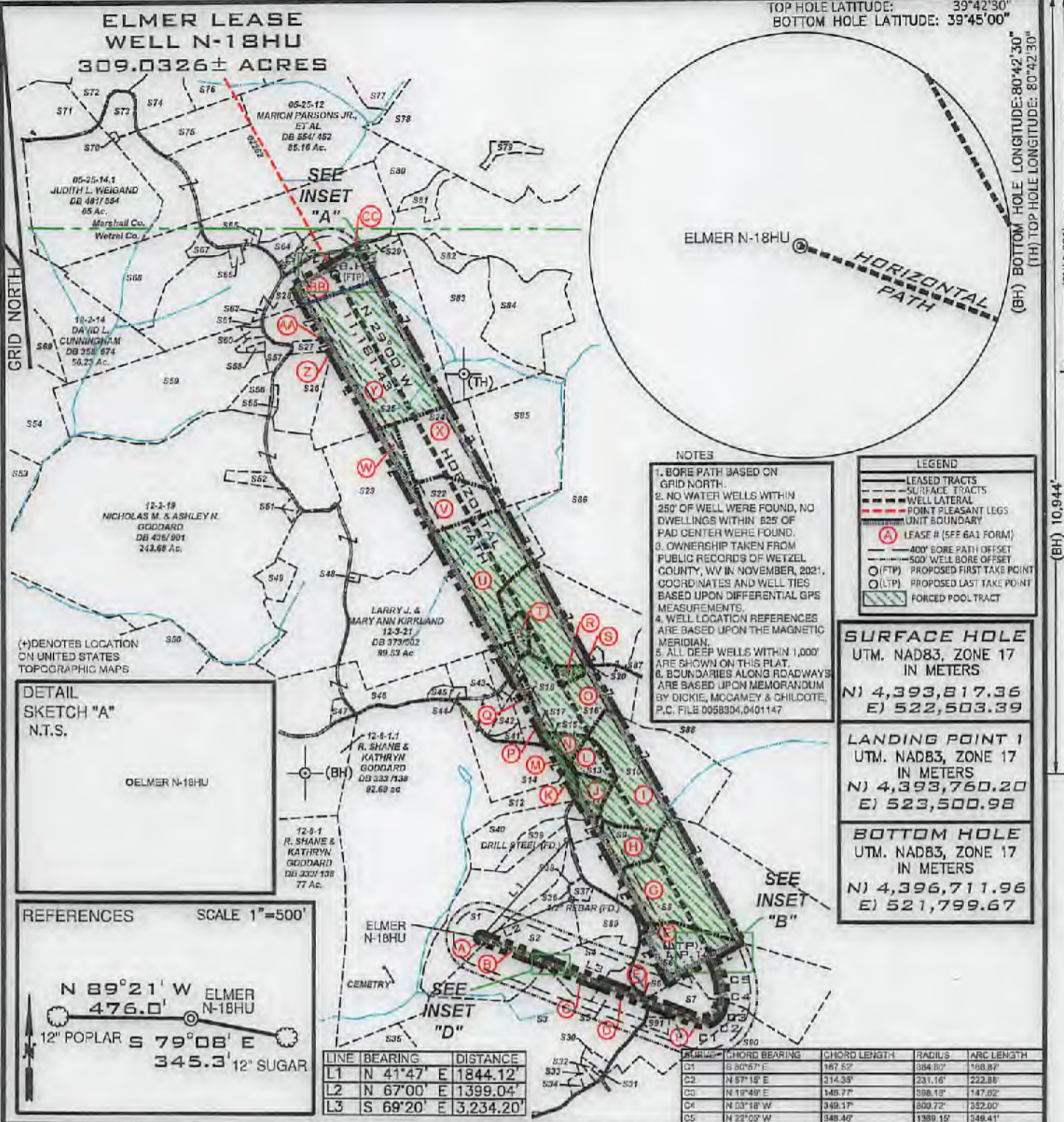
LEASE NAME  
 ELMER  
 DATE:  
 DATE: 10-21-2021

02/11/2022



# ELMER LEASE WELL N-18HU 309.0326± ACRES

TOP HOLE LATITUDE: 39°42'30"  
BOTTOM HOLE LATITUDE: 39°45'00"



**NOTES**

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 525' OF PAD CENTER WERE FOUND.
- OWNERSHIP TAKEN FROM PUBLIC RECORDS OF WETZEL COUNTY, WV IN NOVEMBER, 2021. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
- WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
- ALL DEEP WELLS WITHIN 1,000' ARE SHOWN ON THIS PLAT.
- BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147

**LEGEND**

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

**SURFACE HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,393,817.36  
E) 522,503.39

**LANDING POINT 1**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,393,760.20  
E) 523,500.98

**BOTTOM HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,396,711.96  
E) 521,799.67

**DETAIL SKETCH "A"**  
N.T.S.

OELMER N-18HU

**REFERENCES** SCALE 1"=500'

N 89°21' W 476.0' ELMER N-18HU

12" POPLAR S 79°08' E 345.3' 12" SUGAR

LINE	BEARING	DISTANCE
L1	N 41°47' E	1844.12'
L2	N 67°00' E	1399.04'
L3	S 69°20' E	3,234.20'

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 80°57' E	167.52'	384.80'	169.87'
C2	N 57°18' E	214.59'	231.16'	222.88'
C3	N 10°49' E	148.77'	398.18'	147.02'
C4	N 03°18' W	349.17'	809.72'	352.00'
C5	N 22°09' W	348.46'	1389.15'	346.41'

FILE NUMBER \_\_\_\_\_

DRAWING NUMBER ELMER\_N-18HU\_REVO

SCALE 1" = 2000'

MINIMUM DEGREE OF ACCURACY 1/200

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING  
GRADE GPS

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

P.S. 708  
*David L Jackson*



JACKSON SURVEYING INC.  
P.O. Box 1460  
Clarksburg, WV 26302  
304-623-5551

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

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

LOCATION ELEVATION 1275.25' WATERSHED (HUC 10) PROCTOR CREEK OF FRENCH CREEK - OHIO RIVER (HUC-10)

DISTRICT PROCTOR COUNTY WETZEL

QUADRANGLE WILEVILLE 7.5' LEASE NUMBER \_\_\_\_\_ SEE WW-6A1 FORM

SURFACE OWNER ELNORA TUTTLE ACREAGE 39.19

OIL & GAS ROYALTY OWNER ELNORA TUTTLE - SEE WW-6A1 LEASE ACREAGE 39.19

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: 12,004' TMD: 24,489'

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

02/11/2022

COUNTY NAME  
PERMIT



form wwf

**ELMER LEASE  
WELL N-18HU  
309.0326± ACRES**

\*FORCED POOLED TRACTS ARE HIGHLIGHTED

Tags	Number	Tax Map - Parcel	Surface Owner	Acres
A	51	12-8-15	ELNORA TUTTLE	39.19
B	52	12-8-16	CHARLES & BETTY HUGGINS	39.13
	53	12-8-20	NANCY D. TRUEX	95.35
C	54	12-8-21.1	LINDA M. STOUT	15.26
D	55	12-8-22.1	BARRY C. KIRKLAND	7.401
E	56	12-8-23	JACOB WOODROW & MARY JOSEPHINE NICE	59
F	57	12-8-32	DAVID TODD & CINDY L. BATES & CHARLES M. THOMAS	27.287
G	58	12-8-17	JACOB WOODROW & MARY JOSEPHINE NICE	85.69
H	59	12-8-1	JACOB WOODROW & MARY JOSEPHINE NICE	20.893
I	510	12-8-1.5	JACOB WOODROW & MARY JOSEPHINE NICE	51.107
J	511	12-8-1.1	JACOB WOODROW & MARY JOSEPHINE NICE	6.171
K	512	12-8-2	R. SHANE & KATHRYN GODDARD	178
L	513	12-8-4.3	BRADY G. & SHARON L. HOWELL	5.59
M	514	12-8-3	R. SHANE & KATHRYN GODDARD	31.13
N	515	12-8-3.1	DOUGLAS & SUZANNE ESTEP	3.25
O	516	12-3-30.1	FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & SUZANNE ESTEP (RAYMOND ESTEP - L/E)	81.82
P	517	12-3-39.1	COLLIN S. & MORGAN BATES	1.31
Q	518	12-3-39	FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & SUZANNE ESTEP (RAYMOND ESTEP - L/E)	4.69
R	519	12-3-30.2	APRIL ROSE & DONALD ALLEN POSTLETHWAIT	1.67
S	520	12-3-30	MARY ROSE YOHO - L/E; APRIL ROSE POSTLETHWAIT	0.48
T	521	12-3-29	FRIEND V. ESTEP (RAYMOND F. ESTEP - L/E)	2.9
V	522	12-3-14.1	MATTHEW D. HALL	13
W	523	12-3-13	LARRY J. & MARY ANN KIRKLAND	95
X	524	12-3-14	ROBERT W. BAXTER, FREDERICK J. BAXTER & ANN C. UNGER	27
Y	525	12-3-4	MARY HOHMAN ET AL	85
Z	526	12-3-3.1	DIANA & ROBERT L. SMITH	15.78
AA	527	12-3-02	ROBERT LEE & DIANA G. SMITH	2.48
BB	528	5-25-11.2	JAMES W. KLUG	110.491
CC	529	12-3-42	J. M. KLUG	2.617
	530	12-8-20.1	PAUL J. BLAKE	1.5
	531	12-8-20.3	PAUL J. BLAKE	0.25
	532	12-8-20.9	JOSHUA M. & COURTNEY R. NEFF	0.4
	533	12-8-20.8	JOSHUA M. & COURTNEY R. NEFF	0.99
	534	12-8-20.6	JOHN G. & DEBRA D. THROCKMORTON	1.046
	535	12-8-20.5	JOE B. MILLER & GERALD & SUE YEATER	5.44
	536	12-8-4.4	CHARLES & BETTY HUGGINS	0.69
	537	12-8-4.2	BRENT A. & KIMBERLY J. EDDY	1.861
	538	12-8-16.1	BRENT A. & KIMBERLY J. EDDY	0.06
	539	12-8-14	EDWARD C. & SANDRA K. MURRINER	5.33
	540	12-8-13	EDWARD C. & SANDRA K. MURRINER	15
	541	12-3-32.1	TIMOTHY L. & LEA ANN SUMMERS	1.78
	542	12-3-32	TIMOTHY L. SUMMERS	2.32
	543	12-3-30.3	TIMOTHY L. SUMMERS	0.61
	544	12-3-45	ANTIOCH CHURCH	0.774

545	12-3-28	ANTIOCH CHURCH	1
546	12-8-1.1	R. SHANE & KATHRYN GODDARD	92.69
547	12-8-1.2	JOSH GODDARD	1.81
548	12-8-21.1	LARRY J. & MARY ANN KIRKLAND	0.47
549	12-3-13.1	ZACHARY J. KIRKLAND	5
550	12-2-22.1	DAVID A. NICE	54.66
551	12-3-48	RONALD W. & JULIE A. NICE	1
552	12-3-12	RODNEY DEAN JACKSON	3.625
553	12-2-12	BERYLE E. MASON	59.9
554	12-2-13	JAY S. BOOTH; DANIEL T. BOOTH & DIANE BETH OVERDORFF	100
555	12-3-3	ANITA LARELL SLOUGH	1.12
556	12-3-4.2	DEREK L. BAKER	5.21
557	12-3-4.3	JOSEPH P. & BARBARA A. CAIN	3.619
558	12-3-4.8	BRIN HUBBS	0.621
559	12-3-4.7	JOSEPH P. & BARBARA A. CAIN	67.3
560	12-3-4.6	STEVEN P. WAYMAN	1.009
561	12-3-4.5	HAZEL M. BLAIR	0.451
562	12-3-1	JAMES W. KLUG	0.375
563	12-3-43	ADAM W. FERRELL & BRITTANY M. LOY	1.97
564	12-3-49	LOGAN & AMY TAYLOR	3.814
565	12-3-47	WETZEL CO. EMERGENCY AMBULANCE	0.5
566	12-3-44	JAMES A. & JO C. ESTEP	1.1
567	05-25-11.1	EDWARD W. & DIANNA KLUG	2.343
568	05-25-11.4	EDWARD W. KLUG, ET UX	32.787
569	12-2-14.2	JOHN G. JR. & GERALDINE W. ROGERS	22.0007
570	05-25-13.4	PARSONS CEMETERY	0.382
571	05-25-14	ROY F. VOHO	23
572	05-25-1	MICHAEL L. MASON	35.43
573	05-25-13.2	DAVID A. KLUG	5.89
574	05-25-13	WILLIAM M. FERDA, JR. & STEPHANIE L. PALUCKA	16.014
575	05-25-12.1	KENT & BETTY MASON	15
576	05-25-1.5	RYAN J. BRATTON	21.35
577	05-25-2	JAMES W. KLUG	122.3
578	05-25-9	S.D. FERTITTA, ET UX	181.548
579	05-25-3.1	S.D. FERTITTA, ET UX	3.022
580	05-25-10	TERRY L. & TAMMY J. KIRKLAND, AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	18.75
581	05-25-10.1	TERRY L. & TAMMY J. KIRKLAND, AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	5.25
582	12-3-41	TERRY L. & TAMMY J. KIRKLAND, AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	4.102
583	12-3-11.1	TERRY L. & TAMMY J. KIRKLAND, AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	74.138
584	12-3-4.1	TERRY L. & TAMMY J. KIRKLAND, AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	10.5
585	12-3-15	ROBERT W. BAXTER, FREDERICK J. BAXTER & ANN C. UNGER	38
586	12-3-22	FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & JOAN ESTEP (RAYMOND ESTEP - L/E)	22.5
587	12-3-30.1	JOAN & MICHAEL J. ESTEP	1.75
588	12-3-33	FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & JOAN ESTEP (RAYMOND ESTEP - L/E)	58.32
589	12-8-5	JEREMY S. & ERIN P. GODDARD	25
590	12-8-32.8	DAVID TODD & CINDY L. BATES	36.425
591	12-8-32.5	CHARLES W. THOMAS, JR.	1.309

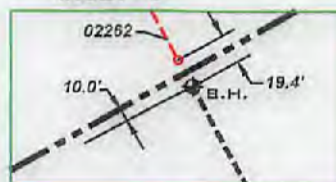
INSET "B"



SEE INSET "C" INSET "A"



INSET "C"



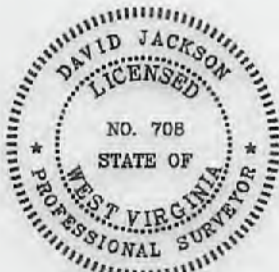
INSET "D"



LEGEND

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

02/11/2022



P.S. 708

David L Jackson



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: ELMER N-18HU  
DISTRICT: Proctor  
COUNTY: Wetzel  
STATE: WV  
API #: 47-103-03467

WELL PLAT  
PAGE 2 OF 3  
DATE: 12/15/2021



form: wv6

**ELMER LEASE  
WELL N-18HU  
309.0326± ACRES**

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Deed Book/Page	
10*31435	A	12-8-15	HENRY AND NANCY GARNER	55	394
10*31435	B	12-8-16	HENRY AND NANCY GARNER	55	394
10*31435	C	12-8-21.1	HENRY AND NANCY GARNER	55	394
10*31435	D	12-8-22.1	HENRY AND NANCY GARNER	55	394
10*31435	E	12-8-23	HENRY AND NANCY GARNER	55	394
10*31435	F	12-8-32	HENRY AND NANCY GARNER	55	394
**FORCE POOL**	G	12-8-17	ROY J GODDARD AND DOROTHY GODDARD	47A	197
**FORCE POOL**	H	12-8-4	ROY J GODDARD AND DOROTHY GODDARD	47A	197
**FORCE POOL**	I	12-8-4.5	ROY J GODDARD AND DOROTHY GODDARD	47A	197
**FORCE POOL**	J	12-8-4.1	ROY J GODDARD AND DOROTHY GODDARD	47A	197
10*31435	K	12-8-2	HENRY AND NANCY GARNER	55	394
**FORCE POOL**	L	12-8-4.3	ROY J GODDARD AND DOROTHY GODDARD	47A	197
10*31435	M	12-8-3	HENRY AND NANCY GARNER	55	394
10*31435	N	12-3-31	HENRY AND NANCY GARNER	55	394
10*31435	O	12-3-30.4	HENRY AND NANCY GARNER	55	394
**FORCE POOL**	P	12-3-39.1	CONKLIN CENTER FOR THE MULTI-HANDICAPPED BLIND, ET AL	NA	NA
**FORCE POOL**	Q	12-3-39	CHRISTINE DOUVILLE, ET AL	NA	NA
10*31435	R	12-3-30.2	HENRY AND NANCY GARNER	55	394
10*31435	S	12-3-30	HENRY AND NANCY GARNER	55	394
10*31435	T	12-3-29	HENRY AND NANCY GARNER	55	394
10*21681	U	12-3-21	DOROTHY J HAAS, ET AL	214A	358
10*Pending	V	12-3-14.1	ANN C LINGER AND ARTHUR L LINGER	273A	324
10*22229	W	12-3-13	MURIEL A MILLER	204A	150
10*Pending	X	12-3-14	ANN C LINGER AND ARTHUR L LINGER, ET AL	273A	324
10*39463	Y	12-3-4	J P COOPER ET AL	56	245
10*39463	Z	12-3-3.1	J P COOPER ET AL	56	245
10*39463	AA	12-3-2	J P COOPER ET AL	56	245
10*22496	BB	5-25-1.2	JAMES W KLUG	923	543
10*22496	CC	12-3-42	JAMES W KLUG	923	543



P.S.  
708

*David L Jackson*

02/11/2022



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: ELMER N-18HU  
DISTRICT: Proctor  
COUNTY: Wetzel  
STATE: WV  
API #: 47-103-03467

WELL PLAT  
PAGE 3 OF 3  
DATE: 12/15/2021



**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
----------------------	-----------------------	-----------------------	---------	-----------

\*See attached pages

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

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

RECEIVED  
 Office of Oil and Gas  
 NOV 02 2021  
 WV Department of Environmental Protection

FEB 07 2022

Well Bore Tracts

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*31435	12-8-15	A	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Egon, Est of George F Eagon, decd, Mildred M Lartigue, Carl I Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31435	12-8-16	B	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Egon, Est of George F Eagon, decd, Mildred M Lartigue, Carl I Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31435	12-8-21.1	C	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Egon, Est of George F Eagon, decd, Mildred M Lartigue, Carl I Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31435	12-8-22.1	D	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Egon, Est of George F Eagon, decd, Mildred M Lartigue, Carl I Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31435	12-8-23	E	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Egon, Est of George F Eagon, decd, Mildred M Lartigue, Carl I Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31435	12-8-32	F	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Egon, Est of George F Eagon, decd, Mildred M Lartigue, Carl I Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*39851	12-8-17	G	ROY J GODDARD AND DOROTHY GODDARD	THE MANUFACTURERS LIGHT & HEAT COMPANY		47A 197	The Manufacturers Light and Heat Company to Columbia Gas Transmission Corp: 263/164	Columbia Gas Transmission Corp to Columbia Natural Resources LLC: 84A/129	Columbia Natural Resources LLC to Chesapeake Appalachia LLC: 402/446	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 97A/578	Chesapeake Appalachia LLC to SWN Production Company LLC: 157A/540	Statoil USA Properties Inc to SWN Exchange Titleholder LLC: 158A/801	Merger - SWN Exchange Titleholder LLC with and into SWN Production Company LLC: CB 13/296	Chesapeake Appalachia LLC to SWN Production Company LLC: 176A/747	**FORCE POOL**	
10*39851	12-8-4	H	ROY J GODDARD AND DOROTHY GODDARD	THE MANUFACTURERS LIGHT & HEAT COMPANY		47A 197	The Manufacturers Light and Heat Company to Columbia Gas Transmission Corp: 263/164	Columbia Gas Transmission Corp to Columbia Natural Resources LLC: 84A/129	Columbia Natural Resources LLC to Chesapeake Appalachia LLC: 402/446	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 97A/578	Chesapeake Appalachia LLC to SWN Production Company LLC: 157A/540	Statoil USA Properties Inc to SWN Exchange Titleholder LLC: 158A/801	Merger - SWN Exchange Titleholder LLC with and into SWN Production Company LLC: CB 13/296	Chesapeake Appalachia LLC to SWN Production Company LLC: 176A/747	**FORCE POOL**	
10*39851	12-8-4.5	I	ROY J GODDARD AND DOROTHY GODDARD	THE MANUFACTURERS LIGHT & HEAT COMPANY		47A 197	The Manufacturers Light and Heat Company to Columbia Gas Transmission Corp: 263/164	Columbia Gas Transmission Corp to Columbia Natural Resources LLC: 84A/129	Columbia Natural Resources LLC to Chesapeake Appalachia LLC: 402/446	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 97A/578	Chesapeake Appalachia LLC to SWN Production Company LLC: 157A/540	Statoil USA Properties Inc to SWN Exchange Titleholder LLC: 158A/801	Merger - SWN Exchange Titleholder LLC with and into SWN Production Company LLC: CB 13/296	Chesapeake Appalachia LLC to SWN Production Company LLC: 176A/747	**FORCE POOL**	
10*39851	12-8-4.3	L	ROY J GODDARD AND DOROTHY GODDARD	THE MANUFACTURERS LIGHT & HEAT COMPANY		47A 197	The Manufacturers Light and Heat Company to Columbia Gas Transmission Corp: 263/164	Columbia Gas Transmission Corp to Columbia Natural Resources LLC: 84A/129	Columbia Natural Resources LLC to Chesapeake Appalachia LLC: 402/446	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 97A/578	Chesapeake Appalachia LLC to SWN Production Company LLC: 157A/540	Statoil USA Properties Inc to SWN Exchange Titleholder LLC: 158A/801	Merger - SWN Exchange Titleholder LLC with and into SWN Production Company LLC: CB 13/296	Chesapeake Appalachia LLC to SWN Production Company LLC: 176A/747	**FORCE POOL**	
10*31435	12-3-30.4	O	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Egon, Est of George F Eagon, decd, Mildred M Lartigue, Carl I Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463



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Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*31435	12-3-30.2	R	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31435	12-3-29	T	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*21681	12-3-21	U	DOROTHY J HAAS, ET AL	TH EXPLORATION LLC	1/8+	214A 358	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22229	12-3-21	U	MURIEL A MILLER	TH EXPLORATION LLC	1/8+	204A 150	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22230	12-3-21	U	JOHN P SMYDER	TH EXPLORATION LLC	1/8+	204A 145	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22694	12-3-21	U	HAMMETT LAND & MINERALS LLC SAMUEL C HAMMETT	TH EXPLORATION LLC	1/8+	209a 283	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23007	12-3-21	U	MANAGING MEMBER	TH EXPLORATION LLC	1/8+	209A 287	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23512	12-3-21	U	JOHN M PARSONS & ANTOINETTE L COSTANTINO	TH EXPLORATION LLC	1/8+	212A 59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23697	12-3-21	U	VIVIAN A PARSONS	TH EXPLORATION LLC	1/8+	212A 59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23719	12-3-21	U	RICHARD ALLEN FONNER AND LINDA M FONNER	TH EXPLORATION LLC	1/8+	212A 521	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23797	12-3-21	U	BRENDA S FONNER	TH EXPLORATION LLC	1/8+	213A 410	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23797	12-3-21	U	FREDERICK R FONNER AND PENELOPE G FONNER	TH EXPLORATION LLC	1/8+	213A 703	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23834	12-3-21	U	JAMES H PARSONS JR	TH EXPLORATION LLC	1/8+	215A 262	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24004	12-3-21	U	JOHN E FONNER AND MICHELE D FONNER	TH EXPLORATION LLC	1/8+	215A 437	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24148	12-3-21	U	JOHN E FONNER AND MICHELE D FONNER	TH EXPLORATION LLC	1/8+	212A 517	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24175	12-3-21	U	ROY C PARSONS	TH EXPLORATION LLC	1/8+	214A 71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24602	12-3-21	U	THOMAS L FONNER	TH EXPLORATION LLC	1/8+	215A 402	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25009	12-3-21	U	HERBERT L MILLER AND BRENDA S MILLER	TH EXPLORATION LLC	1/8+	220A 887	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25623	12-3-21	U	FRANCES E ALLOWAY	TH EXPLORATION LLC	1/8+	225A 771	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25686	12-3-21	U	CHRISTOPHER TILLMAN AND KELLY L TILLMAN	TH EXPLORATION LLC	1/8+	226A 407	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27309	12-3-21	U	ROBERT FRANKLIN II FONNER AND KARYN FONNER	TH EXPLORATION LLC	1/8+	229A 590	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27309	12-3-21	U	JOHN IHMATOLYA AND CHARLOTTE IHMATOLYA	TH EXPLORATION LLC	1/8+	232A 720	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27548	12-3-21	U	JOHN IHMATOLYA AND CHARLOTTE IHMATOLYA	TH EXPLORATION LLC	1/8+	232A 720	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27549	12-3-21	U	BECCY LANE LLC	TH EXPLORATION LLC	1/8+	232A 720	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27549	12-3-21	U	BETTY JANE RICHARDSON FONNER	TH EXPLORATION LLC	1/8+	232A 339	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27963	12-3-21	U	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	234A 623	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28038	12-3-21	U	CHRISTINE C CONNOR AND WILLIAM KYLE CONNOR	TH EXPLORATION LLC	1/8+	234A 623	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31435	12-3-21	U	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31435	12-3-21	U	HENRY AND NANCY GARNER	J A PHILLIPS	1/8+	55 394	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*31440	12-3-21	U	RACHEL AND JACOB COFFIELD	J A PHILLIPS	1/8+	55 329	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to Tri State Gas Company: 73/348 & 73/353	Tri-State Gas Company to The Manufacturers Light & Heat Company: 9A/141	The Manufacturers Light & Heat Company to Columbia Gas Transmission Corp: 263/164	Gas Transmission Corporation changed its name to Columbia Gas Transmission LLC - 1/30/2009	**FORCE POOL**				
10*31440	12-3-21	U	RACHEL AND JACOB COFFIELD	J A PHILLIPS	1/8+	55 329	J A Phillips to South Penn Oil Company: 56/284	South Penn Oil Company to South Penn Natural Gas Company: 33A/455	South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33	Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38	Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440	Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92	Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241	Kathryn C Reed to Carl Perkins: 55A/54	Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9	Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463
10*Pending	12-3-14.1	V	ANN C LINGER AND ARTHUR L LINGER	TH EXPLORATION LLC	1/8+	273A 324	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*39850	12-3-14.1	V	FREDERICK J BAXTER	TH EXPLORATION LLC	1/8+	Pending	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*39850	12-3-14.1	V	ROBERT W BAXTER	TH EXPLORATION LLC	1/8+	Pending	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*Pending	12-3-14	X	ANN C LINGER AND ARTHUR L LINGER, ET AL	TH EXPLORATION LLC	1/8+	273A 324	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*39850	12-3-14	X	FREDERICK J BAXTER	TH EXPLORATION LLC	1/8+	Pending	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*39850	12-3-14	X	ROBERT W BAXTER	TH EXPLORATION LLC	1/8+	Pending	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
✓ 10*39463	12-3-4	Y	J P COOPER ET AL	SOUTH PENN OIL COMPANY	1/8+	56 245	N/A	South Penn Oil Company to Hope Natural Gas Company: 9A/227	Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387	Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69	Consolidated Gas Transmission Corp to CNG Development Company: 67A/453	Jan 1, 1991 CNG Development Company merged with and into CNG Producing Company	Name change - CNG Producing Company changed its name to Dominion Exploration & Production Inc	Name change - Dominion Exploration & Production Inc into Consol Gas Company: CB 13/108	Merger - Consol Gas Company with and into CNX Gas Company LLC: Misc Bk 96/307	CNX Gas Company LLC to TH Exploration LLC: 270A/479
✓ 10*22496	5-25-11.2	BB	JAMES W KLUG	AMERICAN PETROLEUM PARTNERS LLC	1/8+	923 543	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: 207A/706

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**MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES**

STATE OF WEST VIRGINIA       §  
  §  
COUNTY OF WETZEL               §

This **MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES** (hereinafter, the "**Memorandum**") has been executed by and between **PERKINS OIL & GAS, INC.**, a West Virginia corporation, whose address is 2966 Northwest Turnpike, Pennsboro, West Virginia 26415 (hereinafter the "**Assignor**"), and **TH EXPLORATION, LLC**, a Texas limited liability company (hereinafter the "**Assignee**") whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107. Assignor and Assignee are sometimes referred to herein, collectively, as the "**Parties**" and, individually, as a "**Party**." This Memorandum is being executed for the purpose of providing notice to third parties of the execution of a certain Partial Assignment of Oil and Gas Leases (hereinafter, the "**Assignment**"), by and between the Parties.

**WHEREAS**, Assignor is the current owner and lessee of certain oil and gas leases located in Wetzel County, West Virginia, covering specific parcels and being more particularly described on **Exhibit "A"** attached hereto and made a part hereof (collectively, the "Oil and Gas Leases").

In the Assignment dated effective as of the 15<sup>th</sup> day of October, 2020 (hereinafter, the "**Effective Date**") and this Memorandum, Assignor does hereby **GRANT, BARGAIN, SELL, CONVEY, TRANSFER and ASSIGN** unto Assignee, all right, title and interest in and to the Oil and Gas Leases **INSOFAR AND ONLY INSOFAR** as each lease and parcel covers those formations lying between two hundred (200) feet above and two hundred (200) feet below the formations commonly known to as the Utica/Point Pleasant Shale formations, or the stratigraphic equivalent thereof (such depths and formations being referred to as the "**Assigned Formations**"). The Assigned Formations are included with and part of the Assigned Rights as defined in the Assignment.

**EXCLUDING THEREFROM AND EXCEPTING AND RESERVING UNTO THE ASSIGNOR, ITS SUCCESSORS AND ASSIGNS, THE OVERRIDING ROYALTY INTEREST**, as defined in the Assignment.

The Assignment contains various other terms, provisions and conditions, all of which are incorporated herein by reference, and made a part hereof in all respects as though the same were fully set forth herein. To the extent that there are any inconsistencies between this Memorandum and the Assignment, the terms and provisions of the Assignment shall prevail.

Assignor does hereby bind itself and its successors and assigns to warrant and forever defend all and singular title to the Assigned Formations unto Assignee and Assignee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by through, or under Assignor, but not otherwise.

This Memorandum is made expressly subject to the terms and conditions of the Purchase and Sale Agreement dated June, 24, 2020, by and between the Parties, all of which are fully incorporated herein by reference (the "**Purchase Agreement**").

This Memorandum may be executed in multiple counterparts, each of which shall be deemed an original instrument, but all such counterparts together shall constitute but one agreement.

*[TWO SIGNATURE PAGES TO FOLLOW]*

02/11/2022

AMERICAN PETROLEUM PARTNERS  
600 J BARRY COURT SUITE 310  
CANONSBURG PA 15317

STATE OF WEST VIRGINIA §  
  §  
COUNTY OF WETZEL       §

**ASSIGNMENT AND CONVEYANCE**

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 18th day of May, 2018, and made effective December 12, 2017 (the "Effective Date"), by and between AMERICAN PETROLEUM PARTNERS OPERATING, LLC, (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated December 12, 2017 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

**WITNESSETH:**

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

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below.

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

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

TO HAVE AND TO HOLD such right, title and interest in and to the Leases unto Assignee or its designee, and their respective successors and assigns, forever, in accordance with the provisions of this Assignment.

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the

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02/11/2022



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

Date of Notice Certification: 11/01/2021

API No. 47- 103 - \_\_\_\_\_  
Operator's Well No. Elmer N-18HU  
Well Pad Name: Elmer

**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>522,503.39</u>
County: <u>Wetzel</u>	Northing: <u>4,393,817.36</u>
District: <u>Proctor</u>	Public Road Access: <u>Proctor Creek Road</u>
Quadrangle: <u>Wileyville 7.5'</u>	Generally used farm name: <u>Elnora Tuttle</u>
Watershed: <u>Proctor Creek of French Creek - HUC 10</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 type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED  <input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" 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		<b>OOG OFFICE USE ONLY</b>  <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 and Gas NOV 02 2021 WV Department of Environmental Protection		

**Required Attachments:**

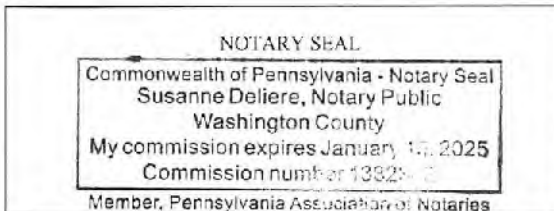
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

WW-6AC  
(1/12)

**Certification of Notice is hereby given:**

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

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



Subscribed and sworn before me this 1<sup>st</sup> day of November, 2021  
*Susanne Deliere* Notary Public  
 My Commission Expires 1/15/2025

**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](mailto:deprivacyofficer@wv.gov).

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WV Department of  
Environmental Protection

02/11/2022



4710303467

WW-6A  
(9-13)

API NO. 47- 103 -  
OPERATOR WELL NO. Elmer N-18HU  
Well Pad Name: Elmer

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: 11/1/2021 Date Permit Application Filed: 11/1/2021

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:

RECEIVED  
Office of Oil and Gas

NOV 02 2021

WV Department of  
Environmental Protection

SURFACE OWNER(s)  
Name: Elnora Tuttle (Pad & Access Road)

Address: 6768 Proctor Creek Road  
Proctor, WV 26055

Name: Charles Lee & Betty Jean Huggins (Pad & Access Road)

Address: 5352 Palmer Ridge Road  
Proctor, WV 26055

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

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: Consol Energy, Inc. Attn: Casey Saunders

Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

COAL OPERATOR

Name: Consol Energy, Inc. Attn: Casey Saunders

Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

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

Name: \*see attached list

Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\*Please attach additional forms if necessary

02/11/2022

**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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



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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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

### **Time Limits and Methods for Filing Comments.**

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

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

### **Comment Requirements**

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

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

### **Permit Denial or Condition**

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

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

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

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



WW-6A  
(8-13)

API NO. 47- 103 -  
OPERATOR WELL NO. Elmer N-18HU  
Well Pad Name: Elmer

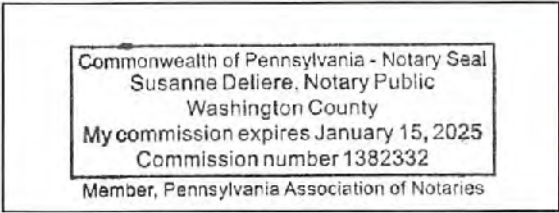
**Notice is hereby given by:**

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:**

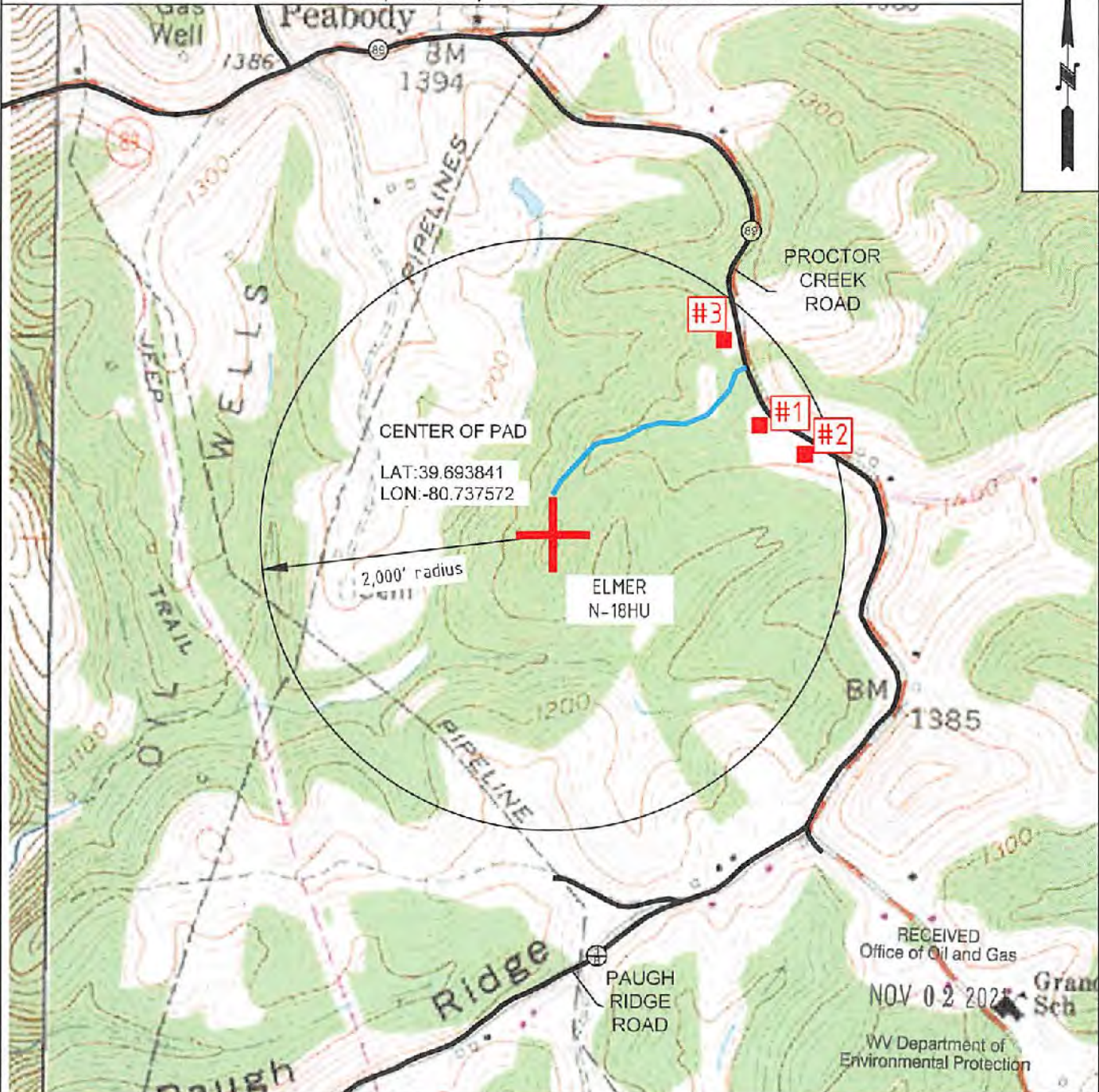
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory 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](mailto:deprivacyofficer@wv.gov).



Subscribed and sworn before me this 1<sup>st</sup> day of November 2021  
*Susanne Deliere* Notary Public  
My Commission Expires 1/15/2025

# PROPOSED ELMER N-18HU

THERE APPEAR TO BE THREE (3) RESIDENCES, AND ZERO (0) BUSINESSES,  
CHURCHES, SCHOOLS, OR EMERGENCY FACILITIES WITHIN 2000'.



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NOV 02 2021  
Grand Sch  
WV Department of  
Environmental Protection



OPERATOR	494510851	TOPO SECTION	LEASE NAME
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		WILEYVILLE 7.5'	ELMER
		SCALE:	DATE:
		1" = 1000'	DATE: 10-22-2021



**Exhibit 3A**

Tug Hill Oil & Gas Inc.  
 380 Southpointe Blvd, Suite 200  
 Canonsburg, PA 15137

**RESIDENCES WITHIN 2000' OF ELMER WELL PAD**

Well: Elmer  
 District: Proctor  
 County: Wetzel  
 State: WV

There appears to be Three (3) Residences, No Businesses, No Schools and No Emergency Facilities within 2000' of the center of well pad for the above referenced well location.

Topo Spot # 1 (House/Cabin) TM 12-8-4.2 Brent A. & Kimberly J. Eddy 6882 Proctor Creek Rd. Proctor, WV 26055 304-455-1510 (h)	Topo Spot # 2 (House/Cabin) TM 12-8-21 Eduardo C. & Sonya R. Deguzman PO Box 1102 Solomons, MD 20688 410-326-0190 (h)	Topo Spot # 3 (House/Cabin) TM 12-8-15 Elnora Tuttle 6768 Proctor Creek Rd. Proctor, WV 26055 304-455-4575 (h)
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 Office of Oil and Gas

NOV 02 2021

WV Department of  
 Environmental Protection

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

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

**Date of Notice:** 10/19/2021 **Date of Planned Entry:** 10/25/2021

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

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

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

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: Elmer Tuttle (Pad & Access Road) /  
Address: 8768 Proctor Creek Road  
Proctor, WV 26055

Name: Charles Lee & Betty Jean Huggins (Pad & Access Road)  
Address: 5352 Palmer Ridge Road /  
Proctor, WV 26055

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: Consol Energy, Inc. Attn: Casey Saunders /  
Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: \*See attached list  
Address: \_\_\_\_\_

\*please attach additional forms if necessary

RECEIVED  
Office of Oil and Gas  
NOV 02 2021  
WV Department of  
Environmental Protection

**Notice is hereby given:**

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

State: West Virginia	Approx. Latitude & Longitude: 39.69384130; -80.73757156
County: Wetzel	Public Road Access: Proctor Creek Road
District: Proctor	Watershed: French Creek - Ohio River (HUC 10)
Quadrangle: Willeyville 7.5'	Generally used farm name: Elmer Tuttle

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://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
Telephone: 724-749-8368	Canonsburg, PA 15317
Email: amorris@tug-hillcp.com	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](mailto:depprivacyofficer@wv.gov).

02/11/2022



4710303467

Additional Parties to Notice

Elmer Pad

Anita Louise Croghan /  
46 Fox Lane  
Winnetka, IL 60093

Charles W. Kolish, Jr. /  
4353 Rudy Lane  
Louisville, KY 40207

Christopher Palmer /  
37 Eton Rd.  
Montgomery, AL 36109

David M. Eddy /  
60090 Kiowa Ln.  
Montrose, CO 81403

Ellen Kay Shook /  
1706 Virginia St.  
Moundsville, WV 26041

John Richard Nuzum /  
2728 Cypress Street  
Columbia, SC 29205

Linda L. Simmons Nuzum /  
98 Michigan Ave.  
Asheville, NC 28806

Mary Margaret Sterling /  
372 Ruddles Mill Rd.  
Paris, KY 40361

Perkins Oil & Gas Inc. /  
2966 Northwest Turnpike  
Pensboro, WV 26415

Richard H. Arman /  
724 Mitchell Point Rd.  
Mineral, VA 23117

Roger E. Woodington /  
11 North Point Drive  
Portsmouth, VA 23703

Susain Rosier /  
665 W. Maryland Ave  
Sebring, OH 44672

Thelma N. Palmer /  
P.O. Box 188  
Pine Grove, WV 26419

Thomas E. Garner /  
413 Tomlinson Ave  
Glen Dale, WV 26038

Vicki S. Voorhis and Norman K. Voorhis /  
802 Highland Ave.  
New Martinsville, WV 26155

Barbara K. Eddy /  
P.O. Box 483  
Centre Hall, PA 16828

Charles W. Kolish, Sr. /  
307 Bramton Road  
Louisville, KY 40207

Daria F. Palmer Brooks /  
5500 Prytania St., PMB #601  
New Orleans, LA 70115

Debra K. Eddy /  
60090 Kiowa Ln.  
Montrose, CO 81403

James Arman /  
2048 Bridal Rd.  
Fernandina Beach, FL 27587

Larry D. Garner /  
5130 Hampton Court  
Zanesville, OH 43701

Lisa Marian Palmer Beers /  
2832 Woodley Rd.  
Montgomery, AL 36111

Michelle Sherwood /  
4725 Milford Rd.  
Wilmington, NC 28405

R. Shane Goddard and Kathryn Goddard /  
5904 Proctor Creek Road  
Proctor, WV 26055

Ridgetop Royalties, LLC /  
Attn: Chris Coonfare  
380 Southpointe Blvd, Ste. 405  
Canonsburg, PA 15317  
Sharon Burton  
314 N. 1st Ave.  
Paden City, WV 26159

Tamela P. Wood and James G. Wood /  
215 McBride Ridge Rd.  
Wileyville, WV 26581

Thomas Arman /  
840 Blue Bird Lane  
Wake Forest, NC 27587

Vanita and Cordova Holding Company, LLC /  
356 Nicholson Loop Rd.  
Morgantown, WV 26508

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Sharon Burton  
314 N. 1st Ave.  
Paden City, WV 26159

02/11/2022

WW-6A5  
(1/12)

4710303467  
Operator Well No. Elmer N-18HU

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS RECEIVED  
NOTICE OF PLANNED OPERATION Office of Oil and Gas

NOV 02 2021

WV Department of  
Environmental Protection

4710303467

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

**Date of Notice:** 11/01/2021 **Date Permit Application Filed:** 11/01/2021

**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: Elnora Tuttle (Pad & Access Road)  
Address: 6768 Proctor Creek Road  
Proctor, WV 26055

Name: Charles Lee & Betty Jean Huggins (Pad & Access Road)  
Address: 5352 Palmer Ridge Road  
Proctor, WV 26055

**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: 522,503.39  
County: Wetzel Northing: 4,393,617.36  
District: Proctor Public Road Access: Proctor Creek Road  
Quadrangle: Wileyville 7.5' Generally used farm name: Elnora Tuttle  
Watershed: French Creek - Ohio River

**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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: Tug Hill Operating, LLC  
Telephone: 724-749-8388  
Email: amorris@tug-hill-op.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](mailto:depprivacyofficer@wv.gov).

02/11/2022





WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

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

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

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

October 29, 2021

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

Subject: DOH Permit for the Elmer Pad, Wetzel County  
 Elmer N-18HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2021-0381 which has been issued to Tug Hill Operating LLC for access to the State Road for a well site located off Wetzel County Route 89 SLS MP 6.84.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE 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.

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WV Department of  
 Environmental Protection

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

02/11/2022



**PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION**

**Elmer N-18HU**

<b>PRODUCT NAME:</b>	<b>CHEMICAL DESCRIPTION:</b>	<b>PRODUCT USE:</b>	<b>HAZARDOUS COMPONENT:</b>
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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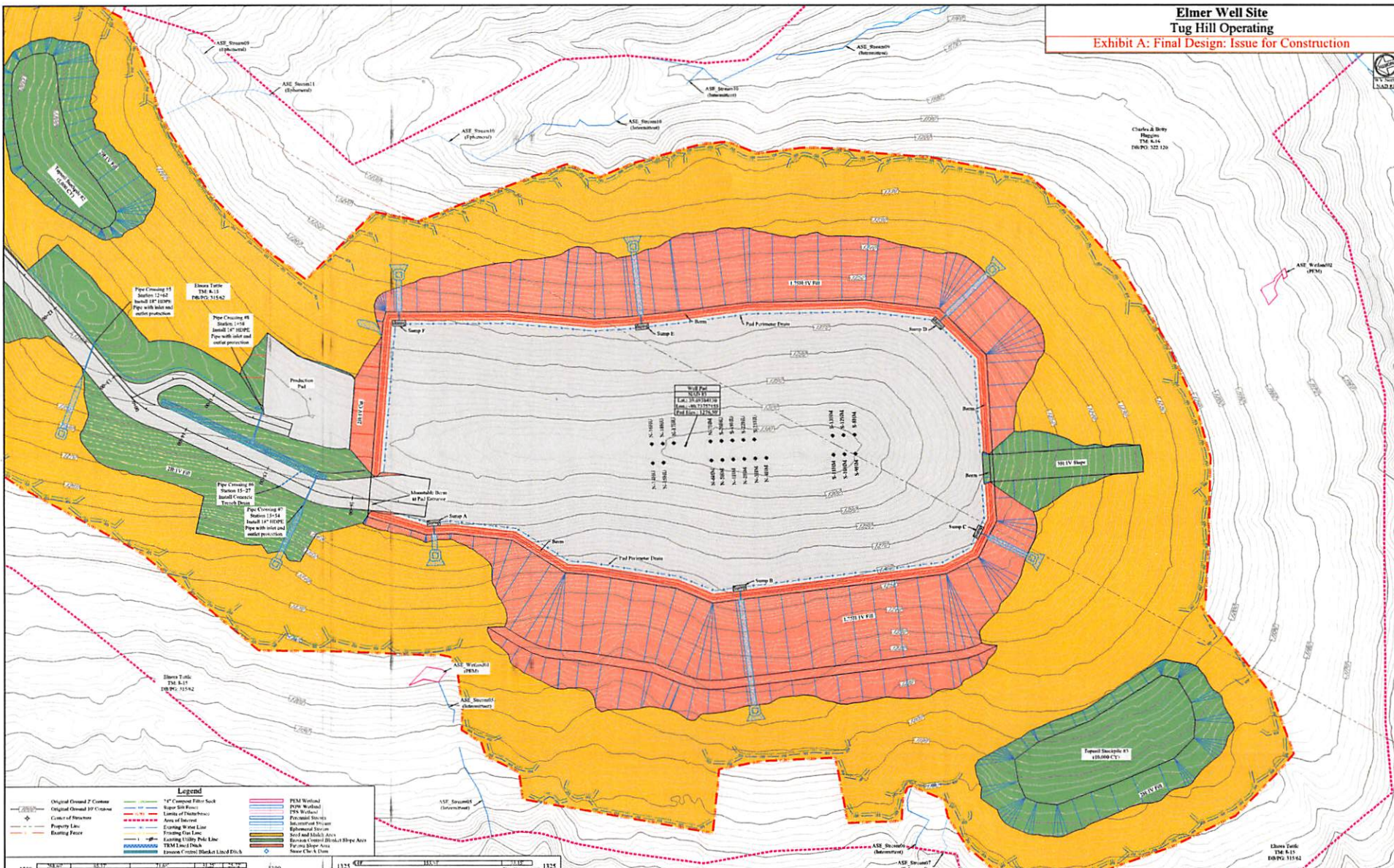
WV Department of  
Environmental Protection





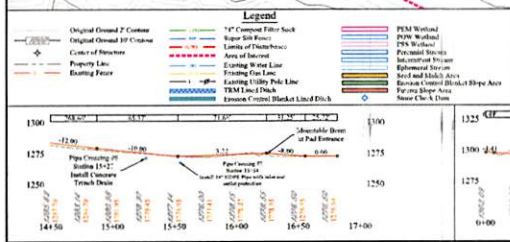


**Elmer Well Site**  
**Tug Hill Operating**  
**Exhibit A: Final Design: Issue for Construction**



Charles B. Berry  
 Manager  
 Tug Hill  
 FWPO: 322 120

**APPROVED**  
**WVDEP OOG**  
 2/11/2022



Disturbed Area	
Well Pad Construction	7.52 Ac
Production Pad Construction	3.92 Ac
Access Road Construction	2.80 Ac
Additional Clearing	11.70 Ac
Well Pad Impervious Area	2.81 Ac
<b>Additional Information</b>	
Total Disturbed Area (Total)	22.74 Ac
Total Impervious Area (Total)	2.81 Ac

Erosion and Sediment Control Plan  
 Elmer Well Site  
 Precor District  
 Wetzel County, WV

**TUG HILL OPERATING**

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

**K&S SURVEYING**  
 Surveying & Mapping  
 1000 West Virginia Ave  
 Morgantown, WV 26506  
 Phone: 304.241.1111  
 Fax: 304.241.1112

Date: 10/27/2021  
 Scale: As Shown  
 Designed by: ZS  
 Fig No: 1000000000  
 Sheet 7 of 11