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west virginia department of environmental protection

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

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

Friday, February 26, 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-4HM  
47-051-02348-00-00

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

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

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

A handwritten signature in blue ink, appearing to read 'James A. Martin'.

James A. Martin  
Chief

Operator's Well Number: VAN WINKLE N-4HM  
Farm Name: XCL MIDSTREAM OPERATI   
U.S. WELL NUMBER: 47-051-02348-00-00  
Horizontal 6A New Drill  
Date Issued: 2/26/2021

Promoting a healthy environment.

## 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).



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

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

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

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

DATE: February 24, 2021  
ORDER NO.: 2021-W-1

**INTRODUCTION**

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

**FINDINGS OF THE CHIEF**

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

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. Tug Hill is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 380 Southpointe Boulevard, Plaza II., Suite 200, Canonsburg, PA 15317.
3. On December 23, 2020, January 19, 22 and 25, 2021 Tug Hill submitted well work permit applications identified as API#s 47- 51-02347, 47-51-02348, 47-51-02349, 47-51-02350, 47-51-02351, 47-51-02352, 47-51-02353, 47-51-02354, 47-51-02355, 47-51-02356, 47-51-02357, 47-51-02358, 47-51-02359, 47-51-02360, 47-51-02361, 47-51-02362, 47-51-02363, 47-51-02364, 47-51-02365, 47-51-02366, 47-51-02367 and 47-51-02368. The wells are located on the Hunter Pethel Pad in the Meade District of Marshall County, West Virginia.
4. On February 18, 2021 Tug Hill requested a waiver for Wetlands 03, 04, 07 and 08 as outlined in Attachment I, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47- 51-02347, 47-51-02348, 47-51-02349, 47-51-02350, 47-51-02351, 47-51-02352, 47-51-02353, 47-51-02354, 47-51-02355, 47-51-02356, 47-51-02357, 47-51-02358, 47-51-02359, 47-51-02360, 47-51-02361, 47-51-02362, 47-51-02363, 47-51-02364, 47-51-02365, 47-51-02366, 47-51-02367 and 47-51-02368. Wetland 03 will be excluded from the waiver due to their location inside of the construction area and total coverage under the ACOE permit.

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the Office of Oil and Gas shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The Office of Oil and Gas may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.”

## ORDER

West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetlands 04, 07 and 08 from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47- 51-02347, 47-51-02348, 47-51-02349, 47-51-02350, 47-51-02351, 47-51-02352, 47-51-02353, 47-51-02354, 47-51-02355, 47-51-02356, 47-51-02357, 47-51-02358, 47-51-02359, 47-51-02360, 47-51-02361, 47-51-02362, 47-51-02363, 47-51-02364, 47-51-02365, 47-51-02366, 47-51-02367 and 47-51-02368. The Office of Oil and Gas hereby **ORDERS** that Tug Hill shall meet the following site construction and operational requirements for the Hunter Pethtel Well Pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetlands 04 and 08 shall be protected by a layer of both Super Silt Fence and twenty four inch (24”) compost filter sock. This along with temporary and permanent vegetative cover will prevent sediment from reaching the wetlands;
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 24th day of February, 2021.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By: **James Martin** Digitally signed by James Martin  
Date: 2021.02.24 13:14:36 -05'00'  
\_\_\_\_\_  
JAMES A. MARTIN, CHIEF



WW-6B  
(04/15)

4705102348  
API NO. 47-051  
OPERATOR WELL NO. Van Winkle N-4HM  
Well Pad Name: Hunter Pethel

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-4HM    Well Pad Name: Hunter Pethel

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  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No Yes

*JM*  
*12/10/2020*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):

Marcellus is the target formation at a depth of 6126' - 6176', thickness of 50' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 6,276'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 16,745'

11) Proposed Horizontal Leg Length: 9,961.20'

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

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

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WW-6B  
(04/15)

4705102348  
API NO. 47-051

OPERATOR WELL NO. Van Winkle N-4HM

Well Pad Name: Hunter Pethtel

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	30"	NEW	BW	BW	120'	120'	259ft <sup>3</sup> (CTS)
Fresh Water	13 3/8"	NEW	J55	54.5#	515'	515'	708ft <sup>3</sup> (CTS)
Coal	13 3/8"	NEW	J55	54.5#	515'	515'	708ft <sup>3</sup> (CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,233'	2,233'	725ft <sup>3</sup> (CTS)
Production	5 1/2"	NEW	P110	20#	16,745'	16,745'	4273ft <sup>3</sup> (CTS)
Tubing	2 3/8"	NEW	N80	4.7#		6,223'	
Liners							

*ju 12/10/2020*

<b>TYPE</b>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	13 3/8"	17 1/2"	.38	2,740	2,192	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"	.352	3,520	2,816	SEE #24	1.19
Production	5 1/2"	8 7/8" _ 8 3/4"	.361	12,640	10,112	SEE #24	1.17/1.19
Tubing	2 3/8"		.19	11,200	8,960		
Liners							

**PACKERS**

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

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4705102348

WW-6B  
(10/14)

API NO. 47-051 -  
OPERATOR WELL NO. Van Winkle N-4HM  
Well Pad Name: Hunter Pethel

*JP*  
12/10/2020

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill through the Marcellus and TD Pilot Hole 100' into the Onondaga. 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 CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 25,000,000 lb proppant and 450,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

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 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

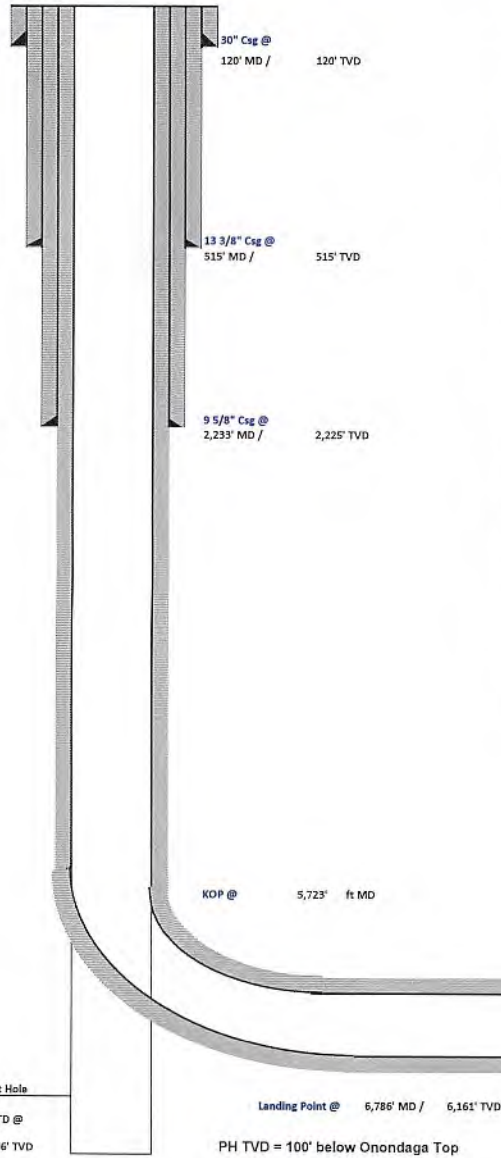
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\*Note: Attach additional sheets as needed.





**WELL NAME:** Van Winkle N-4HM  
**STATE:** WV **COUNTY:** Marshall  
**DISTRICT:** Meade  
**DF Elev:** 754' **GL Elev:** 754'  
**TD:** 16,745'  
**TH Latitude:** 39.781981  
**TH Longitude:** -80.72624  
**BH Latitude:** 39.80433864  
**BH Longitude:** -80.74885894



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	415
Sewickley Coal	314
Pittsburgh Coal	409
Big Lime	1613
Weir	1905
Berea	2104
Gordon	2374
Rhinestreet	5491
Genesee/Burkett	5996
Tully	6023
Hamilton	6058
Marcellus	6126
Landing Depth	6161
Onondaga	6176
Pilot Hole Depth	6276

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	17.5	13 3/8	515'	515'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,233'	2,225'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	16,745'	5,987'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	687	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	759	A	15	Air	1 Centralizer every other jt
Production	3,929	A	14.5	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc

*Handwritten signature and date: 12/10/2020*

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Lateral TD @ 16,745' ft MD  
 5,987' ft TVD

Landing Point @ 6,786' MD / 6,161' TVD  
 PH TD @ 6,276' TVD  
 PH TVD = 100' below Onondaga Top

4705102348



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

**Van Winkle N-4HM**

**Casing**

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	515'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,233'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	16,745'	CTS

**Cement**

- Conductor: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2
- Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
- Intermediate: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.19
- Kick Off Plug: Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug
- Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.19

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**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

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

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

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Permit well - Van Winkle N-4HM  
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.

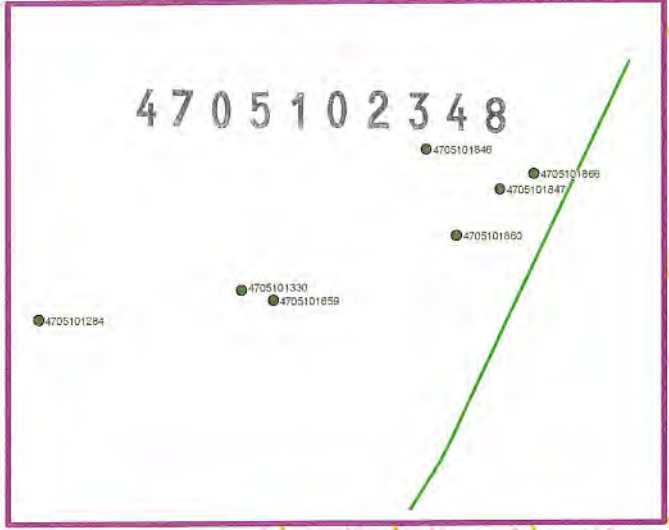
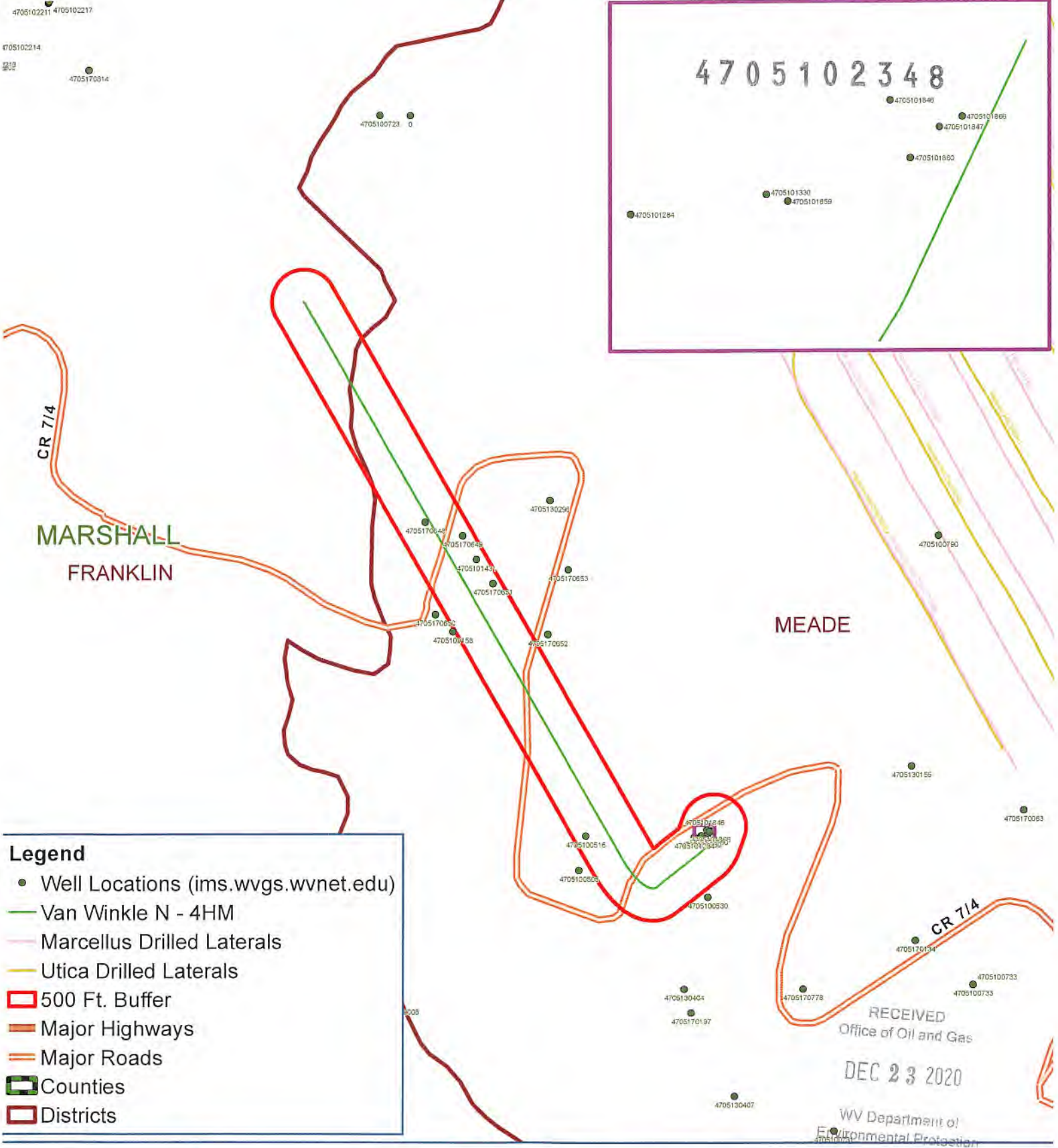
API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	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.
4705100516	Fruchtman, M.	1661' TVD	Big Injun	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation. Well is plugged.	Well was plugged 10/16/1963.
4705101431	Chield Oil & Gas, LLC.	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.
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 Marcellus well.	State records are incomplete.
4705170649	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 Marcellus well.	State records are incomplete.
4705170651	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 Marcellus well.	State records are incomplete.

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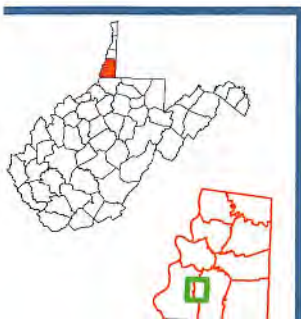




**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- Van Winkle N - 4HM
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- 500 Ft. Buffer
- Major Highways
- Major Roads
- ▭ Counties
- ▭ Districts

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# Van Winkle N - 4HM Meade District Marshall County, WV



Notes:



Well: Van Winkle N-04 HM (slot S)  
 Site: Van Winkle  
 Project: Marshall County, West Virginia  
 Design: rev2  
 Rig:

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Van Winkle N-04HM PBHL r2 - plan hits target center	5987.00	8122.43	-6377.42	14455585.43	1710949.33	39.80433864	-80.74885894
Van Winkle N-04HM LP r1 - plan misses target center by 0.10ft at 6786.01ft MD (6181.00 TVD, -510.11 N, -1413.67 E)	6161.00	-510.06	-1413.58	14446952.95	1715913.16	39.78059200	-80.73127700

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.000	0.00	
2	1500.00	0.00	0.000	1500.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	2500.00	20.00	200.000	2479.82	-162.35	-59.09	2.00	200.000	-91.20	Begin 20.00° tangent
4	2750.00	20.00	200.000	2714.74	-242.70	-88.33	0.00	0.000	-136.34	Begin 2°/100' build/turn
5	3308.36	21.12	232.018	3239.18	-394.81	-200.63	2.00	99.510	-186.63	Begin 21.12° tangent
6	5722.69	21.12	232.018	5491.37	-930.12	-886.23	0.00	0.000	-184.27	Begin 8°/100' build/turn
7	6346.45	50.00	312.741	6016.39	-830.76	-1168.32	8.00	98.752	68.08	Begin 10°/100' build/turn
8	6786.06	91.00	330.101	6161.00	-510.07	-1413.69	10.00	25.452	471.84	Begin 91.00° lateral
9	16748.43	91.00	330.101	6987.00	8122.43	-6377.42	0.00	0.000	0326.93	PBHL/TD 16745.42 MD/5987.00 TVD

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

System Datum: Mean Sea Level  
 Depth Reference: GL @ 754.00ft

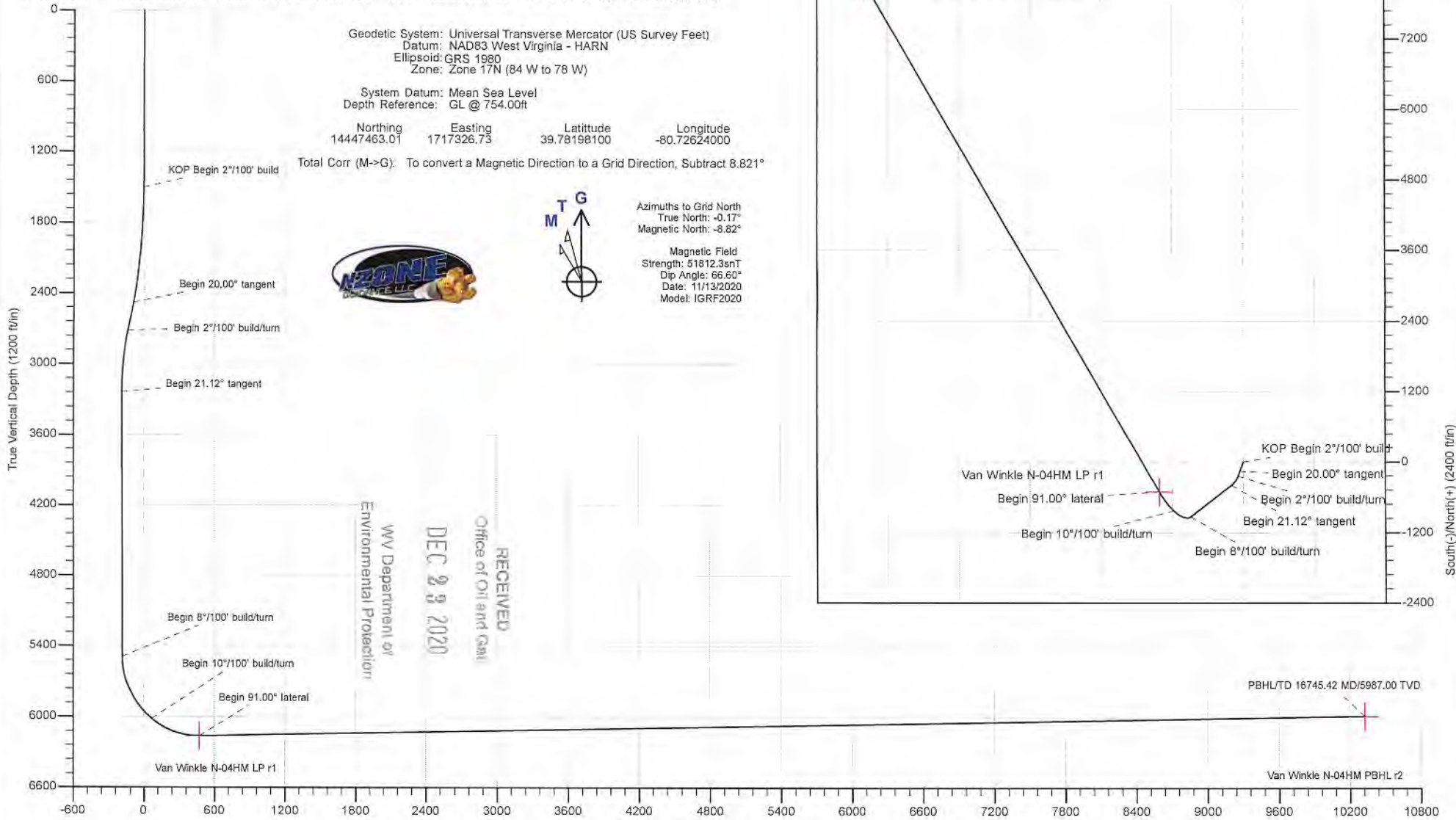
Northing 14447463.01 Easting 1717326.73 Latitude 39.78198100 Longitude -80.72624000

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.821°



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

Magnetic Field  
 Strength: 51812.3snT  
 Dip Angle: 66.60°  
 Date: 11/13/2020  
 Model: IGRF2020



Vertical Section at 321.862° (1200 ft/in)

4705102348





4705102348

Planning Report - Geographic



Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle N-04 HM (slot S)
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-04 HM (slot S)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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

Site	Van Winkle				
Site Position:	Lat/Long	Northing:	14,447,369.50 usft	Latitude:	39.78172533
From:		Easting:	1,717,188.44 usft	Longitude:	-80.72673327
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.175 °

Well	Van Winkle N-04 HM (slot S)					
Well Position	+N/-S	0.00 ft	Northing:	14,447,463.02 usft	Latitude:	39.78198100
	+E/-W	0.00 ft	Easting:	1,717,326.73 usft	Longitude:	-80.72624000
Position Uncertainty	0.00 ft	Wellhead Elevation:		Ground Level:	754.00 ft	

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	11/13/2020	-8.646	66.595	51,812.30596417

Design	rev2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	321.862

Plan Survey Tool Program	Date	11/30/2020		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,745.34 rev2 (Original Hole)	MWD MWD - Standard	

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,500.00	20.00	200.000	2,479.82	-162.35	-59.09	2.00	2.00	0.00	200.000	
2,750.00	20.00	200.000	2,714.74	-242.70	-88.33	0.00	0.00	0.00	0.000	
3,308.36	21.12	232.018	3,239.18	-394.81	-200.63	2.00	0.20	5.73	99.510	
5,722.69	21.12	232.018	5,491.37	-930.12	-886.23	0.00	0.00	0.00	0.000	
6,346.45	50.00	312.741	6,016.39	-830.76	-1,168.32	8.00	4.63	12.94	98.752	
6,786.06	91.00	330.101	6,161.00	-510.07	-1,413.69	10.00	9.33	3.95	25.452	
16,745.43	91.00	330.101	5,987.00	8,122.43	-6,377.42	0.00	0.00	0.00	0.000	Van Winkle N-04HM F





Planning Report - Geographic

4705102348



Database: DB\_Aug1919\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Van Winkle  
 Well: Van Winkle N-04 HM (slot S)  
 Wellbore: Original Hole  
 Design: rev2

Local Co-ordinate Reference: Well Van Winkle N-04 HM (slot S)  
 TVD Reference: GL @ 754.00ft  
 MD Reference: GL @ 754.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.000	0.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
100.00	0.00	0.000	100.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
200.00	0.00	0.000	200.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
300.00	0.00	0.000	300.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
400.00	0.00	0.000	400.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
500.00	0.00	0.000	500.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
600.00	0.00	0.000	600.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
700.00	0.00	0.000	700.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
800.00	0.00	0.000	800.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
900.00	0.00	0.000	900.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
1,300.00	0.00	0.000	1,300.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
1,400.00	0.00	0.000	1,400.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	14,447,463.02	1,717,326.73	39.78198100	-80.72624000	
<b>KOP Begin 2°/100' build</b>										
1,600.00	2.00	200.000	1,599.98	-1.64	-0.60	14,447,461.38	1,717,326.14	39.78197650	-80.72624214	
1,700.00	4.00	200.000	1,699.84	-6.56	-2.39	14,447,456.46	1,717,324.35	39.78196301	-80.72624857	
1,800.00	6.00	200.000	1,799.45	-14.75	-5.37	14,447,448.27	1,717,321.37	39.78194055	-80.72625927	
1,900.00	8.00	200.000	1,898.70	-26.20	-9.54	14,447,436.82	1,717,317.20	39.78190913	-80.72627423	
2,000.00	10.00	200.000	1,997.47	-40.90	-14.89	14,447,422.12	1,717,311.85	39.78186881	-80.72629343	
2,100.00	12.00	200.000	2,095.62	-58.83	-21.41	14,447,404.19	1,717,305.32	39.78181963	-80.72631685	
2,200.00	14.00	200.000	2,193.06	-79.96	-29.10	14,447,383.05	1,717,297.63	39.78176164	-80.72634447	
2,300.00	16.00	200.000	2,289.64	-104.28	-37.96	14,447,358.73	1,717,288.78	39.78169493	-80.72637624	
2,400.00	18.00	200.000	2,385.27	-131.76	-47.96	14,447,331.26	1,717,278.78	39.78161957	-80.72641213	
2,500.00	20.00	200.000	2,479.82	-162.35	-59.09	14,447,300.67	1,717,267.64	39.78153565	-80.72645209	
<b>Begin 20.00° tangent</b>										
2,600.00	20.00	200.000	2,573.78	-194.49	-70.79	14,447,268.53	1,717,255.95	39.78144748	-80.72649408	
2,700.00	20.00	200.000	2,667.75	-226.63	-82.49	14,447,236.39	1,717,244.25	39.78135932	-80.72653607	
2,750.00	20.00	200.000	2,714.74	-242.70	-88.33	14,447,220.32	1,717,238.40	39.78131523	-80.72655706	
<b>Begin 2°/100' build/turn</b>										
2,800.00	19.86	202.904	2,761.75	-258.56	-94.56	14,447,204.46	1,717,232.17	39.78127174	-80.72657941	
2,900.00	19.72	208.800	2,855.85	-288.99	-109.30	14,447,174.03	1,717,217.43	39.78118829	-80.72663220	
3,000.00	19.77	214.720	2,949.98	-317.68	-127.07	14,447,145.34	1,717,199.67	39.78110965	-80.72669574	
3,100.00	20.02	220.554	3,044.02	-344.59	-147.83	14,447,118.43	1,717,178.90	39.78103592	-80.72676994	
3,200.00	20.45	226.202	3,137.86	-369.69	-171.57	14,447,093.33	1,717,155.16	39.78096718	-80.72685472	
3,300.00	21.06	231.582	3,231.37	-392.95	-198.26	14,447,070.07	1,717,128.47	39.78090353	-80.72694997	
3,308.36	21.12	232.018	3,239.18	-394.81	-200.63	14,447,068.21	1,717,126.11	39.78089844	-80.72695841	
<b>Begin 21.12° tangent</b>										
3,400.00	21.12	232.018	3,324.66	-415.13	-226.65	14,447,047.89	1,717,100.08	39.78084286	-80.72705125	
3,500.00	21.12	232.018	3,417.95	-437.30	-255.05	14,447,025.72	1,717,071.69	39.78078221	-80.72715257	
3,600.00	21.12	232.018	3,511.23	-459.47	-283.44	14,447,003.55	1,717,043.29	39.78072155	-80.72725389	
3,700.00	21.12	232.018	3,604.51	-481.64	-311.84	14,446,981.37	1,717,014.89	39.78066090	-80.72735520	
3,800.00	21.12	232.018	3,697.80	-503.81	-340.24	14,446,959.20	1,716,986.49	39.78060025	-80.72745652	
3,900.00	21.12	232.018	3,791.08	-525.99	-368.64	14,446,937.03	1,716,958.10	39.78053959	-80.72755783	
4,000.00	21.12	232.018	3,884.37	-548.16	-397.03	14,446,914.86	1,716,929.70	39.78047894	-80.72765915	
4,100.00	21.12	232.018	3,977.65	-570.33	-425.43	14,446,892.69	1,716,901.30	39.78041829	-80.72776047	
4,200.00	21.12	232.018	4,070.94	-592.50	-453.83	14,446,870.51	1,716,872.91	39.78035763	-80.72786178	
4,300.00	21.12	232.018	4,164.22	-614.68	-482.22	14,446,848.34	1,716,844.51	39.78029698	-80.72796310	
4,400.00	21.12	232.018	4,257.51	-636.85	-510.62	14,446,826.17	1,716,816.11	39.78023632	-80.72806441	
4,500.00	21.12	232.018	4,350.79	-659.02	-539.02	14,446,804.00	1,716,787.71	39.78017567	-80.72816573	
4,600.00	21.12	232.018	4,444.07	-681.19	-567.42	14,446,781.82	1,716,759.32	39.78011501	-80.72826704	
4,700.00	21.12	232.018	4,537.36	-703.37	-595.81	14,446,759.65	1,716,730.92	39.78005436	-80.72836836	





Planning Report - Geographic

4705102348



Database: DB\_Aug1919\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Van Winkle  
 Well: Van Winkle N-04 HM (slot S)  
 Wellbore: Original Hole  
 Design: rev2

Local Co-ordinate Reference: Well Van Winkle N-04 HM (slot S)  
 TVD Reference: GL @ 754.00ft  
 MD Reference: GL @ 754.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey										WV Department of Environmental Protection
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,800.00	21.12	232.018	4,630.64	-725.54	-624.21	14,446,737.48	1,716,702.52	39.77999371	-80.72846967	
4,900.00	21.12	232.018	4,723.93	-747.71	-652.61	14,446,715.31	1,716,674.13	39.77993305	-80.72857099	
5,000.00	21.12	232.018	4,817.21	-769.88	-681.01	14,446,693.14	1,716,645.73	39.77987240	-80.72867230	
5,100.00	21.12	232.018	4,910.50	-792.05	-709.40	14,446,670.96	1,716,617.33	39.77981174	-80.72877361	
5,200.00	21.12	232.018	5,003.78	-814.23	-737.80	14,446,648.79	1,716,588.93	39.77975109	-80.72887493	
5,300.00	21.12	232.018	5,097.07	-836.40	-766.20	14,446,626.62	1,716,560.54	39.77969043	-80.72897624	
5,400.00	21.12	232.018	5,190.35	-858.57	-794.59	14,446,604.45	1,716,532.14	39.77962978	-80.72907755	
5,500.00	21.12	232.018	5,283.63	-880.74	-822.99	14,446,582.27	1,716,503.74	39.77956912	-80.72917887	
5,600.00	21.12	232.018	5,376.92	-902.92	-851.39	14,446,560.10	1,716,475.35	39.77950847	-80.72928018	
5,700.00	21.12	232.018	5,470.20	-925.09	-879.79	14,446,537.93	1,716,446.95	39.77944781	-80.72938149	
5,722.69	21.12	232.018	5,491.37	-930.12	-886.23	14,446,532.90	1,716,440.51	39.77943405	-80.72940448	
<b>Begin 8°/100' build/turn</b>										
5,800.00	21.04	249.270	5,563.58	-943.62	-910.21	14,446,519.40	1,716,416.53	39.77939718	-80.72948998	
5,900.00	23.39	269.617	5,656.28	-950.11	-946.91	14,446,512.90	1,716,379.83	39.77937964	-80.72962067	
6,000.00	27.81	285.137	5,746.55	-944.14	-989.34	14,446,518.87	1,716,337.39	39.77939639	-80.72977165	
6,100.00	33.50	296.233	5,832.61	-925.83	-1,036.69	14,446,537.19	1,716,290.04	39.77944709	-80.72993998	
6,200.00	39.90	304.280	5,912.79	-895.51	-1,088.03	14,446,567.51	1,716,238.71	39.77953076	-80.73012238	
6,300.00	46.73	310.370	5,985.53	-853.80	-1,142.36	14,446,609.22	1,716,184.37	39.77964577	-80.73031531	
6,346.45	50.00	312.741	6,016.39	-830.76	-1,168.32	14,446,632.26	1,716,158.42	39.77970925	-80.73040747	
<b>Begin 10°/100' build/turn</b>										
6,400.00	54.87	315.552	6,049.03	-801.18	-1,198.74	14,446,661.83	1,716,127.99	39.77979073	-80.73051543	
6,500.00	64.11	320.008	6,099.77	-737.37	-1,256.43	14,446,725.65	1,716,070.30	39.77996646	-80.73072008	
6,600.00	73.46	323.809	6,135.93	-664.04	-1,313.79	14,446,798.98	1,716,012.95	39.78016832	-80.73092345	
6,700.00	82.88	327.255	6,156.41	-583.42	-1,369.07	14,446,879.60	1,715,957.67	39.78039017	-80.73111934	
6,786.06	91.00	330.101	6,161.00	-510.07	-1,413.69	14,446,952.95	1,715,913.04	39.78059197	-80.73127740	
<b>Begin 91.00° lateral</b>										
6,800.00	91.00	330.101	6,160.76	-497.99	-1,420.64	14,446,965.03	1,715,906.10	39.78062521	-80.73130200	
6,900.00	91.00	330.101	6,159.01	-411.31	-1,470.48	14,447,051.71	1,715,856.26	39.78086366	-80.73147847	
7,000.00	91.00	330.101	6,157.27	-324.63	-1,520.32	14,447,138.38	1,715,806.42	39.78110211	-80.73165495	
7,100.00	91.00	330.101	6,155.52	-237.96	-1,570.16	14,447,225.06	1,715,756.58	39.78134056	-80.73183142	
7,200.00	91.00	330.101	6,153.77	-151.28	-1,620.00	14,447,311.74	1,715,706.74	39.78157901	-80.73200790	
7,300.00	91.00	330.101	6,152.02	-64.60	-1,669.84	14,447,398.41	1,715,656.90	39.78181745	-80.73218438	
7,400.00	91.00	330.101	6,150.28	22.07	-1,719.68	14,447,485.09	1,715,607.06	39.78205590	-80.73236085	
7,500.00	91.00	330.101	6,148.53	108.75	-1,769.52	14,447,571.77	1,715,557.22	39.78229435	-80.73253734	
7,600.00	91.00	330.101	6,146.78	195.43	-1,819.36	14,447,658.44	1,715,507.38	39.78253280	-80.73271382	
7,700.00	91.00	330.101	6,145.04	282.11	-1,869.20	14,447,745.12	1,715,457.54	39.78277124	-80.73289030	
7,800.00	91.00	330.101	6,143.29	368.78	-1,919.04	14,447,831.80	1,715,407.70	39.78300969	-80.73306678	
7,900.00	91.00	330.101	6,141.54	455.46	-1,968.88	14,447,918.48	1,715,357.86	39.78324814	-80.73324327	
8,000.00	91.00	330.101	6,139.79	542.14	-2,018.72	14,448,005.15	1,715,308.02	39.78348658	-80.73341975	
8,100.00	91.00	330.101	6,138.05	628.82	-2,068.56	14,448,091.83	1,715,258.18	39.78372503	-80.73359624	
8,200.00	91.00	330.101	6,136.30	715.49	-2,118.40	14,448,178.51	1,715,208.34	39.78396347	-80.73377273	
8,300.00	91.00	330.101	6,134.55	802.17	-2,168.24	14,448,265.18	1,715,158.50	39.78420192	-80.73394922	
8,400.00	91.00	330.101	6,132.81	888.85	-2,218.08	14,448,351.86	1,715,108.66	39.78444036	-80.73412571	
8,500.00	91.00	330.101	6,131.06	975.52	-2,267.92	14,448,438.54	1,715,058.82	39.78467881	-80.73430220	
8,600.00	91.00	330.101	6,129.31	1,062.20	-2,317.76	14,448,525.22	1,715,008.98	39.78491725	-80.73447870	
8,700.00	91.00	330.101	6,127.56	1,148.88	-2,367.60	14,448,611.89	1,714,959.14	39.78515570	-80.73465519	
8,800.00	91.00	330.101	6,125.82	1,235.56	-2,417.44	14,448,698.57	1,714,909.30	39.78539414	-80.73483169	
8,900.00	91.00	330.101	6,124.07	1,322.23	-2,467.28	14,448,785.25	1,714,859.46	39.78563258	-80.73500819	
9,000.00	91.00	330.101	6,122.32	1,408.91	-2,517.12	14,448,871.92	1,714,809.62	39.78587103	-80.73518468	
9,100.00	91.00	330.101	6,120.58	1,495.59	-2,566.95	14,448,958.60	1,714,759.78	39.78610947	-80.73536118	
9,200.00	91.00	330.101	6,118.83	1,582.27	-2,616.79	14,449,045.28	1,714,709.94	39.78634791	-80.73553769	
9,300.00	91.00	330.101	6,117.08	1,668.94	-2,666.63	14,449,131.96	1,714,660.10	39.78658635	-80.73571419	
9,400.00	91.00	330.101	6,115.33	1,755.62	-2,716.47	14,449,218.63	1,714,610.26	39.78682480	-80.73589069	
9,500.00	91.00	330.101	6,113.59	1,842.30	-2,766.31	14,449,305.31	1,714,560.42	39.78706324	-80.73606720	





Database: DB\_Aug1919\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Van Winkle  
 Well: Van Winkle N-04 HM (slot S)  
 Wellbore: Original Hole  
 Design: rev2

Local Co-ordinate Reference: Well Van Winkle N-04 HM (slot S)  
 TVD Reference: GL @ 754.00ft  
 MD Reference: GL @ 754.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey

WV Department of Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,600.00	91.00	330.101	6,111.84	1,928.97	-2,816.15	14,449,391.99	1,714,510.58	39.78730168	-80.73624370
9,700.00	91.00	330.101	6,110.09	2,015.65	-2,865.99	14,449,478.66	1,714,460.75	39.78754012	-80.73642021
9,800.00	91.00	330.101	6,108.35	2,102.33	-2,915.83	14,449,565.34	1,714,410.91	39.78777856	-80.73659672
9,900.00	91.00	330.101	6,106.60	2,189.01	-2,965.67	14,449,652.02	1,714,361.07	39.78801700	-80.73677323
10,000.00	91.00	330.101	6,104.85	2,275.68	-3,015.51	14,449,738.69	1,714,311.23	39.78825544	-80.73694974
10,100.00	91.00	330.101	6,103.10	2,362.36	-3,065.35	14,449,825.37	1,714,261.39	39.78849388	-80.73712625
10,200.00	91.00	330.101	6,101.36	2,449.04	-3,115.19	14,449,912.05	1,714,211.55	39.78873232	-80.73730276
10,300.00	91.00	330.101	6,099.61	2,535.71	-3,165.03	14,449,998.73	1,714,161.71	39.78897076	-80.73747928
10,400.00	91.00	330.101	6,097.86	2,622.39	-3,214.87	14,450,085.40	1,714,111.87	39.78920920	-80.73765579
10,500.00	91.00	330.101	6,096.12	2,709.07	-3,264.71	14,450,172.08	1,714,062.03	39.78944764	-80.73783231
10,600.00	91.00	330.101	6,094.37	2,795.75	-3,314.55	14,450,258.76	1,714,012.19	39.78968608	-80.73800883
10,700.00	91.00	330.101	6,092.62	2,882.42	-3,364.39	14,450,345.43	1,713,962.35	39.78992452	-80.73818534
10,800.00	91.00	330.101	6,090.87	2,969.10	-3,414.23	14,450,432.11	1,713,912.51	39.79016296	-80.73836186
10,900.00	91.00	330.101	6,089.13	3,055.78	-3,464.07	14,450,518.79	1,713,862.67	39.79040140	-80.73853839
11,000.00	91.00	330.101	6,087.38	3,142.46	-3,513.91	14,450,605.47	1,713,812.83	39.79063983	-80.73871491
11,100.00	91.00	330.101	6,085.63	3,229.13	-3,563.75	14,450,692.14	1,713,762.99	39.79087827	-80.73889143
11,200.00	91.00	330.101	6,083.89	3,315.81	-3,613.59	14,450,778.82	1,713,713.15	39.79111671	-80.73906796
11,300.00	91.00	330.101	6,082.14	3,402.49	-3,663.43	14,450,865.50	1,713,663.31	39.79135515	-80.73924448
11,400.00	91.00	330.101	6,080.39	3,489.16	-3,713.27	14,450,952.17	1,713,613.47	39.79159358	-80.73942101
11,500.00	91.00	330.101	6,078.64	3,575.84	-3,763.11	14,451,038.85	1,713,563.63	39.79183202	-80.73959754
11,600.00	91.00	330.101	6,076.90	3,662.52	-3,812.95	14,451,125.53	1,713,513.79	39.79207045	-80.73977407
11,700.00	91.00	330.101	6,075.15	3,749.20	-3,862.79	14,451,212.20	1,713,463.95	39.79230889	-80.73995060
11,800.00	91.00	330.101	6,073.40	3,835.87	-3,912.63	14,451,298.88	1,713,414.11	39.79254733	-80.74012714
11,900.00	91.00	330.101	6,071.66	3,922.55	-3,962.47	14,451,385.56	1,713,364.27	39.79278576	-80.74030367
12,000.00	91.00	330.101	6,069.91	4,009.23	-4,012.31	14,451,472.24	1,713,314.43	39.79302420	-80.74048020
12,100.00	91.00	330.101	6,068.16	4,095.91	-4,062.15	14,451,558.91	1,713,264.59	39.79326263	-80.74065674
12,200.00	91.00	330.101	6,066.41	4,182.58	-4,111.99	14,451,645.59	1,713,214.75	39.79350107	-80.74083328
12,300.00	91.00	330.101	6,064.67	4,269.26	-4,161.83	14,451,732.27	1,713,164.91	39.79373950	-80.74100982
12,400.00	91.00	330.101	6,062.92	4,355.94	-4,211.67	14,451,818.94	1,713,115.07	39.79397793	-80.74118636
12,500.00	91.00	330.101	6,061.17	4,442.61	-4,261.51	14,451,905.62	1,713,065.23	39.79421637	-80.74136290
12,600.00	91.00	330.101	6,059.43	4,529.29	-4,311.35	14,451,992.30	1,713,015.39	39.79445480	-80.74153944
12,700.00	91.00	330.101	6,057.68	4,615.97	-4,361.19	14,452,078.98	1,712,965.55	39.79469323	-80.74171598
12,800.00	91.00	330.101	6,055.93	4,702.65	-4,411.03	14,452,165.65	1,712,915.72	39.79493167	-80.74189253
12,900.00	91.00	330.101	6,054.19	4,789.32	-4,460.87	14,452,252.33	1,712,865.88	39.79517010	-80.74206907
13,000.00	91.00	330.101	6,052.44	4,876.00	-4,510.71	14,452,339.01	1,712,816.04	39.79540853	-80.74224562
13,100.00	91.00	330.101	6,050.69	4,962.68	-4,560.55	14,452,425.68	1,712,766.20	39.79564696	-80.74242217
13,200.00	91.00	330.101	6,048.94	5,049.36	-4,610.39	14,452,512.36	1,712,716.36	39.79588539	-80.74259872
13,300.00	91.00	330.101	6,047.20	5,136.03	-4,660.23	14,452,599.04	1,712,666.52	39.79612383	-80.74277527
13,400.00	91.00	330.101	6,045.45	5,222.71	-4,710.07	14,452,685.71	1,712,616.68	39.79636226	-80.74295182
13,500.00	91.00	330.101	6,043.70	5,309.39	-4,759.90	14,452,772.39	1,712,566.84	39.79660069	-80.74312837
13,600.00	91.00	330.101	6,041.96	5,396.06	-4,809.74	14,452,859.07	1,712,517.00	39.79683912	-80.74330493
13,700.00	91.00	330.101	6,040.21	5,482.74	-4,859.58	14,452,945.75	1,712,467.16	39.79707755	-80.74348148
13,800.00	91.00	330.101	6,038.46	5,569.42	-4,909.42	14,453,032.42	1,712,417.32	39.79731598	-80.74365804
13,900.00	91.00	330.101	6,036.71	5,656.10	-4,959.26	14,453,119.10	1,712,367.48	39.79755441	-80.74383460
14,000.00	91.00	330.101	6,034.97	5,742.77	-5,009.10	14,453,205.78	1,712,317.64	39.79779284	-80.74401116
14,100.00	91.00	330.101	6,033.22	5,829.45	-5,058.94	14,453,292.45	1,712,267.80	39.79803127	-80.74418772
14,200.00	91.00	330.101	6,031.47	5,916.13	-5,108.78	14,453,379.13	1,712,217.96	39.79826970	-80.74436428
14,300.00	91.00	330.101	6,029.73	6,002.80	-5,158.62	14,453,465.81	1,712,168.12	39.79850813	-80.74454084
14,400.00	91.00	330.101	6,027.98	6,089.48	-5,208.46	14,453,552.49	1,712,118.28	39.79874655	-80.74471741
14,500.00	91.00	330.101	6,026.23	6,176.16	-5,258.30	14,453,639.16	1,712,068.44	39.79898498	-80.74489397
14,600.00	91.00	330.101	6,024.48	6,262.84	-5,308.14	14,453,725.84	1,712,018.60	39.79922341	-80.74507054
14,700.00	91.00	330.101	6,022.74	6,349.51	-5,357.98	14,453,812.52	1,711,968.76	39.79946184	-80.74524711
14,800.00	91.00	330.101	6,020.99	6,436.19	-5,407.82	14,453,899.19	1,711,918.92	39.79970026	-80.74542368
14,900.00	91.00	330.101	6,019.24	6,522.87	-5,457.66	14,453,985.87	1,711,869.08	39.79993869	-80.74560025
15,000.00	91.00	330.101	6,017.50	6,609.55	-5,507.50	14,454,072.55	1,711,819.24	39.80017712	-80.74577682





Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle N-04 HM (slot S)
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-04 HM (slot S)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
15,100.00	91.00	330.101	6,015.75	6,696.22	-5,557.34	14,454,159.23	1,711,769.40	39.80041555	-80.74595339	
15,200.00	91.00	330.101	6,014.00	6,782.90	-5,607.18	14,454,245.90	1,711,719.56	39.80065397	-80.74612996	
15,300.00	91.00	330.101	6,012.25	6,869.58	-5,657.02	14,454,332.58	1,711,669.72	39.80089240	-80.74630654	
15,400.00	91.00	330.101	6,010.51	6,956.25	-5,706.86	14,454,419.26	1,711,619.88	39.80113082	-80.74648312	
15,500.00	91.00	330.101	6,008.76	7,042.93	-5,756.70	14,454,505.93	1,711,570.04	39.80136925	-80.74665969	
15,600.00	91.00	330.101	6,007.01	7,129.61	-5,806.54	14,454,592.61	1,711,520.20	39.80160767	-80.74683627	
15,700.00	91.00	330.101	6,005.27	7,216.29	-5,856.38	14,454,679.29	1,711,470.36	39.80184610	-80.74701285	
15,800.00	91.00	330.101	6,003.52	7,302.96	-5,906.22	14,454,765.96	1,711,420.53	39.80208452	-80.74718943	
15,900.00	91.00	330.101	6,001.77	7,389.64	-5,956.06	14,454,852.64	1,711,370.69	39.80232295	-80.74736602	
16,000.00	91.00	330.101	6,000.02	7,476.32	-6,005.90	14,454,939.32	1,711,320.85	39.80256137	-80.74754260	
16,100.00	91.00	330.101	5,998.28	7,563.00	-6,055.74	14,455,026.00	1,711,271.01	39.80279979	-80.74771918	
16,200.00	91.00	330.101	5,996.53	7,649.67	-6,105.58	14,455,112.67	1,711,221.17	39.80303822	-80.74789577	
16,300.00	91.00	330.101	5,994.78	7,736.35	-6,155.42	14,455,199.35	1,711,171.33	39.80327664	-80.74807236	
16,400.00	91.00	330.101	5,993.04	7,823.03	-6,205.26	14,455,286.03	1,711,121.49	39.80351506	-80.74824895	
16,500.00	91.00	330.101	5,991.29	7,909.70	-6,255.10	14,455,372.70	1,711,071.65	39.80375349	-80.74842554	
16,600.00	91.00	330.101	5,989.54	7,996.38	-6,304.94	14,455,459.38	1,711,021.81	39.80399191	-80.74860213	
16,700.00	91.00	330.101	5,987.79	8,083.06	-6,354.78	14,455,546.06	1,710,971.97	39.80423033	-80.74877872	
16,745.42	91.00	330.101	5,987.00	8,122.43	-6,377.41	14,455,585.43	1,710,949.33	39.80433862	-80.74885893	
<b>PBHL/TD 16745.42 MD/5987.00 TVD</b>										
16,745.43	91.00	330.101	5,987.00	8,122.43	-6,377.42	14,455,585.43	1,710,949.33	39.80433864	-80.74885894	

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-04HM PBI - hit/miss target - Shape - Point	0.00	0.000	5,987.00	8,122.43	-6,377.42	14,455,585.43	1,710,949.33	39.80433864	-80.74885894	
Van Winkle N-04HM LP - plan misses target center by 0.10ft at 6786.01ft MD (6161.00 TVD, -510.11 N, -1413.67 E) - Point	0.00	0.000	6,161.00	-510.06	-1,413.58	14,446,952.96	1,715,913.16	39.78059200	-80.73127700	

Plan Annotations						
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment		
		+N/-S (ft)	+E/-W (ft)			
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build		
2,500.00	2,479.82	-162.35	-59.09	Begin 20.00° tangent		
2,750.00	2,714.74	-242.70	-88.33	Begin 2°/100' build/turn		
3,308.36	3,239.18	-394.81	-200.63	Begin 21.12° tangent		
5,722.69	5,491.37	-930.12	-886.23	Begin 8°/100' build/turn		
6,346.45	6,016.39	-830.76	-1,168.32	Begin 10°/100' build/turn		
6,786.06	6,161.00	-510.07	-1,413.69	Begin 91.00° lateral		
16,745.42	5,987.00	8,122.43	-6,377.41	PBHL/TD 16745.42 MD/5987.00 TVD		

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Environmental Protection



WW-9  
(4/16)

4705102348

API Number 47 - 051 -  
Operator's Well No. Van Winkle N-4HM

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 [Signature]

Company Official (Typed Name) James Pancake

Company Official Title Vice President - Geoscience

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DEC 29 2020

WV Department of  
Environmental Protection

Subscribed and sworn before me this 14 day of DECEMBER

My commission expires 2/16/2024

Commonwealth of Pennsylvania - Notary Seal  
2020 David Gabriel Delallo, Notary Public  
Washington County  
Notary Public  
My commission expires February 16, 2024  
Commission number 1267492  
Member, Pennsylvania Association of Notaries

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Jane Nishoba

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

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DEC 23 2020

Title: Oil and Gas Inspector

Date: 12/10/2020

WV Department of  
Environmental Protection

Field Reviewed? (  ) Yes (  ) No

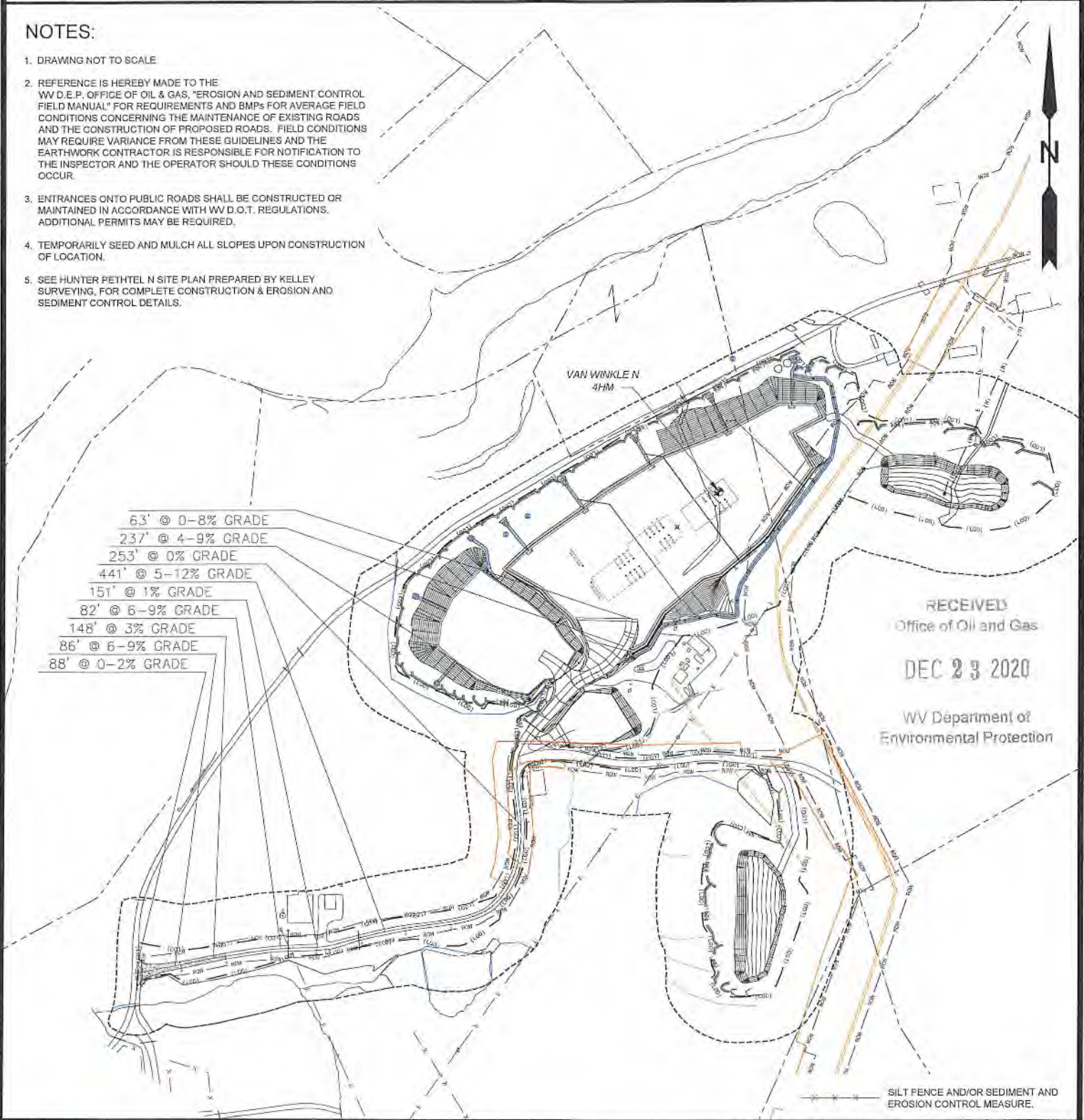


# PROPOSED VAN WINKLE N - 4HM

4705102348

**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 PETHTEL N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.




12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5834  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
[slswv.com](http://slswv.com)

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/22/2020	NONE



**TUG HILL  
OPERATING**

4705102348



# Well Site Safety Plan

## Tug Hill Operating, LLC

*12/10/2020*

Well Name: Van Winkle N-4HM

Pad Location: Hunter Pethtel Pad

Marshall County, West Virginia

UTM meters , NADD83, Zone 17:

Northing: 4,403,595.53

Easting: 523,442.20

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DEC 23 2020  
December 2020

WV Department of  
Environmental Protection



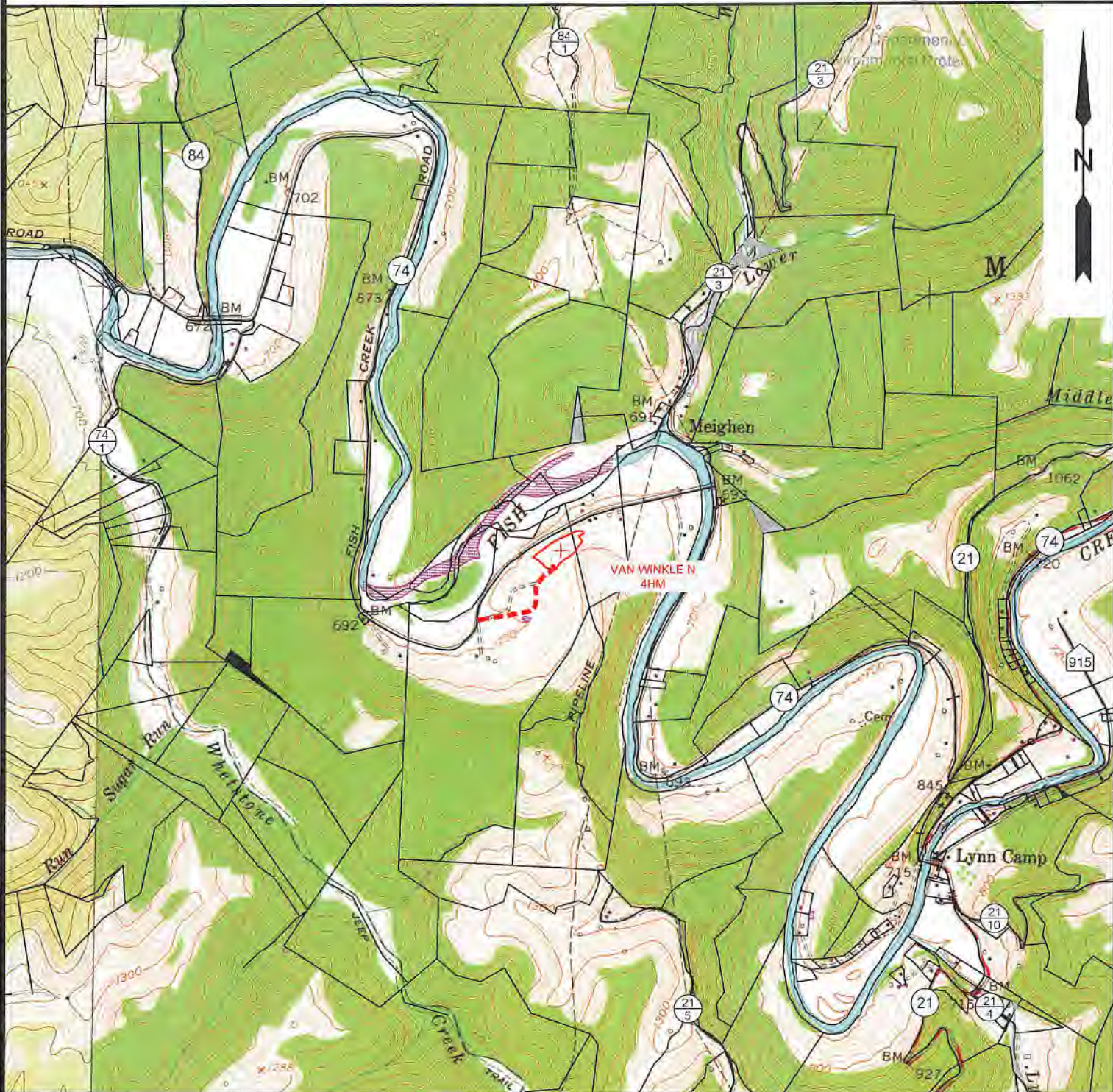
4705102348

WW-9

# PROPOSED VAN WINKLE N - 4HM

SUPPLEMENT PG. 2  
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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 PETHEL N WELL PAD LOCATION.



12 Vannorn 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  
slswv.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

DATE	SCALE
12/22/2020	1" = 2000'



## TUG HILL OPERATING



**HUNTER PETHTEL LEASE  
VAN WINKLE N 4HM WELL  
TUG HILL OPERATING**

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

T.H. LONGITUDE 80°42'30"  
B.H. LONGITUDE 80°42'30"

10,562' B.H.

**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.



9-10-1.3	FINLEY D. MONTGOMERY, ET UX	20,294
5-10-5	WILLIAM F. RULONG, ET AL	27.5
5-10-7	WILLIAM F. RULONG, ET AL	22,872
5-10-8.1	SAMUEL D. & BECKY ROBINSON	1,511
9-10-21	JAMES & VICKIE J. MASON	2.00
9-10-22	JAMES & VICKIE J. MASON	1.169

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

NAD'83 S.P.C.(FT)	N. 469,289.31	E. 1,623,892.52
NAD'83 GEO.	LAT-(N) 39.781981	LONG-(W) 80.726241
NAD'83 UTM (M)	N. 4,403,595.57	E. 523,442.19

**LANDING POINT**

NAD'83 S.P.C.(FT)	N. 468,802.6	E. 1,622,470.2
NAD'83 GEO.	LAT-(N) 39.780592	LONG-(W) 80.731277
NAD'83 UTM (M)	N. 4,403,440.1	E. 523,011.3

**BOTTOM HOLE**

NAD'83 S.P.C.(FT)	N. 477,519.8	E. 1,617,649.7
NAD'83 GEO.	LAT-(N) 39.804339	LONG-(W) 80.748859
NAD'83 UTM (M)	N. 4,406,071.3	E. 521,498.4



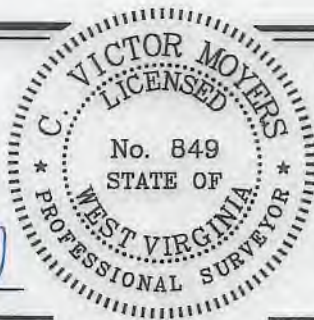
**REFERENCES**



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  
slswv.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 DECEMBER 2, 20 20  
REVISED 12-04-2020, 12-10-2020, 12-22-2020  
OPERATORS WELL NO. VAN WINKLE N 4HM  
API WELL NO. 47 - 051 - 02348  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8952P4HMR-VER2R2.dwg  
VAN WINKLE N 4HM-REV2  
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  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: GROUND: 755.90' 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: LEASE NO. SEE WW-6A1  
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 MARCELLUS  
ESTIMATED DEPTH TVD: 6,276' / TMD: 16,745'

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 ADDRESS 5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313-

COUNTY NAME  
PERMIT



# HUNTER PETHTEL LEASE VAN WINKLE N 4HM WELL TUG HILL OPERATING

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

T.H. LONGITUDE 80°42'30"  
B.H. LONGITUDE 80°42'30"  
3,529' T.H.

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	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
D	JOHN E. & JANET E. KELLEY, ET AL	9-10-19	113.08
E	CAROL VAN SCYOC	9-10-2	206.988
F	WALTER J. FECAT, JR., ET UX	9-10-2.2	5.00
G	CAROL VAN SCYOC	9-10-1	118.087
H	CONNIE S. CUNNINGHAM	9-10-1.1	0.482
I	WILLIAM F. RULONG, ET AL	5-10-8	70.6672
J	ROBERT GREGORY MCGUIRE, ET UX	5-9-10	139.60
K	ROBERT GREGORY MCGUIRE, ET UX	5-9-12	78.28

NAD'83 GRID NORTH

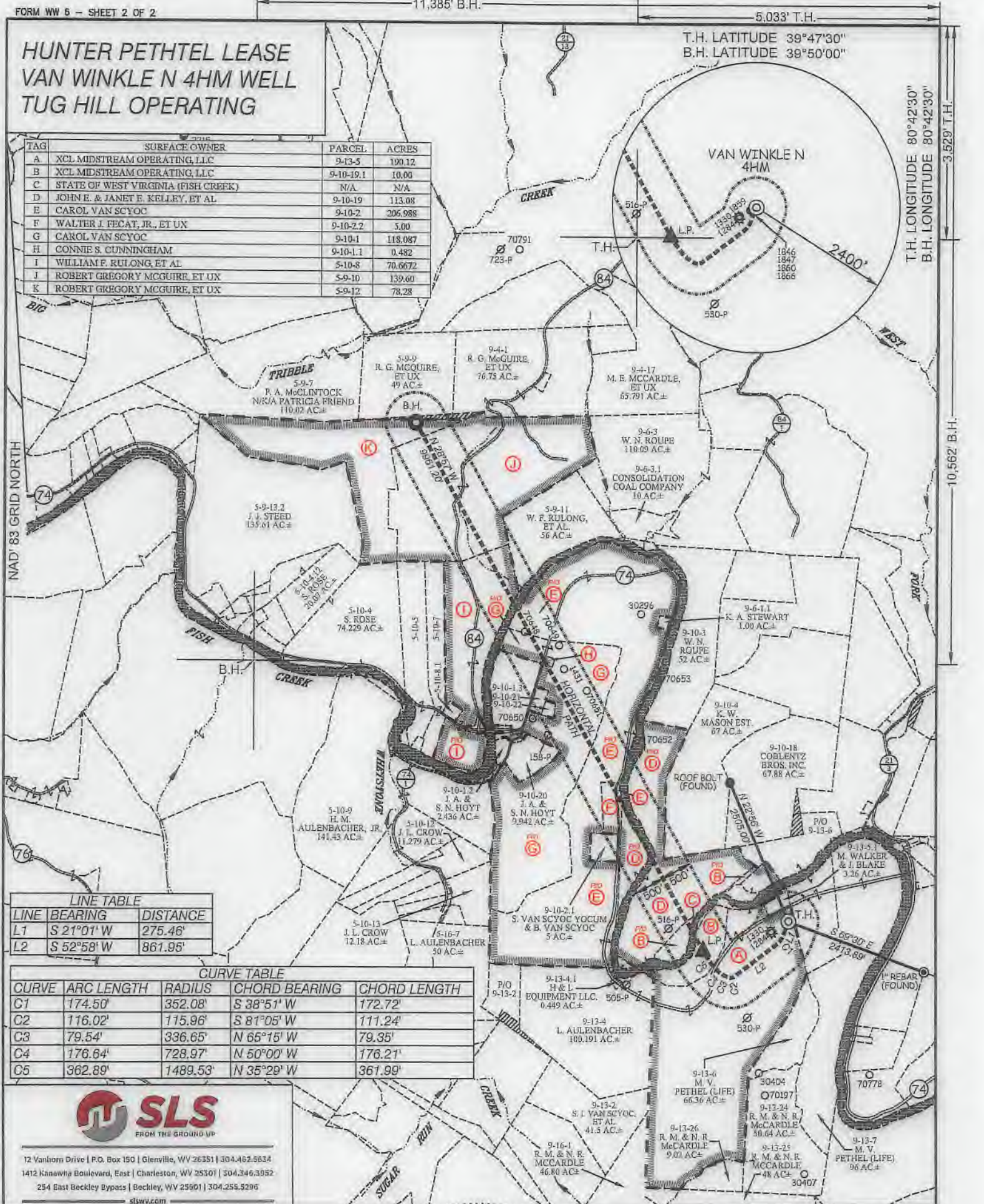
NAD'83 GRID NORTH

NAD'83 GRID NORTH

NAD'83 GRID NORTH

NAD'83 GRID NORTH

NAD'83 GRID NORTH



LINE	BEARING	DISTANCE
L1	S 21°01' W	275.46'
L2	S 52°58' W	861.95'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	174.50'	352.08'	S 38°51' W	172.72'
C2	116.02'	115.96'	S 81°05' W	111.24'
C3	79.54'	336.65'	N 65°15' W	79.35'
C4	176.64'	728.97'	N 50°00' W	176.21'
C5	362.89'	1489.53'	N 35°29' W	361.99'



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 254 East Beckley Bypass | Beckley, WV 25601 | 304.255.5295  
 slsvw.com

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)			
NAD'83 S.P.C.(FT)	N. 469,289.31	E. 1,623,892.52	
NAD'83 GEO.	LAT-(N) 39.781981	LONG-(W) 80.726241	
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LANDING POINT			
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NAD'83 GEO.	LAT-(N) 39.780592	LONG-(W) 80.731277	
NAD'83 UTM (M)	N. 4,403,440.1	E. 523,011.3	
BOTTOM HOLE			
NAD'83 S.P.C.(FT)	N. 477,519.8	E. 1,617,649.7	
NAD'83 GEO.	LAT-(N) 39.804939	LONG-(W) 80.748859	
NAD'83 UTM (M)	N. 4,406,071.3	E. 521,498.4	



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

P.S. 849 *C. Victor Moyers*

SCALE 1" = 2000' FILE NO. 8952P4HMR-VER2R2.dwg  
 VAN WINKLE N 4HM-REV2  
 DATE DECEMBER 2, 20 20  
 REVISED 12-04-2020, 12-10-2020, 12-22-2020  
 OPERATORS WELL NO. VAN WINKLE N 4HM  
 API WELL NO. 47 - 051 - 02348  
 NO. STATE COUNTY PERMIT N/A

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

LEASE LINE	
SURFACE LINE	
WELL LATERAL	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
TAX MAP-PARCEL	
SURFACE OWNER (SEE TABLE)	
LEASE # (SEE WW-6A1)	

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

COUNTY NAME  
PERMIT



WW-6A1  
(5/13)

Operator's Well No. Van Winkle N-4HM

**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

**\*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

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

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

WW-6A1 Supplement

Operator's Well No. Van Winkle N-4HM

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment
10*31312	9-13-5	A	DENNIS W HUNTER AND KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	155	Central Michigan Exploraiton LLC to Stone Energy Corporation: 21/288 & 21/356	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 HUNTER AND KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	690	60	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/497	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*23458	FISH CREEK	C	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	TH EXPLORATION LLC	0.2	1019	373	N/A	N/A	N/A
10*31384	9-10-19	D	JOHN E KELLEY AND JANET E KELLEY	STONE ENERGY CORPORATION	1/8+	693	6	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*19894	9-10-2	E	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A
10*28415	9-10-2.2	F	WALTER J FECAT AND BRENDA S FECAT	TH EXPLORATION LLC	1/8+	1071	547	N/A	N/A	N/A
10*19894	9-10-1	G	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A
10*19894	9-10-1.1	H	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A
10*18726	5-10-8	I	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941	441	N/A	N/A	N/A
10*18837	5-10-8	I	THE RODGERS FAMILY TRUST	TH EXPLORATION LLC	1/8+	935	122	N/A	N/A	N/A
10*18943	5-10-8	I	BRANDY SUE MOORE AND DELMAS L MOORE	TH EXPLORATION LLC	1/8+	940	124	N/A	N/A	N/A
10*19607	5-10-8	I	DAVA HARTLEY SMITH	TH EXPLORATION LLC	1/8+	944	186	N/A	N/A	N/A
10*19666	5-10-8	I	RALPH TERRY AND MONICA TERRY	TH EXPLORATION LLC	1/8+	944	182	N/A	N/A	N/A
10*22324	5-10-8	I	RHONDA RISDEN	TH EXPLORATION LLC	1/8+	965	600	N/A	N/A	N/A
10*22542	5-10-8	I	VINCE E OSER AND KAY J OSER	TH EXPLORATION LLC	1/8+	966	198	N/A	N/A	N/A
10*23487	5-10-8	I	ELMER RICHARDSON OR UNKNOWN HEIRS ET AL	TH EXPLORATION LLC	1/8+	1009	255	N/A	N/A	N/A
10*23491	5-10-8	I	LAWRENCE EDWARD MOORE OR UNKNOWN HEIRS ET AL	TH EXPLORATION LLC	1/8+	1014	498	N/A	N/A	N/A
10*26513	5-10-8	I	CLIFFORD C HARTLEY AND BARBARA T HARTLEY	TH EXPLORATION LLC	1/8+	1034	226	N/A	N/A	N/A
10*27959	5-10-8	I	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	N/A	N/A	N/A
10*28119	5-10-8	I	WILMA JEAN OSER	TH EXPLORATION LLC	1/8+	1057	328	N/A	N/A	N/A
10*28563	5-10-8	I	MARGARET TOLER	TH EXPLORATION LLC	1/8+	1074	630	N/A	N/A	N/A
10*28616	5-10-8	I	SILVIA J NEEHOUSE	TH EXPLORATION LLC	1/8+	1075	37	N/A	N/A	N/A
10*28617	5-10-8	I	RICKY E DAVIS AIF ALISA M DAVIS	TH EXPLORATION LLC	1/8+	1075	35	N/A	N/A	N/A
10*28812	5-10-8	I	ROBERT N BAKER AND THERESA L BAKER	TH EXPLORATION LLC	1/8+	1077	33	N/A	N/A	N/A
10*28855	5-10-8	I	PAMELA J WHORTON AND ROBERT D WHORTON	TH EXPLORATION LLC	1/8+	1077	264	N/A	N/A	N/A
10*28926	5-10-8	I	DAVID M AND SHERRY L TOLER	TH EXPLORATION LLC	1/8+	1078	13	N/A	N/A	N/A
10*28950	5-10-8	I	ANTHONY C BENEDETTA AND MARY A BENEDETTA	TH EXPLORATION LLC	1/8+	1078	188	N/A	N/A	N/A

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DEC 23 2020  
WV Department of Environmental Protection

4705102348



WW-6A1 Supplement

Operator's Well No. Van Winkle N-4HM

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment
10*28969	5-10-8	I	HARRY MCCrackEN AND BETH ANN MCCrackEN	TH EXPLORATION LLC	1/8+	1078	436	N/A	N/A	N/A
10*28988	5-10-8	I	HAROLD L GOUDY AND DONNA D GOUDY	TH EXPLORATION LLC	1/8+	1080	536	N/A	N/A	N/A
10*28989	5-10-8	I	SANDRA K LYTTON AND CHARLES E LYTTON	TH EXPLORATION LLC	1/8+	1080	538	N/A	N/A	N/A
10*28993	5-10-8	I	CALVIN MCGUIRE	TH EXPLORATION LLC	1/8+	1080	541	N/A	N/A	N/A
10*28994	5-10-8	I	JENNIFER T PUMPA AND RICHARD PUMPA	TH EXPLORATION LLC	1/8+	1080	543	N/A	N/A	N/A
10*28995	5-10-8	I	ELLEN SCHMIDT	TH EXPLORATION LLC	1/8+	1080	545	N/A	N/A	N/A
10*28996	5-10-8	I	SHAWN MARIE SEWGARD AND JERRY SWEGARD	TH EXPLORATION LLC	1/8+	1083	124	N/A	N/A	N/A
10*29043	5-10-8	I	DONALD LESTER GOUDY JR AND BILLIE GOUDY	TH EXPLORATION LLC	1/8+	1083	121	N/A	N/A	N/A
10*29044	5-10-8	I	GARREN RAY GOUDY AND HOLLEE J GOUDY	TH EXPLORATION LLC	1/8+	1083	377	N/A	N/A	N/A
10*29073	5-10-8	I	JOEL B MATHIS II AND DEBORAH MATHIS	TH EXPLORATION LLC	1/8+	1083	563	N/A	N/A	N/A
10*29206	5-10-8	I	PAMELA R BENEDETTA	TH EXPLORATION LLC	1/8+	1085	598	N/A	N/A	N/A
10*29245	5-10-8	I	AMFLO ENTERPRISES LLC CO BARRY STIFFLER	TH EXPLORATION LLC	1/8+	1086	508	N/A	N/A	N/A
10*29267	5-10-8	I	ELNORA M BARANICH	TH EXPLORATION LLC	1/8+	1090	141	N/A	N/A	N/A
10*29394	5-10-8	I	WILLIAM ELLIOTT AND MARY MARCIA ELLIOTT	TH EXPLORATION LLC	1/8+	1096	303	N/A	N/A	N/A
10*29512	5-10-8	I	KERRY R AND BARBARA MOORE	TH EXPLORATION LLC	1/8+	1096	305	N/A	N/A	N/A
10*29643	5-10-8	I	JAMES AND DEBRA LEE MATHIS	TH EXPLORATION LLC	1/8+	1100	83	N/A	N/A	N/A
10*29664	5-10-8	I	DALE BRUCE MOORE	TH EXPLORATION LLC	1/8+	1100	89	N/A	N/A	N/A
10*29669	5-10-8	I	JEFFREY & MELISSA M MOORE	TH EXPLORATION LLC	1/8+	1100	91	N/A	N/A	N/A
10*29721	5-10-8	I	CHARLES MICHAEL & TRACEY L BAKER	TH EXPLORATION LLC	1/8+	1100	250	N/A	N/A	N/A
10*29795	5-10-8	I	LOUIS M BENEDETTA	TH EXPLORATION LLC	1/8+	1101	27	N/A	N/A	N/A
10*29801	5-10-8	I	KIRCHGESSNER CONSULTING GROUP LLC	TH EXPLORATION LLC	1/8+			N/A	N/A	N/A
10*29807	5-10-8	I	DANIEL J NABUDA	TH EXPLORATION LLC	1/8+			N/A	N/A	N/A
10*29809	5-10-8	I	RICHARD D & JULIA M REPASKY	TH EXPLORATION LLC	1/8+			N/A	N/A	N/A
10*29813	5-10-8	I	HELEN E ROBINSON	TH EXPLORATION LLC	1/8+	1101	23	N/A	N/A	N/A
10*29833	5-10-8	I	SKYPOINT RESOURCES LLC	TH EXPLORATION LLC	1/8+			N/A	N/A	N/A
10*29857	5-10-8	I	DEAN A BENEDETTA	TH EXPLORATION LLC	1/8+			N/A	N/A	N/A
10*29858	5-10-8	I	H3 LLC	TH EXPLORATION LLC	1/8+			N/A	N/A	N/A
10*31355	5-10-8	I	KERRY R MOORE ET UX	CHEVRON USA INC	1/8+	772	546	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*31356	5-10-8	I	AMY M TOLER FKA AMY M PARKER	STONE ENERGY CORPORATION	1/8+	874	502	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21

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WW-6A1 Supplement

Operator's Well No. Van Winkle N-4HM

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment
10*31357	5-10-8	I	LORI E KESTNER	STONE ENERGY CORPORATION	1/8+	886	251	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31360	5-10-8	I	AVA SMITH	CHEVRON USA	1/8+	801	572	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*31361	5-10-8	I	JAMES W HARTLEY	CHEVRON USA INC	1/8+	801	563	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*31364	5-10-8	I	JEFFREY MOORE ET UX	CHEVRON USA INC	1/8+	776	443	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*31365	5-10-8	I	RHONDA SUE DEPAUL	CHEVRON USA INC	1/8+	777	84	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*31366	5-10-8	I	MARY RENEE WHITE	CHEVRON USA INC	1/8+	777	76	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*31367	5-10-8	I	RICHARD NEWMAN WHITE	CHEVRON USA INC	1/8+	771	51	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*31368	5-10-8	I	RUSSELL ALBERT WHITE	CHEVRON USA INC	1/8+	777	68	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*31369	5-10-8	I	JAMES ROBERT WHITE	CHEVRON USA INC	1/8+	778	189	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

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Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment
10*31371	5-10-8	I	DANNY MOORE ET UX	CHEVRON USA INC	1/8+	780	160	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*31372	5-10-8	I	ROBERT LEE WHITE JR	CHEVRON USA INC	1/8+	781	522	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*31373	5-10-8	I	JOYCE FELLERS ET VIR	CHEVRON USA INC	1/8+	780	267	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*31377	5-10-8	I	WILLIAM L ROBINSON ET UX	CHEVRON USA INC	1/8+	779	608	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*31383	5-10-8	I	KIMBERLY LAKE	CHEVRON USA INC	1/8+	784	427	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*47051.305.0	5-9-10	J	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	895	45	N/A	N/A	N/A
10*47051.305.0	5-9-12	K	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	895	45	N/A	N/A	N/A

\*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.

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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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December 21, 2020

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-4HM

Subject: Marshall County Route 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 84 and 74 in the area reflected on the Van Winkle N-4HM 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,

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

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

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

Date of Notice Certification: 12/21/2020

API No. 47- 051 -

Operator's Well No. Van Winkle N-4HM

Well Pad Name: Hunter Patchel

**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>523,442.19</u>
County:	<u>Marshall</u>		Northing:	<u>4,403,595.57</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>			

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 style="padding-left: 150px;"><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 checked="" type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" 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.

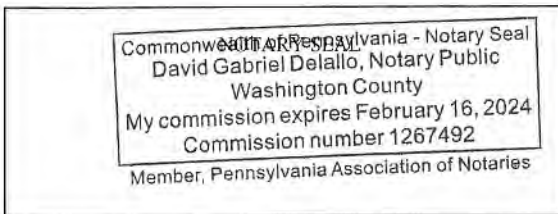


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**Certification of Notice is hereby given:**

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>Amy Morris</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 21 day of December, 2020  
David Gabriel Delallo Notary Public  
 My Commission Expires 2/16/2024

**Oil and Gas Privacy Notice:**

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

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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: 12/23/2020

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: 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

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

Name: Regina M. & Aaron D. Murray, Remainderman

Address: 5 Mound Manor

St. Mary's, WV 26170

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

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

SURFACE OWNER(s) (Impoundments or Pits)

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

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

COAL OWNER OR LESSEE

Name: CNX Land, LLC

Address: 1000 Consol Energy Drive

Canonsburg, PA 15317

COAL OPERATOR

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

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

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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**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

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(8-13)

API NO. 47-051 - \_\_\_\_\_  
OPERATOR WELL NO. Van Winkle N-4HM  
Well Pad Name: Hunter Pethel

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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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

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4705102348

WW-6A  
(8-13)

API NO. 47-051 - \_\_\_\_\_  
OPERATOR WELL NO. Van Winkle N-4HM  
Well Pad Name: Hunter Pethel

**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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WV Department of  
Environmental Protection

WW-6A  
(8-13)

4705102348

API NO. 47-051

OPERATOR WELL NO. Van Winkle N-4HM

Well Pad Name: Hunter Pethel

**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC

Telephone: 724-749-8388

Email: amorris@tug-hillop.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200

Canonsburg, PA 15317

Facsimile: 724-338-2030

**Oil and Gas Privacy Notice:**

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

Commonwealth of Pennsylvania - Notary Seal  
Susanne Dellere, Notary Public  
Washington County  
My commission expires January 15, 2025  
Commission number 1382332  
Member, Pennsylvania Association of Notaries

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

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**Exhibit WW-6A**

**Supplement Pg. 1A**

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

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

Well: Van Winkle N – 4HM  
 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.

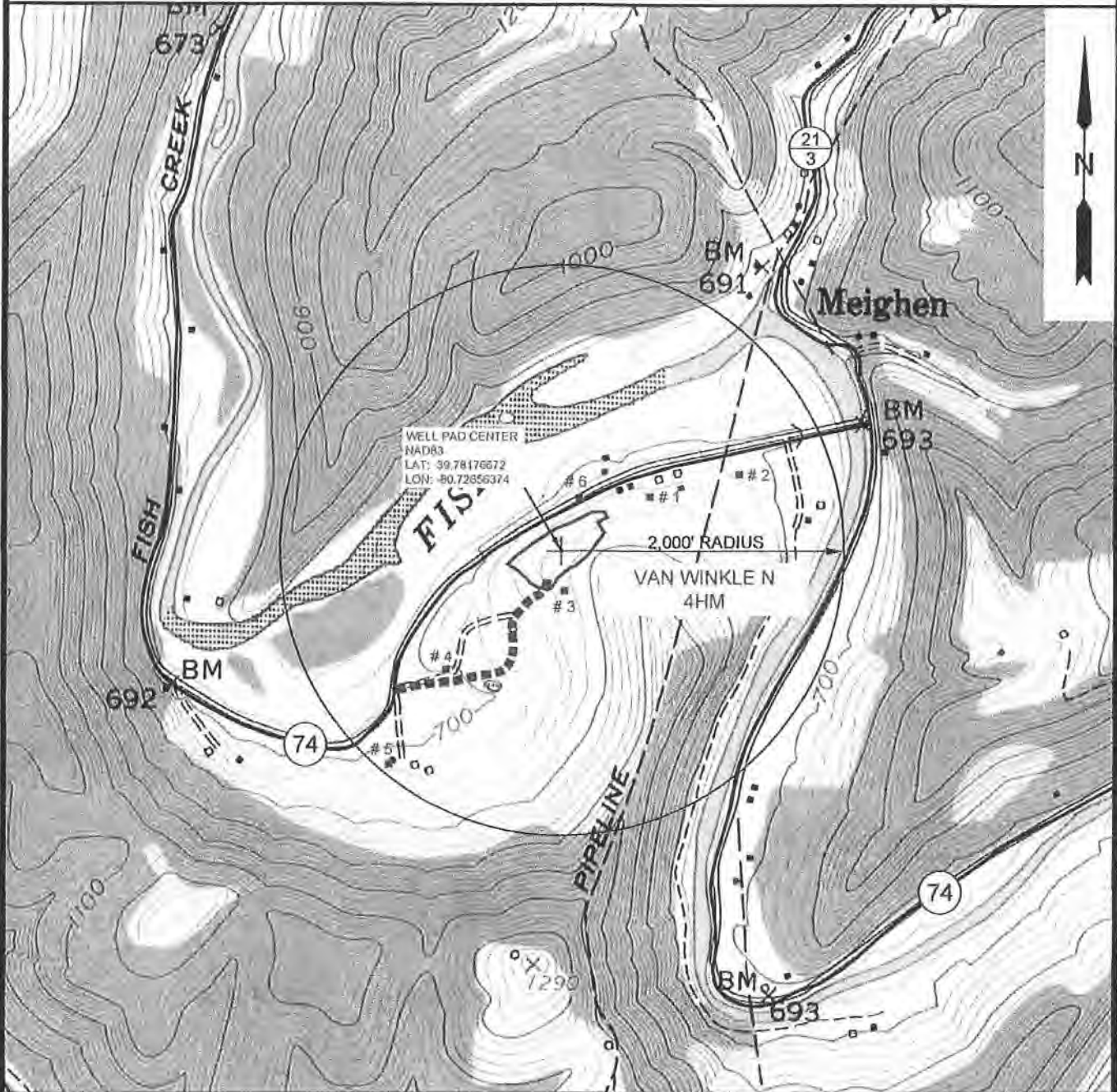
<p><b>Residence (#1)</b>                  TM 13 Pcl. 6                  Mary Virginia Pethtel                  Phone: 304-684-2646, 304-845-3423                  Physical Address:                  None Found – Possible Mobile Home                  Tax Address:                  9845 Fish Creek Rd                  Glen Easton, WV 26039</p>	<p><b>Residence (#2)</b>                  TM 13 Pcl. 7                  Mary Virginia Pethtel                  Phone: 304-684-2646, 304-845-3423                  Physical Address:                  9845 Fish Creek Rd                  Glen Easton, WV 26039                  Tax Address:                  Same</p>	<p><b>Commercial/Business (#3)*</b>                  TM 13 Pcl. 5                  Xcl. Midstream Operating, LLC                  Phone: 1-888-751-0434                  Physical Address:                  9269 Fish Creek Rd.                  Glen Easton, WV 26039                  Tax Address:                  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                  Phone: 1-888-751-0434                  Physical Address:                  None Found – Appears to be newer home                  Tax Address:                  1320 S University DR STE 500                  Fort Worth, TX 76107</p>	<p><b>Residence (#5)</b>                  TM 13 Pcl. 5                  Xcl. Midstream Operating, LLC                  Phone: 1-888-751-0434                  Physical Address:                  9201 Fish Creek Rd.                  Glen Easton, WV 26039                  Tax Address:                  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>

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# PROPOSED VAN WINKLE N - 4HM



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 25801 | 304.255.5296  
slsuv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/22/2020	1" = 1000'



**TUG HILL**  
OFFICE OPERATING

JAN 27 2021



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: 12/14/2020 Date Permit Application Filed: 1/4/2021

Notice of:

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

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

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

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

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

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

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: Regina M. & Aaron D. Murray, Remainderman  
Address: 5 Mound Manor  
St. Mary's, WV 26170

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

SURFACE OWNER(s) (Impoundments or Pits)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: CNX Land, LLC  
Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

COAL OPERATOR  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

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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Office of Oil and Gas  
DEC 23 2020

WV Department of  
Environmental Protection

**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).

DEC 23 2020

**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.**

**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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Environmental Protection



4705102348

WW-6A  
(8-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Van Winkle N-4HM  
Well Pad Name: Hunter Pethtel

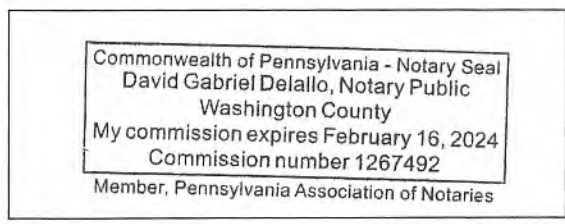
**Notice is hereby given by:**

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

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

**Oil and Gas Privacy Notice:**

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



Subscribed and sworn before me this 14 day of DECEMBER, 2020

*David Delallo*  
\_\_\_\_\_  
Notary Public

My Commission Expires 2/16/24

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Environmental Protection

**Exhibit WW-6A****Supplement Pg. 1A**

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

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

Well: Van Winkle N – 4HM  
District: Meade  
State: WV

There are five (5) 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.

<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> 9687 Fish Creek Rd. Glen Easton, WV 26039 <b>Tax Address:</b> 9845 Fish Creek Rd Glen Easton, WV 26039</p>	<p><b>Residence (#2)</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 (#3)</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 (#4)*</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 (#5)</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 (#6)</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>

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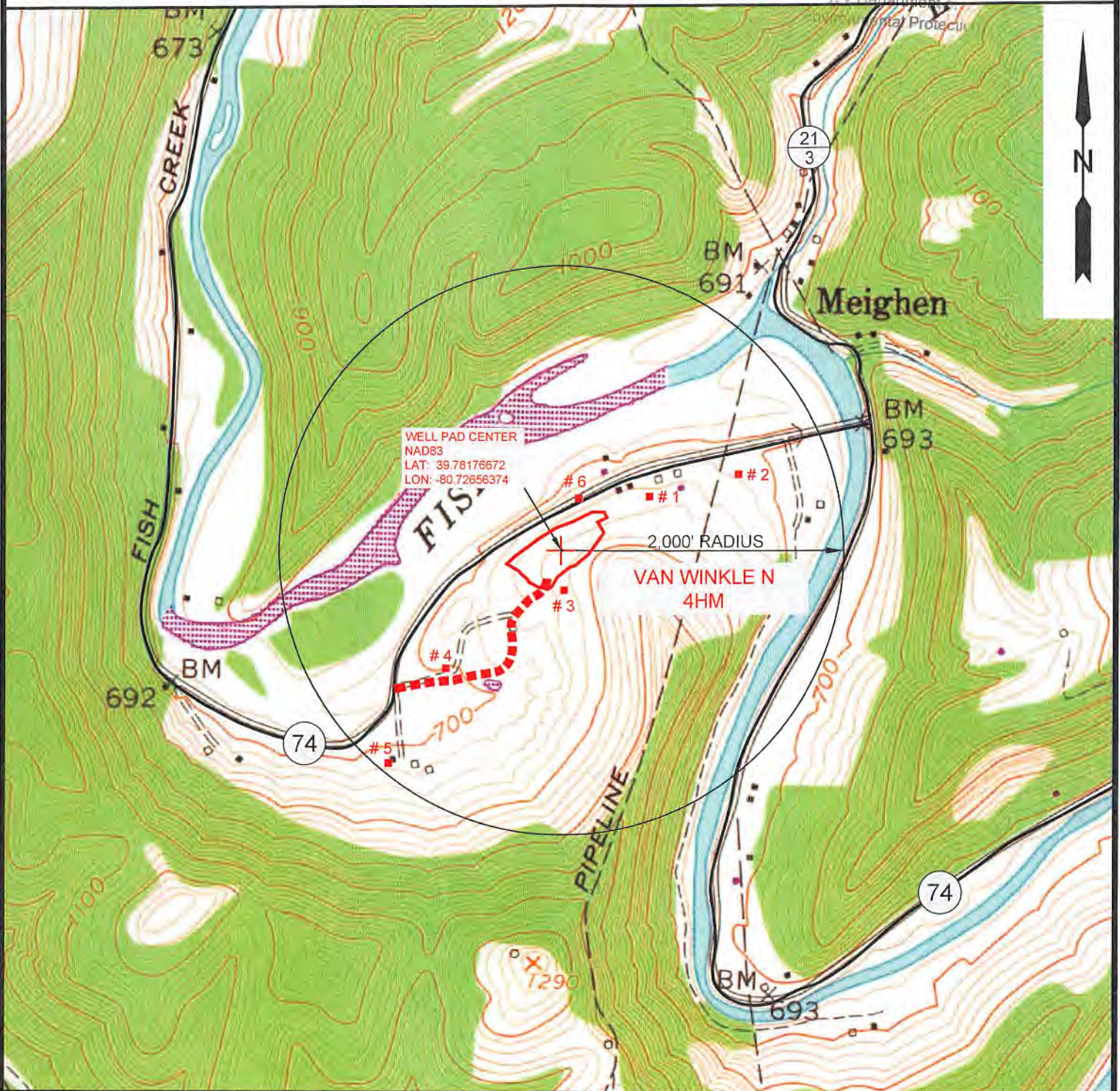


WW-6A

# PROPOSED VAN WINKLE N - 4HM

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SUPPLEMENT PG. 1B

DEC 23 2020



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 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	12/22/2020	1" = 1000'



**TUG HILL**  
OPERATING



Affidavit of Personal Service

4705102348

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)  , 6A5
- (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. Van Winkle N-4HM, N-5HM 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.

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.

[Signature]  
(Signature of person executing service)

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

[Signature]  
Notary Public

RECEIVED  
Office of Oil and Gas

(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

DEC 23 2020  
WV Department of Environmental Protection



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

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

**Date of Notice:** 12/14/2020      **Date of Planned Entry:** 12/18/2020

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

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

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

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: 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: West Virginia  
County: Marshall  
District: Meade  
Quadrangle: Glen Easton 7.5'

Approx. Latitude & Longitude: 39.78176850; -80.72661368  
Public Road Access: County Route 74  
Watershed: Middle Fish Creek  
Generally used farm name: XcL Midstream Operating, LLC

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

**Notice is hereby given by:**

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

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2020

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DEC 23 2020

WV Department of  
Environmental Protection

**Oil and Gas Privacy Notice:**

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

4705102348

**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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Environmental Protection



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. VanWinkle 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 14<sup>th</sup> 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.

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.

any G. Morris  
(Signature of person executing service)

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

[Signature]  
Notary Public DEC 23 2020

(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

WV Department of Environmental Protection







4705102348

**Additional Surface Owner – Van Winkle N-4HM and N-5HM  
WW-6A5**

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

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WV Department of  
Environmental Protection

Affidavit of Personal Service

4705102348

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)  , GAS
- (2) Application on Form WW-2(B) \_\_\_ / WW-3(B) \_\_\_ / WW-4(B) \_\_\_ / WW-5(B) \_\_\_ / WW-6(B)
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XCL Midstream Operating, LLC  
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Handing it to the corporation's employee \_\_\_ / officer  / director \_\_\_ / attorney in fact \_\_\_ / named Justin Trellet.

David Gabriel Delallo  
(Signature of person executing service)

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

David Gabriel 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

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4705102348

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

December 17, 2020

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

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

Subject: DOH Permit for the Hunter-Pethtel Pad, Marshall County  
Van Winkle N-4HM 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.

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Office of Oil and Gas

Very Truly Yours,

DEC 23 2020

WV Department of  
Environmental Protection

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

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



4705102348

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

Well No. Van Winkle N-4HM

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

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Office of Oil and Gas

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WV Department of  
Environmental Protection



# Hunter Pethel Well Pad Site

Site Design, Construction Plan, &  
Erosion and Sediment Control Plans  
Tug Hill Operating  
Marshall County  
Meade District  
Latitude 39.78176672°  
Longitude -80.72656374°  
Middle Fish Creek Watershed

**Pertinent Site Information**  
Hunter Pethel Well Pad Site  
Emergency Number: 304-343-1920  
Meade District: Marshall County, WV  
Watershed: Middle Fish Creek Watershed  
Tug Hill Contact Number: 1-817-632-3400

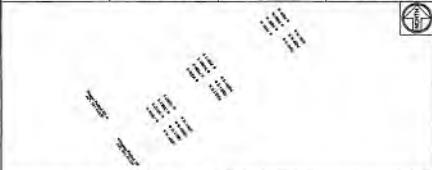


Property Owner Information - Hunter Pethel Well Site

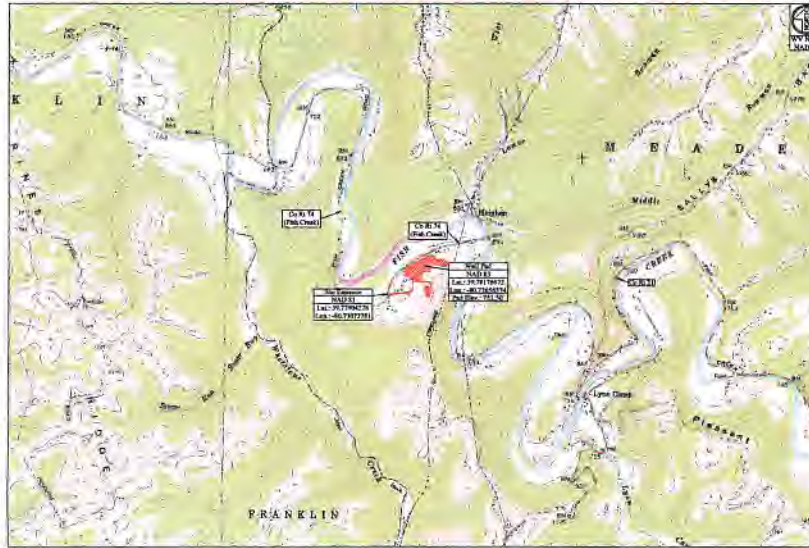
Owner	Meade District - Market Counts									
	TM	TP	W	PT	PA	PA2	PA3	PA4	PA5	PA6
WV Meade County, LLC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Public	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<b>Total</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>

## Exhibit A: Final Design: Issue for Permitting

Site Name	Center of Well Pad	Center of Production Pad	Center of Drilling Pad
WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29	WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29	WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29	WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29



Well Pad	Center of Well Pad	Center of Production Pad	Center of Drilling Pad
WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29	WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29	WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29	WV NAD 83 E: 465214.29 WV NAD 83 N: 465214.29



Well Pad Construction Summary

Item	Quantity	Unit
Excavation	1,000	cu yd
Gravel	500	cu yd
Asphalt	10,000	sq yd

Estimated Area

Area Type	Area (sq ft)
Well Pad	1,000
Production Pad	2,000
Access Road	5,000

Hunter Pethel Well Pad Site Quantities

Description	Quantity	Unit
Excavation	1,000	cu yd
Gravel	500	cu yd
Asphalt	10,000	sq yd

Intermittent Stream Impact (Linear Feet)

Stream Name	Impact Length (ft)
Middle Fish Creek	100
Other Stream	50
<b>Total</b>	<b>150</b>

Wetland Impact (Square Feet)

Wetland Type	Impact Area (sq ft)
Emergent Wetland	100
Other Wetland	50
<b>Total</b>	<b>150</b>

**APPROVED**  
**WVDEP OOG**  
2/24/2021



Site Location (NAD 83)	Latitude (DD)	Longitude (DD)
Well Pad	39.78176672	-80.72656374
Production Pad	39.78176672	-80.72656374

**Project Contacts**

The Hill Operating, LLC  
100 Rockledge Blvd.  
Buckhannon, WV 26039  
Canaanville, VA 0331

**Environmental**

Wetland Determination as provided by a third party dated 10/13/2020.

**Remediation Information**

The geologic information herein is based on aerial photographs by Blue Mountain Aerial Mapping, WV.

**MISS UTILITY OF WEST VIRGINIA**  
1-800-245-4848  
1000 Virginia Ave. SW  
Martinsburg, WV 26150

The WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities.

**Approach Routes:**

From the intersection of WV Rt 2 and 12th Street in Moundsville, WV, travel South on WV Rt 2 for 1.3 mi. Turn Left onto WV Rt 2 (Round Bottom Hill Rd.) Follow WV Rt 2 for 1.2 mi. Turn Right onto Co Rt 885 (Inchey Ln.) Follow Co Rt 885 for 1.5 mi. Turn Right onto Co Rt 31 (Roberts Ridge). Follow Co Rt 31 for 0.1 mi. Turn Right onto Ezer Rd 2 (Gallop Backbone). Follow Ezer Rd 2 for 4.7 mi. Turn Left onto the Knob Creek Well Pad, then Right onto Ezer Rd 2 (backtracking on Ezer Rd 2) and follow Ezer Rd 2 for 0.3 mi. Turn Left onto Co Rt 74 (Fish Creek). Follow Co Rt 74 for 2.1 mi. Turn Left (crossing the bridge) to stay on Co Rt 74. Follow Co Rt 74 for 0.6 mi. The site entrance will be on the Left (East) side of the road.



**Well Location Description:**

- All well construction complies with the following restrictions:
- \*SPP must be existing and/or developed spring used for domestic purposes.
- \*SPP must be installed and/or new greater than 2,500 GPD and the pump is duty increased from the center of the pad.
- \*SPP from the edge of disturbance to a natural reproducing trout stream.
- \*SPP from a surface ground water table to a 100-foot depth.

**WV License Exemptions of WV Code 25A-12**

The following activities are exempt from the provisions of WV Code 25A-12:

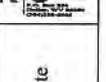
- Construction of a well for domestic purposes.
- Construction of a well for agricultural purposes.
- Construction of a well for industrial purposes.
- Construction of a well for geothermal purposes.
- Construction of a well for scientific purposes.
- Construction of a well for research purposes.
- Construction of a well for educational purposes.
- Construction of a well for religious purposes.
- Construction of a well for cultural purposes.
- Construction of a well for historical purposes.
- Construction of a well for archaeological purposes.
- Construction of a well for paleontological purposes.
- Construction of a well for biological purposes.
- Construction of a well for geological purposes.
- Construction of a well for environmental purposes.
- Construction of a well for scientific purposes.
- Construction of a well for research purposes.
- Construction of a well for educational purposes.
- Construction of a well for religious purposes.
- Construction of a well for cultural purposes.
- Construction of a well for historical purposes.
- Construction of a well for archaeological purposes.
- Construction of a well for paleontological purposes.
- Construction of a well for biological purposes.
- Construction of a well for geological purposes.
- Construction of a well for environmental purposes.

**Sheet Description**

Sheet	Description
1	Cover Sheet
1	Schedule of Quantities
W1-N4	Site Notes
2	Pre-Construction Site Conditions
3	Site Soil Map
4	Sharing Exhibit
5	Overall Plan View
6	EAS Plan View
7	Top Key Exhibit
8	Plan View
9-10	Cross Sections - Site
11-12	Cross Sections - Access Road
01-04	Construction Exhibit
L1	Landowner Disturbed Area Exhibit
S1	Site Reclamation
M1-M3	Production Exhibit
D1-D2	Erosion and Sediment Control Details
R1	Access Road Details
PI	Well Details



THIS DOCUMENT PREPARED FOR TUG HILL OPERATING



**Hunter Pethel Well Pad Site**  
Meade District  
Marshall County, WV

Date: 1/24/2021  
Scale: As Shown  
Designed By: ZS  
File No:  
Sheet 3 of 13







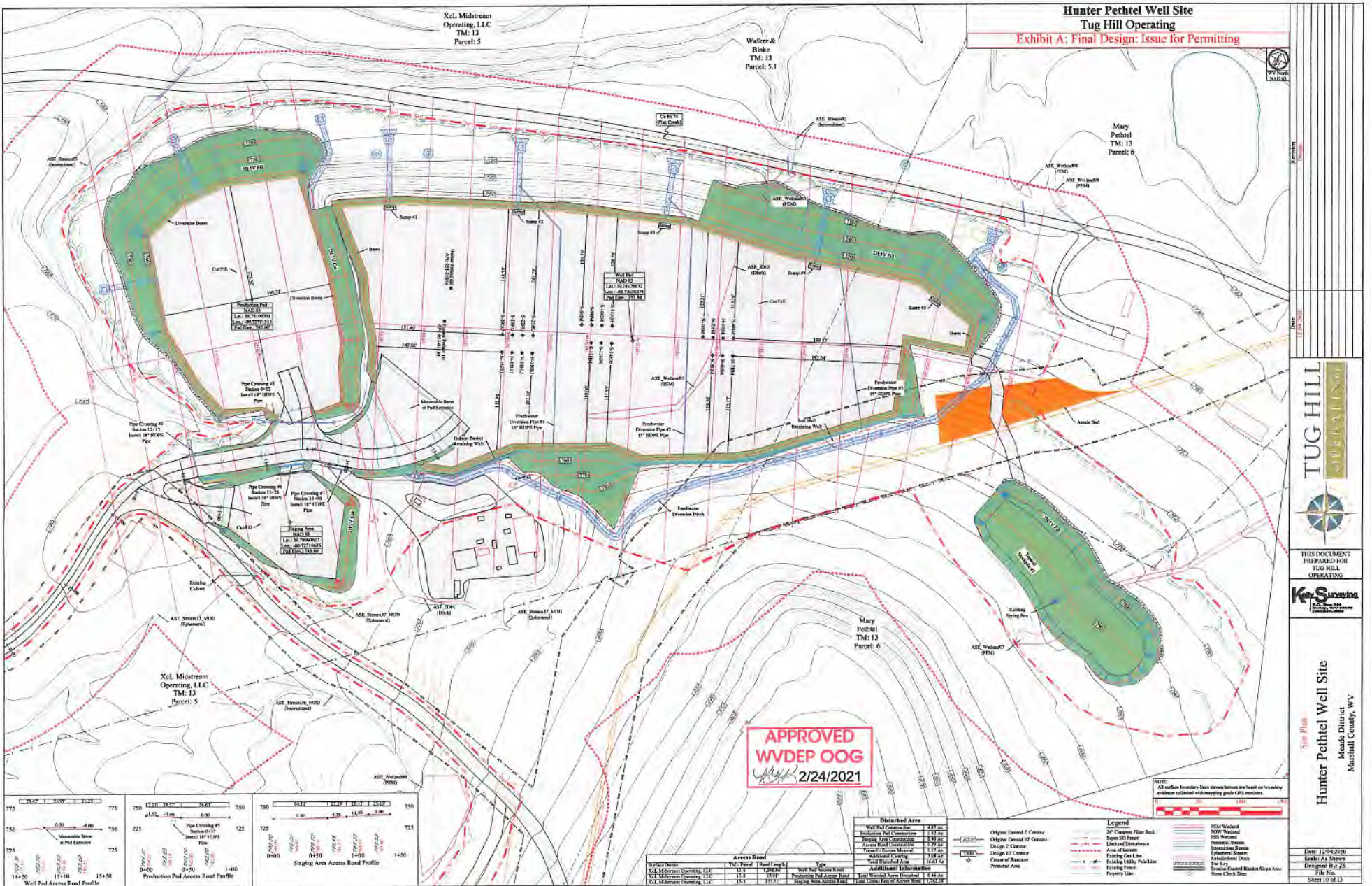
**Hunter Pethel Well Site**  
Tug Hill Operating

Exhibit A: Final Design: Issue for Permitting

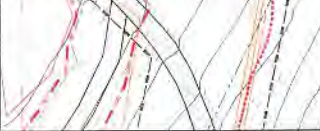
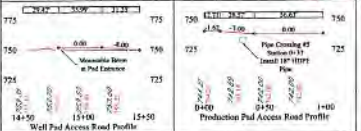
Xel Midstream Operating, LLC  
TM: 13  
Parcel: 5

Walker & Blake  
TM: 13  
Parcel: 5.1

Mary Pethel  
TM: 13  
Parcel: 6



**APPROVED**  
**WVDEP OOG**  
2/24/2021



Well Pad Area	Yield (bbl/d)	Well Pad Area (Ac)	Well Pad Access Road	Well Pad Access Road	Well Pad Access Road
Xel Midstream Operating, LLC	125	1,250	Production Pad Access Road	1,250	1,250
Xel Midstream Operating, LLC	125	1,250	Production Pad Access Road	1,250	1,250
Xel Midstream Operating, LLC	125	1,250	Production Pad Access Road	1,250	1,250

Disturbed Area	Area (Ac)
Well Pad Construction	1.87 Ac
Production Pad Construction	1.12 Ac
Staging Area Construction	1.42 Ac
Access Road Construction	2.39 Ac
Upper Access Road	1.17 Ac
Additional Clearing	3.88 Ac
Total Disturbed Area	12.05 Ac

Legend	Description
—	Original Ground Elevation
—	Original Ground (if Covered)
—	Design 2' Contour
—	Design 10' Contour
—	Center of Structure
—	Proposed Area
—	20' Temporary Filter Buck
—	Topsoil 10' Buffer
—	Line and Offset Reference
—	Area of Interest
—	Existing Gas Line
—	Existing Utility Pad Line
—	Existing Fence
—	Property Line
—	PEM Wetland
—	POW Wetland
—	Normal Stream
—	Seasonal Stream
—	Intermittent Stream
—	Artificial Stream
—	Artificial Stream
—	Stream Channel Disturbance Area
—	Stone Check Dam

NOTE: All surface boundary lines shown herein are based on the boundary evidence collected with existing public GIS resources.

**TUG HILL**  
ADVERTISING

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

**Key Surveys**  
SURVEYING & ENGINEERING

Hunter Pethel Well Site  
Marshall County, WV

Date: 12/04/2020  
Scale: As Shown  
Designed By: JS  
File No:  
Sheet 10 of 13