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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)

Monday, May 3, 2021  
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 VAN WINKLE N-17HU  
47-051-02350-00-00

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

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

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief

Operator's Well Number: VAN WINKLE N-17HU  
Farm Name: XCL MIDSTREAM OPERATING  
U.S. WELL NUMBER: 47-051-02350-00-00  
Horizontal 6A New Drill  
Date Issued: 5/3/2021



west virginia department of environmental protection

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

April 22, 2021

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

RE: Application for Deep Well Permit – API #47-051-02350

COMPANY: Tug Hill Operating, LLC

FARM: XCL Midstream Operating, LLC Van Winkle N-17HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton

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

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

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

Sincerely,

Susan Rose  
Administrator

\*\* Old Crow N-19HU 47-051-02190; Old Crow N-20HU 47-051-02191; MND 6 HHS 47-051-01732; MND20CU 47-051-02013; MND20DU 47-051-02014; MND20EU 47-051-02045; Pendleton N-9HU 47-051-02245; Knob Creek N-12HU 47-051-02268; Knob Creek N-11HU 47-051-02287; Hunter 1 47-051-01284

05/07/2021

# 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).

05/07/2021

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

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

2) Operator's Well Number: Van Winkle N-17HU      Well Pad Name: Hunter Pethtel

3) Farm Name/Surface Owner: XcL Midstream Operating, LLC      Public Road Access: County Route 74

4) Elevation, current ground: 754'      Elevation, proposed post-construction: 754'

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

(b) If Gas    Shallow      Deep      X

Horizontal    X

*Baugh Steep*  
*1-21-21*

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Point Pleasant is the target formation at a depth of 10,946' - 11,066', thickness of 120' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,216'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 26,057'

11) Proposed Horizontal Leg Length: 14,405.70'

12) Approximate Fresh Water Strata Depths: 70; 415'

13) Method to Determine Fresh Water Depths: Offset well reports or noticeable flow at the flowline or when need to start soaping

14) Approximate Saltwater Depths: 870'

15) Approximate Coal Seam Depths: Sewickley Coal - 314' and Pittsburgh Coal - 409'

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

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

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

WW-6B  
(04/15)

API NO. 47-051 -  
OPERATOR WELL NO. Van Winkle N-17HU  
Well Pad Name: Hunter Pethtel

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	515'	515'	883FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2,226'	2,226'	1576FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,078'	10,078'	3267FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	26,057'	26,057'	6140FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		10,710'	
Liners							

*Boyz Stillips*  
1-21-21

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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WW-6B  
(10/14)

API NO. 47- 051 -  
OPERATOR WELL NO. Van Winkle N-17HU  
Well Pad Name: Hunter Pethel

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. Drill curve and lateral per proposed well plan, run and cement production casing. Perform DBL 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 35,250,000 lb. proppant and 635,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

*Bay Stilly 1-21-21*

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.63 acres

22) Area to be disturbed for well pad only, less access road (acres): 4.87 acres

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.

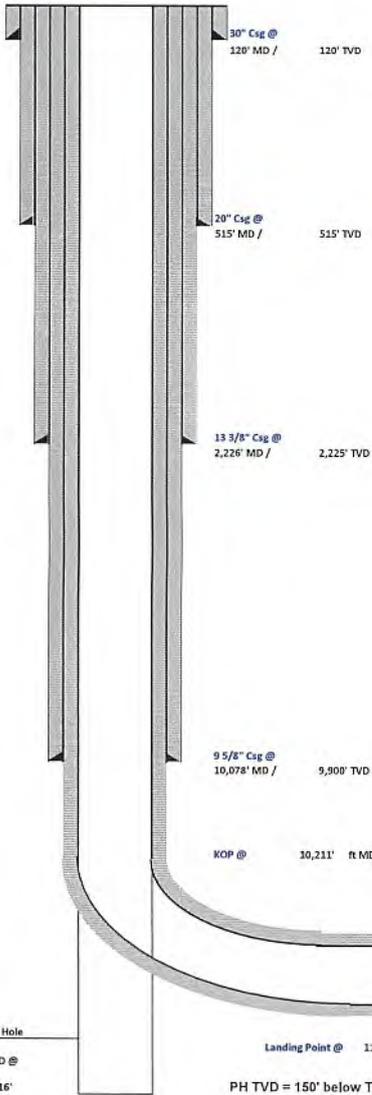


WELL NAME: Van Winkle N-17HU  
 STATE: WV COUNTY: Marshall  
 DISTRICT: Meade  
 DF Elev: 754' GL Elev: 754'  
 TD: 26,057'  
 TH Latitude: 39.781489  
 TH Longitude: -80.726923  
 BH Latitude: 39.814169  
 BH Longitude: -80.758356

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	415'
Sewickley Coal	314'
Pittsburgh Coal	409'
Big Lime	1,690'
Berea	2,121'
Tully	6,040'
Marcellus	6,143'
Onondaga	6,193'
Salina	6,909'
Lockport	7,967'
Utica	10,683'
Point Pleasant	10,946'
Landing Depth	10,988'
Trenton	11,066'
Pilot Hole TD	11,216'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	515'	515'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,226'	2,225'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,078'	9,900'	47	HPP110	Surface
Production	8 1/2	5 1/2	26,057'	10,736'	28	HCP110	Surface

CEMENT SUMMARY			DRILLING DETAILS		
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	949	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,708	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,808	A	14.5	Air	1 Centralizer every other jt
Production	5,472	A	15	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to stc



*Bay Stelly 1/21/21*

Pilot Hole  
PH TD @  
11,216'

Landing Point @ 11,654' MD / 10,988' TVD  
PH TVD = 150' below Trenton Top

Lateral TD @ 26,057' ft MD  
10,736' ft TVD

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

**Van Winkle N-17HU**

**Casing**

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	515'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,226'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,078'	CTS
Production	5 1/2"	HCP110	8 1/2"	26,057'	CTS

**Cement**

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 15.6 ppg, Y=1.99

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 15.2ppg, Y = 1.18

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05/07/2021



January 15, 2021

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

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JAN 19

WV Department of  
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RE: Van Winkle N-17HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

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

5-10-8

5-10-7

5-10-5

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

Sincerely,

**Amy L. Morris**

Permitting Specialist – Appalachia Region  
Tug Hill Operating

**500' Offset Operator List**

**Van Winkle N-17HU**

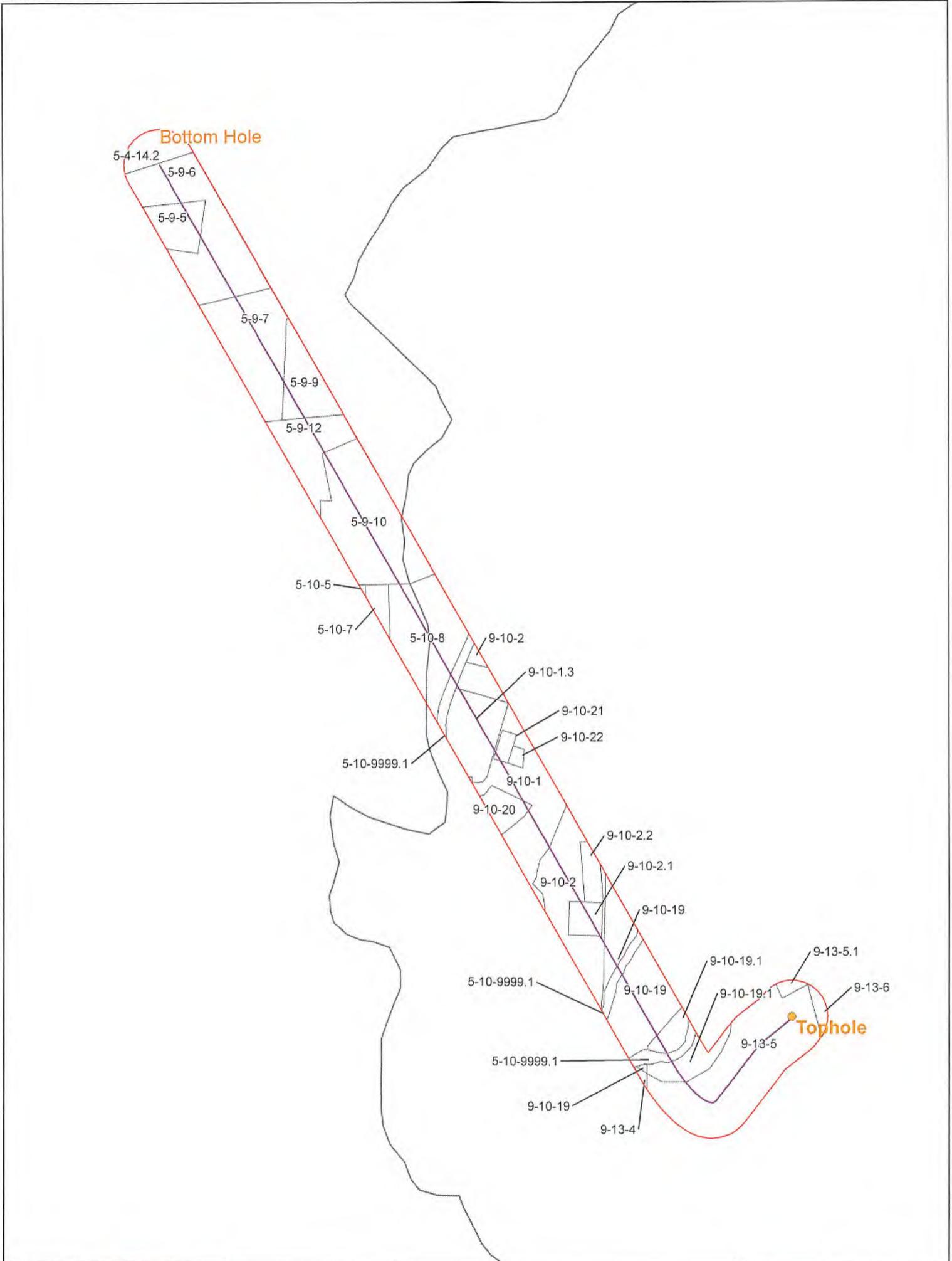
COUNTY	DISTRICT	PARCEL	OWNER	ADDRESS
Marshall	Franklin	5-10-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-10-7	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-10-8	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-10-9999.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-4-14.2	HG ENERGY II APPALACHIA LLC	5260 Dupont Road, Parkersburg, WV 26101
Marshall	Franklin	5-9-10	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-9-12	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-9-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-9-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-9-7	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-9-9	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-1.3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

**500' Offset Operator List**

**Van Winkle N-17HU**

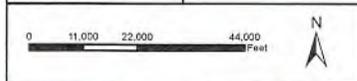
COUNTY	DISTRICT	PARCEL	OWNER	ADDRESS
Marshall	Meade	9-10-19.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-2.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-2.2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-20	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-21	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-22	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-5.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

Van Winkle N-17HU



Coordinate System: NAD 1983 UTM Zone 17N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 False Easting: 1,640,416.5000  
 False Northing: 0.0000  
 Central Meridian: -81.0000  
 Scale Factor: 0.9999  
 Latitude Of Origin: 39.0000  
 Units: Feet US

**CONFIDENTIAL**



- Utica Well
- 500' Buffer

Van Winkle N-17HU  
 Operators within 500 Feet of Well Borehole



**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. IHS 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 (12/04/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

1. Wellbore with IHS 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

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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

Permit well - Van Winkle N-17HU

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
4705101330	Tug Hill Operating	10154' MD, 6151' TVD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well. Tug Hill Operating is considering plugging this well.
4705101284	Tug Hill Operating	6340' TVD	None	None	Yes, existing vertical pilot drilled into Onondaga. Well was not perforated. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Well is not producing.
4705101859	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101860	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101866	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101846	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101847	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705100505	Fruchtman, M.	2444' TVD	Big Injun	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 9/4/1963.
4705100516	Fruchtman, M.	1661' TVD	Big Injun	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 10/16/1963.
4705100158	Burley Oil Co.	1500' TVD	Big Injun	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 5/4/1945.
4705170650	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705170648	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705100158	Marshall	158	Meade	Glen Easton	Cameron	39.790294	-80.74066	522204.7	4404514.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100158	11/8/1944	Original Loc	Completed	Kelby	1		H & T W Crew		Kelby	Butley Oil Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY	
4705100158	11/8/1944	8/21/1944	700	Ground Level	Unnamed	Big Injun (PriceSeq)	Big Injun (PriceSeq)	Outpost (Extension)	Test	Unsuccessful	Dry	unknown	Nat/Open H	1500		1500	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
4705100158	Original Loc	Sevickley coal	Well Record	225	Reasonable	5	Reasonable	700 Ground Level
4705100158	Original Loc	Pittsburgh coal	Well Record	313	Reasonable	5	Reasonable	700 Ground Level
4705100158	Original Loc	Mahoning Sa/Big Dunk	Well Record	815	Reasonable	20	Reasonable	700 Ground Level
4705100158	Original Loc	Allegheny coal (udf)	CBM: Drillers Pick	910	Reasonable	5	Reasonable	700 Ground Level
4705100158	Original Loc	Allegheny coal (udf)	CBM: Drillers Pick	1070	Reasonable	2	Reasonable	700 Ground Level
4705100158	Original Loc	Salt Sands (undif)	Well Record	1203	Reasonable	112	Reasonable	700 Ground Level
4705100158	Original Loc	Big Lime	Well Record	1367	Reasonable	33	Reasonable	700 Ground Level
4705100158	Original Loc	Greenbrier Group	Well Record	1367	Reasonable	33	Reasonable	700 Ground Level
4705100158	Original Loc	Big Injun (PriceSeq)	Well Record	1400	Reasonable	0	Reasonable	700 Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100158	5/4/1945	0

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705100505	Marshall	505	Meade	Glen Easton	Cameron	39.750144	-80.733702	522803.9	4403389.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100505	7/17/1963	Original Loc	Completed	C B Smith et al	1				C B Smith	Fuchiman, M			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHO	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705100505	7/17/1963	6/10/1963	662 Ground Level	Unnamed	Price Fm & equivs	Price Fm & equivs	Outpost:(Extension) Test	Unsuccessful	Dry w/ Gas Show	Cable Tool	Fractured	2444		2444		0	16	0	0			0	0	415	40			

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
4705100505	7/17/1963	Water	Unknown Water	Vertical			100						3
4705100505	7/17/1963	Water	Unknown Water	Vertical			1042						0

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705100505	Original Loc	Pittsburgh coal	Well Record	310	Reasonable	7	Reasonable	661	Ground Level
4705100505	Original Loc	1st Cov Riv/Moundsvie	Past WVGES Staff Geologist	672	Reasonable	18	Reasonable	661	Ground Level
4705100505	Original Loc	1st Salt Sand	Past WVGES Staff Geologist	1033	Reasonable	23	Reasonable	661	Ground Level
4705100505	Original Loc	2nd Salt Sand	Past WVGES Staff Geologist	1110	Reasonable	47	Reasonable	661	Ground Level
4705100505	Original Loc	3rd Salt Sand	Past WVGES Staff Geologist	1235	Reasonable	90	Reasonable	661	Ground Level
4705100505	Original Loc	Big Lime	Well Record	1358	Reasonable	52	Reasonable	661	Ground Level
4705100505	Original Loc	Greenbrier Group	Well Record	1358	Reasonable	52	Reasonable	661	Ground Level
4705100505	Original Loc	Big Injun (PriceSeq)	Past WVGES Staff Geologist	1410	Reasonable	260	Reasonable	661	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100505	9/4/1963	0

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705100516	Marshall	516	Meade	Gen Easton	Cameron	39.781594	-80.733327	522835.5	4403550.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100516	10/5/1963	Original Loc	Completed	Jehu E Kelley	1				Jehu E Kelley	Fruchtman, M.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FTM	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TYD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705100516	10/5/1963	9/11/1963	676 Ground Level	Unnamed	Big Injun (Price&eq)	Big Injun (Price&eq)	Outpost (Extension) Test	Unsuccessful	Dry w/ Gas Show	Cable Tool	Nat/Open H	1661	1661			0	0	0	0	0	0	0	0	0	0	0	0	

Pay/ShowWater 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
4705100516	10/5/1963	Water	Fresh Water	Vertical			55						0
4705100516	10/5/1963	Water	Fresh Water	Vertical			183						2
4705100516	10/5/1963	Show	Gas	Vertical	180		186	Pennsylvanian System	0	0			0
4705100516	10/5/1963	Show	Gas	Vertical	685		690	Pennsylvanian System	0	0			0
4705100516	10/5/1963	Water	Salt Water	Vertical			1068						0
4705100516	10/5/1963	Show	Gas	Vertical			1130	2nd Salt Sand	0	0			0
4705100516	10/5/1963	Show	Gas	Vertical	1467		1470	Big Injun (undrill)	0	0			0

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
4705100516	Original Loc	Pittsburgh coal	Well Record	316	Reasonable	6	Reasonable	676 Ground Level
4705100516	Original Loc	1st Salt Sand	Past WWGES Staff Geologist	1048	Reasonable	62	Reasonable	676 Ground Level
4705100516	Original Loc	2nd Salt Sand	Past WWGES Staff Geologist	1130	Reasonable	6	Reasonable	676 Ground Level
4705100516	Original Loc	3rd Salt Sand	Past WWGES Staff Geologist	1245	Reasonable	67	Reasonable	676 Ground Level
4705100516	Original Loc	Big Lime	Well Record	1358	Reasonable	52	Reasonable	676 Ground Level
4705100516	Original Loc	Greenbrier Group	Well Record	1358	Reasonable	52	Reasonable	676 Ground Level
4705100516	Original Loc	Big Injun (Price&eq)	Well Record	1410	Reasonable	0	Reasonable	676 Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100516	10/16/1963	0

There is no Sample data for this well

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Location Information: View Map

Table with columns: API, COUNTY, PERMIT, TAX\_DISTRICT, QUAD\_75, QUAD\_15, LAT\_OD, LOW\_OD, UTM\_E, UTM\_N. Row 1: 4705101284, Marshall, 1234, Meads, Glen Easton, Cameron, 39 751504, 40 757376, 523702.4, 4483519.9

There is no Bottom Hole Location data for this well

Owner Information:

Table with columns: 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. Row 1: 4705101284, 11/25/2009, Original Loc, Completed, Dennis W Hunter, 1, Hunter, Dennis W Hunter, Stone Energy Corporation, 6335, Marcellus Fm

Completion Information:

Table with columns: API, CMP\_DT, SPUD\_DT, ELEV DATUM, FIELD, DEEPEST\_FM, DEEPEST\_FMT, INITIAL\_CLASS, FINAL\_CLASS, TYPE, RIG, CMP\_MTHD, TVD, TMD, NEW\_FTG, KOD, G\_BEF, G\_AFT, O\_BEF, O\_AFT, NGL\_BEF, NGL\_AFT, P\_BEF, TL\_BEF, P\_AFT, TL\_AFT, BHL\_P\_BEF, BHL\_P\_AFT, G\_MSRD\_BY. Row 1: 4705101284, 11/25/2009, 6/25/2009, 762, Ground Level, Cameron-Gannett, Onondaga Ls, Marcellus Fm, Development well, Development well, Gas, Rotary, Fractured, 6540, 6340, 278, 209, 1615, 440

Pay/Show/Water Information:

Table with columns: API, CMP\_DT, ACTIVITY, PRODUCT, SECTION, DEPTH\_TOP, FM\_TOP, DEPTH\_BOT, FM\_BOT, G\_BEF, G\_AFT, O\_BEF, O\_AFT, WATER\_QNTY. Rows include Stone Energy Corporation and EQT Production Company for various dates and products like Gas and Water.

Production Gas Information: (Volumes in Mcf)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_GAS, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2011 to 2019.

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_OIL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2011 to 2019.

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_NGL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2011 to 2019.

Production Water Information: (Volumes in Gallons)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_WTR, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for EQT Production Company from 2016 to 2019.

Stratigraphy Information:

Table with columns: API, SUFFIX, FM, QUALITY, DEPTH\_TOP, DEPTH\_QUALITY, THICKNESS, THICKNESS\_QUALITY, ELEV, DATUM. Rows list geological formations like Fillburgh coal, Little Lime, Greeniner Grop, etc., with their respective depths and qualities.

Wireline (E-Log) Information:

Table with columns: API, LOG\_TOP, LOG\_BOT, DEEPEST\_FM, LOGS\_AVAIL, SCAN, DIGITIZED, GR\_TOP, GR\_BOT, D\_TOP, D\_BOT, N\_TOP, N\_BOT, L\_TOP, L\_BOT, T\_TOP, T\_BOT, S\_TOP, S\_BOT, O\_TOP, O\_BOT, INCH2, INCH5, REDUCED, KOP, LOGMD, ELEV\_KB, ELEV\_GL, ELEV\_DF, LOG\_MSRD\_FROM. Row 1: 4705101284, 160, 6360, G D H I G, Y, N, 100, 6360, 2011, 6355, 2011, 6360, 2037, 6360, 2011, 6357, Y, Y, N

Comment: logs caliper, ps, tension, ft amplitude, ccd, vul, bit size,

Downloadable Log Images: We advise you to save the log image file to your PC for viewing. To do so, right-click the tif image of interest and select the save option. Then you can direct the file to a location of your choice. Please note these images vary in size and some may take several minutes to download, especially if using a 56k or slower dialup connection.

Quick Reference Guide for Log File Names: For more info about WVGES scanned logs click here

geologic log types:

g density (includes bulk density, compensated density); density, density porosity; grain density; matrix density, etc.)

e photoelectric adsorption (PE or Pe, etc.)

g gamma ray

i induction (includes dual induction, medium induction, deep induction, etc.)

l laterolog

m dipmeter

n neutron (includes neutron porosity, sidewall neutron-SYN, etc.)

o other

s sonic or velocity

t temperature (includes borehole temperature, BHT differential temperature, etc.)

z spontaneous potential or potential

mechanical log types:

b cement bond

c caliper

o other

p perforation depth control or perforate

Other logs may include, but are not limited to, such curves as audio, bit size, CCL-casing collar locator continuous meter directional survey, gas detector, guard, HCLL-Hydrate Cement Top Locator, radioactive tracer, tension

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: View Map

Table with columns: API, COUNTY, PERMIT, TAX\_DISTRICT, QUAD\_76, QUAD\_15, LAT\_DD, LON\_DD, UTM\_E, UTM\_N. Row 1: 4705101330, Marshall, 1330, Meade, Glen Easton, Cameron, 39.781575, -80.728931, 523383.2, 4493550.8

Bottom Hole Location Information:

Table with columns: API, EP\_FLAG, UTM\_E, UTM\_N, LON\_DD, LAT\_DD. Row 1: 4705101330, 1, As Proposed, 523185.9, 4492272.8, -80.729502, 39.770971

Owner Information:

Table with columns: 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. Row 1: 4705101330, 6/19/2010, Dvld Orig Loc, Completed, Dennis W Hunter, 1H, Hunter-Pentel, Dennis W Hunter, Stone Energy Corporation, 6220, Marcellus Fm

Completion Information:

Table with columns: API, CMP\_DT, SPUD\_DT, ELEV, DATUM, FIELD, DEEPEST\_FM, DEEPEST\_FMT, INITIAL\_CLASS, FINAL\_CLASS, TYPE, RIG, CMP\_MTHD, TVD, TMD, NEW\_FTG, KOD, G\_BEF, G\_AFT, O\_BEF, O\_AFT, NGL\_BEF, NGL\_AFT, P\_BEF, P\_AFT, TLAFT, BH\_P\_BEF, BH\_P\_AFT, G\_MSRD\_BY. Row 1: 4705101330, 6/19/2010, 2/26/2010, 755, Ground Level, Cameron-Garner, Ononoga Ls, Marcellus Fm, Development Well, Development Well, Gas, Rotary, Fractured, 6151, 10154, 10154, 257, 2069, 2200, 16

Pay/Show/Water Information:

Table with columns: API, CMP\_DT, ACTIVITY, PRODUCT, SECTION, DEPTH\_TOP, FM\_TOP, DEPTH\_BOT, FM\_BOT, G\_BEF, G\_AFT, O\_BEF, O\_AFT, WATER\_QNTY. Rows include Water, Salt Water, Gas activities at various depths.

Production Gas Information: (Volumes in Mcf)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_GAS, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2011 to 2019.

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_OIL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2011 to 2019.

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_NGL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2011 to 2019.

Production Water Information: (Volumes in Gallons)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_WTR, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for EQT Production Company from 2016 to 2019.

Stratigraphy Information:

Table with columns: API, SUFFIX, FM, FM\_QUALITY, DEPTH\_TOP, DEPTH\_QUALITY, THICKNESS, THICKNESS\_QUALITY, ELEV, DATUM. Rows list stratigraphic units like Pittsburgh coal, Little Lime, Elg Intn (PriceSeq), etc.

Wellbore (E-Log) Information:

Table with columns: API, LOG\_TOP, LOG\_BOT, DEEPEST\_FML, LOGS\_AVAIL, SCAN, DIGITIZED, GR\_TOP, GR\_BOT, D\_TOP, D\_BOT, N\_TOP, N\_BOT, L\_TOP, L\_BOT, T\_TOP, T\_BOT, S\_TOP, S\_BOT, O\_TOP, O\_BOT, INCH2, INCH5, REDUCED, KOP, LOGMD, ELEV\_KB, ELEV\_GL, ELEV\_OF, LOG\_MSRD\_FROM. Row 1: 4705101330, 4622, 6151, G, Y, N, N, Y, N, 4660, 10055

Comment: \*logs: RQP, tool temp

Downloadable Log Images: We advise you to save the log image file to your PC for viewing. To do so, right-click the .tif image of interest and select the save option. Then you can direct the file to a location of your choice. Please note these images vary in size and some may take several minutes to download, especially if using a 56k or slower dialup connection.

Table with columns: FILENAME. Row 1: 4705101330op\_5m\_md\_tvd.tif

- Quick Reference Guide for Log File Names: For more info about WVGES scanned logs click here
geologic log types:
d density (includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)
e photoelectric absorption (PE or Pe, etc.)
g gamma ray
i induction (includes dual induction, medium induction, deep induction, etc.)
l laterallog
m dipmeter
n neutron (includes neutron porosity, sidewall neutron-SWNL, etc.)
o other
s sonic or velocity
t temperature (includes borehole temperature, BHT, differential temperature, etc.)
z spontaneous potential or potential
mechanical log types:
b cement bond
c caliper
e other
p perforation depth control or perforator

\*other logs may include, but are not limited to, such curves as audio, bit size, GCL-casing collar locator, continuous meter, directional survey, gas detector, guard, NCTL-Nuclear Cement Top Locator, radioactive tracer, tension

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101846	Marshall	1846	Meade	Gen Easton	Cameron	39.781827	-80.726602	523411.3	4403578.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101846	1	As Proposed	521973.8	4404978.5	-80.743342

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
4705101846	--		Cancelled	Dennis W Hunter	9H		Hunter Petitet		Dennis W Hunter et al	Stone Energy Corporation	6140	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFT	O_BEFO	O_AFT	NGL_BEFO	NGL_AFT	P_BEFO	TI_BEFO	P_AFT	TI_AFT	BH_P_BEFO	BH_P_AFT	G_MSRD_BY
4705101846	--	--	755	Ground Level																									

There is no Pay data for this well

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
4705101846	EQT Production Company	2018	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
4705101846	EQT Production Company	2018	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
4705101846	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101846	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101847	Marshall	1847	Meade	Glen Easton	Cameron	39.781755	-80.72847	523422.6	4403570.4

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101847	1	As Proposed	523970	4401941.7	-80.720137	39.787065

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
4705101847	././.		Dvtd Origi Loc	Cancelled	Dennis W Hunter	4H	Hunter Peittel		Dennis W Hunter et al	Stone Energy Corporation	6250	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101847	././.	././.	755	Ground Level																									

There is no Pay data for this well

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
4705101847	EQT Production Company	2018	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
4705101847	EQT Production Company	2018	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
4705101847	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101847	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX	DISTRICT	QUAD_76	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101859	Marshall	1859	Meade		Glen Easton	Cameron	39.78158	-80.726875	523388	4403548.6

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101859	1	As Proposed	521903.3	4404881.6	-80.744175	39.791808

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
4705101859	--		Cancelled	Dennis W Hunter	8H		Hurder Pethtel		Dennis W Hunter et al	Stone Energy Corporation	6140	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRO_BY
4705101859	--	--	755	Ground Level																									

Comment: -- Plat coordinates hard to read, blurry Per WVDEP OOG website, well was cancelled 12/11/2017. No cancellation documents available.

There is no Pay data for this well

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
4705101859	EQT Production Company	2018	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
4705101859	EQT Production Company	2018	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
4705101859	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101859	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101860	Marshall	1860	Meade	Glen Easton	Cameron	39.781673	-80.726548	523416	4403581.3

Bottom Hole Location Information:

API	EP FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101860	1	As Proposed	522074.3	4405230.4	-80.74216

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
4705101860	---		Cancelled	Dennis W Hunter	10H		Hunter Peibtal		Dennis W Hunter et al	Stone Energy Corporation		6140	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101860	---	---	755	Ground Level																								

Comment: --- Per WVDEP OOG website, well was cancelled 12/11/2017. No cancellation documents available.

There is no Pay data for this well

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
4705101860	EQT Production Company	2018	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
4705101860	EQT Production Company	2018	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
4705101860	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101860	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101866	Marshall	1866	Meade	Glen Easton	Cameron	39.781762	-80.726409	523427.8	4403573.4

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101866	1	As Proposed	524237.2	4402287.1	-80.717095	39.77917

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
4705101866	--	Dvlt Orngl Loc	Cancelled	Dennis W Hunter	51		Hunter/Petitel		Dennis W Hunter et al	Stone Energy Corporation	6250	Marcellus Fm	4200

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_FYD	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRLD_BY
4705101866	--	--	--	755	Ground Level																								

Comment: -- Per WVDEP OOG website, well was cancelled 12/11/2017. No cancellation documents available.

There is no Pay data for this well

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
4705101866	EQT Production Company	2018	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
4705101866	EQT Production Company	2018	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
4705101866	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101866	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170648	Marshall	70648	Meade	Glen Easton	Cameron	39.734949	-80.742174	522073.6	4405030.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170648	----	----	unknown	Prpty Map Woodson Crow						----- 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_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705170648	----	----						unclassified	unclassified	not available	unknown	unknown																	

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705170650	Marshall	70650	Meade	Glen Easton	Cameron	39.731016	-60.741611	522123.1	4404594.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170650	-/-	-/-	unknown	Prptr, Map Woodson Creek	1				OP=AP G Co	Oper in Min owner fld no code assign(Orphan well proj)			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705170650	-/-	-/-						unclassified	unclassified	not available	unknown	unknown																	

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

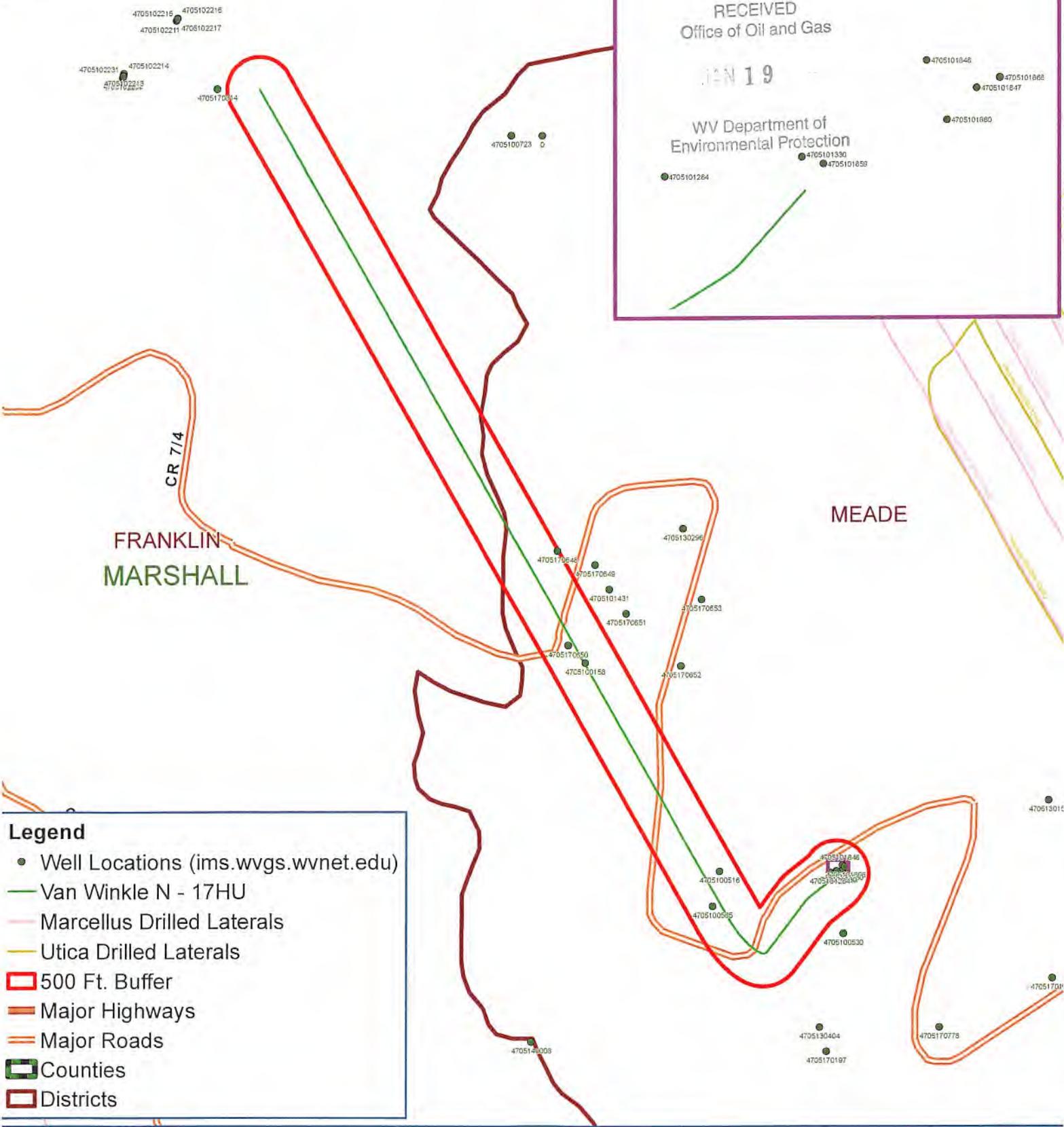
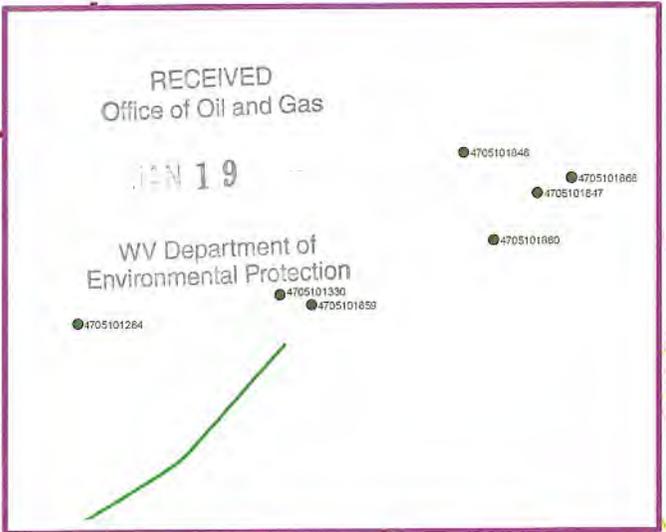
There is no Plugging data for this well

There is no Sample data for this well

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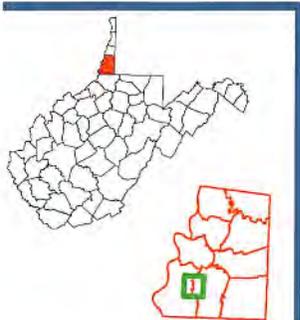
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**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- Van Winkle N - 17HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- ▭ 500 Ft. Buffer
- Major Highways
- Major Roads
- ▭ Counties
- ▭ Districts



# Van Winkle N - 17HU Meade District Marshall County, WV



Map Prepared by:

05/07/2021



Well: Van Winkle N-17 HU (slot F)  
 Site: Van Winkle  
 Project: Marshall County, West Virginia  
 Design: rev3

Rig:  
 DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Van Winkle N-17HU PBHL r3 - plan hits target center	10736.00	11874.35	-8862.99	14459157.61	1708272.42	39.81416900	-80.75835600
Van Winkle N-17HU LP r2 - plan misses target center by 0.08ft at 11653.97ft MD (10988.00 TVD, -616.90 N, -1696.83 E)	10988.00	-616.86	-1696.76	14446666.42	1715438.65	39.77980900	-80.73296900

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 @ 754.00ft

Northing	Easting	Latitude	Longitude
14447283.28	1717135.40	39.78148900	-80.72692300

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.820°

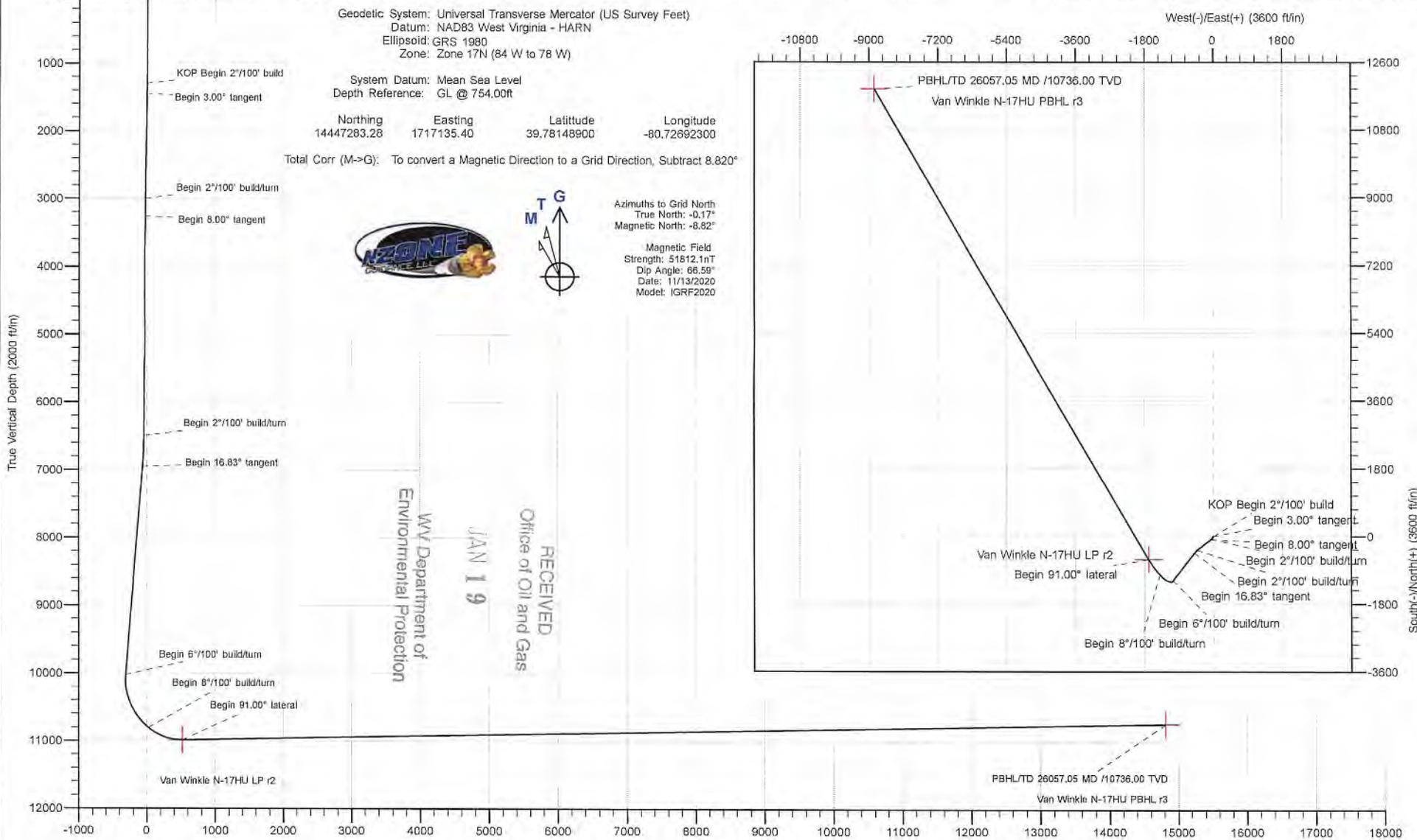


Azimuths to Grid North  
 True North: -0.17°  
 Magnetic North: -8.82°

Magnetic Field  
 Strength: 51812.1nT  
 Dip Angle: 66.59°  
 Date: 11/13/2020  
 Model: IGRF2020

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	1450.00	3.00	215.00	1449.93	-3.22	-2.25	2.00	215.000	-1.23	Begin 3.00° tangent
4	3002.20	3.00	215.00	3000.00	-59.76	-48.85	0.00	0.000	-26.69	Begin 2°/100' build/turn
5	3262.45	8.00	232.00	3258.99	-86.50	-67.04	2.00	26.649	-29.22	Begin 8.00° tangent
6	6535.31	8.00	232.00	6500.00	-366.93	-425.97	0.00	0.000	-39.26	Begin 2°/100' build/turn
7	6999.80	16.83	217.68	6953.27	-440.22	-492.70	2.00	-26.344	-58.08	Begin 16.83° tangent
8	10210.78	16.83	217.68	10026.65	-1176.19	-1061.09	0.00	0.000	-307.89	Begin 6°/100' build/turn
9	11117.58	50.00	316.29	10811.98	-1016.88	-1407.79	6.00	111.345	27.16	Begin 8°/100' build/turn
10	11654.01	91.00	330.16	10988.00	-616.86	-1696.85	8.00	20.600	520.63	Begin 91.00° lateral
11	26057.05	91.00	330.16	10736.00	11874.35	-8862.99	0.00	0.00014817.32		PBHL/TD 26057.05 MD /10736.00 TVD



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Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Van Winkle N-17 HU (slot F)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle N-17 HU (slot F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev3		

<b>Project</b>	Marshall County, West Virginia		
<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>	Van Winkle				
<b>Site Position:</b>		<b>Northing:</b>	14,447,369.50 usft	<b>Latitude:</b>	39.78172533
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,717,188.44 usft	<b>Longitude:</b>	-80.72673327
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	Van Winkle N-17 HU (slot F)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,447,283.28 usft	<b>Latitude:</b>	39.78148900
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,717,135.40 usft	<b>Longitude:</b>	-80.72692300
<b>Position Uncertainty</b>	0.00 ft		<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	754.00 ft
<b>Grid Convergence:</b>	0.175 °					

<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 (nT)</b>
	IGRF2020	11/13/2020	-8.646	66.595	51,812.12736370

<b>Design</b>	rev3				
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	323.26	

<b>Plan Survey Tool Program</b>	<b>Date</b>	1/5/2021			
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	26,057.05 rev3 (Original Hole)	MWD	MWD - Standard	

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Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Van Winkle N-17 HU (slot F)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle N-17 HU (slot F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev3		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,450.00	3.00	215.00	1,449.93	-3.22	-2.25	2.00	2.00	0.00	215.000	
3,002.20	3.00	215.00	3,000.00	-69.76	-48.85	0.00	0.00	0.00	0.000	
3,262.45	8.00	232.00	3,258.99	-86.50	-67.04	2.00	1.92	6.53	26.649	
6,535.31	8.00	232.00	6,500.00	-366.93	-425.97	0.00	0.00	0.00	0.000	
6,999.80	16.83	217.68	6,953.27	-440.22	-492.70	2.00	1.90	-3.08	-26.344	
10,210.78	16.83	217.68	10,026.65	-1,176.19	-1,061.09	0.00	0.00	0.00	0.000	
11,117.58	50.00	316.29	10,811.98	-1,016.88	-1,407.79	6.00	3.66	10.88	111.345	
11,654.01	91.00	330.16	10,988.00	-616.86	-1,696.85	8.00	7.64	2.58	20.600	
26,057.05	91.00	330.16	10,736.00	11,874.35	-8,862.99	0.00	0.00	0.00	0.000	Van Winkle N-17HU F

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Planning Report - Geographic

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West Virginia Department of Environmental Protection  
E-Permitting System

Database: DB\_Dec2220\_v16  
Company: Tug Hill Operating LLC  
Project: Marshall County, West Virginia  
Site: Van Winkle  
Well: Van Winkle N-17 HU (slot F)  
Wellbore: Original Hole  
Design: rev3

Local Co-ordinate Reference: Well Van Winkle N-17 HU (slot F)  
TVD Reference: GL @ 754.00ft  
MD Reference: GL @ 754.00ft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

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	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
100.00	0.00	0.00	100.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
200.00	0.00	0.00	200.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
300.00	0.00	0.00	300.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
400.00	0.00	0.00	400.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
500.00	0.00	0.00	500.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
600.00	0.00	0.00	600.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
700.00	0.00	0.00	700.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
800.00	0.00	0.00	800.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
900.00	0.00	0.00	900.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,447,283.28	1,717,135.40	39.78148900	-80.72692300
<b>KOP Begin 2°/100' build</b>									
1,400.00	2.00	215.00	1,399.98	-1.43	-1.00	14,447,281.85	1,717,134.40	39.78148508	-80.72692658
1,450.00	3.00	215.00	1,449.93	-3.22	-2.25	14,447,280.06	1,717,133.15	39.78148019	-80.72693105
<b>Begin 3.00° tangent</b>									
1,500.00	3.00	215.00	1,499.86	-5.36	-3.75	14,447,277.92	1,717,131.64	39.78147431	-80.72693642
1,600.00	3.00	215.00	1,599.73	-9.65	-6.75	14,447,273.63	1,717,128.64	39.78146257	-80.72694715
1,700.00	3.00	215.00	1,699.59	-13.93	-9.76	14,447,269.35	1,717,125.64	39.78145082	-80.72695788
1,800.00	3.00	215.00	1,799.45	-18.22	-12.76	14,447,265.06	1,717,122.64	39.78143907	-80.72696861
1,900.00	3.00	215.00	1,899.31	-22.51	-15.76	14,447,260.77	1,717,119.64	39.78142732	-80.72697934
2,000.00	3.00	215.00	1,999.18	-26.80	-18.76	14,447,256.48	1,717,116.63	39.78141557	-80.72699007
2,100.00	3.00	215.00	2,099.04	-31.08	-21.76	14,447,252.20	1,717,113.63	39.78140382	-80.72700081
2,200.00	3.00	215.00	2,198.90	-35.37	-24.77	14,447,247.91	1,717,110.63	39.78139208	-80.72701154
2,300.00	3.00	215.00	2,298.77	-39.66	-27.77	14,447,243.62	1,717,107.63	39.78138033	-80.72702227
2,400.00	3.00	215.00	2,398.63	-43.94	-30.77	14,447,239.34	1,717,104.63	39.78136858	-80.72703300
2,500.00	3.00	215.00	2,498.49	-48.23	-33.77	14,447,235.05	1,717,101.63	39.78135683	-80.72704373
2,600.00	3.00	215.00	2,598.36	-52.52	-36.77	14,447,230.76	1,717,098.62	39.78134508	-80.72705446
2,700.00	3.00	215.00	2,698.22	-56.80	-39.78	14,447,226.47	1,717,095.62	39.78133333	-80.72706519
2,800.00	3.00	215.00	2,798.08	-61.09	-42.78	14,447,222.19	1,717,092.62	39.78132159	-80.72707592
2,900.00	3.00	215.00	2,897.94	-65.38	-45.78	14,447,217.90	1,717,089.62	39.78130984	-80.72708666
3,000.00	3.00	215.00	2,997.81	-69.67	-48.78	14,447,213.61	1,717,086.62	39.78129809	-80.72709739
3,002.20	3.00	215.00	3,000.00	-69.76	-48.85	14,447,213.52	1,717,086.55	39.78129783	-80.72709762
<b>Begin 2°/100' build/turn</b>									
3,100.00	4.83	225.48	3,097.57	-74.74	-53.25	14,447,208.54	1,717,082.15	39.78128418	-80.72711335
3,200.00	6.77	230.21	3,197.06	-81.47	-60.78	14,447,201.81	1,717,074.61	39.78126578	-80.72714023
3,262.45	8.00	232.00	3,258.99	-86.50	-67.04	14,447,196.78	1,717,068.36	39.78125201	-80.72716255
<b>Begin 8.00° tangent</b>									
3,300.00	8.00	232.00	3,296.17	-89.72	-71.15	14,447,193.56	1,717,064.24	39.78124321	-80.72717724
3,400.00	8.00	232.00	3,395.20	-98.29	-82.12	14,447,184.99	1,717,053.28	39.78121977	-80.72721637
3,500.00	8.00	232.00	3,494.23	-106.85	-93.09	14,447,176.42	1,717,042.31	39.78119633	-80.72725550
3,600.00	8.00	232.00	3,593.25	-115.42	-104.06	14,447,167.86	1,717,031.34	39.78117289	-80.72729463
3,700.00	8.00	232.00	3,692.28	-123.99	-115.02	14,447,159.29	1,717,020.37	39.78114945	-80.72733376
3,800.00	8.00	232.00	3,791.31	-132.56	-125.99	14,447,150.72	1,717,009.41	39.78112601	-80.72737289
3,900.00	8.00	232.00	3,890.33	-141.13	-136.96	14,447,142.15	1,716,998.44	39.78110257	-80.72741202
4,000.00	8.00	232.00	3,989.36	-149.70	-147.92	14,447,133.58	1,716,987.47	39.78107913	-80.72745114
4,100.00	8.00	232.00	4,088.39	-158.26	-158.89	14,447,125.01	1,716,976.51	39.78105570	-80.72749027
4,200.00	8.00	232.00	4,187.41	-166.83	-169.86	14,447,116.45	1,716,965.54	39.78103226	-80.72752940
4,300.00	8.00	232.00	4,286.44	-175.40	-180.82	14,447,107.88	1,716,954.57	39.78100882	-80.72756853
4,400.00	8.00	232.00	4,385.47	-183.97	-191.79	14,447,099.31	1,716,943.61	39.78098538	-80.72760766
4,500.00	8.00	232.00	4,484.49	-192.54	-202.76	14,447,090.74	1,716,932.64	39.78096194	-80.72764679
4,600.00	8.00	232.00	4,583.52	-201.11	-213.73	14,447,082.17	1,716,921.67	39.78093850	-80.72768592

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Planning Report - Geographic

WV Department of  
Environmental Protection

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Van Winkle N-17 HU (slot F)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle N-17 HU (slot F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,700.00	8.00	232.00	4,682.55	-209.67	-224.69	14,447,073.60	1,716,910.70	39.78091506	-80.72772504	
4,800.00	8.00	232.00	4,781.57	-218.24	-235.66	14,447,065.04	1,716,899.74	39.78089162	-80.72776417	
4,900.00	8.00	232.00	4,880.60	-226.81	-246.63	14,447,056.47	1,716,888.77	39.78086818	-80.72780330	
5,000.00	8.00	232.00	4,979.63	-235.38	-257.59	14,447,047.90	1,716,877.80	39.78084474	-80.72784243	
5,100.00	8.00	232.00	5,078.65	-243.95	-268.56	14,447,039.33	1,716,866.84	39.78082130	-80.72788156	
5,200.00	8.00	232.00	5,177.68	-252.52	-279.53	14,447,030.76	1,716,855.87	39.78079786	-80.72792069	
5,300.00	8.00	232.00	5,276.71	-261.08	-290.49	14,447,022.19	1,716,844.90	39.78077442	-80.72795981	
5,400.00	8.00	232.00	5,375.74	-269.65	-301.46	14,447,013.63	1,716,833.94	39.78075098	-80.72799894	
5,500.00	8.00	232.00	5,474.76	-278.22	-312.43	14,447,005.06	1,716,822.97	39.78072754	-80.72803807	
5,600.00	8.00	232.00	5,573.79	-286.79	-323.40	14,446,996.49	1,716,812.00	39.78070410	-80.72807720	
5,700.00	8.00	232.00	5,672.82	-295.36	-334.36	14,446,987.92	1,716,801.04	39.78068067	-80.72811633	
5,800.00	8.00	232.00	5,771.84	-303.93	-345.33	14,446,979.35	1,716,790.07	39.78065723	-80.72815545	
5,900.00	8.00	232.00	5,870.87	-312.49	-356.30	14,446,970.78	1,716,779.10	39.78063379	-80.72819458	
6,000.00	8.00	232.00	5,969.90	-321.06	-367.26	14,446,962.22	1,716,768.13	39.78061035	-80.72823371	
6,100.00	8.00	232.00	6,068.92	-329.63	-378.23	14,446,953.65	1,716,757.17	39.78058691	-80.72827284	
6,200.00	8.00	232.00	6,167.95	-338.20	-389.20	14,446,945.08	1,716,746.20	39.78056347	-80.72831197	
6,300.00	8.00	232.00	6,266.98	-346.77	-400.16	14,446,936.51	1,716,735.23	39.78054003	-80.72835110	
6,400.00	8.00	232.00	6,366.00	-355.34	-411.13	14,446,927.94	1,716,724.27	39.78051659	-80.72839022	
6,500.00	8.00	232.00	6,465.03	-363.91	-422.10	14,446,919.37	1,716,713.30	39.78049315	-80.72842935	
6,535.31	8.00	232.00	6,500.00	-366.93	-425.97	14,446,916.35	1,716,709.43	39.78048487	-80.72844317	
<b>Begin 2°/100' build/tum</b>										
6,600.00	9.18	228.40	6,563.96	-373.13	-433.38	14,446,910.15	1,716,702.02	39.78046792	-80.72846959	
6,700.00	11.05	224.35	6,662.40	-385.27	-446.04	14,446,898.01	1,716,689.36	39.78043466	-80.72851479	
6,800.00	12.96	221.48	6,760.21	-400.53	-460.16	14,446,882.75	1,716,675.23	39.78039289	-80.72856524	
6,900.00	14.89	219.34	6,857.27	-418.87	-475.74	14,446,864.42	1,716,659.66	39.78034266	-80.72862086	
6,999.80	16.83	217.68	6,953.27	-440.22	-492.70	14,446,843.06	1,716,642.70	39.78028415	-80.72868146	
<b>Begin 16.83° tangent</b>										
7,000.00	16.83	217.68	6,953.46	-440.27	-492.73	14,446,843.01	1,716,642.66	39.78028402	-80.72868159	
7,100.00	16.83	217.68	7,049.17	-463.19	-510.44	14,446,820.09	1,716,624.96	39.78022123	-80.72874484	
7,200.00	16.83	217.68	7,144.89	-486.11	-528.14	14,446,797.17	1,716,607.26	39.78015843	-80.72880810	
7,300.00	16.83	217.68	7,240.60	-509.03	-545.84	14,446,774.25	1,716,589.56	39.78009563	-80.72887135	
7,400.00	16.83	217.68	7,336.32	-531.95	-563.54	14,446,751.33	1,716,571.86	39.78003283	-80.72893460	
7,500.00	16.83	217.68	7,432.03	-554.87	-581.24	14,446,728.41	1,716,554.16	39.77997003	-80.72899786	
7,600.00	16.83	217.68	7,527.75	-577.79	-598.94	14,446,705.49	1,716,536.46	39.77990724	-80.72906111	
7,700.00	16.83	217.68	7,623.46	-600.71	-616.64	14,446,682.57	1,716,518.75	39.77984444	-80.72912436	
7,800.00	16.83	217.68	7,719.18	-623.63	-634.35	14,446,659.65	1,716,501.05	39.77978164	-80.72918761	
7,900.00	16.83	217.68	7,814.89	-646.55	-652.05	14,446,636.73	1,716,483.35	39.77971884	-80.72925087	
8,000.00	16.83	217.68	7,910.61	-669.47	-669.75	14,446,613.81	1,716,465.65	39.77965604	-80.72931412	
8,100.00	16.83	217.68	8,006.32	-692.39	-687.45	14,446,590.89	1,716,447.95	39.77959324	-80.72937737	
8,200.00	16.83	217.68	8,102.04	-715.31	-705.15	14,446,567.97	1,716,430.25	39.77953044	-80.72944062	
8,300.00	16.83	217.68	8,197.75	-738.23	-722.85	14,446,545.05	1,716,412.54	39.77946765	-80.72950387	
8,400.00	16.83	217.68	8,293.47	-761.15	-740.56	14,446,522.13	1,716,394.84	39.77940485	-80.72956713	
8,500.00	16.83	217.68	8,389.18	-784.07	-758.26	14,446,499.21	1,716,377.14	39.77934205	-80.72963038	
8,600.00	16.83	217.68	8,484.89	-806.99	-775.96	14,446,476.29	1,716,359.44	39.77927925	-80.72969363	
8,700.00	16.83	217.68	8,580.61	-829.91	-793.66	14,446,453.37	1,716,341.74	39.77921645	-80.72975688	
8,800.00	16.83	217.68	8,676.32	-852.84	-811.36	14,446,430.45	1,716,324.04	39.77915365	-80.72982013	
8,900.00	16.83	217.68	8,772.04	-875.76	-829.06	14,446,407.53	1,716,306.34	39.77909085	-80.72988338	
9,000.00	16.83	217.68	8,867.75	-898.68	-846.76	14,446,384.60	1,716,288.63	39.77902805	-80.72994663	
9,100.00	16.83	217.68	8,963.47	-921.60	-864.47	14,446,361.68	1,716,270.93	39.77896526	-80.73000988	
9,200.00	16.83	217.68	9,059.18	-944.52	-882.17	14,446,338.76	1,716,253.23	39.77890246	-80.73007313	
9,300.00	16.83	217.68	9,154.90	-967.44	-899.87	14,446,315.84	1,716,235.53	39.77883966	-80.73013639	
9,400.00	16.83	217.68	9,250.61	-990.36	-917.57	14,446,292.92	1,716,217.83	39.77877686	-80.73019964	
9,500.00	16.83	217.68	9,346.33	-1,013.28	-935.27	14,446,270.00	1,716,200.13	39.77871406	-80.73026289	
9,600.00	16.83	217.68	9,442.04	-1,036.20	-952.97	14,446,247.08	1,716,182.42	39.77865126	-80.73032614	



Planning Report - Geographic

WV Department of  
Environmental Protection

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Van Winkle N-17 HU (slot F)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle N-17 HU (slot F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,700.00	16.83	217.68	9,537.76	-1,059.12	-970.68	14,446,224.16	1,716,164.72	39.77858846	-80.73038939
9,800.00	16.83	217.68	9,633.47	-1,082.04	-988.38	14,446,201.24	1,716,147.02	39.77852566	-80.73045264
9,900.00	16.83	217.68	9,729.19	-1,104.96	-1,006.08	14,446,178.32	1,716,129.32	39.77846286	-80.73051589
10,000.00	16.83	217.68	9,824.90	-1,127.88	-1,023.78	14,446,155.40	1,716,111.62	39.77840006	-80.73057914
10,100.00	16.83	217.68	9,920.62	-1,150.80	-1,041.48	14,446,132.48	1,716,093.92	39.77833726	-80.73064239
10,200.00	16.83	217.68	10,016.33	-1,173.72	-1,059.18	14,446,109.56	1,716,076.22	39.77827447	-80.73070564
10,210.78	16.83	217.68	10,026.65	-1,176.19	-1,061.09	14,446,107.09	1,716,074.31	39.77826770	-80.73071245
<b>Begin 6°/100' build/turn</b>									
10,300.00	15.68	236.44	10,112.36	-1,193.09	-1,079.05	14,446,090.19	1,716,056.35	39.77822143	-80.73077654
10,400.00	16.43	258.09	10,208.55	-1,203.49	-1,104.16	14,446,079.79	1,716,031.24	39.77819309	-80.73086605
10,500.00	19.09	275.84	10,303.84	-1,204.75	-1,134.29	14,446,078.54	1,716,001.11	39.77818988	-80.73097330
10,600.00	23.00	288.59	10,397.21	-1,196.85	-1,169.11	14,446,086.43	1,715,966.29	39.77821186	-80.73109712
10,700.00	27.63	297.54	10,487.61	-1,179.88	-1,208.22	14,446,103.40	1,715,927.18	39.77825877	-80.73123616
10,800.00	32.69	304.00	10,574.07	-1,154.04	-1,251.21	14,446,129.25	1,715,884.19	39.77833011	-80.73138888
10,900.00	37.99	308.87	10,655.63	-1,119.59	-1,297.59	14,446,163.69	1,715,837.81	39.77842509	-80.73155362
11,000.00	43.45	312.69	10,731.41	-1,076.93	-1,346.88	14,446,206.36	1,715,788.52	39.77854266	-80.73172857
11,100.00	49.01	315.80	10,800.56	-1,026.51	-1,398.51	14,446,256.78	1,715,736.89	39.77868155	-80.73191182
11,117.58	50.00	316.29	10,811.98	-1,016.88	-1,407.79	14,446,266.40	1,715,727.61	39.77870806	-80.73194474
<b>Begin 8°/100' build/turn</b>									
11,200.00	56.21	319.08	10,861.44	-968.13	-1,452.08	14,446,315.15	1,715,683.32	39.77884231	-80.73210187
11,300.00	63.81	321.96	10,911.40	-901.28	-1,507.03	14,446,382.00	1,715,628.37	39.77902634	-80.73229675
11,400.00	71.46	324.49	10,949.43	-827.24	-1,562.30	14,446,456.04	1,715,573.10	39.77923014	-80.73249268
11,500.00	79.14	326.80	10,974.79	-747.43	-1,618.81	14,446,535.85	1,715,518.59	39.77944976	-80.73268585
11,600.00	86.84	328.99	10,986.98	-663.41	-1,669.51	14,446,619.87	1,715,465.89	39.77968092	-80.73287251
11,654.01	91.00	330.16	10,988.00	-616.86	-1,696.85	14,446,666.42	1,715,438.55	39.77980899	-80.73296933
<b>Begin 91.00° lateral</b>									
11,700.00	91.00	330.16	10,987.20	-576.98	-1,719.73	14,446,706.30	1,715,415.67	39.77991872	-80.73305035
11,800.00	91.00	330.16	10,985.45	-490.25	-1,769.48	14,446,793.03	1,715,365.92	39.78015730	-80.73322652
11,900.00	91.00	330.16	10,983.70	-403.52	-1,819.24	14,446,879.76	1,715,316.16	39.78039588	-80.73340270
12,000.00	91.00	330.16	10,981.95	-316.80	-1,868.99	14,446,966.48	1,715,266.41	39.78063446	-80.73357887
12,100.00	91.00	330.16	10,980.20	-230.07	-1,918.75	14,447,053.21	1,715,216.65	39.78087303	-80.73375505
12,200.00	91.00	330.16	10,978.45	-143.34	-1,968.50	14,447,139.93	1,715,166.90	39.78111161	-80.73393122
12,300.00	91.00	330.16	10,976.70	-56.62	-2,018.26	14,447,226.66	1,715,117.15	39.78135019	-80.73410740
12,400.00	91.00	330.16	10,974.95	30.11	-2,068.01	14,447,313.39	1,715,067.39	39.78158877	-80.73428358
12,500.00	91.00	330.16	10,973.20	116.83	-2,117.76	14,447,400.11	1,715,017.64	39.78182735	-80.73445977
12,600.00	91.00	330.16	10,971.45	203.56	-2,167.52	14,447,486.84	1,714,967.88	39.78206593	-80.73463595
12,700.00	91.00	330.16	10,969.70	290.29	-2,217.27	14,447,573.56	1,714,918.13	39.78230451	-80.73481213
12,800.00	91.00	330.16	10,967.95	377.01	-2,267.03	14,447,660.29	1,714,868.37	39.78254308	-80.73498832
12,900.00	91.00	330.16	10,966.20	463.74	-2,316.78	14,447,747.02	1,714,818.62	39.78278166	-80.73516450
13,000.00	91.00	330.16	10,964.45	550.46	-2,366.54	14,447,833.74	1,714,768.87	39.78302024	-80.73534069
13,100.00	91.00	330.16	10,962.70	637.19	-2,416.29	14,447,920.47	1,714,719.11	39.78325881	-80.73551688
13,200.00	91.00	330.16	10,960.95	723.92	-2,466.05	14,448,007.20	1,714,669.36	39.78349739	-80.73569307
13,300.00	91.00	330.16	10,959.20	810.64	-2,515.80	14,448,093.92	1,714,619.60	39.78373597	-80.73586926
13,400.00	91.00	330.16	10,957.45	897.37	-2,565.55	14,448,180.65	1,714,569.85	39.78397454	-80.73604545
13,500.00	91.00	330.16	10,955.70	984.10	-2,615.31	14,448,267.37	1,714,520.09	39.78421312	-80.73622164
13,600.00	91.00	330.16	10,953.95	1,070.82	-2,665.06	14,448,354.10	1,714,470.34	39.78445169	-80.73639784
13,700.00	91.00	330.16	10,952.20	1,157.55	-2,714.82	14,448,440.83	1,714,420.59	39.78469027	-80.73657404
13,800.00	91.00	330.16	10,950.45	1,244.27	-2,764.57	14,448,527.55	1,714,370.83	39.78492884	-80.73675023
13,900.00	91.00	330.16	10,948.70	1,331.00	-2,814.33	14,448,614.28	1,714,321.08	39.78516742	-80.73692643
14,000.00	91.00	330.16	10,946.95	1,417.73	-2,864.08	14,448,701.00	1,714,271.32	39.78540599	-80.73710263
14,100.00	91.00	330.16	10,945.20	1,504.45	-2,913.83	14,448,787.73	1,714,221.57	39.78564457	-80.73727883
14,200.00	91.00	330.16	10,943.46	1,591.18	-2,963.59	14,448,874.46	1,714,171.81	39.78588314	-80.73745503
14,300.00	91.00	330.16	10,941.71	1,677.91	-3,013.34	14,448,961.18	1,714,122.06	39.78612171	-80.73763124
14,400.00	91.00	330.16	10,939.96	1,764.63	-3,063.10	14,449,047.91	1,714,072.31	39.78636029	-80.73780744

JAN 19

WV Department of  
Environmental Protection



Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Van Winkle N-17 HU (slot F)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle N-17 HU (slot F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,500.00	91.00	330.16	10,938.21	1,851.36	-3,112.85	14,449,134.63	1,714,022.55	39.78659886	-80.73798365	
14,600.00	91.00	330.16	10,936.46	1,938.08	-3,162.61	14,449,221.36	1,713,972.80	39.78683743	-80.73815985	
14,700.00	91.00	330.16	10,934.71	2,024.81	-3,212.36	14,449,308.09	1,713,923.04	39.78707600	-80.73833606	
14,800.00	91.00	330.16	10,932.96	2,111.54	-3,262.12	14,449,394.81	1,713,873.28	39.78731457	-80.73851227	
14,900.00	91.00	330.16	10,931.21	2,198.26	-3,311.87	14,449,481.54	1,713,823.53	39.78755315	-80.73868848	
15,000.00	91.00	330.16	10,929.46	2,284.99	-3,361.62	14,449,568.26	1,713,773.78	39.78779172	-80.73886469	
15,100.00	91.00	330.16	10,927.71	2,371.72	-3,411.38	14,449,654.99	1,713,724.03	39.78803029	-80.73904090	
15,200.00	91.00	330.16	10,925.96	2,458.44	-3,461.13	14,449,741.72	1,713,674.27	39.78826886	-80.73921712	
15,300.00	91.00	330.16	10,924.21	2,545.17	-3,510.89	14,449,828.44	1,713,624.52	39.78850743	-80.73939333	
15,400.00	91.00	330.16	10,922.46	2,631.89	-3,560.64	14,449,915.17	1,713,574.76	39.78874600	-80.73956955	
15,500.00	91.00	330.16	10,920.71	2,718.62	-3,610.40	14,450,001.89	1,713,525.01	39.78898457	-80.73974577	
15,600.00	91.00	330.16	10,918.96	2,805.35	-3,660.15	14,450,088.62	1,713,475.25	39.78922314	-80.73992199	
15,700.00	91.00	330.16	10,917.21	2,892.07	-3,709.90	14,450,175.35	1,713,425.50	39.78946171	-80.74009821	
15,800.00	91.00	330.16	10,915.46	2,978.80	-3,759.66	14,450,262.07	1,713,375.75	39.78970028	-80.74027443	
15,900.00	91.00	330.16	10,913.71	3,065.53	-3,809.41	14,450,348.80	1,713,325.99	39.78993885	-80.74045065	
16,000.00	91.00	330.16	10,911.96	3,152.25	-3,859.17	14,450,435.52	1,713,276.24	39.79017742	-80.74062688	
16,100.00	91.00	330.16	10,910.21	3,238.98	-3,908.92	14,450,522.25	1,713,226.48	39.79041599	-80.74080310	
16,200.00	91.00	330.16	10,908.46	3,325.70	-3,958.68	14,450,608.98	1,713,176.73	39.79065455	-80.74097933	
16,300.00	91.00	330.16	10,906.71	3,412.43	-4,008.43	14,450,695.70	1,713,126.97	39.79089312	-80.74115555	
16,400.00	91.00	330.16	10,904.96	3,499.16	-4,058.19	14,450,782.43	1,713,077.22	39.79113169	-80.74133178	
16,500.00	91.00	330.16	10,903.21	3,585.88	-4,107.94	14,450,869.16	1,713,027.47	39.79137026	-80.74150801	
16,600.00	91.00	330.16	10,901.46	3,672.61	-4,157.69	14,450,955.88	1,712,977.71	39.79160882	-80.74168424	
16,700.00	91.00	330.16	10,899.71	3,759.34	-4,207.45	14,451,042.61	1,712,927.96	39.79184739	-80.74186048	
16,800.00	91.00	330.16	10,897.96	3,846.06	-4,257.20	14,451,129.33	1,712,878.20	39.79208596	-80.74203671	
16,900.00	91.00	330.16	10,896.22	3,932.79	-4,306.96	14,451,216.06	1,712,828.45	39.79232452	-80.74221294	
17,000.00	91.00	330.16	10,894.47	4,019.51	-4,356.71	14,451,302.79	1,712,778.69	39.79256309	-80.74238918	
17,100.00	91.00	330.16	10,892.72	4,106.24	-4,406.47	14,451,389.51	1,712,728.94	39.79280166	-80.74256542	
17,200.00	91.00	330.16	10,890.97	4,192.97	-4,456.22	14,451,476.24	1,712,679.19	39.79304022	-80.74274166	
17,300.00	91.00	330.16	10,889.22	4,279.69	-4,505.98	14,451,562.96	1,712,629.43	39.79327879	-80.74291790	
17,400.00	91.00	330.16	10,887.47	4,366.42	-4,555.73	14,451,649.69	1,712,579.68	39.79351735	-80.74309414	
17,500.00	91.00	330.16	10,885.72	4,453.15	-4,605.48	14,451,736.42	1,712,529.92	39.79375592	-80.74327038	
17,600.00	91.00	330.16	10,883.97	4,539.87	-4,655.24	14,451,823.14	1,712,480.17	39.79399448	-80.74344662	
17,700.00	91.00	330.16	10,882.22	4,626.60	-4,704.99	14,451,909.87	1,712,430.41	39.79423304	-80.74362287	
17,800.00	91.00	330.16	10,880.47	4,713.32	-4,754.75	14,451,996.59	1,712,380.66	39.79447161	-80.74379911	
17,900.00	91.00	330.16	10,878.72	4,800.05	-4,804.50	14,452,083.32	1,712,330.90	39.79471017	-80.74397536	
18,000.00	91.00	330.16	10,876.97	4,886.78	-4,854.26	14,452,170.05	1,712,281.15	39.79494873	-80.74415161	
18,100.00	91.00	330.16	10,875.22	4,973.50	-4,904.01	14,452,256.77	1,712,231.40	39.79518730	-80.74432786	
18,200.00	91.00	330.16	10,873.47	5,060.23	-4,953.76	14,452,343.50	1,712,181.64	39.79542586	-80.74450411	
18,300.00	91.00	330.16	10,871.72	5,146.96	-5,003.52	14,452,430.22	1,712,131.89	39.79566442	-80.74468036	
18,400.00	91.00	330.16	10,869.97	5,233.68	-5,053.27	14,452,516.95	1,712,082.13	39.79590298	-80.74485661	
18,500.00	91.00	330.16	10,868.22	5,320.41	-5,103.03	14,452,603.68	1,712,032.38	39.79614155	-80.74503286	
18,600.00	91.00	330.16	10,866.47	5,407.13	-5,152.78	14,452,690.40	1,711,982.62	39.79638011	-80.74520912	
18,700.00	91.00	330.16	10,864.72	5,493.86	-5,202.54	14,452,777.13	1,711,932.87	39.79661867	-80.74538538	
18,800.00	91.00	330.16	10,862.97	5,580.59	-5,252.29	14,452,863.85	1,711,883.12	39.79685723	-80.74556163	
18,900.00	91.00	330.16	10,861.22	5,667.31	-5,302.05	14,452,950.58	1,711,833.36	39.79709579	-80.74573789	
19,000.00	91.00	330.16	10,859.47	5,754.04	-5,351.80	14,453,037.31	1,711,783.61	39.79733435	-80.74591415	
19,100.00	91.00	330.16	10,857.72	5,840.76	-5,401.55	14,453,124.03	1,711,733.85	39.79757291	-80.74609042	
19,200.00	91.00	330.16	10,855.97	5,927.49	-5,451.31	14,453,210.76	1,711,684.10	39.79781147	-80.74626668	
19,300.00	91.00	330.16	10,854.22	6,014.22	-5,501.06	14,453,297.48	1,711,634.34	39.79805003	-80.74644294	
19,400.00	91.00	330.16	10,852.47	6,100.94	-5,550.82	14,453,384.21	1,711,584.59	39.79828859	-80.74661921	
19,500.00	91.00	330.16	10,850.72	6,187.67	-5,600.57	14,453,470.94	1,711,534.84	39.79852715	-80.74679547	
19,600.00	91.00	330.16	10,848.97	6,274.40	-5,650.33	14,453,557.66	1,711,485.08	39.79876571	-80.74697174	
19,700.00	91.00	330.16	10,847.23	6,361.12	-5,700.08	14,453,644.39	1,711,435.33	39.79900427	-80.74714801	
19,800.00	91.00	330.16	10,845.48	6,447.85	-5,749.84	14,453,731.12	1,711,385.57	39.79924283	-80.74732428	
19,900.00	91.00	330.16	10,843.73	6,534.57	-5,799.59	14,453,817.84	1,711,335.82	39.79948138	-80.74750055	

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Planning Report - Geographic

WV Department of

Database:	DB_Dec2220_v18	Local Co-ordinate Reference:	Well Van Winkle N-17 HU (slot F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 754.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 754.00ft
Site:	Van Winkle	North Reference:	Grid
Well:	Van Winkle N-17 HU (slot F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
20,000.00	91.00	330.16	10,841.98	6,621.30	-5,849.34	14,453,904.57	1,711,286.06	39.79971994	-80.74767682	
20,100.00	91.00	330.16	10,840.23	6,708.03	-5,899.10	14,453,991.29	1,711,236.31	39.79995850	-80.74785310	
20,200.00	91.00	330.16	10,838.48	6,794.75	-5,948.85	14,454,078.02	1,711,186.56	39.80019706	-80.74802937	
20,300.00	91.00	330.16	10,836.73	6,881.48	-5,998.61	14,454,164.75	1,711,136.80	39.80043561	-80.74820565	
20,400.00	91.00	330.16	10,834.98	6,968.21	-6,048.36	14,454,251.47	1,711,087.05	39.80067417	-80.74838192	
20,500.00	91.00	330.16	10,833.23	7,054.93	-6,098.12	14,454,338.20	1,711,037.29	39.80091273	-80.74855820	
20,600.00	91.00	330.16	10,831.48	7,141.66	-6,147.87	14,454,424.92	1,710,987.54	39.80115128	-80.74873448	
20,700.00	91.00	330.16	10,829.73	7,228.38	-6,197.62	14,454,511.65	1,710,937.78	39.80138984	-80.74891076	
20,800.00	91.00	330.16	10,827.98	7,315.11	-6,247.38	14,454,598.38	1,710,888.03	39.80162839	-80.74908705	
20,900.00	91.00	330.16	10,826.23	7,401.84	-6,297.13	14,454,685.10	1,710,838.28	39.80186695	-80.74926333	
21,000.00	91.00	330.16	10,824.48	7,488.56	-6,346.89	14,454,771.83	1,710,788.52	39.80210550	-80.74943961	
21,100.00	91.00	330.16	10,822.73	7,575.29	-6,396.64	14,454,858.55	1,710,738.77	39.80234406	-80.74961590	
21,200.00	91.00	330.16	10,820.98	7,662.02	-6,446.40	14,454,945.28	1,710,689.01	39.80258261	-80.74979219	
21,300.00	91.00	330.16	10,819.23	7,748.74	-6,496.15	14,455,032.01	1,710,639.26	39.80282117	-80.74996847	
21,400.00	91.00	330.16	10,817.48	7,835.47	-6,545.91	14,455,118.73	1,710,589.50	39.80305972	-80.75014476	
21,500.00	91.00	330.16	10,815.73	7,922.19	-6,595.66	14,455,205.46	1,710,539.75	39.80329828	-80.75032105	
21,600.00	91.00	330.16	10,813.98	8,008.92	-6,645.41	14,455,292.18	1,710,490.00	39.80353683	-80.75049735	
21,700.00	91.00	330.16	10,812.23	8,095.65	-6,695.17	14,455,378.91	1,710,440.24	39.80377538	-80.75067364	
21,800.00	91.00	330.16	10,810.48	8,182.37	-6,744.92	14,455,465.64	1,710,390.49	39.80401394	-80.75084993	
21,900.00	91.00	330.16	10,808.73	8,269.10	-6,794.68	14,455,552.36	1,710,340.73	39.80425249	-80.75102623	
22,000.00	91.00	330.16	10,806.98	8,355.83	-6,844.43	14,455,639.09	1,710,290.98	39.80449104	-80.75120253	
22,100.00	91.00	330.16	10,805.23	8,442.55	-6,894.19	14,455,725.81	1,710,241.22	39.80472959	-80.75137882	
22,200.00	91.00	330.16	10,803.48	8,529.28	-6,943.94	14,455,812.54	1,710,191.47	39.80496814	-80.75155512	
22,300.00	91.00	330.16	10,801.73	8,616.00	-6,993.70	14,455,899.27	1,710,141.72	39.80520670	-80.75173142	
22,400.00	91.00	330.16	10,799.99	8,702.73	-7,043.45	14,455,985.99	1,710,091.96	39.80544525	-80.75190772	
22,500.00	91.00	330.16	10,798.24	8,789.46	-7,093.20	14,456,072.72	1,710,042.21	39.80568380	-80.75208403	
22,600.00	91.00	330.16	10,796.49	8,876.18	-7,142.96	14,456,159.44	1,709,992.45	39.80592235	-80.75226033	
22,700.00	91.00	330.16	10,794.74	8,962.91	-7,192.71	14,456,246.17	1,709,942.70	39.80616090	-80.75243664	
22,800.00	91.00	330.16	10,792.99	9,049.64	-7,242.47	14,456,332.90	1,709,892.94	39.80639945	-80.75261294	
22,900.00	91.00	330.16	10,791.24	9,136.36	-7,292.22	14,456,419.62	1,709,843.19	39.80663800	-80.75278925	
23,000.00	91.00	330.16	10,789.49	9,223.09	-7,341.98	14,456,506.35	1,709,793.44	39.80687655	-80.75296556	
23,100.00	91.00	330.16	10,787.74	9,309.81	-7,391.73	14,456,593.07	1,709,743.68	39.80711510	-80.75314187	
23,200.00	91.00	330.16	10,785.99	9,396.54	-7,441.48	14,456,679.80	1,709,693.93	39.80735365	-80.75331818	
23,300.00	91.00	330.16	10,784.24	9,483.27	-7,491.24	14,456,766.53	1,709,644.17	39.80759220	-80.75349449	
23,400.00	91.00	330.16	10,782.49	9,569.99	-7,540.99	14,456,853.25	1,709,594.42	39.80783074	-80.75367081	
23,500.00	91.00	330.16	10,780.74	9,656.72	-7,590.75	14,456,939.98	1,709,544.66	39.80806929	-80.75384712	
23,600.00	91.00	330.16	10,778.99	9,743.45	-7,640.50	14,457,026.71	1,709,494.91	39.80830784	-80.75402344	
23,700.00	91.00	330.16	10,777.24	9,830.17	-7,690.26	14,457,113.43	1,709,445.16	39.80854639	-80.75419976	
23,800.00	91.00	330.16	10,775.49	9,916.90	-7,740.01	14,457,200.16	1,709,395.40	39.80878493	-80.75437607	
23,900.00	91.00	330.16	10,773.74	10,003.62	-7,789.77	14,457,286.88	1,709,345.65	39.80902348	-80.75455239	
24,000.00	91.00	330.16	10,771.99	10,090.35	-7,839.52	14,457,373.61	1,709,295.89	39.80926203	-80.75472871	
24,100.00	91.00	330.16	10,770.24	10,177.08	-7,889.27	14,457,460.34	1,709,246.14	39.80950058	-80.75490504	
24,200.00	91.00	330.16	10,768.49	10,263.80	-7,939.03	14,457,547.06	1,709,196.38	39.80973912	-80.75508136	
24,300.00	91.00	330.16	10,766.74	10,350.53	-7,988.78	14,457,633.79	1,709,146.63	39.80997767	-80.75525769	
24,400.00	91.00	330.16	10,764.99	10,437.26	-8,038.54	14,457,720.51	1,709,096.88	39.81021621	-80.75543401	
24,500.00	91.00	330.16	10,763.24	10,523.98	-8,088.29	14,457,807.24	1,709,047.12	39.81045476	-80.75561034	
24,600.00	91.00	330.16	10,761.49	10,610.71	-8,138.05	14,457,893.97	1,708,997.37	39.81069330	-80.75578667	
24,700.00	91.00	330.16	10,759.74	10,697.43	-8,187.80	14,457,980.69	1,708,947.61	39.81093185	-80.75596300	
24,800.00	91.00	330.16	10,757.99	10,784.16	-8,237.56	14,458,067.42	1,708,897.86	39.81117039	-80.75613933	
24,900.00	91.00	330.16	10,756.24	10,870.89	-8,287.31	14,458,154.14	1,708,848.10	39.81140894	-80.75631566	
25,000.00	91.00	330.16	10,754.49	10,957.61	-8,337.06	14,458,240.87	1,708,798.35	39.81164748	-80.75649199	
25,100.00	91.00	330.16	10,752.75	11,044.34	-8,386.82	14,458,327.60	1,708,748.60	39.81188603	-80.75666833	
25,200.00	91.00	330.16	10,751.00	11,131.07	-8,436.57	14,458,414.32	1,708,698.84	39.81212457	-80.75684466	
25,300.00	91.00	330.16	10,749.25	11,217.79	-8,486.33	14,458,501.05	1,708,649.09	39.81236311	-80.75702100	
25,400.00	91.00	330.16	10,747.50	11,304.52	-8,536.08	14,458,587.77	1,708,599.33	39.81260166	-80.75719734	



Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Van Winkle N-17 HU (slot F)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle N-17 HU (slot F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
25,500.00	91.00	330.16	10,745.75	11,391.24	-8,585.84	14,458,674.50	1,708,549.58	39.81284020	-80.75737368
25,600.00	91.00	330.16	10,744.00	11,477.97	-8,635.59	14,458,761.23	1,708,499.82	39.81307874	-80.75755002
25,700.00	91.00	330.16	10,742.25	11,564.70	-8,685.34	14,458,847.95	1,708,450.07	39.81331728	-80.75772636
25,800.00	91.00	330.16	10,740.50	11,651.42	-8,735.10	14,458,934.68	1,708,400.32	39.81355582	-80.75790270
25,900.00	91.00	330.16	10,738.75	11,738.15	-8,784.85	14,459,021.40	1,708,350.56	39.81379437	-80.75807904
26,000.00	91.00	330.16	10,737.00	11,824.87	-8,834.61	14,459,108.13	1,708,300.81	39.81403291	-80.75825539
26,057.05	91.00	330.16	10,736.00	11,874.35	-8,862.99	14,459,157.61	1,708,272.42	39.81416900	-80.75835600
PBHL/TD 26057.05 MD /10736.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Van Winkle N-17HU PBI - hit/miss target - Shape - Point	0.00	0.00	10,736.00	11,874.35	-8,862.99	14,459,157.61	1,708,272.42	39.81416900	-80.75835600
Van Winkle N-17HU LP I - plan misses target center by 0.08ft at 11653.97ft MD (10988.00 TVD, -616.90 N, -1696.83 E) - Point	0.00	0.00	10,988.00	-616.86	-1,696.76	14,446,666.42	1,715,438.65	39.77980900	-80.73296900

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
26,057.05	10,736.00	20" Casing	20	24	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,300.00	1,300.00	0.00	0.00	KOP Begin 2°/100' build	<p>RECEIVED Office of Oil and Gas</p> <p>JAN 19</p> <p>WV Department of Environmental Protection</p>
1,450.00	1,449.93	-3.22	-2.25	Begin 3.00° tangent	
3,002.20	3,000.00	-69.76	-48.85	Begin 2°/100' build/turn	
3,262.45	3,258.99	-86.50	-67.04	Begin 8.00° tangent	
6,535.31	6,500.00	-366.93	-425.97	Begin 2°/100' build/turn	
6,999.80	6,953.27	-440.22	-492.70	Begin 16.83° tangent	
10,210.78	10,026.65	-1,176.19	-1,061.09	Begin 6°/100' build/turn	
11,117.58	10,811.98	-1,016.88	-1,407.79	Begin 8°/100' build/turn	
11,654.01	10,988.00	-616.86	-1,696.85	Begin 91.00° lateral	
26,057.05	10,736.00	11,874.35	-8,862.99	PBHL/TD 26057.05 MD /10736.00 TVD	

WW-9  
(4/16)

API Number 47 - 051 - \_\_\_\_\_  
Operator's Well No. Van Winkle N-17HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) Fish Creek Quadrangle Glen Easton 7.5'

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

Will a pit be used? Yes  No

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

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? AST Tanks will be used with proper contain

Proposed Disposal Method For Treated Pit Wastes:

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

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

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

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? Barite for weight

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

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

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386426

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

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

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

Company Official Signature James A. Pancake

Company Official (Typed Name) James Pancake

Company Official Title Vice President - Geoscience

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FEB 03 2021

WV Department of  
Environmental Protection

Subscribed and sworn before me this 8 day of JANUARY, 20 21

[Signature]

Commonwealth of Pennsylvania - Notary Seal  
David Gabriel Delallo, Notary Public  
Washington County  
My commission expires February 16, 2024  
Commission number 1267492

Notary Public

My commission expires \_\_\_\_\_

Member, Pennsylvania Association of Notaries

05/07/2021

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.63 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
Annual Ryegrass	40
Spring Oats	96

Seed Type	lbs/acre
Orchard Grass	12
Ladino	3
White Clover	2

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Bany Steg

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

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FEB 03 2021

Title: Oil and Gas Inspector

Date: 1-21-21

WV Department of  
Environmental Protection

Field Reviewed?  Yes  No

# PROPOSED VAN WINKLE N - 17HU

**NOTES:**

1. DRAWING NOT TO SCALE
2. 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.
3. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
4. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.
5. SEE HUNTER PETHEL N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.

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JAN 19

WV Department of  
Environmental Protection

- 63' @ 0-8% GRADE
- 237' @ 4-9% GRADE
- 253' @ 0% GRADE
- 441' @ 5-12% GRADE
- 151' @ 1% GRADE
- 82' @ 6-9% GRADE
- 148' @ 3% GRADE
- 86' @ 6-9% GRADE
- 88' @ 0-2% GRADE

SILT FENCE AND/OR SEDIMENT AND  
EROSION CONTROL MEASURE.



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
sllsvv.com

**TOPO SECTION:**

GLEN EASTON 7.5'	
COUNTY	DISTRICT
MARSHALL	MEADE
DRAWN BY	JOB NO.
K.G.M.	8952

**OPERATOR:**

PREPARED FOR:  
TUG HILL OPERATING, LLC  
380 SOUTHPOINTE BLVD  
SUITE 200  
CANONSBURG, PA 15317



**TUG HILL  
OPERATING**

05/07/2021

4705102350



# Well Site Safety Plan

## Tug Hill Operating, LLC

*Bary Stiles 1/21/21*

Well Name: Van Winkle N-17HU

Location: Hunter Pethtel

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,403,540.75

Easting: 523,383.91

January 2021

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Office of Oil and Gas

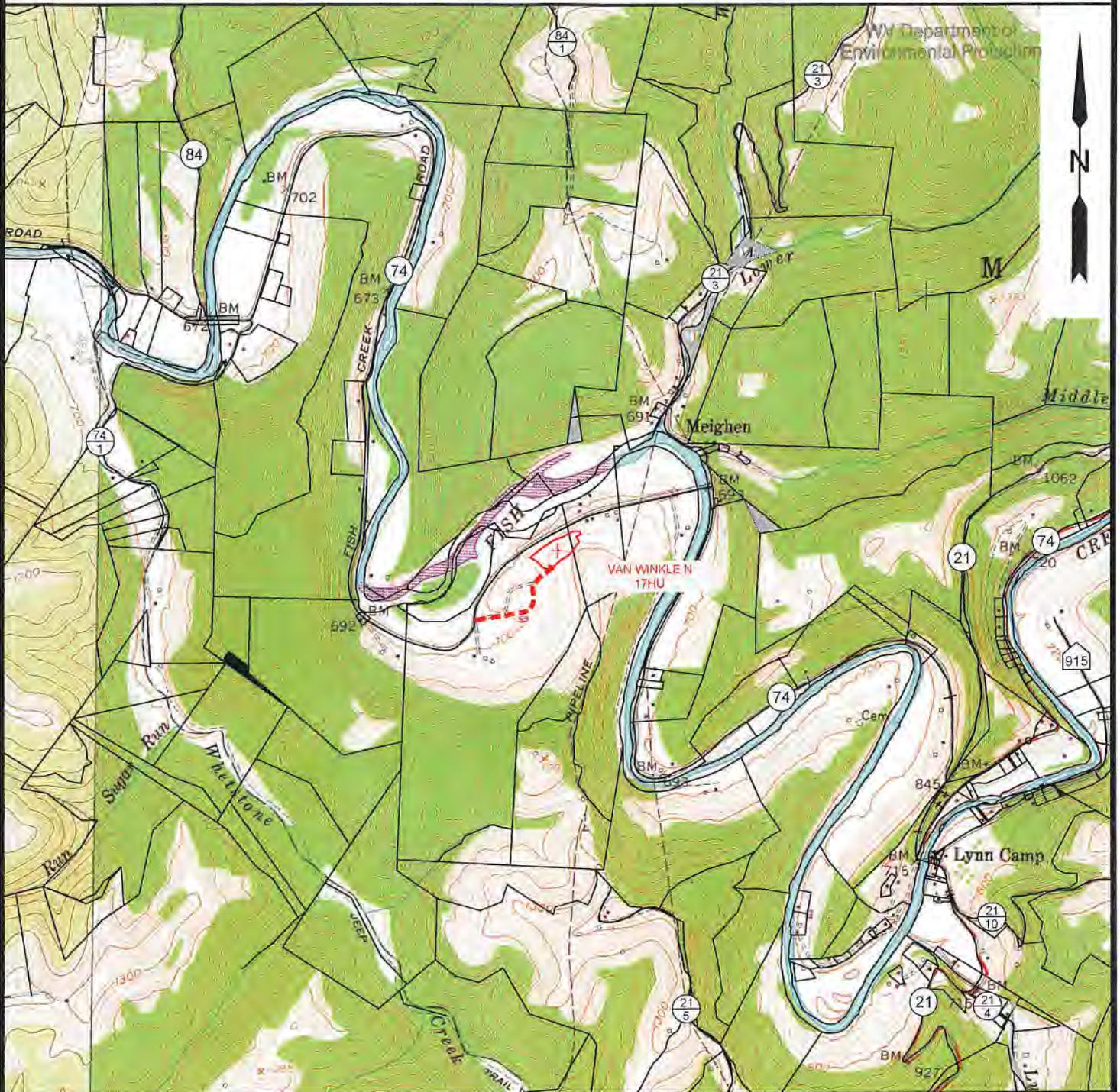
FEB 03 2021

WV Department of  
Environmental Protection

05/07/2021

# PROPOSED VAN WINKLE N - 17HU

JAN 19



NOTE: CLOSEST WATER PURVEYOR  
GRANDVIEW - DOOLIN PUBLIC SERVICE DISTRICT  
PROCTOR, WV

LAT: 39.7137712  
LON: -80.8258327  
LOCATED: S 49°13'48" W AT 37,316.19' FROM THE CENTER OF HUNTER PETHTEL N WELL PAD LOCATION.



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5534  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
slswv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/24/2020	1" = 2000'



**TUG HILL  
OPERATING**

05/07/2021

**HUNTER PETHTEL LEASE  
UTICA UNIT - 431.59 AC±  
VAN WINKLE N 17HU WELL  
TUG HILL OPERATING**

TAG	SURFACE OWNER	PARCEL	ACRES
A	XCL MIDSTREAM OPERATING, LLC	9-13-5	190.12
B	XCL MIDSTREAM OPERATING, LLC	9-10-19.1	10.00
C	LOUIS AULENBACHER	9-13-4	100.191
D	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	JOHN E. & JANET E. KELLEY, ET AL.	9-10-19	113.08
F	CAROL VAN SCYOC	9-10-2	206.988
G	SHERRY VAN SCYOC YOCUM & BLAINE VAN SCYOC	9-10-2.1	5.00
H	WALTER J. FECAT, JR., ET UX	9-10-2.2	5.00
I	CAROL VAN SCYOC	9-10-1	118.087
J	JOSHUA A. & SHANNON N. HOYT	9-10-20	9.942
K	JOSHUA A. & SHANNON N. HOYT	9-10-1.2	2.436
L	JAMES & VICKIE J. MASON	9-10-22	1.169
M	JAMES & VICKIE J. MASON	9-10-21	2.00
N	FINLEY D. MONTGOMERY, ET UX	9-10-1.3	20.294
O	CONNIE S. CUNNINGHAM	9-10-1.1	0.482
P	WILLIAM F. RULONG, ET AL.	5-10-8	70.6672
Q	WILLIAM F. RULONG, ET AL.	5-10-7	22.872
R	WILLIAM F. RULONG, ET AL.	5-10-5	27.5
S	ROBERT GREGORY MCGUIRE, ET UX	5-9-10	139.60
T	ROBERT GREGORY MCGUIRE, ET UX	5-9-12	78.28
U	ROBERT GREGORY MCGUIRE, ET UX	5-9-9	49.00
V	PATRICIA A. MCCLINTOCK N/K/A/ PATRICIA FRIEND	5-9-7	110.02
W	PATRICIA A. MCCLINTOCK N/K/A/ PATRICIA FRIEND	5-9-6	101.00
X	PATRICIA A. MCCLINTOCK N/K/A/ PATRICIA FRIEND	5-9-5	22.5

PARCEL	SURFACE ADJOINER	ACRES
5-10-6	WILLIAM F. RULONG, ET AL.	P/O L.00
5-10-8.1	SAMUEL D. & BECKY ROBINSON	1.511
9-13-6	MARY VIRGINIA PETHTEL (LIFE)	66.36
9-13-7	MARY VIRGINIA PETHTEL (LIFE)	96.00
9-13-24	ROBERT N. & NANCY R. MCCARDLE	50.64
9-13-25	ROBERT N. & NANCY R. MCCARDLE	48.00
9-13-26	ROBERT N. & NANCY R. MCCARDLE	9.02



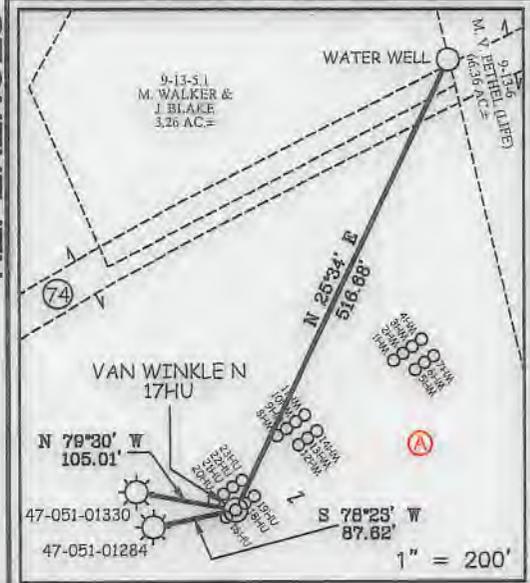
DETAIL 2  
SCALE: 1" = 500'



**NOTES ON SURVEY**

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.
- PROPOSED LATERAL OR TOP HOLE OF VAN WINKLE N-17HU IS WITHIN 3000' OF TOP HOLES OR LATERALS OF: PROPOSED VAN WINKLE N-18HU, PROPOSED VAN WINKLE N-19HU, PROPOSED VAN WINKLE S-20HU, PROPOSED VAN WINKLE S-21HU, PROPOSED VAN WINKLE S-22HU, PROPOSED VAN WINKLE S-23HU, KNOB CREEK N-11HU (47-051-02287), MND 20 DU (47-051-02014).

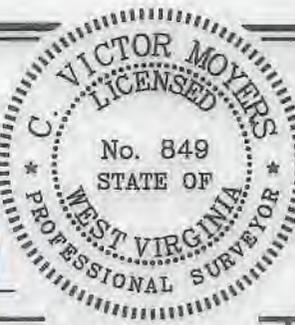
**REFERENCES**



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254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
slov.com

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 849 *C. Victor Moyers*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE JANUARY 14, 20 21  
REVISED FEBRUARY 25, 2021  
OPERATORS WELL NO. VAN WINKLE N 17HU  
API WELL NO. 47-051-01330  
STATE 47 COUNTY 051 PERMIT 02350

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. 8952P17HUR.dwg  
VAN WINKLE N 17HU-REV3  
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

WELL TYPE: OIL  GAS  INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

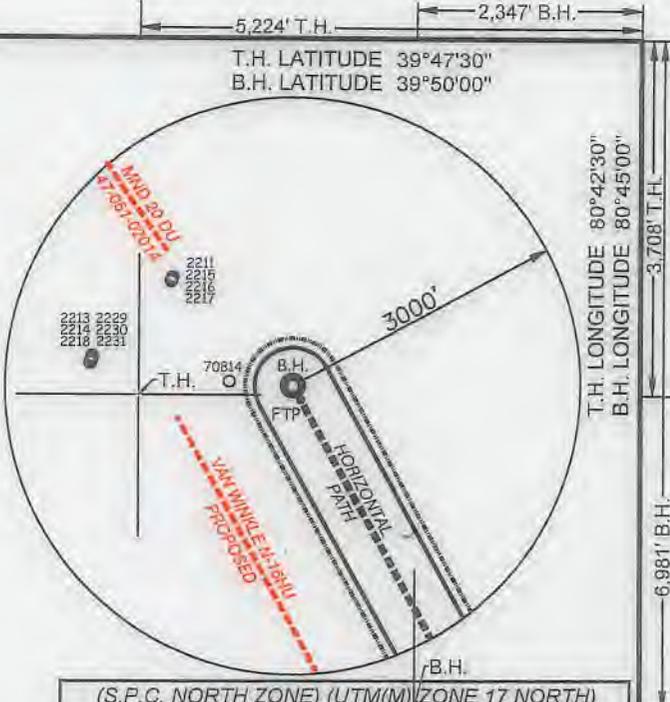
LOCATION: GROUND: 756.10' ELEVATION PROPOSED: 753.50' WATERSHED FISH CREEK (HUC 10)  
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER XCL MIDSTREAM OPERATING, LLC ACREAGE 190.12 ±  
ROYALTY OWNER DENNIS HUNTER, ET AL - SEE WW-6A1 ACREAGE 190.12 ±

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION POINT PLEASANT  
ESTIMATED DEPTH TVD: 11,216' / TMD: 26,057'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD  
FORT WORTH, TX 76107 CHARLESTON, WV 25313



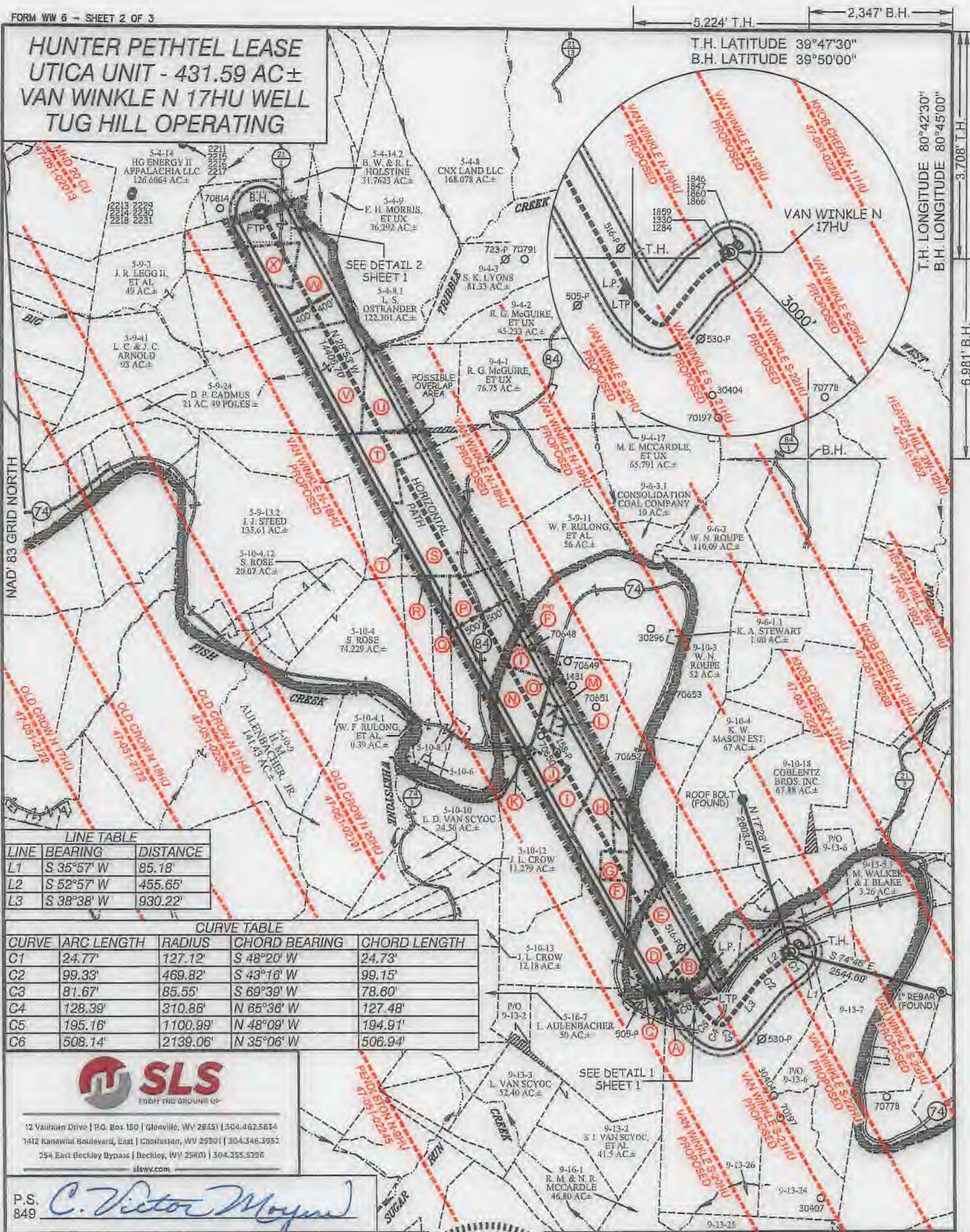
(S.P.C. NORTH ZONE) (UTM(M))	ZONE 17 NORTH)
NAD'83 S.P.C.(FT)	N. 469,112.82 E. 1,623,698.27
NAD'83 GEO.	LAT-(N) 39.781489 LONG-(W) 80.726923
NAD'83 UTM (M)	N. 4,403,540.75 E. 523,383.91
LANDING POINT	
NAD'83 S.P.C.(FT)	N. 468,524.0 E. 1,621,990.8
NAD'83 GEO.	LAT-(N) 39.779809 LONG-(W) 80.732969
NAD'83 UTM (M)	N. 4,403,352.7 E. 522,865.7
BOTTOM HOLE	
NAD'83 S.P.C.(FT)	N. 461,137.4 E. 1,615,032.0
NAD'83 GEO.	LAT-(N) 39.814169 LONG-(W) 80.758356
NAD'83 UTM (M)	N. 4,407,160.1 E. 520,682.5

COUNTY NAME  
PERMIT

05/07/2021

**HUNTER PETHTEL LEASE  
UTICA UNIT - 431.59 AC±  
VAN WINKLE N 17HU WELL  
TUG HILL OPERATING**

T.H. LATITUDE 39°47'30"  
B.H. LATITUDE 39°50'00"



**LINE TABLE**

LINE	BEARING	DISTANCE
L1	S 35°57' W	85.18'
L2	S 52°57' W	455.65'
L3	S 38°38' W	930.22'

**CURVE TABLE**

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	24.77'	127.12'	S 48°20' W	24.73'
C2	99.33'	469.82'	S 43°16' W	99.15'
C3	81.67'	85.55'	S 69°39' W	78.60'
C4	128.39'	310.86'	N 65°36' W	127.48'
C5	195.16'	1100.99'	N 48°09' W	194.91'
C6	508.14'	2139.06'	N 35°06' W	506.94'

12 Vanium Drive | P.O. Box 180 | Glenville, WV 26031 | 304.462.5634  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25801 | 304.355.5296  
slswv.com

P.S. 849 *C. Victor Moyers*

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 469,112.62	E. 1,623,698.27
NAD'83 GEO.	LAT-(N) 39.781489	LONG-(W) 80.726923
NAD'83 UTM (M)	N. 4,403,540.75	E. 523,393.91
<b>LANDING POINT</b>		
NAD'83 S.P.C.(FT)	N. 469,524.0	E. 1,621,990.8
NAD'83 GEO.	LAT-(N) 39.779609	LONG-(W) 80.732969
NAD'83 UTM (M)	N. 4,403,352.7	E. 522,866.7
<b>BOTTOM HOLE</b>		
NAD'83 S.P.C.(FT)	N. 481,197.4	E. 1,615,032.0
NAD'83 GEO.	LAT-(N) 39.814169	LONG-(W) 80.758356
NAD'83 UTM (M)	N. 4,407,160.1	E. 520,682.5



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

**LEGEND**

UNIT BOUNDARY	
LEASED TRACTS INSIDE	
UNIT BOUNDARY	
SURFACE LINE	
PROPOSED UTICA	
WELL LATERAL	
400' OFFSET LINE	
500' OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
SURFACE OWNER (SEE TABLE)	
LEASE # (SEE ADDITIONAL SHEETS)	

SCALE 1" = 2000' FILE NO. 8952P17HUR.dwg  
VAN WINKLE N 17HU-REV3  
DATE JANUARY 14, 2021  
REVISED FEBRUARY 25, 2021  
OPERATORS WELL NO. VAN WINKLE N 17HU  
API WELL NO. 47-051-02350 Deep Well  
NO. STATE COUNTY PERMIT

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

WELL OPERATOR TUG HILL OPERATING, LLC	DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500	ADDRESS CT CORPORATION SYSTEM
FORT WORTH, TX 76107	5400 D BIG TYLER ROAD
	CHARLESTON, WV 25313

05/07/2021

COUNTY NAME  
PERMIT

**HUNTER PETHTEL LEASE  
UTICA UNIT - 431.59 AC±  
VAN WINKLE N 17HU WELL  
TUG HILL OPERATING**



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25601 | 304.255.5296  
slswv.com

NO.	Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Deed Book/Page	
✓ 1	10*31312	9-13-5	A	DENNIS W & KATHY A HUNTER	668	155
✓ 2	10*31352	9-10-19.1	B	DENNIS W & KATHY A HUNTER	690	60
✓ 3	10*22382	9-13-4	C	BETTY LOU KAMPE, ET AL	919	399
✓ 4	10*23458	FISH CREEK	D	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	1019	373
✓ 5	10*31384	9-10-19	E	JOHN E KELLEY & JANET E KELLEY	693	6
✓ 6	10*19894	9-10-2	F	CAROL L VANSYOC	941	392
✓ 7	10*18398	9-10-2.1	G	BLAINE A VANSYOC, ET AL	932	470
✓ 8	10*28415	9-10-2.2	H	WALTER J FECAT AND BRENDA S FECAT	1071	547
✓ 9	10*19894	9-10-1	I	CAROL L VANSYOC	941	392
✓ 10	10*29359	9-10-20	J	JOSHUA A HOYT AND SHANNON N HOYT, ET AL	1096	535
✓ 11	10*29359	9-10-1.2	K	JOSHUA A HOYT AND SHANNON N HOYT, ET AL	1096	535
✓ 12	10*19894	9-10-22	L	CAROL L VANSYOC	941	392
✓ 13	10*19894	9-10-21	M	CAROL L VANSYOC	941	392
✓ 14	10*31374	9-10-1.3	N	FINLEY MONTGOMERY	734	177
✓ 15	10*19894	9-10-1.1	O	CAROL L VANSYOC	941	392
✓ 16	10*29245	5-10-8	P	AMFLO ENTERPRISES LLC CO BARRY STIFFLER, ET AL	1086	508
✓ 17	10*29245	5-10-7	Q	AMFLO ENTERPRISES LLC CO BARRY STIFFLER, ET AL	1086	508
✓ 18	10*29245	5-10-5	R	AMFLO ENTERPRISES LLC CO BARRY STIFFLER, ET AL	1086	508
✓ 19	10*47051.144.0	5-9-10	S	ROBERT G & TERRI L MCGUIRE	867	581
✓ 20	10*47051.144.0	5-9-12	T	ROBERT G & TERRI L MCGUIRE	867	581
✓ 21	10*29855	5-9-9	U	ROBERT G & TERRI L MCGUIRE	1101	307
✓ 22	10*29860	5-9-7	V	P & D REALTY	1101	305
✓ 23	10*29860	5-9-6	W	P & D REALTY	1101	305
✓ 24	10*29860	5-9-5	X	P & D REALTY	1101	305

FILE NO. 8952P17HUR.dwg  
VAN WINKLE N 17HU-REV3

DATE JANUARY 14, 20 21

REVISED FEBRUARY 25, 2021

OPERATORS WELL NO. VAN WINKLE N 17HU

API WELL NO. 47 — 051 — 02350 *Deep HcA*  
STATE COUNTY PERMIT



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



P.S. 849

*C. Victor Moyers*

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER  
ADDRESS CT CORPORATION SYSTEM  
5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

COUNTY NAME

PERMIT

**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

RECEIVED  
Office of Oil and Gas  
  
JAN 19  
  
WV Department of  
Environmental Protection

**\*Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act.**

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

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

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

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

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

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment
10*31312	9-13-5	A	DENNIS W & KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	155	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/497	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31352	9-10-19.1	B	DENNIS W & KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	690	60	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/497	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*23458	FISH CREEK	D	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	TH EXPLORATION LLC	1/8+	1019	373	N/A	N/A	N/A	N/A	N/A
10*31384	9-10-19	E	JOHN E KELLEY & JANET E KELLEY	STONE ENERGY CORPORATION	1/8+	693	6	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*19894	9-10-2	F	CAROL L VANSYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*18398	9-10-2.1	G	BLAINE A VANSYOC	TH EXPLORATION LLC	1/8+	932	470	N/A	N/A	N/A	N/A	N/A
10*18399	9-10-2.1	G	SHERRY CARROLL	TH EXPLORATION LLC	1/8+	932	473	N/A	N/A	N/A	N/A	N/A
10*19894	9-10-1	I	CAROL L VANSYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*29359	9-10-20	J	JOSHUA A HOYT AND SHANNON N HOYT	TH EXPLORATION LLC	1/8+	1096	535	N/A	N/A	N/A	N/A	N/A
10*31379	9-10-20	J	JOSHUA A HOYT ET UX	TRIENERGY HOLDINGS LLC	1/8+	720	403	TriEnergy Holdings LLC to NPAR LLC: 25/463	NPAR LLC to Chevron USA Inc: 26/269 & 756/307	Chevron USA Inc to Stone Energy Corporation: 33/325 & 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*19894	9-10-21	M	CAROL L VANSYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*31374	9-10-1.3	N	FINLEY MONTGOMERY	TRIENERGY HOLDINGS LLC	1/8+	734	177	TriEnergy Holdings LLC to NPAR LLC: 25/463	NPAR LLC to Chevron USA Inc: 26/269 & 756/307	Chevron USA Inc to Stone Energy Corporation: 33/325 & 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29245	5-10-8	P	AMFLO ENTERPRISES LLC CO BARRY STIFFLER	TH EXPLORATION LLC	1/8+	1086	508	N/A	N/A	N/A	N/A	N/A
10*31356	5-10-8	P	AMY M.TOLER	CHEVRON USA INC	1/8+	772	407	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*28950	5-10-8	P	ANTHONY C BENEDETTA AND MARY A BENEDETTA	TH EXPLORATION LLC	1/8+	1078	188	N/A	N/A	N/A	N/A	N/A
10*31360	5-10-8	P	AVA SMITH	CHEVRON USA INC	1/8+	801	572	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*18943	5-10-8	P	BRANDY SUE MOORE AND DELMAS L MOORE	TH EXPLORATION LLC	1/8+	940	124	N/A	N/A	N/A	N/A	N/A
10*28993	5-10-8	P	CALVIN MCGUIRE	TH EXPLORATION LLC	1/8+	1080	541	N/A	N/A	N/A	N/A	N/A
10*29721	5-10-8	P	CHARLES MICHAEL & TRACEY L BAKER	TH EXPLORATION LLC	1/8+	1100	250	N/A	N/A	N/A	N/A	N/A
10*26514	5-10-8	P	CLIFFORD C HARTLEY AND BARBARA T HARTLEY*	TH EXPLORATION LLC	1/8+	1034	229	N/A	N/A	N/A	N/A	N/A
10*29664	5-10-8	P	DALE BRUCE MOORE	TH EXPLORATION LLC	1/8+	1100	89	N/A	N/A	N/A	N/A	N/A
10*31370	5-10-8	P	DALE BRUCE MOORE	CHEVRON USA INC	1/8+	781	514	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29808	5-10-8	P	DANIEL J NABUDA*	TH EXPLORATION LLC	1/8+	1101	291	N/A	N/A	N/A	N/A	N/A
10*30034	5-10-8	P	DANNY MOORE ET UX	TH EXPLORATION LLC	1/8+	1103	582	N/A	N/A	N/A	N/A	N/A
10*19607	5-10-8	P	DAVA HARTLEY SMITH	TH EXPLORATION LLC	1/8+	944	186	N/A	N/A	N/A	N/A	N/A
10*30076	5-10-8	P	DAVID A JOHNSON AND KELLI A JOHNSON	TH EXPLORATION LLC	1/8+	1104	194	N/A	N/A	N/A	N/A	N/A
10*28926	5-10-8	P	DAVID M AND SHERRY L TOLER	TH EXPLORATION LLC	1/8+	1078	13	N/A	N/A	N/A	N/A	N/A
10*29856	5-10-8	P	DEAN A BENEDETTA*	TH EXPLORATION LLC	1/8+	1102	298	N/A	N/A	N/A	N/A	N/A
10*29043	5-10-8	P	DONALD LESTER GOUDY JR AND BILLIE GOUDY	TH EXPLORATION LLC	1/8+	1083	121	N/A	N/A	N/A	N/A	N/A
10*28995	5-10-8	P	ELLEN SCHMIDT	TH EXPLORATION LLC	1/8+	1080	545	N/A	N/A	N/A	N/A	N/A
10*23487	5-10-8	P	ELMER RICHARDSON ET AL CAROLYN FLANNERY AS SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8+	1009	255	N/A	N/A	N/A	N/A	N/A
10*29267	5-10-8	P	ELNORA M BARANICH	TH EXPLORATION LLC	1/8+	1090	141	N/A	N/A	N/A	N/A	N/A
10*18726	5-10-8	P	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941	441	N/A	N/A	N/A	N/A	N/A
10*29044	5-10-8	P	GARREN RAY GOUDY AND HOLLEE J GOUDY	TH EXPLORATION LLC	1/8+	1083	377	N/A	N/A	N/A	N/A	N/A
10*29925	5-10-8	P	H3 LLC	TH EXPLORATION LLC	1/8+	1103	569	N/A	N/A	N/A	N/A	N/A
10*28988	5-10-8	P	HAROLD L GOUDY AND DONNA D GOUDY	TH EXPLORATION LLC	1/8+	1080	536	N/A	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment
10*28969	5-10-8	P	HARRY MCCrackEN AND BETH ANN MCCrackEN	TH EXPLORATION LLC	1/8+	1078	436	N/A	N/A	N/A	N/A	N/A
10*29813	5-10-8	P	HELEN E ROBINSON	TH EXPLORATION LLC	1/8+	1101	23	N/A	N/A	N/A	N/A	N/A
10*29644	5-10-8	P	JAMES & DEBRA LEE MATHIS	TH EXPLORATION LLC	1/8+	1100	86	N/A	N/A	N/A	N/A	N/A
10*31369	5-10-8	P	JAMES ROBERT WHITE	CHEVRON USA INC	1/8+	778	189	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31361	5-10-8	P	JAMES W HARTLEY	CHEVRON USA INC	1/8+	801	563	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29669	5-10-8	P	JEFFREY & MELISSA M MOORE	TH EXPLORATION LLC	1/8+	1100	91	N/A	N/A	N/A	N/A	N/A
10*31364	5-10-8	P	JEFFREY MOORE ET UX	CHEVRON USA INC	1/8+	776	443	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*28994	5-10-8	P	JENNIFER T PUMPA AND RICHARD PUMPA	TH EXPLORATION LLC	1/8+	1080	543	N/A	N/A	N/A	N/A	N/A
10*29073	5-10-8	P	JOEL B MATHIS II AND DEBORAH MATHIS	TH EXPLORATION LLC	1/8+	1083	563	N/A	N/A	N/A	N/A	N/A
10*31373	5-10-8	P	JOYCE FELLERS ET VIR	CHEVRON USA INC	1/8+	780	267	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29978	5-10-8	P	KEITH DAWSON	TH EXPLORATION LLC	1/8+	1103	164	N/A	N/A	N/A	N/A	N/A
10*29512	5-10-8	P	KERRY R MOORE AND BARBARA MOORE	TH EXPLORATION LLC	1/8+	1096	305	N/A	N/A	N/A	N/A	N/A
10*31355	5-10-8	P	KERRY R MOORE ET UX	CHEVRON USA INC	1/8+	772	546	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29802	5-10-8	P	KIRCHGESSNER CONSULTING GROUP LLC*	TH EXPLORATION LLC	1/8+	1101	297	N/A	N/A	N/A	N/A	N/A
10*23491	5-10-8	P	LAWRENCE EDWARD MOORE OR UNKNOWN HEIRS, ET AL	TH EXPLORATION LLC	1/8+	1014	498	N/A	N/A	N/A	N/A	N/A
10*31357	5-10-8	P	LORI E KESTNER	STONE ENERGY CORPORATION	1/8+	886	251	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29796	5-10-8	P	LOUIS M BENEDETTA	TH EXPLORATION LLC	1/8+	1101	27	N/A	N/A	N/A	N/A	N/A
10*28563	5-10-8	P	MARGARET TOLER	TH EXPLORATION LLC	1/8+	1074	630	N/A	N/A	N/A	N/A	N/A
10*30040	5-10-8	P	MARY RENEE WHITE	TH EXPLORATION LLC	1/8+	1103	600	N/A	N/A	N/A	N/A	N/A
10*28855	5-10-8	P	PAMELA J WHORTON AND ROBERT D WHORTON	TH EXPLORATION LLC	1/8+	1077	264	N/A	N/A	N/A	N/A	N/A
10*29206	5-10-8	P	PAMELA R BENEDETTA	TH EXPLORATION LLC	1/8+	1085	598	N/A	N/A	N/A	N/A	N/A
10*19666	5-10-8	P	RALPH TERRY AND MONICA TERRY	TH EXPLORATION LLC	1/8+	944	182	N/A	N/A	N/A	N/A	N/A
10*22324	5-10-8	P	RHONDA RISDEN	TH EXPLORATION LLC	1/8+	965	600	N/A	N/A	N/A	N/A	N/A
10*30075	5-10-8	P	RHONDA SUE DEPAUL	TH EXPLORATION LLC	1/8+	1103	606	N/A	N/A	N/A	N/A	N/A
10*29810	5-10-8	P	RICHARD D & JULIA M REPASKY*	TH EXPLORATION LLC	1/8+	1101	285	N/A	N/A	N/A	N/A	N/A
10*30042	5-10-8	P	RICHARD NEWMAN WHITE	TH EXPLORATION LLC	1/8+	1103	594	N/A	N/A	N/A	N/A	N/A
10*28617	5-10-8	P	RICKY E DAVIS AIF ALISA M DAVIS	TH EXPLORATION LLC	1/8+	1075	35	N/A	N/A	N/A	N/A	N/A
10*30046	5-10-8	P	ROBERT LEE WHITE JR ET UX	TH EXPLORATION LLC	1/8+	1103	612	N/A	N/A	N/A	N/A	N/A
10*28812	5-10-8	P	ROBERT N BAKER AND THERESA L BAKER	TH EXPLORATION LLC	1/8+	1077	33	N/A	N/A	N/A	N/A	N/A
10*30037	5-10-8	P	RUSSELL ALBERT WHITE	TH EXPLORATION LLC	1/8+	1103	588	N/A	N/A	N/A	N/A	N/A
10*28989	5-10-8	P	SANDRA K LYTTON AND CHARLES E LYTTON	TH EXPLORATION LLC	1/8+	1080	538	N/A	N/A	N/A	N/A	N/A
10*28996	5-10-8	P	SHAWN MARIE SEWGARD AND JERRY SEWGARD	TH EXPLORATION LLC	1/8+	1083	124	N/A	N/A	N/A	N/A	N/A
10*28616	5-10-8	P	SILVIA J NEEHOUSE	TH EXPLORATION LLC	1/8+	1075	37	N/A	N/A	N/A	N/A	N/A
10*29833	5-10-8	P	SKYPOINT RESOURCES LLC	TH EXPLORATION LLC	1/8+	1103	556	N/A	N/A	N/A	N/A	N/A
10*27959	5-10-8	P	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	N/A	N/A	N/A	N/A	N/A
10*18837	5-10-8	P	THE RODGERS FAMILY TRUST	TH EXPLORATION LLC	1/8+	935	122	N/A	N/A	N/A	N/A	N/A
10*22542	5-10-8	P	VINCE E OSER AND KAY J OSER	TH EXPLORATION LLC	1/8+	966	198	N/A	N/A	N/A	N/A	N/A
10*29394	5-10-8	P	WILLIAM ELLIOTT AND MARY MARCIA ELLIOTT	TH EXPLORATION LLC	1/8+	1096	303	N/A	N/A	N/A	N/A	N/A

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10*31377	5-10-8	P	WILLIAM L ROBINSON ET UX	CHEVRON USA INC	1/8+	779	608	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*28127	5-10-8	P	WILMA JEAN OSER	TH EXPLORATION LLC	1/8+	1057	330	N/A	N/A	N/A	N/A	N/A
✓ 10*47051.144.0	5-9-10	S	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	867	581	N/A	N/A	N/A	N/A	N/A
✓ 10*47051.144.0	5-9-12	T	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	867	581	N/A	N/A	N/A	N/A	N/A
✓ 10*29855	5-9-9	U	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	1101	307	N/A	N/A	N/A	N/A	N/A
✓ 10*29860	5-9-7	V	P & D REALTY	TH EXPLORATION LLC	1/8+	1101	305	N/A	N/A	N/A	N/A	N/A
✓ 10*29860	5-9-6	W	P & D REALTY	TH EXPLORATION LLC	1/8+	1101	305	N/A	N/A	N/A	N/A	N/A
✓ 10*29860	5-9-5	X	P & D REALTY	TH EXPLORATION LLC	1/8+	1101	305	N/A	N/A	N/A	N/A	N/A

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10*22382	9-13-4	C	BETTY LOU KAMPE	AMERICAN PETROLEUM PARTNERS LLC	1/8+	919	399	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*22355	9-13-4	C	DEL T KELLEY AND DEBORAH A KELLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916	84	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*19250	9-13-4	C	LOUIS AULENBACHER	CHEVRON USA INC	1/8+	902	444	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*22362	9-13-4	C	TOD M KELLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916	81	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*28415	9-10-2.2	H	WALTER J FECAT AND BRENDA S FECAT	TH EXPLORATION LLC	1/8+	1071	547	N/A	N/A	N/A	N/A	N/A
10*29359	9-10-1.2	K	JOSHUA A HOYT AND SHANNON N HOYT	TH EXPLORATION LLC	1/8+	1096	535	N/A	N/A	N/A	N/A	N/A
10*31379	9-10-1.2	K	JOSHUA A HOYT ET UX	TRIENERGY HOLDINGS LLC	1/8+	720	403	TriEnergy Holdings LLC to NPAR LLC: 25/463	NPAR LLC to Chevron USA Inc: 26/269 & 756/307	Chevron USA Inc to Stone Energy Corporation: 33/325 & 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*19894	9-10-22	L	CAROL L VANSYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*19894	9-10-1.1	O	CAROL L VANSYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*29245	5-10-7	Q	AMFLO ENTERPRISES LLC CO BARRY STIFFLER	TH EXPLORATION LLC	1/8+	1086	508	N/A	N/A	N/A	N/A	N/A
10*31356	5-10-7	Q	AMY M TOLER	CHEVRON USA INC	1/8+	772	407	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*28950	5-10-7	Q	ANTHONY C BENEDETTA AND MARY A BENEDETTA	TH EXPLORATION LLC	1/8+	1078	188	N/A	N/A	N/A	N/A	N/A
10*31360	5-10-7	Q	AVA SMITH	CHEVRON USA INC	1/8+	801	572	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*18943	5-10-7	Q	BRANDY SUE MOORE AND DELMAS L MOORE	TH EXPLORATION LLC	1/8+	940	124	N/A	N/A	N/A	N/A	N/A
10*28993	5-10-7	Q	CALVIN MCGUIRE	TH EXPLORATION LLC	1/8+	1080	541	N/A	N/A	N/A	N/A	N/A
10*29721	5-10-7	Q	CHARLES MICHAEL & TRACEY L BAKER	TH EXPLORATION LLC	1/8+	1100	250	N/A	N/A	N/A	N/A	N/A
10*26514	5-10-7	Q	CLIFFORD C HARTLEY AND BARBARA T HARTLEY*	TH EXPLORATION LLC	1/8+	1034	229	N/A	N/A	N/A	N/A	N/A
10*29664	5-10-7	Q	DALE BRUCE MOORE	TH EXPLORATION LLC	1/8+	1100	89	N/A	N/A	N/A	N/A	N/A
10*29808	5-10-7	Q	DANIEL J NABUDA*	TH EXPLORATION LLC	1/8+	1101	291	N/A	N/A	N/A	N/A	N/A
10*30034	5-10-7	Q	DANNY MOORE ET UX	TH EXPLORATION LLC	1/8+	1103	582	N/A	N/A	N/A	N/A	N/A
10*19607	5-10-7	Q	DAVA HARTLEY SMITH	TH EXPLORATION LLC	1/8+	944	186	N/A	N/A	N/A	N/A	N/A
10*30076	5-10-7	Q	DAVID A JOHNSON AND KELLI A JOHNSON	TH EXPLORATION LLC	1/8+	1104	194	N/A	N/A	N/A	N/A	N/A
10*28926	5-10-7	Q	DAVID M AND SHERRY L TOLER	TH EXPLORATION LLC	1/8+	1078	13	N/A	N/A	N/A	N/A	N/A
10*29856	5-10-7	Q	DEAN A BENEDETTA*	TH EXPLORATION LLC	1/8+	1102	298	N/A	N/A	N/A	N/A	N/A
10*29043	5-10-7	Q	DONALD LESTER GOUDY JR AND BILLIE GOUDY	TH EXPLORATION LLC	1/8+	1083	121	N/A	N/A	N/A	N/A	N/A
10*28995	5-10-7	Q	ELLEN SCHMIDT	TH EXPLORATION LLC	1/8+	1080	545	N/A	N/A	N/A	N/A	N/A
10*23487	5-10-7	Q	ELMER RICHARDSON ET AL CAROLYN FLANNERY AS SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8+	1009	255	N/A	N/A	N/A	N/A	N/A
10*29267	5-10-7	Q	ELNORA M BARANICH	TH EXPLORATION LLC	1/8+	1090	141	N/A	N/A	N/A	N/A	N/A
10*18726	5-10-7	Q	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941	441	N/A	N/A	N/A	N/A	N/A
10*29044	5-10-7	Q	GARREN RAY GOUDY AND HOLLEE J GOUDY	TH EXPLORATION LLC	1/8+	1083	377	N/A	N/A	N/A	N/A	N/A
10*29925	5-10-7	Q	H3 LLC	TH EXPLORATION LLC	1/8+	1103	569	N/A	N/A	N/A	N/A	N/A
10*28988	5-10-7	Q	HAROLD L GOUDY AND DONNA D GOUDY	TH EXPLORATION LLC	1/8+	1080	536	N/A	N/A	N/A	N/A	N/A
10*28969	5-10-7	Q	HARRY MCCrackEN AND BETH ANN MCCrackEN	TH EXPLORATION LLC	1/8+	1078	436	N/A	N/A	N/A	N/A	N/A
10*29813	5-10-7	Q	HELEN E ROBINSON	TH EXPLORATION LLC	1/8+	1101	23	N/A	N/A	N/A	N/A	N/A
10*29644	5-10-7	Q	JAMES & DEBRA LEE MATHIS	TH EXPLORATION LLC	1/8+	1100	86	N/A	N/A	N/A	N/A	N/A
10*31361	5-10-7	Q	JAMES W HARTLEY	CHEVRON USA INC	1/8+	801	563	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29669	5-10-7	Q	JEFFREY & MELISSA M MOORE	TH EXPLORATION LLC	1/8+	1100	91	N/A	N/A	N/A	N/A	N/A

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10*28994	5-10-7	Q	JENNIFER T PUMPA AND RICHARD PUMPA	TH EXPLORATION LLC	1/8+	1080	543	N/A	N/A	N/A	N/A	N/A
10*29073	5-10-7	Q	JOEL B MATHIS II AND DEBORAH MATHIS	TH EXPLORATION LLC	1/8+	1083	563	N/A	N/A	N/A	N/A	N/A
10*29978	5-10-7	Q	KEITH DAWSON	TH EXPLORATION LLC	1/8+	1103	164	N/A	N/A	N/A	N/A	N/A
10*29512	5-10-7	Q	KERRY R MOORE AND BARBARA MOORE	TH EXPLORATION LLC	1/8+	1096	305	N/A	N/A	N/A	N/A	N/A
10*29802	5-10-7	Q	KIRCHGESSNER CONSULTING GROUP LLC*	TH EXPLORATION LLC	1/8+	1101	297	N/A	N/A	N/A	N/A	N/A
10*23491	5-10-7	Q	LAWRENCE EDWARD MOORE OR UNKNOWN HEIRS, ET AL	TH EXPLORATION LLC	1/8+	1014	498	N/A	N/A	N/A	N/A	N/A
10*31357	5-10-7	Q	LORI E KESTNER	STONE ENERGY CORPORATION	1/8+	886	251	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29796	5-10-7	Q	LOUIS M BENEDETTA	TH EXPLORATION LLC	1/8+	1101	27	N/A	N/A	N/A	N/A	N/A
10*28563	5-10-7	Q	MARGARET TOLER	TH EXPLORATION LLC	1/8+	1074	630	N/A	N/A	N/A	N/A	N/A
10*30040	5-10-7	Q	MARY RENEE WHITE	TH EXPLORATION LLC	1/8+	1103	600	N/A	N/A	N/A	N/A	N/A
10*28855	5-10-7	Q	PAMELA J WHORTON AND ROBERT D WHORTON	TH EXPLORATION LLC	1/8+	1077	264	N/A	N/A	N/A	N/A	N/A
10*29206	5-10-7	Q	PAMELA R BENEDETTA	TH EXPLORATION LLC	1/8+	1085	598	N/A	N/A	N/A	N/A	N/A
10*19666	5-10-7	Q	RALPH TERRY AND MONICA TERRY	TH EXPLORATION LLC	1/8+	944	182	N/A	N/A	N/A	N/A	N/A
10*22324	5-10-7	Q	RHONDA RISDEN	TH EXPLORATION LLC	1/8+	965	600	N/A	N/A	N/A	N/A	N/A
10*30075	5-10-7	Q	RHONDA SUE DEPAUL	TH EXPLORATION LLC	1/8+	1103	606	N/A	N/A	N/A	N/A	N/A
10*29810	5-10-7	Q	RICHARD D & JULIA M REPASKY*	TH EXPLORATION LLC	1/8+	1101	285	N/A	N/A	N/A	N/A	N/A
10*30042	5-10-7	Q	RICHARD NEWMAN WHITE	TH EXPLORATION LLC	1/8+	1103	594	N/A	N/A	N/A	N/A	N/A
10*28617	5-10-7	Q	RICKY E DAVIS AIF ALISA M DAVIS	TH EXPLORATION LLC	1/8+	1075	35	N/A	N/A	N/A	N/A	N/A
10*30046	5-10-7	Q	ROBERT LEE WHITE JR ET UX	TH EXPLORATION LLC	1/8+	1103	612	N/A	N/A	N/A	N/A	N/A
10*28812	5-10-7	Q	ROBERT N BAKER AND THERESA L BAKER	TH EXPLORATION LLC	1/8+	1077	33	N/A	N/A	N/A	N/A	N/A
10*30037	5-10-7	Q	RUSSELL ALBERT WHITE	TH EXPLORATION LLC	1/8+	1103	588	N/A	N/A	N/A	N/A	N/A
10*28989	5-10-7	Q	SANDRA K LYTTON AND CHARLES E LYTTON	TH EXPLORATION LLC	1/8+	1080	538	N/A	N/A	N/A	N/A	N/A
10*28996	5-10-7	Q	SHAWN MARIE SEWGARD AND JERRY SWEGARD	TH EXPLORATION LLC	1/8+	1083	124	N/A	N/A	N/A	N/A	N/A
10*28616	5-10-7	Q	SILVIA J NEEHOUSE	TH EXPLORATION LLC	1/8+	1075	37	N/A	N/A	N/A	N/A	N/A
10*29833	5-10-7	Q	SKYPOINT RESOURCES LLC	TH EXPLORATION LLC	1/8+	1103	556	N/A	N/A	N/A	N/A	N/A
10*27959	5-10-7	Q	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	N/A	N/A	N/A	N/A	N/A
10*18837	5-10-7	Q	THE RODGERS FAMILY TRUST	TH EXPLORATION LLC	1/8+	935	122	N/A	N/A	N/A	N/A	N/A
10*22542	5-10-7	Q	VINCE E OSER AND KAY J OSER	TH EXPLORATION LLC	1/8+	966	198	N/A	N/A	N/A	N/A	N/A
10*29394	5-10-7	Q	WILLIAM ELLIOTT AND MARY MARCIA ELLIOTT	TH EXPLORATION LLC	1/8+	1096	303	N/A	N/A	N/A	N/A	N/A
10*28127	5-10-7	Q	WILMA JEAN OSER	TH EXPLORATION LLC	1/8+	1057	330	N/A	N/A	N/A	N/A	N/A
10*29245	5-10-5	R	AMFLO ENTERPRISES LLC CO BARRY STIFFLER	TH EXPLORATION LLC	1/8+	1086	508	N/A	N/A	N/A	N/A	N/A
10*31356	5-10-5	R	AMY M TOLER	CHEVRON USA INC.	1/8+	772	407	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*25700	5-10-5	R	ANGEL M ROLLINS	TH EXPLORATION LLC	1/8+	1033	302	N/A	N/A	N/A	N/A	N/A
10*28950	5-10-5	R	ANTHONY C BENEDETTA AND MARY A BENEDETTA	TH EXPLORATION LLC	1/8+	1078	188	N/A	N/A	N/A	N/A	N/A
10*31360	5-10-5	R	AVA SMITH	CHEVRON USA INC.	1/8+	801	572	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*19253	5-10-5	R	BARBARA A FARMER	AB RESOURCES LLC	1/8+	757	391	N/A	N/A	N/A	AB Resources LLC to Chevron USA Inc: 29/277	Chevron USA Inc to TH Exploration LLC: 40/127
10*26819	5-10-5	R	BARBARA JO JOHNSON AND STEVEN R JOHNSON*	TH EXPLORATION LLC	1/8+	1038	199	N/A	N/A	N/A	N/A	N/A
10*19470	5-10-5	R	BARBARA M CHESNUT AND WAYNE H CHESNUT	TH EXPLORATION LLC	1/8+	942	581	N/A	N/A	N/A	N/A	N/A
10*18394	5-10-5	R	BEATRICA P MADDEN & JOHN R MADDEN SR	TH EXPLORATION LLC	1/8+	932	447	N/A	N/A	N/A	N/A	N/A
10*19209	5-10-5	R	BILL DAWSON	CHEVRON USA INC.	1/8+	783	181	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*18393	5-10-5	R	BRANDON S FORRESTER AND CASSIDY M FORRESTER	TH EXPLORATION LLC	1/8+	932	450	N/A	N/A	N/A	N/A	N/A
10*18943	5-10-5	R	BRANDY SUE MOORE AND DELMAS L MOORE	TH EXPLORATION LLC	1/8+	940	124	N/A	N/A	N/A	N/A	N/A
10*19027	5-10-5	R	BRENDA G KITCHENS	CHEVRON USA INC.	1/8+	804	383	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127

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10*19889	5-10-5	R	BRITTANY N LEMASTERS	TH EXPLORATION LLC	1/8+	945	488	N/A	N/A	N/A	N/A	N/A
10*28993	5-10-5	R	CALVIN MCGUIRE	TH EXPLORATION LLC	1/8+	1080	541	N/A	N/A	N/A	N/A	N/A
10*19471	5-10-5	R	CANDY JO BAKER	TH EXPLORATION LLC	1/8+	942	585	N/A	N/A	N/A	N/A	N/A
10*18391	5-10-5	R	CAROL A JONES	TH EXPLORATION LLC	1/8+	932	456	N/A	N/A	N/A	N/A	N/A
10*29929	5-10-5	R	CAROL L DUNCIL EARLEWINE*	TH EXPLORATION LLC	1/8+	1102	304	N/A	N/A	N/A	N/A	N/A
10*18944	5-10-5	R	CAROLE A GILBERT	TH EXPLORATION LLC	1/8+	940	121	N/A	N/A	N/A	N/A	N/A
10*26599	5-10-5	R	CATHY D SOVINSKY*	TH EXPLORATION LLC	1/8+	1034	564	N/A	N/A	N/A	N/A	N/A
10*29721	5-10-5	R	CHARLES MICHAEL & TRACEY L BAKER	TH EXPLORATION LLC	1/8+	1100	250	N/A	N/A	N/A	N/A	N/A
19214	5-10-5	R	CHARLES T LASHARE AND MELISSA S LASHARE	CHEVRON USA INC	1/8+	786	201	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*26514	5-10-5	R	CLIFFORD C HARTLEY AND BARBARA T HARTLEY*	TH EXPLORATION LLC	1/8+	1034	229	N/A	N/A	N/A	N/A	N/A
10*29664	5-10-5	R	DALE BRUCE MOORE	TH EXPLORATION LLC	1/8+	1100	89	N/A	N/A	N/A	N/A	N/A
10*29808	5-10-5	R	DANIEL J NABUDA*	TH EXPLORATION LLC	1/8+	1101	291	N/A	N/A	N/A	N/A	N/A
10*30034	5-10-5	R	DANNY MOORE ET UX	TH EXPLORATION LLC	1/8+	1103	582	N/A	N/A	N/A	N/A	N/A
10*19607	5-10-5	R	DAVA HARTLEY SMITH	TH EXPLORATION LLC	1/8+	944	186	N/A	N/A	N/A	N/A	N/A
10*30076	5-10-5	R	DAVID A JOHNSON AND KELLI A JOHNSON	TH EXPLORATION LLC	1/8+	1104	194	N/A	N/A	N/A	N/A	N/A
10*28525	5-10-5	R	DAVID C. WHITE, AS SPECIAL COMMISSIONER FOR ELISE LASHARE	TH EXPLORATION LLC	1/8+	1073	375	N/A	N/A	N/A	N/A	N/A
10*28524	5-10-5	R	DAVID C. WHITE, AS SPECIAL COMMISSIONER FOR GAGE LASHARE	TH EXPLORATION LLC	1/8+	1073	377	N/A	N/A	N/A	N/A	N/A
10*28926	5-10-5	R	DAVID M AND SHERRY L TOLER	TH EXPLORATION LLC	1/8+	1078	13	N/A	N/A	N/A	N/A	N/A
10*29856	5-10-5	R	DEAN A BENEDETTA*	TH EXPLORATION LLC	1/8+	1102	298	N/A	N/A	N/A	N/A	N/A
10*18390	5-10-5	R	DOLLY M BOYER AND HUBERT R BOYER	TH EXPLORATION LLC	1/8+	932	462	N/A	N/A	N/A	N/A	N/A
10*19469	5-10-5	R	DONALD E GILBERT	TH EXPLORATION LLC	1/8+	942	600	N/A	N/A	N/A	N/A	N/A
10*29043	5-10-5	R	DONALD LESTER GOUDY JR AND BILLIE GOUDY	TH EXPLORATION LLC	1/8+	1083	121	N/A	N/A	N/A	N/A	N/A
10*29927	5-10-5	R	DONALD R REYNOLDS	TH EXPLORATION LLC	1/8+	1103	563	N/A	N/A	N/A	N/A	N/A
10*18388	5-10-5	R	ELIZABETH R MERCER AKA ROSE LEMASTERS MERCER	TH EXPLORATION LLC	1/8+	932	465	N/A	N/A	N/A	N/A	N/A
10*28995	5-10-5	R	ELLEN SCHMIDT	TH EXPLORATION LLC	1/8+	1080	545	N/A	N/A	N/A	N/A	N/A
10*23487	5-10-5	R	ELMER RICHARDSON OR UNKNOWN HEIRS ET AL	TH EXPLORATION LLC	1/8+	1009	255	N/A	N/A	N/A	N/A	N/A
10*29267	5-10-5	R	ELNORA M BARANICH	TH EXPLORATION LLC	1/8+	1090	141	N/A	N/A	N/A	N/A	N/A
10*18726	5-10-5	R	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941	441	N/A	N/A	N/A	N/A	N/A
10*19888	5-10-5	R	EMMA JEAN LASHARE WILSON	TH EXPLORATION LLC	1/8+	945	622	N/A	N/A	N/A	N/A	N/A
10*18581	5-10-5	R	EMMA KATHERINE GILBERT	TH EXPLORATION LLC	1/8+	935	1	N/A	N/A	N/A	N/A	N/A
10*29044	5-10-5	R	GARREN RAY GOUDY AND HOLLEE J GOUDY	TH EXPLORATION LLC	1/8+	1083	377	N/A	N/A	N/A	N/A	N/A
19212	5-10-5	R	GREG ALLEN LASHARE KATHLEEN JANE LASHER	CHEVRON USA INC	1/8+	784	6	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*29925	5-10-5	R	H3 LLC	TH EXPLORATION LLC	1/8+	1103	569	N/A	N/A	N/A	N/A	N/A
10*29926	5-10-5	R	H3 LLC	TH EXPLORATION LLC	1/8+	1103	561	N/A	N/A	N/A	N/A	N/A
10*28988	5-10-5	R	HAROLD L GOUDY AND DONNA D GOUDY	TH EXPLORATION LLC	1/8+	1080	536	N/A	N/A	N/A	N/A	N/A
10*28969	5-10-5	R	HARRY MCCrackEN AND BETH ANN MCCrackEN	TH EXPLORATION LLC	1/8+	1078	436	N/A	N/A	N/A	N/A	N/A
10*29813	5-10-5	R	HELEN E ROBINSON	TH EXPLORATION LLC	1/8+	1101	23	N/A	N/A	N/A	N/A	N/A
10*29806	5-10-5	R	HELEN VIRGINIA MCKOWN*	TH EXPLORATION LLC	1/8+	1101	255	N/A	N/A	N/A	N/A	N/A
10*18389	5-10-5	R	HERSHEL DUTTON AND KATHY DOLIN DUTTON	TH EXPLORATION LLC	1/8+	932	459	N/A	N/A	N/A	N/A	N/A
10*29644	5-10-5	R	JAMES & DEBRA LEE MATHIS	TH EXPLORATION LLC	1/8+	1100	86	N/A	N/A	N/A	N/A	N/A
10*26594	5-10-5	R	JAMES L LITMAN AND CAROLE J LITMAN*	TH EXPLORATION LLC	1/8+	1034	573	N/A	N/A	N/A	N/A	N/A
10*31361	5-10-5	R	JAMES W HARTLEY	CHEVRON USA INC	1/8+	801	563	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29669	5-10-5	R	JEFFREY & MELISSA M MOORE	TH EXPLORATION LLC	1/8+	1100	91	N/A	N/A	N/A	N/A	N/A
10*28994	5-10-5	R	JENNIFER T PUMPA AND RICHARD PUMPA	TH EXPLORATION LLC	1/8+	1080	543	N/A	N/A	N/A	N/A	N/A
10*29073	5-10-5	R	JOEL B MATHIS II AND DEBORAH MATHIS	TH EXPLORATION LLC	1/8+	1083	563	N/A	N/A	N/A	N/A	N/A
10*28532	5-10-5	R	JONI HEBERT	TH EXPLORATION LLC	1/8+	1073	379	N/A	N/A	N/A	N/A	N/A
10*26566	5-10-5	R	KATIE LASHARE	TH EXPLORATION LLC	1/8+	1038	458	N/A	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment
10*29978	5-10-5	R	KEITH DAWSON	TH EXPLORATION LLC	1/8+	1103	164	N/A	N/A	N/A	N/A	N/A
10*18395	5-10-5	R	KELLY JO DOLIN	TH EXPLORATION LLC	1/8+	932	612	N/A	N/A	N/A	N/A	N/A
10*29512	5-10-5	R	KERRY R MOORE AND BARBARA MOORE	TH EXPLORATION LLC	1/8+	1096	305	N/A	N/A	N/A	N/A	N/A
10*29802	5-10-5	R	KIRCHGESSNER CONSULTING GROUP LLC*	TH EXPLORATION LLC	1/8+	1101	297	N/A	N/A	N/A	N/A	N/A
10*19501	5-10-5	R	LARRY RAY GILBERT	TH EXPLORATION LLC	1/8+	942	596	N/A	N/A	N/A	N/A	N/A
10*23491	5-10-5	R	LAWRENCE EDWARD MOORE OR UNKNOWN HEIRS, ET AL	TH EXPLORATION LLC	1/8+	1014	498	N/A	N/A	N/A	N/A	N/A
10*27528	5-10-5	R	LAWRENCE ROBERT EARLEWINE	TH EXPLORATION LLC	1/8+	1060	191	N/A	N/A	N/A	N/A	N/A
10*29804	5-10-5	R	LILLIAN H & JOHN KURPIL*	TH EXPLORATION LLC	1/8+	1101	261	N/A	N/A	N/A	N/A	N/A
10*31357	5-10-5	R	LORI E KESTNER	STONE ENERGY CORPORATION	1/8+	886	251	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*27599	5-10-5	R	LORI KAY JARVIS	TH EXPLORATION LLC	1/8+	1060	587	N/A	N/A	N/A	N/A	N/A
10*29796	5-10-5	R	LOUIS M BENEDETTA	TH EXPLORATION LLC	1/8+	1101	27	N/A	N/A	N/A	N/A	N/A
10*18582	5-10-5	R	MARGARET GILBERT	TH EXPLORATION LLC	1/8+	934	648	N/A	N/A	N/A	N/A	N/A
10*28563	5-10-5	R	MARGARET TOLER	TH EXPLORATION LLC	1/8+	1074	630	N/A	N/A	N/A	N/A	N/A
10*22491	5-10-5	R	MARK A THOMAS AND MICHELLE D J THOMAS	TH EXPLORATION LLC	1/8+	964	487	N/A	N/A	N/A	N/A	N/A
10*19029	5-10-5	R	MARK ANTHONY LASHARE	CHEVRON USA INC	1/8+	804	641	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*21921	5-10-5	R	MARLENE HRIVNAK	TH EXPLORATION LLC	1/8+	960	9	N/A	N/A	N/A	N/A	N/A
10*19026	5-10-5	R	MARSHA LASHARE BOVEE	CHEVRON USA INC	1/8+	805	21	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*18473	5-10-5	R	MARY ALICE THOMAS MELLOTT	TH EXPLORATION LLC	1/8+	933	133	N/A	N/A	N/A	N/A	N/A
10*30040	5-10-5	R	MARY RENEE WHITE	TH EXPLORATION LLC	1/8+	1103	600	N/A	N/A	N/A	N/A	N/A
10*23347	5-10-5	R	MICHAEL BAUM	TH EXPLORATION LLC	1/8+	985	8	N/A	N/A	N/A	N/A	N/A
10*21915	5-10-5	R	MICHAEL WAYNE THOMAS AND DARLA R THOMAS	TH EXPLORATION LLC	1/8+	960	7	N/A	N/A	N/A	N/A	N/A
10*19977	5-10-5	R	MILDRED ALICE GILBERT SAPP AND EDGAR SAPP	TH EXPLORATION LLC	1/8+	947	571	N/A	N/A	N/A	N/A	N/A
10*19468	5-10-5	R	NANCY C LONG AND RONALD LONG	TH EXPLORATION LLC	1/8+	942	577	N/A	N/A	N/A	N/A	N/A
10*22781	5-10-5	R	PAMELA J THOMAS KNIRSCH	TH EXPLORATION LLC	1/8+	972	19	N/A	N/A	N/A	N/A	N/A
10*28855	5-10-5	R	PAMELA J WHORTON AND ROBERT D WHORTON	TH EXPLORATION LLC	1/8+	1077	264	N/A	N/A	N/A	N/A	N/A
10*29206	5-10-5	R	PAMELA R BENEDETTA	TH EXPLORATION LLC	1/8+	1085	598	N/A	N/A	N/A	N/A	N/A
10*18350	5-10-5	R	PEGGY SUE HILL DOLIN FORDYCE	TH EXPLORATION LLC	1/8+	931	401	N/A	N/A	N/A	N/A	N/A
10*19666	5-10-5	R	RALPH TERRY AND MONICA TERRY	TH EXPLORATION LLC	1/8+	944	182	N/A	N/A	N/A	N/A	N/A
10*22324	5-10-5	R	RHONDA RISDEN	TH EXPLORATION LLC	1/8+	965	600	N/A	N/A	N/A	N/A	N/A
10*30075	5-10-5	R	RHONDA SUE DEPAUL	TH EXPLORATION LLC	1/8+	1103	606	N/A	N/A	N/A	N/A	N/A
10*18385	5-10-5	R	RICHARD A DOLIN AND MARGARET ANN DOLIN	TH EXPLORATION LLC	1/8+	932	496	N/A	N/A	N/A	N/A	N/A
10*29810	5-10-5	R	RICHARD D & JULIA M REPASKY*	TH EXPLORATION LLC	1/8+	1101	285	N/A	N/A	N/A	N/A	N/A
10*30042	5-10-5	R	RICHARD NEWMAN WHITE	TH EXPLORATION LLC	1/8+	1103	594	N/A	N/A	N/A	N/A	N/A
10*28617	5-10-5	R	RICKY E DAVIS AIF ALISA M DAVIS	TH EXPLORATION LLC	1/8+	1075	35	N/A	N/A	N/A	N/A	N/A
10*18838	5-10-5	R	ROBERT A BAKER	TH EXPLORATION LLC	1/8+	937	403	N/A	N/A	N/A	N/A	N/A
10*19838	5-10-5	R	ROBERT ALLAN PATERSON AND LEZLIE PATERSON	TH EXPLORATION LLC	1/8+	945	625	N/A	N/A	N/A	N/A	N/A
10*29723	5-10-5	R	ROBERT E EARLEWINE JR	TH EXPLORATION LLC	1/8+	1100	95	N/A	N/A	N/A	N/A	N/A
10*30046	5-10-5	R	ROBERT LEE WHITE JR ET UX	TH EXPLORATION LLC	1/8+	1103	612	N/A	N/A	N/A	N/A	N/A
10*28812	5-10-5	R	ROBERT N BAKER AND THERESA L BAKER	TH EXPLORATION LLC	1/8+	1077	33	N/A	N/A	N/A	N/A	N/A
10*22719	5-10-5	R	ROMAN CATHOLIC DIOCESE OF WHEELING BY MICHAEL J BRANSFIELD BISHOP	TH EXPLORATION LLC	1/8+	968	292	N/A	N/A	N/A	N/A	N/A
10*26818	5-10-5	R	RONALD G BAKER*	TH EXPLORATION LLC	1/8+	1038	196	N/A	N/A	N/A	N/A	N/A
10*19166	5-10-5	R	ROSE MARIE BOWMAN	CHEVRON USA INC	1/8+	775	36	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 40/127
10*30037	5-10-5	R	RUSSELL ALBERT WHITE	TH EXPLORATION LLC	1/8+	1103	588	N/A	N/A	N/A	N/A	N/A
10*18392	5-10-5	R	RUSSELL C LEMASTERS	TH EXPLORATION LLC	1/8+	932	453	N/A	N/A	N/A	N/A	N/A
10*28989	5-10-5	R	SANDRA K LYTTON AND CHARLES E LYTTON	TH EXPLORATION LLC	1/8+	1080	538	N/A	N/A	N/A	N/A	N/A
10*28996	5-10-5	R	SHAWN MARIE SEWGARD AND JERRY SWEGARD	TH EXPLORATION LLC	1/8+	1083	124	N/A	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment
10*29798	5-10-5	R	SHIRLEY C EARLEWINE*	TH EXPLORATION LLC	1/8+	1101	273	N/A	N/A	N/A	N/A	N/A
10*28616	5-10-5	R	SILVIA J NEEHOUSE	TH EXPLORATION LLC	1/8+	1075	37	N/A	N/A	N/A	N/A	N/A
10*29833	5-10-5	R	SKYPOINT RESOURCES LLC	TH EXPLORATION LLC	1/8+	1103	556	N/A	N/A	N/A	N/A	N/A
10*27959	5-10-5	R	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	N/A	N/A	N/A	N/A	N/A
10*21186	5-10-5	R	SYLVIA A GILBERT KRAFFT	TH EXPLORATION LLC	1/8+	952	152	N/A	N/A	N/A	N/A	N/A
10*29800	5-10-5	R	TAMMY L & DOUGLAS E GOULDSBERRY*	TH EXPLORATION LLC	1/8+	1101	267	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*29812	5-10-5	R	TERESA & THOMAS ZIANTS*	TH EXPLORATION LLC	1/8+	1101	279	N/A	N/A	N/A	N/A	N/A
10*18723	5-10-5	R	TERRI K SONDERGARD	TH EXPLORATION LLC	1/8+	938	525	N/A	N/A	N/A	N/A	N/A
10*21184	5-10-5	R	TERRY LEE SOVINSKY AND DAWN S SOVINSKY	TH EXPLORATION LLC	1/8+	952	155	N/A	N/A	N/A	N/A	N/A
10*18837	5-10-5	R	THE RODGERS FAMILY TRUST	TH EXPLORATION LLC	1/8+	935	122	N/A	N/A	N/A	N/A	N/A
10*19052	5-10-5	R	TIMOTHY JOHNSON	CHEVRON USA INC	1/8+	818	18	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*26937	5-10-5	R	TIMOTHY LASHARE*	TH EXPLORATION LLC	1/8+	1046	446	N/A	N/A	N/A	N/A	N/A
10*18728	5-10-5	R	TRACY J GILBERT	TH EXPLORATION LLC	1/8+	938	458	N/A	N/A	N/A	N/A	N/A
10*26603	5-10-5	R	TRAVIS H GREER AND BETTY J GREER*	TH EXPLORATION LLC	1/8+	1034	558	N/A	N/A	N/A	N/A	N/A
10*22542	5-10-5	R	VINCE E OSER AND KAY J OSER	TH EXPLORATION LLC	1/8+	966	198	N/A	N/A	N/A	N/A	N/A
10*22815	5-10-5	R	VIRGINIA R THOMAS	TH EXPLORATION LLC	1/8+	972	21	N/A	N/A	N/A	N/A	N/A
10*29394	5-10-5	R	WILLIAM ELLIOTT AND MARY MARCIA ELLIOTT	TH EXPLORATION LLC	1/8+	1096	303	N/A	N/A	N/A	N/A	N/A
10*26941	5-10-5	R	WILLIAM RICHARD HEISER*	TH EXPLORATION LLC	1/8+	1039	490	N/A	N/A	N/A	N/A	N/A
10*28127	5-10-5	R	WILMA JEAN OSER	TH EXPLORATION LLC	1/8+	1057	330	N/A	N/A	N/A	N/A	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

March 26, 2021

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

9489 0090 0027 6201 3316 66

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Van Winkle N-17HU

Dear Sir or Ma'am:

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

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

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

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

05/07/2021



April 13, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6201 3316 66.**

#### Item Details

**Status:** Delivered, Front Desk/Reception/Mail Room  
**Status Date / Time:** April 5, 2021, 2:30 pm  
**Location:** FORT WORTH, TX 76107  
**Postal Product:** First-Class Mail®  
**Extra Services:** Certified Mail™  
Return Receipt Electronic

#### Shipment Details

**Weight:** 6lb, 5.3oz

#### Recipient Signature

Signature of Recipient:	
Address of Recipient:	JB RT# Covid-19 1320 S University 76107 500

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

05/07/2021



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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

March 26, 2021

HG Energy II Appalachia LLC  
5260 Dupont Rd  
Parkersburg WV 26101

9489 0090 0027 6201 3316 73

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Tug Hill Operating, LLC – Van Winkle N-17HU

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

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is fluid and cursive.  
Susan Rose  
Administrator

encl:

05/07/2021



April 13, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number: **9489 0090 0027 6201 3316 73**.

#### Item Details

<b>Status:</b>	Delivered, Left with Individual
<b>Status Date / Time:</b>	April 5, 2021, 1:29 pm
<b>Location:</b>	PARKERSBURG, WV 26101
<b>Postal Product:</b>	First-Class Mail®
<b>Extra Services:</b>	Certified Mail™ Return Receipt Electronic

#### Shipment Details

<b>Weight:</b>	4lb, 12.3oz
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#### Recipient Signature

Signature of Recipient:	HGEAR US RY CIT
Address of Recipient:	C240 Borne

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

05/07/2021

ASSIGNMENT AND BILL OF SALE

This ASSIGNMENT AND BILL OF SALE (this "*Assignment*") dated as of December 1, 2020 (the "*Execution Date*"), is made by and between EQT PRODUCTION COMPANY, a Pennsylvania corporation, with an address at 625 Liberty Avenue, Suite 1700, Pittsburgh, Pennsylvania 15222 ("*EQT*"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("*TH*") pursuant to the terms of that certain Acreage Trade Agreement by and among EQT, TH and TH Exploration II, LLC ("*TH II*"), dated July 8, 2020 (the "*Agreement*"). EQT and TH may be referred to herein together as the "*Parties*", and each individually as a "*Party*".

RECITALS

WHEREAS, EQT desires to transfer, convey and assign to TH certain of EQT's oil and gas leasehold interests located in Marshall County, West Virginia set forth on Exhibit A attached hereto and incorporated herein ("*EQT Leases*") in accordance with this Assignment and the Agreement; and

WHEREAS, TH desires to receive from EQT, all of EQT's right, title and interest in and to the EQT Leases in accordance with this Assignment and the Agreement.

NOW, THEREFORE, for and in consideration of the mutual promises contained herein and in the Agreement, the benefits to be derived by each Party hereunder and under the Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE I  
DEFINED TERMS

1.1 *Definitions.* Capitalized terms used herein and not otherwise defined throughout this Assignment shall have the meanings given such terms in the Agreement.

ARTICLE II  
ASSIGNMENT OF ASSETS

2.1 *Assignment.* Subject to the terms and conditions of this Assignment and the Agreement, EQT does hereby assign, convey and transfer to TH all of the right, title and interest of EQT in and to the following (collectively for purposes of this Assignment, the "*EQT Assets*"):

(a) Subject to the conveyance of the Wells Assets from EQT to TH II as described in the Agreement, the EQT Leases and appurtenances thereto (including rights of access and to install facilities), all Hydrocarbons within, produced from, derived from, or sold from the EQT Leases (and all proceeds related thereto), on and after the Valuation Date, and all Surface Contracts including but not limited to those set forth on Exhibit B attached hereto and incorporated herein (the "*EQT Surface Contracts*") related to the EQT Leases and such Hydrocarbons; and

(b) Copies of deeds, files and all other ownership information directly related to the acquisition, operations and maintenance of the EQT Leases, lease files for the EQT Leases

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Environmental Protection



MICHAEL MORAN  
BRIGHTON RESOURCES  
5851 ELLSWORTH AVENUE, #1  
PITTSBURGH PA 15232-1707

BOOK 0040 PAGE 0127

STATE OF WEST VIRGINIA §  
  §  
COUNTY OF MARSHALL §

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

ASSIGNMENT AND CONVEYANCE

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

WITNESSETH:

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

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

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

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

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

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

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05/07/2021



January 15, 2021

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Wade Stansberry

RE: Van Winkle N-17HU

Subject: Marshall County Route 21/1, 84 and 74 Road Crossing Letter

Dear Wade:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 21/1, 84 and 74 in the area reflected on the Van Winkle N-17HU well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

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

Sincerely,

Amy Morris  
Permit Specialist – Appalachia Region  
Cell 304-376-0111  
Email: [amiller@tug-hilop.com](mailto:amiller@tug-hilop.com)

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05/07/2021

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(1/12)

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

Date of Notice Certification: 01/15/2021

API No. 47-051

Operator's Well No. Van Winkle N-17HU

Well Pad Name: Hunter Paditel

**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>523,383.91</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,403,540.75</u>
District:	<u>Meade</u>	Public Road Access:	<u>County Route 74</u>
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>XGL Midstream Operating, LLC</u>
Watershed:	<u>Fish 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.

<p>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:</p> <p>PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><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</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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**Required Attachments:**

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

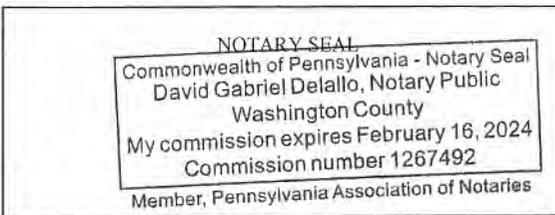
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**Certification of Notice is hereby given:**

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><i>Amy Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permitting Specialist - Appalachia Region</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hillop.com</u>



Subscribed and sworn before me this 15 day of JANUARY, 2021

*[Signature]* Notary Public

My Commission Expires 2/16/24

**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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4705102350  
API NO. 47-051  
OPERATOR WELL NO. Van Winkle N-17HU  
Well Pad Name: Hunter Pethtel

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: 1/26/2021 Date Permit Application Filed: 1/15/2021

Notice of:

- [X] 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 [X] 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.

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

- [X] SURFACE OWNER(s) Name: Xcl. Midstream Operating, LLC (Well Pad & Access Road) Address: 380 Southpointe Boulevard, Plaza II, Suite 215 Canonsburg, PA 15317 Name: Frank E. & Mary Virginia Pethtel, Life Estate (Well Pad) Address: 9845 Fish Creek Road Glen Easton, WV 26039 [X] SURFACE OWNER(s) (Road and/or Other Disturbance) Name: Regina M. & Aaron D. Murray, Remainderman Address: 5 Mound Manor St. Mary's, WV 26170 [ ] SURFACE OWNER(s) (Impoundments or Pits) Name: Address:

- [X] COAL OWNER OR LESSEE Name: CNX Land, LLC Address: 1000 Consol Energy Drive Canonsburg, PA 15317 [ ] COAL OPERATOR Name: Address: [X] SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s) Name: \*See attached Address: [ ] OPERATOR OF ANY NATURAL GAS STORAGE FIELD Name: Address:

\*Please attach additional forms if necessary

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05/07/2021

**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

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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.**

05/07/2021

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

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

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

### **Comment Requirements**

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

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

### **Permit Denial or Condition**

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

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

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

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

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Office of Oil and Gas

FEB 03 2021

WV Department of  
Environmental Protection

05/07/2021

WW-6A  
(8-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Van Winkle N-17HU  
Well Pad Name: Hunter Pethtel

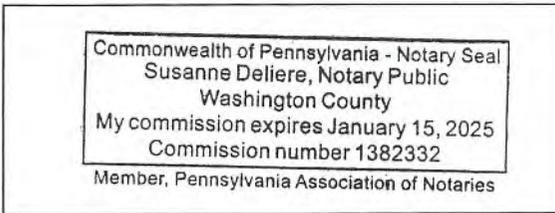
**Notice is hereby given by:**

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 [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 26<sup>th</sup> day of January 2021  
Susanne Deliere Notary Public  
My Commission Expires 1/15/2025

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Office of Oil and Gas

FEB 03 2021

WV Department of  
Environmental Protection

05/07/2021

Tug Hill Operating, LLC  
 380 Southpointe Blvd, Suite 200  
 Cannonsburg, PA 15137

**Residences within Two-Thousand Feet (2,000')**

Well: Van Winkle N – 17HU  
 District: Meade  
 State: WV

There are four (4) possible residences, one (1) possible commercial or business site, no churches, no schools and no emergency facilities within two-thousand feet (2,000') of the above referenced well location. Number 6 is a water well only and is not a residence.

<p><b>Residence (#1)</b>                  TM 13 Pcl. 6                  Mary Virginia Pethtel  <b>Phone:</b> 304-684-2646, 304-845-3423  <b>Physical Address:</b>                  None Found – Possible Mobile Home  <b>Tax Address:</b>                  9845 Fish Creek Rd                  Glen Easton, WV 26039</p>	<p><b>Residence (#2)</b>                  TM 13 Pcl. 7                  Mary Virginia Pethtel  <b>Phone:</b> 304-684-2646, 304-845-3423  <b>Physical Address:</b>                  9845 Fish Creek Rd                  Glen Easton, WV 26039  <b>Tax Address:</b>                  Same</p>	<p><b>Commercial/Business (#3)*</b>                  TM 13 Pcl. 5                  XcL Midstream Operating, LLC  <b>Phone:</b> 1-888-751-0434  <b>Physical Address:</b>                  9269 Fish Creek Rd.                  Glen Easton, WV 26039  <b>Tax Address:</b>                  1320 S University DR STE 500                  Fort Worth, TX 76107                  *Physical address appears to be related to Oil &amp; Gas Well Pad.</p>
<p><b>Residence (#4)</b>                  TM 13 Pcl. 5                  XcL Midstream Operating, LLC  <b>Phone:</b> 1-888-751-0434  <b>Physical Address:</b>                  None Found – Appears to be newer home  <b>Tax Address:</b>                  1320 S University DR STE 500                  Fort Worth, TX 76107</p>	<p><b>Residence (#5)</b>                  TM 13 Pcl. 5                  XcL Midstream Operating, LLC  <b>Phone:</b> 1-888-751-0434  <b>Physical Address:</b>                  9201 Fish Creek Rd.                  Glen Easton, WV 26039  <b>Tax Address:</b>                  1320 S University DR STE 500                  Fort Worth, TX 76107</p>	<p><b>(#6)</b>                  Water Well Only (No Residence)                  Joseph L. Blake &amp; Michael A. Walker                  1207 Roberts Ridge Rd.                  Moundsville, WV 26041</p>

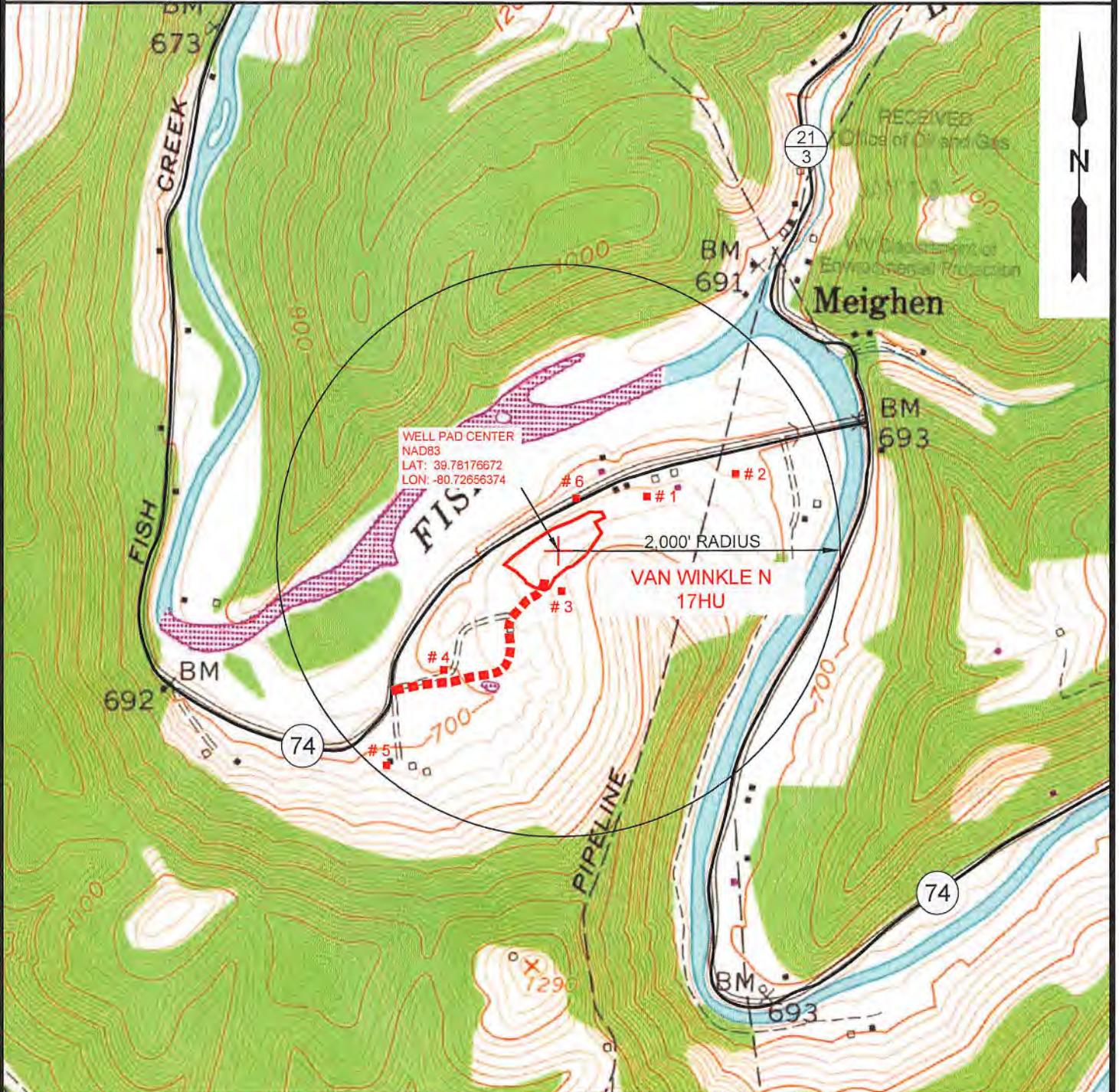
RECEIVED  
 Office of Oil and Gas

FEB 03 2021

WV Department of  
 Environmental Protection

05/07/2021

# PROPOSED VAN WINKLE N - 17HU



NOTE: THERE APPEARS TO BE SIX (6) POSSIBLE WATER SOURCES WITHIN 2,000'. NUMBER 6 IS A WATER WELL ONLY (NO RESIDENCE).

 <p>12 Vanhorn Drive   P.O. Box 150   Glenville, WV 26351   304.462.5634 1412 Kanawha Boulevard, East   Charleston, WV 25301   304.346.3952 254 East Beckley Bypass   Beckley, WV 25801   304.255.5296 sllswv.com</p>	<b>TOPO SECTION:</b> GLEN EASTON 7.5'		<b>OPERATOR:</b> PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		 <p><b>TUG HILL OPERATING</b></p> <p style="color: red; font-weight: bold;">05/07/2021</p>		
	<b>COUNTY</b> MARSHALL	<b>DISTRICT</b> MEADE	<b>DRAWN BY</b> K.G.M.	<b>JOB NO.</b> 8952		<b>DATE</b> 12/24/2020	<b>SCALE</b> 1" = 1000'



Affidavit of Personal Service

State Of Pennsylvania  
County Of Washington

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Office of Oil and Gas

JAN 19

The undersigned, being first duly sworn, says that the undersigned Department of Environmental Protection has a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A) \_\_\_ / WW-3(A) \_\_\_ / WW-4(A) \_\_\_ / WW-5(A) \_\_\_ / WW-6(A) UAS
- (2) Application on Form WW-2(B) \_\_\_ / WW-3(B) \_\_\_ / WW-4(B) \_\_\_ / WW-5(B) \_\_\_ / WW-6(B) X
- (3)  Plat showing the well location on Form WW-6, and
- (4)  Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. Van Winkle Wells (9ft) located in Meade District, Marshall County, West Virginia, upon the person or organization named--

Kcl Midstream Operating, LLC  
--by delivering the same in Washington County, State of Pennsylvania on the 14<sup>th</sup> day of January, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him \_\_\_ / her \_\_\_ / or, because he \_\_\_ / she \_\_\_ / refused to take it when offered it, by leaving it in his \_\_\_ / her \_\_\_ / presence.

Handing it to a member of his or her family above the age of 16 years named \_\_\_\_\_ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to \_\_\_\_\_, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named \_\_\_\_\_, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

Handing it to the corporation's employee \_\_\_ / officer  / director \_\_\_ / attorney in fact \_\_\_ / named Justin Trettel.

anyellowis  
(Signature of person executing service)

Taken, subscribed and sworn before me this 14 day of JANUARY 2021.  
My commission expires 2/16/24

[Signature]  
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

Commonwealth of Pennsylvania - Notary Seal  
David Gabriel Delallo, Notary Public  
Washington County  
My commission expires February 16, 2024  
Commission number 1267492  
Member, Pennsylvania Association of Notaries

**WW-70 Attachment**

**Well List**

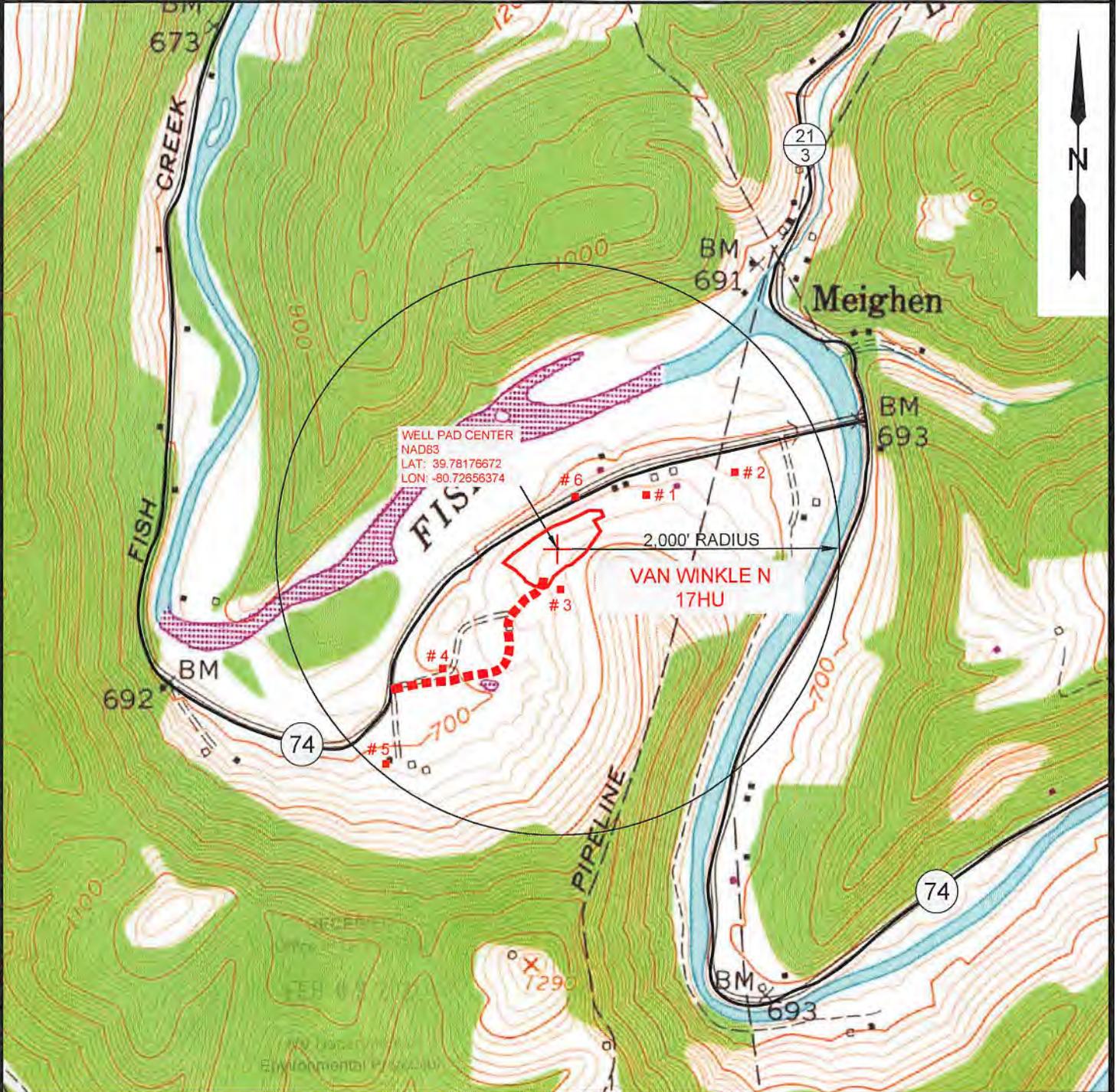
Van Winkle N-16HU  
Van Winkle N-17HU  
Van Winkle N-18HU  
Van Winkle N-19HU  
Van Winkle S-20HU  
Van Winkle S-21HU  
Van Winkle S-22HU  
Van Winkle S-23HU

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WV Department of  
Environmental Protection

# PROPOSED VAN WINKLE N - 17HU



NOTE: THERE APPEARS TO BE SIX (6) POSSIBLE WATER SOURCES WITHIN 2,000'. NUMBER 6 IS A WATER WELL ONLY (NO RESIDENCE).



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
 254 East Beckley Bypass | Beckley, WV 25901 | 304.255.5296  
 sfsww.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY		TUG HILL OPERATING, LLC	
DISTRICT		380 SOUTHPOINTE BLVD	
MARSHALL	MEADE	SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/24/2020	1" = 1000'



**TUG HILL**  
OPERATING

05/07/2021

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:** 12/11/2020      **Date of Planned Entry:** 12/18/2020

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Office of Oil and Gas

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

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

JAN 19

WV Department of Environmental Protection

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: XcL Midstream Operating, LLC (Well Pad & Access Road) ✓  
 Address: 380 Southpointe Boulevard, Plaza II, Suite 215  
Canonsburg, PA 15317

Name: Frank E. & Mary Virginia Pethtel, Life Estate (Well Pad) ✓  
 Address: 9845 Fish Creek Road  
Glen Easton, WV 26039

Name: Regina M. & Aaron D. Murray, Remainderman ✓  
 Address: 5 Mound Manor  
St. Marys, WV 26170

COAL OWNER OR LESSEE

Name: CNX Land, LLC  
 Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: Frank E. & Mary Virginia Pethtel, Life Estate ✓  
 Address: 9845 Fish Creek Road  
Glen Easton, WV 26039      \*\*See attached list

\*please attach additional forms if necessary

**Notice is hereby given:**

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.78176850; -80.72661368</u>
County: <u>Marshall</u>	Public Road Access: <u>County Route 74</u>
District: <u>Meade</u>	Watershed: <u>Middle Fish Creek</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>XcL Midstream Operating, LLC</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 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: <u>Tug Hill Operating, LLC</u>	Address: <u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
Telephone: <u>724-749-8388</u>	<u>Canonsburg, PA 15317</u>
Email: <u>amorris@lug-hillop.com</u>	Facsimile: <u>724-338-2020</u>

**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).

05/07/2021

**WW-6A3 Notice of Entry for Plat Survey  
Additional Parties to Notice  
Van Winkle Wells**

**Additional Mineral Owner:**  
Dennis W. Hunter  
3322 Rainbow Lane  
North Ft. Myers, FL 33903

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WV Department of  
Environmental Protection

05/07/2021

Affidavit of Personal Service

State Of Pennsylvania  
County Of Washington

The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A)    / WW-3(A)    / WW-4(A)    / WW-5(A)    / WW-6(A) 3 ✓
- (2) Application on Form WW-2(B)    / WW-3(B)    / WW-4(B)    / WW-5(B)    / WW-6(B)
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. Handbook Wells (see list) located in Meade District, Marshall County, West Virginia, upon the person or organization named--

XCL Midstream Operating, LLC  
--by delivering the same in Washington County, State of Pennsylvania on the 14th day of December, 2020 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him    / her    / or, because he    / she    / refused to take it when offered it, by leaving it in his    / her    / presence.

Handing it to a member of his or her family above the age of 16 years named    who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to   , a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

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For a limited partnership:

Handing it to the general partner, named   , or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

WV Department of  
Environmental Protection

For a corporation:

Handing it to the corporation's employee    / officer    / director    / attorney in fact    / named Justin Irettel.

Amy S. Morris  
(Signature of person executing service)

Taken, subscribed and sworn before me this 14 day of December, 2020.  
My commission expires 2/16/2024

David Delallo  
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

Commonwealth of Pennsylvania - Notary Seal  
David Gabriel Delallo, Notary Public  
Washington County  
My commission expires February 16, 2024  
Commission number 1267492  
Member, Pennsylvania Association of Notaries

**WW-70 Attachment**

**Well List**

Van Winkle N-16HU  
Van Winkle N-17HU  
Van Winkle N-18HU  
Van Winkle N-19HU  
Van Winkle S-20HU  
Van Winkle S-21HU  
Van Winkle S-22HU  
Van Winkle S-23HU

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WV Department of  
Environmental Protection

05/07/2021

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

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

**Date of Notice:** 01/14/2021      **Date Permit Application Filed:** 01/15/2021

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Environmental Protection

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

- CERTIFIED MAIL                                       HAND DELIVERY
- RETURN RECEIPT REQUESTED                                      DELIVERY

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

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

Name: XcL Midstream Operating, LLC  
Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317

Name: Frank E. & Mary Virginia Pethtel (Life Estate)  
Address: 9845 Fish Creek Road  
Glen Easton, WV 26039

**Notice is hereby given:**

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>523,383.91</u>
County:	<u>Marshall</u>		Northing:	<u>4,403,540.75</u>
District:	<u>Meade</u>	Public Road Access:	<u>County Route 74</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>XcL Midstream Operating, LLC</u>	
Watershed:	<u>Fish Creek (HUC 10)</u>			

**This Notice Shall Include:**

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

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

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**Additional Surface Owner – Van Winkle Wells  
WW-6A5**

Regina M. & Aaron D. Murray  
5 Mound Manor  
St. Marys, WV 26170



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WV Department of  
Environmental Protection

05/07/2021



Affidavit of Personal Service

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Office of Oil and Gas

State OF Pennsylvania  
County OF Washington

JAN 19

WV Department of  
Environmental Protection

The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A) \_\_\_ / WW-3(A) \_\_\_ / WW-4(A) \_\_\_ / WW-5(A) \_\_\_ / WW-6(A) UAS
- (2) Application on Form WW-2(B) \_\_\_ / WW-3(B) \_\_\_ / WW-4(B) \_\_\_ / WW-5(B) \_\_\_ / WW-6(B) X
- (3)  Plat showing the well location on Form WW-6, and
- (4)  Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. Van Winkle Wells (9ft) located in Meade District, Marshall County, West Virginia, upon the person or organization named--

Kel Midstream Operating, LLC  
--by delivering the same in Washington County, State of Pennsylvania on the 14<sup>th</sup> day of January, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him \_\_\_ / her \_\_\_ / or, because he \_\_\_ / she \_\_\_ / refused to take it when offered it, by leaving it in his \_\_\_ / her \_\_\_ / presence.

Handing it to a member of his or her family above the age of 16 years named \_\_\_\_\_ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to \_\_\_\_\_, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named \_\_\_\_\_, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

Handing it to the corporation's employee \_\_\_ / officer  / director \_\_\_ / attorney in fact \_\_\_ / named Justin Trettel.

anyklovic  
(Signature of person executing service)

Taken, subscribed and sworn before me this 14 day of JANUARY 2021.  
My commission expires 2/16/24

[Signature]  
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

Commonwealth of Pennsylvania - Notary Seal  
David Gabriel Delallo, Notary Public  
Washington County  
My commission expires February 16, 2024  
Commission number 1267492  
Member, Pennsylvania Association of Notaries

**WW-70 Attachment**

**Well List**

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Van Winkle S-21HU  
Van Winkle S-22HU  
Van Winkle S-23HU

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JAN 19 . . .

WV Department of  
Environmental Protection



## WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

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

Byrd E. White, III  
Secretary of Transportation/  
Commissioner of Highways

Jimmy Wriston, P. E.  
Deputy Secretary/  
Deputy Commissioner

January 14, 2021

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

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JAN 19

WV Department of  
Environmental Protection

Subject: DOH Permit for the Hunter-Pethtel Pad, Marshall County  
Van Winkle N-17HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2009-0275 which has been transferred to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 74 SLS.

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

Very Truly Yours,

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

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

05/07/2021



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WV Department of  
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**PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION**

**Van Winkle Wells**

<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





