



west virginia department of environmental protection

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

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

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-5HM
47-051-02347-00-00

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

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

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

James A. Martin
Chief

Operator's Well Number: VAN WINKLE N-5HM
Farm Name: XCL MIDSTREAM OPERATING
U.S. WELL NUMBER: 47-051-02347-00-00
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

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.

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.



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601 57th Street, S.E.
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Harold D. Ward, Cabinet Secretary
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**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 1, 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)

4705102347

API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-5HM
Well Pad Name: Hunter Pethtel

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-5HM Well Pad Name: Hunter Pethtel

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

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

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

Handwritten signature and date: 12/10/2020

6) Existing Pad: Yes or No Yes

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

Marcellus is the target formation at a depth of 6140' - 6190', thickness of 50' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 6,290'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 16,124'

11) Proposed Horizontal Leg Length: 9,498.60'

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

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(a) If Yes, provide Mine Info: Name: _____ DEC 23 2020

Depth: _____

Seam: _____

Owner: _____

WV Department of
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WW-6B
(04/15)

API NO. 47-051

OPERATOR WELL NO. Van Winkle N-5HM

Well Pad Name: Hunter Pethel

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259ft ³ (CTS)
Fresh Water	13 3/8"	NEW	J55	54.5#	515'	515'	708ft ³ (CTS)
Coal	13 3/8"	NEW	J55	54.5#	515'	515'	708ft ³ (CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,226'	2,226'	723ft ³ (CTS)
Production	5 1/2"	NEW	P110	20#	16,124'	16,124'	4114ft ³ (CTS)
Tubing	2 3/8"	NEW	N80	4.7#		6,008'	
Liners							

M
12/10/2020

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	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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WW-6B
(10/14)

4705102347
API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-5HM
Well Pad Name: Hunter Pethel

*M
12/15/2020*

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 23,750,000 lb proppant and 430,000 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:

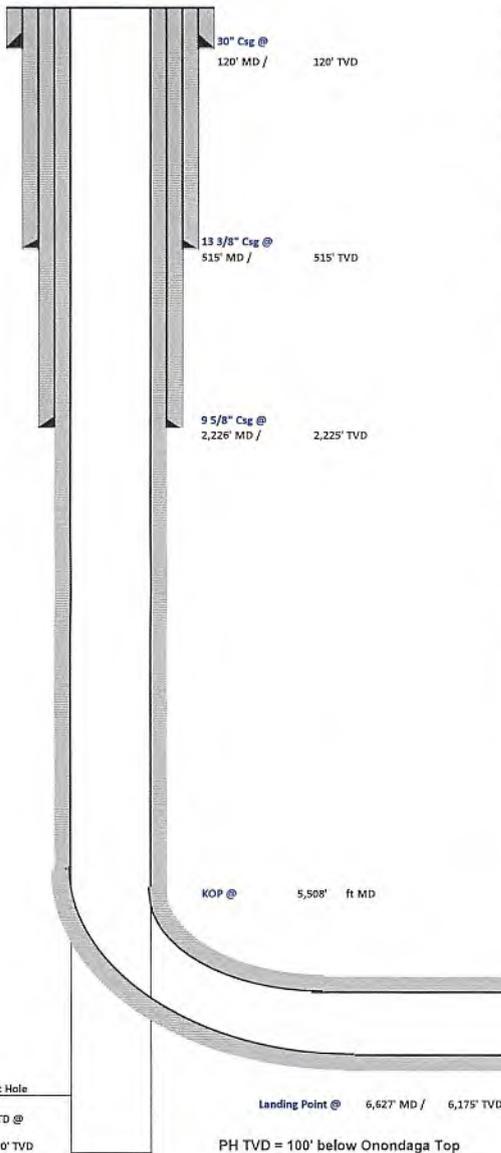
Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

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*Note: Attach additional sheets as needed.



WELL NAME: Van Winkle N-5HM
STATE: WV **COUNTY:** Marshall
DISTRICT: Meade
DF Elev: 754' **GL Elev:** 754'
TD: 16,124'
TH Latitude: 39.781896
TH Longitude: -80.726263
BH Latitude: 39.8043
BH Longitude: -80.745752



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	415
Sawickley Coal	314
Pittsburgh Coal	409
Big Lime	1627
Weir	1919
Berea	2118
Gordon	2388
Rhinestreet	5505
Genesee/Durkett	6010
Tully	6037
Hamilton	6072
Mercellus	6140
Landing Depth	6175
Onondaga	6190
Pilot Hole Depth	6290

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	2,226'	2,225'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	16,124'	6,009'	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	757	A	15	Air	1 Centralizer every other jt
Production	3,781	A	14.5	Air / SOBMs	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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4705102347



Tug Hill Operating, LLC Casing and Cement Program

Van Winkle N-5HM

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"	2,226'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	16,124'	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, DPS GIS (12/04/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

Permit well - Van Winkle N-5HM
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.
4705101850	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.
4705101431	Chief 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.
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.
4705170652	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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Log Well Information: Well No. 51-01330-01, Permit No. 01330, County = 51, State = WV, Operator = ...

Log Well Location Information: Township = ...

Operator Information: Operator Name = ...

Completion Information: Completion Date = ...

Production Information: Production Type = ...

Production Data Summary: Summary of production data for various months.

Production Data by Month: Detailed production data for each month from 2018 to 2019.

Production Data by Well: Production data for individual wells in the field.

Production Data by Property: Production data for different property owners.

Production Data by Lease: Production data for different lease agreements.

Production Data by Operator: Production data for different operators.

Production Data by County: Production data for different counties.

Production Data by State: Production data for different states.

Production Data by Country: Production data for different countries.

Production Data by Continent: Production data for different continents.

Production Data by Planet: Production data for different planets.

Production Data by Galaxy: Production data for different galaxies.

Production Data by Universe: Production data for different universes.

Production Data by Multiverse: Production data for different multiverses.

Production Data by Parallel Universe: Production data for different parallel universes.

Production Data by Alternate Reality: Production data for different alternate realities.

Production Data by Dimension: Production data for different dimensions.

Production Data by Plane: Production data for different planes.

Production Data by Point: Production data for different points.

Production Data by Line: Production data for different lines.

Production Data by Surface: Production data for different surfaces.

Production Data by Volume: Production data for different volumes.

Production Data by Mass: Production data for different masses.

Production Data by Energy: Production data for different energies.

Production Data by Force: Production data for different forces.

Production Data by Pressure: Production data for different pressures.

Production Data by Temperature: Production data for different temperatures.

Production Data by Humidity: Production data for different humidities.

Production Data by Wind: Production data for different winds.

Production Data by Rain: Production data for different rains.

Production Data by Snow: Production data for different snows.

Production Data by Ice: Production data for different ices.

Production Data by Fire: Production data for different fires.

Production Data by Earthquake: Production data for different earthquakes.

Production Data by Tsunami: Production data for different tsunamis.

Production Data by Hurricane: Production data for different hurricanes.

Production Data by Storm: Production data for different storms.

Production Data by Flood: Production data for different floods.

Production Data by Drought: Production data for different droughts.

Production Data by Heatwave: Production data for different heatwaves.

Production Data by Coldwave: Production data for different coldwaves.

Production Data by Heatstroke: Production data for different heatstrokes.

Production Data by Hypothermia: Production data for different hypothermias.

Production Data by Sunburn: Production data for different sunburns.

Production Data by Frostbite: Production data for different frostbites.

Production Data by Heat Exhaustion: Production data for different heat exhaustions.

Production Data by Heat Stroke: Production data for different heat strokes.

Production Data by Heat Cramps: Production data for different heat cramps.

Production Data by Heat Rash: Production data for different heat rashes.

Production Data by Heat Sickness: Production data for different heat sicknesses.

Production Data by Heat Fatigue: Production data for different heat fatigues.

Production Data by Heat Dehydration: Production data for different heat dehydrations.

Production Data by Heat Exhaustion: Production data for different heat exhaustions.

Production Data by Heat Stroke: Production data for different heat strokes.

Production Data by Heat Cramps: Production data for different heat cramps.

Production Data by Heat Rash: Production data for different heat rashes.

Production Data by Heat Sickness: Production data for different heat sicknesses.

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Production Data by Heat Dehydration: Production data for different heat dehydrations.

Production Data by Heat Exhaustion: Production data for different heat exhaustions.

Production Data by Heat Stroke: Production data for different heat strokes.

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Production Data by Heat Stroke: Production data for different heat strokes.

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Production Data by Heat Sickness: Production data for different heat sicknesses.

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Production Data by Heat Dehydration: Production data for different heat dehydrations.

Production Data by Heat Exhaustion: Production data for different heat exhaustions.

Production Data by Heat Stroke: Production data for different heat strokes.

Production Data by Heat Cramps: Production data for different heat cramps.

Production Data by Heat Rash: Production data for different heat rashes.

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WV Department of Environmental Protection

Well: County = 51 Permit = 01829

Report Date: Thursday, December 03, 2020 1:06:40 PM

Location Information - Well ID: 51-01829-001

Return Well Location Information - Well ID: 51-01829-001

Operator Information - Well ID: 51-01829-001

Compliance Information - Well ID: 51-01829-001

There is no Pay data for this well

Production Gas Information - Well ID: 51-01829-001

Production Oil Information - Well ID: 51-01829-001

Production Water Information - Well ID: 51-01829-001

There is no Bioregistry data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

WV Department of Environmental Protection

Well: County = 51 Permit = 01850

Report Date: Thursday, December 03, 2020 1:06:40 PM

Location Information - Well ID: 51-01850-001

Return Well Location Information - Well ID: 51-01850-001

Operator Information - Well ID: 51-01850-001

Compliance Information - Well ID: 51-01850-001

There is no Pay data for this well

Production Gas Information - Well ID: 51-01850-001

Production Oil Information - Well ID: 51-01850-001

Production Water Information - Well ID: 51-01850-001

There is no Bioregistry data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

WV Department of Environmental Protection

Well: County = 51 Permit = 01856

Report Date: Thursday, December 03, 2020 1:06:40 PM

Location Information - Well ID: 51-01856-001

Return Well Location Information - Well ID: 51-01856-001

Operator Information - Well ID: 51-01856-001

Compliance Information - Well ID: 51-01856-001

There is no Pay data for this well

Production Gas Information - Well ID: 51-01856-001

Production Oil Information - Well ID: 51-01856-001

Production Water Information - Well ID: 51-01856-001

There is no Bioregistry data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

WV Department of Environmental Protection

Well: County = 51 Permit = 01844

Report Date: Thursday, December 03, 2020 1:06:40 PM

Location Information - Well ID: 51-01844-001

Return Well Location Information - Well ID: 51-01844-001

Operator Information - Well ID: 51-01844-001

Compliance Information - Well ID: 51-01844-001

There is no Pay data for this well

Production Gas Information - Well ID: 51-01844-001

Production Oil Information - Well ID: 51-01844-001

Production Water Information - Well ID: 51-01844-001

There is no Bioregistry data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

WV Department of Environmental Protection

Well: County = 51 Permit = 01847

Report Date: Thursday, December 03, 2020 1:06:40 PM

Location Information - Well ID: 51-01847-001

Return Well Location Information - Well ID: 51-01847-001

Operator Information - Well ID: 51-01847-001

Compliance Information - Well ID: 51-01847-001

There is no Pay data for this well

Production Gas Information - Well ID: 51-01847-001

Production Oil Information - Well ID: 51-01847-001

Production Water Information - Well ID: 51-01847-001

There is no Bioregistry data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

WV Department of Environmental Protection

Well: County = 51 Permit = 01431

Report Date: Thursday, December 03, 2020 1:06:40 PM

Location Information - Well ID: 51-01431-001

Return Well Location Information - Well ID: 51-01431-001

Operator Information - Well ID: 51-01431-001

Compliance Information - Well ID: 51-01431-001

There is no Production Gas data for this well

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

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

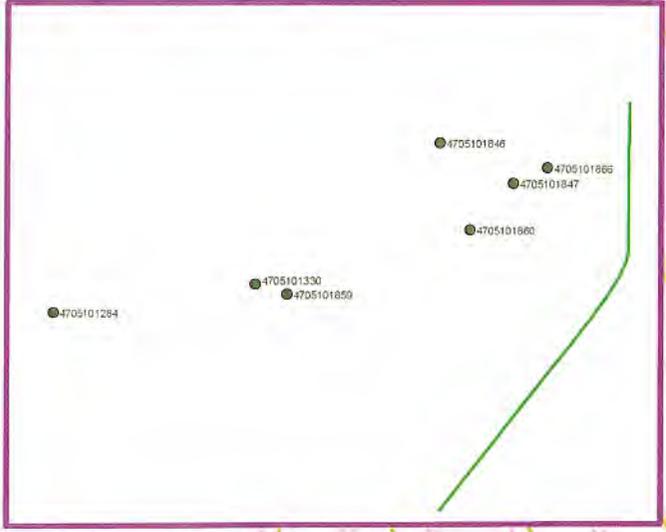
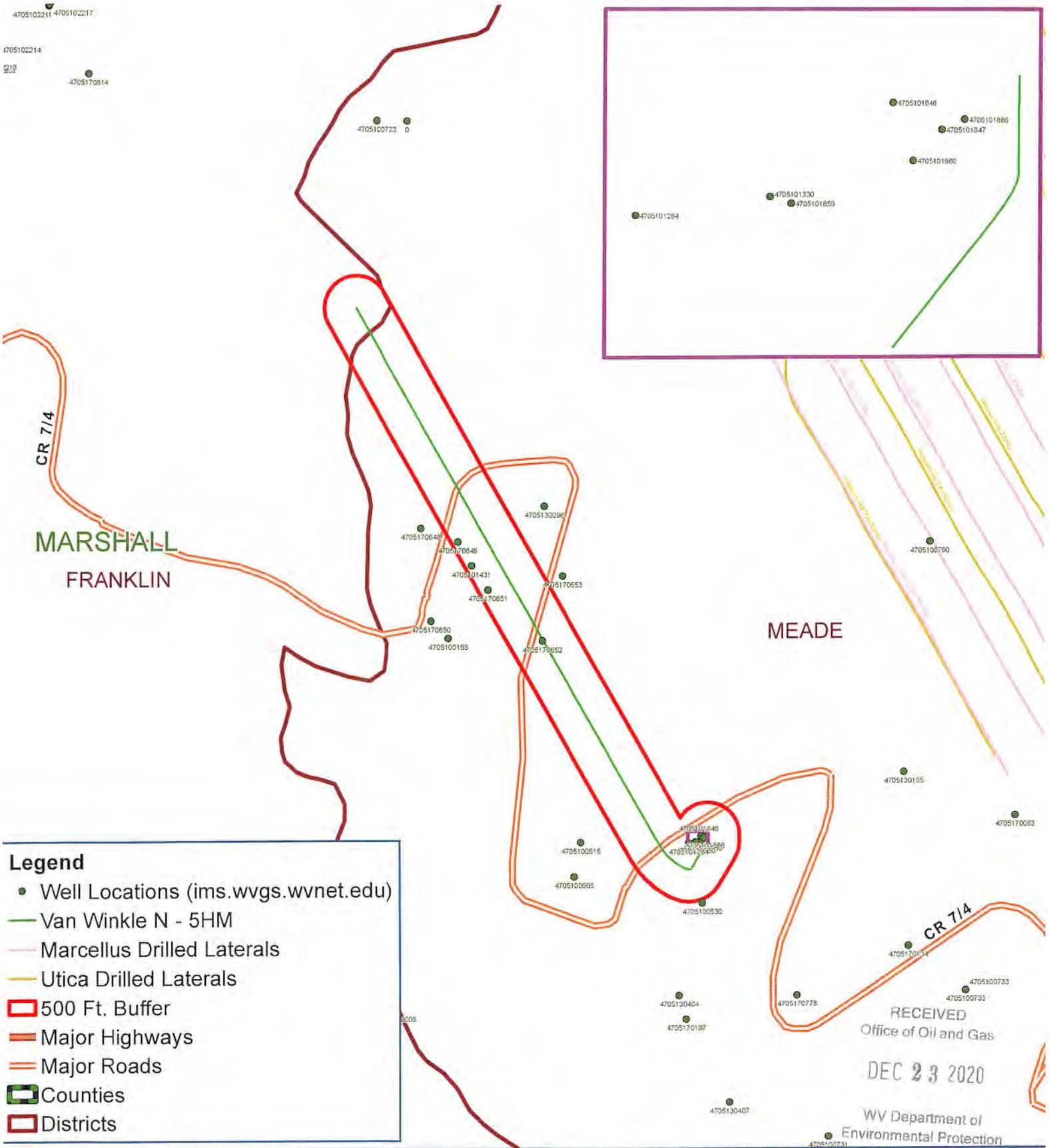
There is no Bioregistry data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

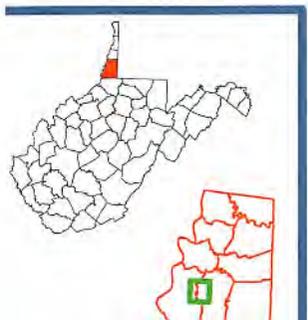
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Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Van Winkle N - 5HM
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- 500 Ft. Buffer
- Major Highways
- Major Roads
- ▭ Counties
- ▭ Districts

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Van Winkle N - 5HM Meade District Marshall County, WV



Notes:





Well: Van Winkle N-05 HM (slot T)
 Site: Van Winkle
 Project: Marshall County, West Virginia
 Design: rev1
 Rig:

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Van Winkle N-05HM PBHL r1	6009.00	8141.80	-5496.43	144455573.82	1711821.95	39.80430000	-80.74575200
- plan hits target center							
Van Winkle N-05HM LP r1	6175.00	-104.35	-787.73	14447327.69	1716532.64	39.78161600	-80.72906800
- plan misses target center by 0.56ft at 6625.26ft MD (-6174.61 TVD, -104.55 N, -788.08 E)							

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.000	0.00	
2	1100.00	0.00	0.000	1100.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	1250.00	3.00	180.000	1249.93	-3.93	0.00	2.00	180.000	-3.25	Begin 3.00° tangent
4	3002.47	3.00	180.000	3000.00	-95.64	0.00	0.00	0.000	-79.26	Begin 2°/100' build/turn
5	3495.74	12.30	211.500	3488.48	-153.49	-27.52	2.00	40.515	-111.80	Begin 12.30° tangent
6	5508.46	12.30	211.500	5455.00	-519.08	-251.55	0.00	0.000	-289.39	Begin 8°/100' build/turn
7	6156.27	50.00	305.000	6018.63	-429.39	-508.63	8.00	103.433	-71.19	Begin 10°/100' build/turn
8	6626.70	91.00	330.265	6174.58	-103.31	-788.79	10.00	35.668	355.84	Begin 91.00° lateral
9	16123.53	91.00	330.265	6009.00	8141.80	-5496.43	0.00	0.000	9824.54	PBHL/TD 16123.53 MD/6009.00 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

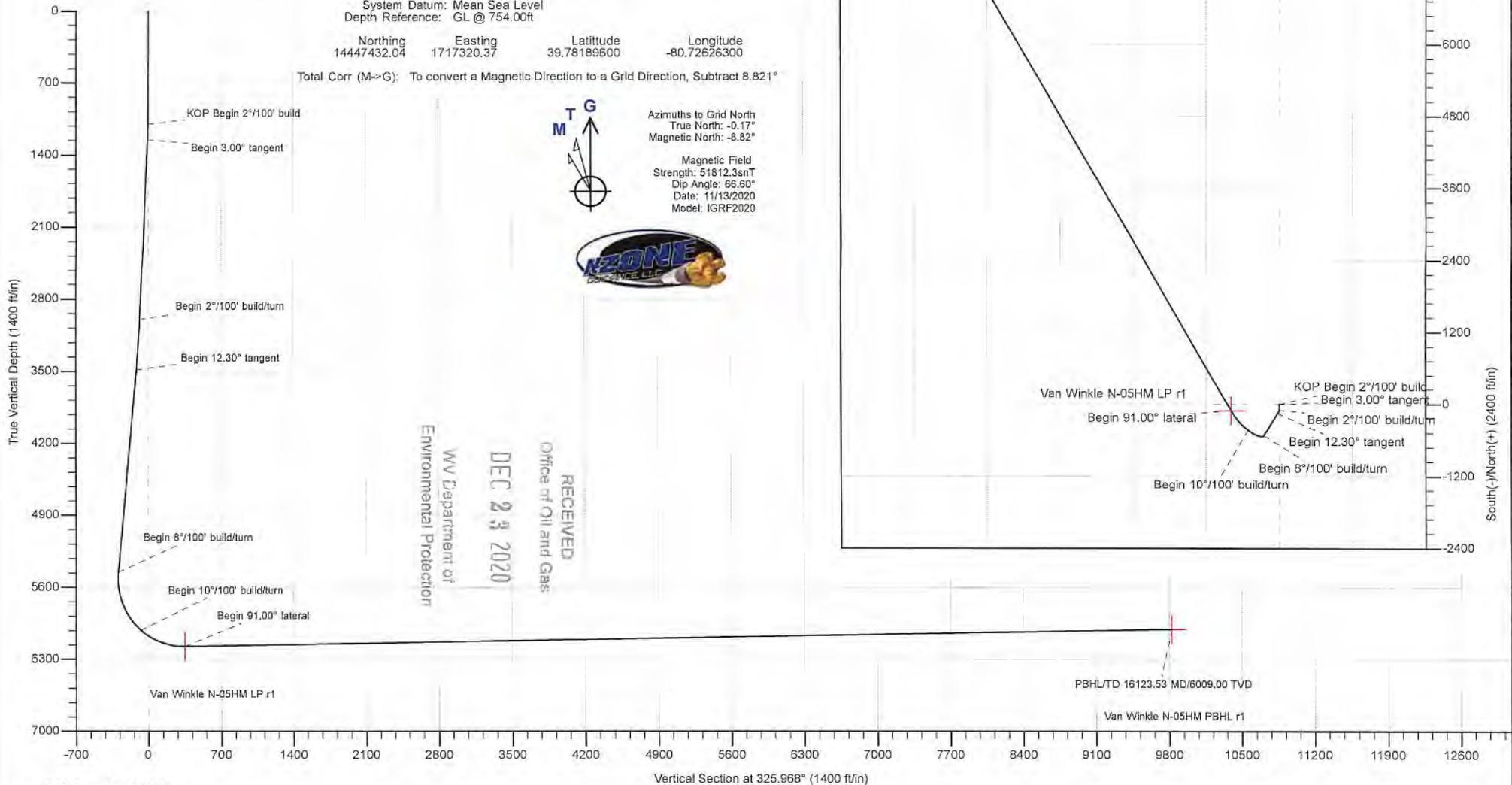
Northing 14447432.04 Easting 1717320.37 Latitude 39.78189600 Longitude -80.72626300

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.82°



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

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



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4705102347



4705102347

Planning Report - Geographic



Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle N-05 HM (slot T)
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-05 HM (slot T)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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:		Northing:	14,447,369.50 usft	Latitude:	39.78172533
From:	Lat/Long	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-05 HM (slot T)					
Well Position	+N/-S	0.00 ft	Northing:	14,447,432.05 usft	Latitude:	39.78189600
	+E/-W	0.00 ft	Easting:	1,717,320.37 usft	Longitude:	-80.72626300
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	51,812.26474669

Design	rev1				
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	325.968	

Plan Survey Tool Program	Date	11/17/2020			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	16,123.53 rev1 (Original Hole)	MWD	MWD - Standard	

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Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,250.00	3.00	180.000	1,249.93	-3.93	0.00	2.00	2.00	0.00	180.000	
3,002.47	3.00	180.000	3,000.00	-95.64	0.00	0.00	0.00	0.00	0.000	
3,495.74	12.30	211.500	3,488.48	-153.49	-27.52	2.00	1.89	6.39	40.515	
5,508.46	12.30	211.500	5,455.00	-519.08	-251.55	0.00	0.00	0.00	0.000	
6,156.27	50.00	305.000	6,018.63	-429.39	-508.63	8.00	5.82	14.43	103.433	
6,626.70	91.00	330.265	6,174.58	-103.31	-788.79	10.00	8.72	5.37	35.668	
16,123.53	91.00	330.265	6,009.00	8,141.80	-5,498.43	0.00	0.00	0.00	0.000	Van Winkle N-05HM F



Planning Report - Geographic



Database: DB_Aug1919_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle N-05 HM (slot T)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Van Winkle N-05 HM (slot T)
 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		
0.00	0.00	0.000	0.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
100.00	0.00	0.000	100.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
200.00	0.00	0.000	200.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
300.00	0.00	0.000	300.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
400.00	0.00	0.000	400.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
500.00	0.00	0.000	500.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
600.00	0.00	0.000	600.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
700.00	0.00	0.000	700.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
800.00	0.00	0.000	800.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
900.00	0.00	0.000	900.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,447,432.05	1,717,320.37	39.78189600	-80.72626300		
KOP Begin 2°/100' build											
1,200.00	2.00	180.000	1,199.98	-1.75	0.00	14,447,430.30	1,717,320.37	39.78189121	-80.72626302		
1,250.00	3.00	180.000	1,249.93	-3.93	0.00	14,447,428.12	1,717,320.37	39.78188522	-80.72626304		
Begin 3.00° tangent											
1,300.00	3.00	180.000	1,299.86	-6.54	0.00	14,447,425.50	1,717,320.37	39.78187803	-80.72626307		
1,400.00	3.00	180.000	1,399.73	-11.78	0.00	14,447,420.27	1,717,320.37	39.78186366	-80.72626313		
1,500.00	3.00	180.000	1,499.59	-17.01	0.00	14,447,415.04	1,717,320.37	39.78184929	-80.72626319		
1,600.00	3.00	180.000	1,599.45	-22.24	0.00	14,447,409.80	1,717,320.37	39.78183491	-80.72626324		
1,700.00	3.00	180.000	1,699.31	-27.48	0.00	14,447,404.57	1,717,320.37	39.78182054	-80.72626330		
1,800.00	3.00	180.000	1,799.18	-32.71	0.00	14,447,399.33	1,717,320.37	39.78180617	-80.72626336		
1,900.00	3.00	180.000	1,899.04	-37.94	0.00	14,447,394.10	1,717,320.37	39.78179180	-80.72626341		
2,000.00	3.00	180.000	1,998.90	-43.18	0.00	14,447,388.87	1,717,320.37	39.78177742	-80.72626347		
2,100.00	3.00	180.000	2,098.77	-48.41	0.00	14,447,383.63	1,717,320.37	39.78176305	-80.72626353		
2,200.00	3.00	180.000	2,198.63	-53.65	0.00	14,447,378.40	1,717,320.37	39.78174868	-80.72626358		
2,300.00	3.00	180.000	2,298.49	-58.88	0.00	14,447,373.17	1,717,320.37	39.78173431	-80.72626364		
2,400.00	3.00	180.000	2,398.36	-64.11	0.00	14,447,367.93	1,717,320.37	39.78171993	-80.72626370		
2,500.00	3.00	180.000	2,498.22	-69.35	0.00	14,447,362.70	1,717,320.37	39.78170556	-80.72626376		
2,600.00	3.00	180.000	2,598.08	-74.58	0.00	14,447,357.47	1,717,320.37	39.78169119	-80.72626381		
2,700.00	3.00	180.000	2,697.94	-79.81	0.00	14,447,352.23	1,717,320.37	39.78167681	-80.72626387		
2,800.00	3.00	180.000	2,797.81	-85.05	0.00	14,447,347.00	1,717,320.37	39.78166244	-80.72626393		
2,900.00	3.00	180.000	2,897.67	-90.28	0.00	14,447,341.77	1,717,320.37	39.78164807	-80.72626398		
3,000.00	3.00	180.000	2,997.53	-95.51	0.00	14,447,336.53	1,717,320.37	39.78163370	-80.72626404		
3,002.47	3.00	180.000	3,000.00	-95.64	0.00	14,447,336.40	1,717,320.37	39.78163334	-80.72626404		
Begin 2°/100' build/turn											
3,100.00	4.66	195.800	3,097.31	-102.01	-1.08	14,447,330.04	1,717,319.29	39.78161587	-80.72626795		
3,200.00	6.53	203.183	3,196.83	-111.14	-4.42	14,447,320.90	1,717,315.94	39.78159082	-80.72627995		
3,300.00	8.46	207.251	3,295.97	-122.91	-10.03	14,447,309.14	1,717,310.34	39.78155855	-80.72630003		
3,400.00	10.41	209.809	3,394.62	-137.29	-17.89	14,447,294.76	1,717,302.48	39.78151912	-80.72632817		
3,495.74	12.30	211.500	3,488.48	-153.49	-27.52	14,447,278.55	1,717,292.85	39.78147470	-80.72636263		
Begin 12.30° tangent											
3,500.00	12.30	211.500	3,492.64	-154.27	-27.99	14,447,277.78	1,717,292.37	39.78147258	-80.72636432		
3,600.00	12.30	211.500	3,590.34	-172.43	-39.13	14,447,259.62	1,717,281.24	39.78142279	-80.72640414		
3,700.00	12.30	211.500	3,688.05	-190.59	-50.26	14,447,241.45	1,717,270.11	39.78137300	-80.72644396		
3,800.00	12.30	211.500	3,785.75	-208.76	-61.39	14,447,223.29	1,717,258.98	39.78132321	-80.72648377		
3,900.00	12.30	211.500	3,883.46	-226.92	-72.52	14,447,205.12	1,717,247.85	39.78127343	-80.72652359		
4,000.00	12.30	211.500	3,981.16	-245.09	-83.65	14,447,186.96	1,717,236.72	39.78122364	-80.72656341		
4,100.00	12.30	211.500	4,078.87	-263.25	-94.78	14,447,168.80	1,717,225.59	39.78117385	-80.72660322		
4,200.00	12.30	211.500	4,176.57	-281.41	-105.91	14,447,150.63	1,717,214.46	39.78112406	-80.72664304		
4,300.00	12.30	211.500	4,274.28	-299.58	-117.04	14,447,132.47	1,717,203.33	39.78107427	-80.72668285		
4,400.00	12.30	211.500	4,371.98	-317.74	-128.17	14,447,114.31	1,717,192.19	39.78102448	-80.72672267		
4,500.00	12.30	211.500	4,469.69	-335.90	-139.30	14,447,096.14	1,717,181.06	39.78097469	-80.72676249		
4,600.00	12.30	211.500	4,567.39	-354.07	-150.43	14,447,077.98	1,717,169.93	39.78092490	-80.72680230		



Planning Report - Geographic



Database: DB_Aug1919_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle N-05 HM (slot T)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Van Winkle N-05 HM (slot T)
 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	
4,700.00	12.30	211.500	4,665.09	-372.23	-161.56	14,447,059.81	1,717,158.80	39.78087511	-80.72684212	
4,800.00	12.30	211.500	4,762.80	-390.40	-172.69	14,447,041.65	1,717,147.67	39.78082532	-80.72688194	
4,900.00	12.30	211.500	4,860.50	-408.56	-183.83	14,447,023.49	1,717,136.54	39.78077553	-80.72692175	
5,000.00	12.30	211.500	4,958.21	-426.72	-194.96	14,447,005.32	1,717,125.41	39.78072574	-80.72696157	
5,100.00	12.30	211.500	5,055.91	-444.89	-206.09	14,446,987.16	1,717,114.28	39.78067595	-80.72700138	
5,200.00	12.30	211.500	5,153.62	-463.05	-217.22	14,446,969.00	1,717,103.15	39.78062616	-80.72704120	
5,300.00	12.30	211.500	5,251.32	-481.21	-228.35	14,446,950.83	1,717,092.02	39.78057637	-80.72708101	
5,400.00	12.30	211.500	5,349.03	-499.38	-239.48	14,446,932.67	1,717,080.89	39.78052658	-80.72712083	
5,500.00	12.30	211.500	5,446.73	-517.54	-250.61	14,446,914.50	1,717,069.76	39.78047680	-80.72716065	
5,508.46	12.30	211.500	5,455.00	-519.08	-251.55	14,446,912.97	1,717,068.81	39.78047258	-80.72716401	
Begin 8°/100' build/turn										
5,600.00	12.74	245.709	5,544.48	-531.56	-265.87	14,446,900.48	1,717,054.50	39.78043842	-80.72721509	
5,700.00	17.18	271.991	5,641.18	-535.59	-290.71	14,446,896.46	1,717,029.65	39.78042757	-80.72730358	
5,800.00	23.54	286.143	5,734.94	-529.52	-324.71	14,446,902.53	1,716,995.66	39.78044453	-80.72742451	
5,900.00	30.64	294.288	5,823.94	-513.46	-367.18	14,446,918.59	1,716,953.18	39.78048899	-80.72757553	
6,000.00	38.08	299.552	5,906.46	-487.72	-417.32	14,446,944.32	1,716,903.05	39.78056008	-80.72775369	
6,100.00	45.68	303.300	5,980.87	-452.82	-474.13	14,446,979.23	1,716,846.24	39.78065641	-80.72795554	
6,156.27	50.00	305.000	6,018.63	-429.39	-508.63	14,447,002.65	1,716,811.74	39.78072103	-80.72807807	
Begin 10°/100' build/turn										
6,200.00	53.60	308.166	6,045.68	-408.90	-536.20	14,447,023.14	1,716,784.17	39.78077753	-80.72817598	
6,300.00	62.08	314.428	6,098.89	-352.97	-599.55	14,447,079.08	1,716,720.82	39.78093168	-80.72840087	
6,400.00	70.81	319.761	6,138.84	-285.82	-661.76	14,447,146.22	1,716,658.60	39.78111659	-80.72862159	
6,500.00	79.68	324.549	6,164.30	-209.51	-720.95	14,447,222.54	1,716,599.42	39.78132666	-80.72883143	
6,600.00	88.61	329.072	6,174.49	-126.35	-775.31	14,447,305.70	1,716,545.06	39.78155549	-80.72902402	
6,628.70	91.00	330.265	6,174.58	-103.31	-788.79	14,447,328.74	1,716,531.58	39.78161888	-80.72907176	
Begin 91.00° lateral										
6,700.00	91.00	330.265	6,173.31	-39.67	-825.14	14,447,392.38	1,716,495.22	39.78179396	-80.72920047	
6,800.00	91.00	330.265	6,171.56	47.15	-874.73	14,447,479.20	1,716,445.63	39.78203280	-80.72937605	
6,900.00	91.00	330.265	6,169.82	133.97	-924.33	14,447,566.02	1,716,396.04	39.78227164	-80.72955164	
7,000.00	91.00	330.265	6,168.08	220.79	-973.92	14,447,652.84	1,716,346.45	39.78251048	-80.72972722	
7,100.00	91.00	330.265	6,166.33	307.61	-1,023.51	14,447,739.66	1,716,296.86	39.78274932	-80.72990281	
7,200.00	91.00	330.265	6,164.59	394.43	-1,073.10	14,447,826.48	1,716,247.27	39.78298816	-80.73007840	
7,300.00	91.00	330.265	6,162.84	481.25	-1,122.69	14,447,913.30	1,716,197.68	39.78322700	-80.73025399	
7,400.00	91.00	330.265	6,161.10	568.07	-1,172.28	14,448,000.11	1,716,148.08	39.78346584	-80.73042958	
7,500.00	91.00	330.265	6,159.36	654.89	-1,221.88	14,448,086.93	1,716,098.49	39.78370468	-80.73060517	
7,600.00	91.00	330.265	6,157.61	741.71	-1,271.47	14,448,173.75	1,716,048.90	39.78394352	-80.73078077	
7,700.00	91.00	330.265	6,155.87	828.53	-1,321.06	14,448,260.57	1,715,999.31	39.78418235	-80.73095636	
7,800.00	91.00	330.265	6,154.13	915.35	-1,370.65	14,448,347.39	1,715,949.72	39.78442119	-80.73113196	
7,900.00	91.00	330.265	6,152.38	1,002.17	-1,420.24	14,448,434.21	1,715,900.13	39.78466003	-80.73130755	
8,000.00	91.00	330.265	6,150.64	1,088.99	-1,469.83	14,448,521.03	1,715,850.53	39.78489887	-80.73148315	
8,100.00	91.00	330.265	6,148.90	1,175.81	-1,519.43	14,448,607.85	1,715,800.94	39.78513770	-80.73165875	
8,200.00	91.00	330.265	6,147.15	1,262.63	-1,569.02	14,448,694.67	1,715,751.35	39.78537654	-80.73183435	
8,300.00	91.00	330.265	6,145.41	1,349.45	-1,618.61	14,448,781.49	1,715,701.76	39.78561538	-80.73200996	
8,400.00	91.00	330.265	6,143.67	1,436.27	-1,668.20	14,448,868.31	1,715,652.17	39.78585421	-80.73218556	
8,500.00	91.00	330.265	6,141.92	1,523.09	-1,717.79	14,448,955.13	1,715,602.58	39.78609305	-80.73236116	
8,600.00	91.00	330.265	6,140.18	1,609.90	-1,767.38	14,449,041.95	1,715,552.99	39.78633189	-80.73253677	
8,700.00	91.00	330.265	6,138.43	1,696.72	-1,816.98	14,449,128.77	1,715,503.39	39.78657072	-80.73271238	
8,800.00	91.00	330.265	6,136.69	1,783.54	-1,866.57	14,449,215.59	1,715,453.80	39.78680956	-80.73288798	
8,900.00	91.00	330.265	6,134.95	1,870.36	-1,916.16	14,449,302.40	1,715,404.21	39.78704839	-80.73306359	
9,000.00	91.00	330.265	6,133.20	1,957.18	-1,965.75	14,449,389.22	1,715,354.62	39.78728723	-80.73323920	
9,100.00	91.00	330.265	6,131.46	2,044.00	-2,015.34	14,449,476.04	1,715,305.03	39.78752606	-80.73341482	
9,200.00	91.00	330.265	6,129.72	2,130.82	-2,064.93	14,449,562.86	1,715,255.44	39.78776490	-80.73359043	
9,300.00	91.00	330.265	6,127.97	2,217.64	-2,114.53	14,449,649.68	1,715,205.84	39.78800373	-80.73376604	
9,400.00	91.00	330.265	6,126.23	2,304.46	-2,164.12	14,449,736.50	1,715,156.25	39.78824256	-80.73394166	



Planning Report - Geographic

4705102347



Database: DB_Aug1919_v14
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 Site: Van Winkle
 Well: Van Winkle N-05 HM (slot T)
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 Design: rev1

Local Co-ordinate Reference: Well Van Winkle N-05 HM (slot T)
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Planned Survey

WV Department of
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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,500.00	91.00	330.265	6,124.49	2,391.28	-2,213.71	14,449,823.32	1,715,106.66	39.78848140	-80.73411728
9,600.00	91.00	330.265	6,122.74	2,478.10	-2,263.30	14,449,910.14	1,715,057.07	39.78872023	-80.73429289
9,700.00	91.00	330.265	6,121.00	2,564.92	-2,312.89	14,449,996.96	1,715,007.48	39.78895906	-80.73446851
9,800.00	91.00	330.265	6,119.26	2,651.74	-2,362.48	14,450,083.78	1,714,957.89	39.78919790	-80.73464413
9,900.00	91.00	330.265	6,117.51	2,738.56	-2,412.08	14,450,170.60	1,714,908.29	39.78943673	-80.73481975
10,000.00	91.00	330.265	6,115.77	2,825.38	-2,461.67	14,450,257.42	1,714,858.70	39.78967556	-80.73499538
10,100.00	91.00	330.265	6,114.02	2,912.20	-2,511.26	14,450,344.24	1,714,809.11	39.78991439	-80.73517100
10,200.00	91.00	330.265	6,112.28	2,999.02	-2,560.85	14,450,431.06	1,714,759.52	39.79015322	-80.73534663
10,300.00	91.00	330.265	6,110.54	3,085.84	-2,610.44	14,450,517.88	1,714,709.93	39.79039205	-80.73552225
10,400.00	91.00	330.265	6,108.79	3,172.66	-2,660.03	14,450,604.69	1,714,660.34	39.79063089	-80.73569788
10,500.00	91.00	330.265	6,107.05	3,259.48	-2,709.63	14,450,691.51	1,714,610.75	39.79086972	-80.73587351
10,600.00	91.00	330.265	6,105.31	3,346.29	-2,759.22	14,450,778.33	1,714,561.15	39.79110855	-80.73604914
10,700.00	91.00	330.265	6,103.56	3,433.11	-2,808.81	14,450,865.15	1,714,511.56	39.79134738	-80.73622477
10,800.00	91.00	330.265	6,101.82	3,519.93	-2,858.40	14,450,951.97	1,714,461.97	39.79158621	-80.73640040
10,900.00	91.00	330.265	6,100.08	3,606.75	-2,907.99	14,451,038.79	1,714,412.38	39.79182504	-80.73657604
11,000.00	91.00	330.265	6,098.33	3,693.57	-2,957.58	14,451,125.61	1,714,362.79	39.79206387	-80.73675167
11,100.00	91.00	330.265	6,096.59	3,780.39	-3,007.18	14,451,212.43	1,714,313.20	39.79230270	-80.73692731
11,200.00	91.00	330.265	6,094.85	3,867.21	-3,056.77	14,451,299.25	1,714,263.60	39.79254152	-80.73710294
11,300.00	91.00	330.265	6,093.10	3,954.03	-3,106.36	14,451,386.07	1,714,214.01	39.79278035	-80.73727858
11,400.00	91.00	330.265	6,091.36	4,040.85	-3,155.95	14,451,472.89	1,714,164.42	39.79301918	-80.73745422
11,500.00	91.00	330.265	6,089.61	4,127.67	-3,205.54	14,451,559.71	1,714,114.83	39.79325801	-80.73762986
11,600.00	91.00	330.265	6,087.87	4,214.49	-3,255.13	14,451,646.53	1,714,065.24	39.79349684	-80.73780551
11,700.00	91.00	330.265	6,086.13	4,301.31	-3,304.73	14,451,733.35	1,714,015.65	39.79373566	-80.73798115
11,800.00	91.00	330.265	6,084.38	4,388.13	-3,354.32	14,451,820.17	1,713,966.06	39.79397449	-80.73815679
11,900.00	91.00	330.265	6,082.64	4,474.95	-3,403.91	14,451,906.98	1,713,916.46	39.79421332	-80.73833244
12,000.00	91.00	330.265	6,080.90	4,561.77	-3,453.50	14,451,993.80	1,713,866.87	39.79445214	-80.73850809
12,100.00	91.00	330.265	6,079.15	4,648.59	-3,503.09	14,452,080.62	1,713,817.28	39.79469097	-80.73868373
12,200.00	91.00	330.265	6,077.41	4,735.41	-3,552.68	14,452,167.44	1,713,767.69	39.79492980	-80.73885938
12,300.00	91.00	330.265	6,075.67	4,822.23	-3,602.28	14,452,254.26	1,713,718.10	39.79516862	-80.73903503
12,400.00	91.00	330.265	6,073.92	4,909.05	-3,651.87	14,452,341.08	1,713,668.51	39.79540745	-80.73921069
12,500.00	91.00	330.265	6,072.18	4,995.87	-3,701.46	14,452,427.90	1,713,618.91	39.79564627	-80.73938634
12,600.00	91.00	330.265	6,070.44	5,082.69	-3,751.05	14,452,514.72	1,713,569.32	39.79588510	-80.73956199
12,700.00	91.00	330.265	6,068.69	5,169.50	-3,800.64	14,452,601.54	1,713,519.73	39.79612392	-80.73973765
12,800.00	91.00	330.265	6,066.95	5,256.32	-3,850.23	14,452,688.36	1,713,470.14	39.79636275	-80.73991331
12,900.00	91.00	330.265	6,065.20	5,343.14	-3,899.83	14,452,775.18	1,713,420.55	39.79660157	-80.74008896
13,000.00	91.00	330.265	6,063.46	5,429.96	-3,949.42	14,452,862.00	1,713,370.96	39.79684040	-80.74026462
13,100.00	91.00	330.265	6,061.72	5,516.78	-3,999.01	14,452,948.82	1,713,321.37	39.79707922	-80.74044028
13,200.00	91.00	330.265	6,059.97	5,603.60	-4,048.60	14,453,035.64	1,713,271.77	39.79731804	-80.74061594
13,300.00	91.00	330.265	6,058.23	5,690.42	-4,098.19	14,453,122.46	1,713,222.18	39.79755687	-80.74079161
13,400.00	91.00	330.265	6,056.49	5,777.24	-4,147.78	14,453,209.27	1,713,172.59	39.79779569	-80.74096727
13,500.00	91.00	330.265	6,054.74	5,864.06	-4,197.38	14,453,296.09	1,713,123.00	39.79803451	-80.74114294
13,600.00	91.00	330.265	6,053.00	5,950.88	-4,246.97	14,453,382.91	1,713,073.41	39.79827333	-80.74131860
13,700.00	91.00	330.265	6,051.26	6,037.70	-4,296.56	14,453,469.73	1,713,023.82	39.79851216	-80.74149427
13,800.00	91.00	330.265	6,049.51	6,124.52	-4,346.15	14,453,556.55	1,712,974.22	39.79875098	-80.74166994
13,900.00	91.00	330.265	6,047.77	6,211.34	-4,395.74	14,453,643.37	1,712,924.63	39.79898980	-80.74184561
14,000.00	91.00	330.265	6,046.03	6,298.16	-4,445.33	14,453,730.19	1,712,875.04	39.79922862	-80.74202128
14,100.00	91.00	330.265	6,044.28	6,384.98	-4,494.93	14,453,817.01	1,712,825.45	39.79946744	-80.74219695
14,200.00	91.00	330.265	6,042.54	6,471.80	-4,544.52	14,453,903.83	1,712,775.86	39.79970626	-80.74237263
14,300.00	91.00	330.265	6,040.79	6,558.62	-4,594.11	14,453,990.65	1,712,726.27	39.79994508	-80.74254830
14,400.00	91.00	330.265	6,039.05	6,645.44	-4,643.70	14,454,077.47	1,712,676.67	39.80018390	-80.74272398
14,500.00	91.00	330.265	6,037.31	6,732.26	-4,693.29	14,454,164.29	1,712,627.08	39.80042272	-80.74289965
14,600.00	91.00	330.265	6,035.56	6,819.08	-4,742.88	14,454,251.11	1,712,577.49	39.80066154	-80.74307533
14,700.00	91.00	330.265	6,033.82	6,905.89	-4,792.48	14,454,337.93	1,712,527.90	39.80090036	-80.74325101
14,800.00	91.00	330.265	6,032.08	6,992.71	-4,842.07	14,454,424.75	1,712,478.31	39.80113918	-80.74342669
14,900.00	91.00	330.265	6,030.33	7,079.53	-4,891.66	14,454,511.56	1,712,428.72	39.80137800	-80.74360238



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WV Department of Environmental Protection

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15,000.00	91.00	330.265	6,028.59	7,166.35	-4,941.25	14,454,598.38	1,712,379.13	39.80161682	-80.74377806
15,100.00	91.00	330.265	6,026.85	7,253.17	-4,990.84	14,454,685.20	1,712,329.53	39.80185564	-80.74395374
15,200.00	91.00	330.265	6,025.10	7,339.99	-5,040.43	14,454,772.02	1,712,279.94	39.80209445	-80.74412943
15,300.00	91.00	330.265	6,023.36	7,426.81	-5,090.03	14,454,858.84	1,712,230.35	39.80233327	-80.74430512
15,400.00	91.00	330.265	6,021.62	7,513.63	-5,139.62	14,454,945.66	1,712,180.76	39.80257209	-80.74448080
15,500.00	91.00	330.265	6,019.87	7,600.45	-5,189.21	14,455,032.48	1,712,131.17	39.80281091	-80.74465649
15,600.00	91.00	330.265	6,018.13	7,687.27	-5,238.80	14,455,119.30	1,712,081.58	39.80304972	-80.74483218
15,700.00	91.00	330.265	6,016.38	7,774.09	-5,288.39	14,455,206.12	1,712,031.98	39.80328854	-80.74500788
15,800.00	91.00	330.265	6,014.64	7,860.91	-5,337.98	14,455,292.94	1,711,982.39	39.80352736	-80.74518357
15,900.00	91.00	330.265	6,012.90	7,947.73	-5,387.58	14,455,379.76	1,711,932.80	39.80376617	-80.74535926
16,000.00	91.00	330.265	6,011.15	8,034.55	-5,437.17	14,455,466.58	1,711,883.21	39.80400499	-80.74553496
16,100.00	91.00	330.265	6,009.41	8,121.37	-5,486.76	14,455,553.40	1,711,833.62	39.80424380	-80.74571065
16,123.53	91.00	330.265	6,009.00	8,141.80	-5,498.43	14,455,573.83	1,711,821.95	39.80430000	-80.74575200

PBHL/TD 16123.53 MD/6009.00 TVD

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Van Winkle N-05HM PBI - hit/miss target - Shape - Point	0.00	0.000	6,009.00	8,141.80	-5,498.43	14,455,573.83	1,711,821.95	39.80430000	-80.74575200
Van Winkle N-05HM LP - plan misses target center by 0.56ft at 6625.26ft MD (6174.61 TVD, -104.55 N, -788.08 E) - Point	0.00	0.000	6,175.00	-104.35	-787.73	14,447,327.69	1,716,532.64	39.78161600	-80.72906800

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,100.00	1,100.00	0.00	0.00	KOP Begin 2°/100' build
1,250.00	1,249.93	-3.93	0.00	Begin 3.00° tangent
3,002.47	3,000.00	-95.64	0.00	Begin 2°/100' build/turn
3,495.74	3,488.48	-153.49	-27.52	Begin 12.30° tangent
5,508.46	5,455.00	-519.08	-251.55	Begin 8°/100' build/turn
6,156.27	6,018.63	-429.39	-508.63	Begin 10°/100' build/turn
6,626.70	6,174.58	-103.31	-788.79	Begin 91.00° lateral
16,123.53	6,009.00	8,141.80	-5,498.43	PBHL/TD 16123.53 MD/6009.00 TVD

WW-9
(4/16)

API Number 47 - 051 -
Operator's Well No. Van Winkle N-5HM

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

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

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

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

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

Additives to be used in drilling medium? Barite for weight

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

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

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

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

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

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

Company Official Signature James A. Pancake

Company Official (Typed Name) James Pancake

Company Official Title Vice President - Geoscience

DEC 23 2020

Office of Oil and Gas
WV Department of Environmental Protection

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

[Signature]

Notary Public

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

My commission expires 2/16/2024

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:

Jan Muliken

Comments:

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Environmental Protection

Title: Oil and Gas Inspector

Date: 12/10/2020

Field Reviewed? Yes

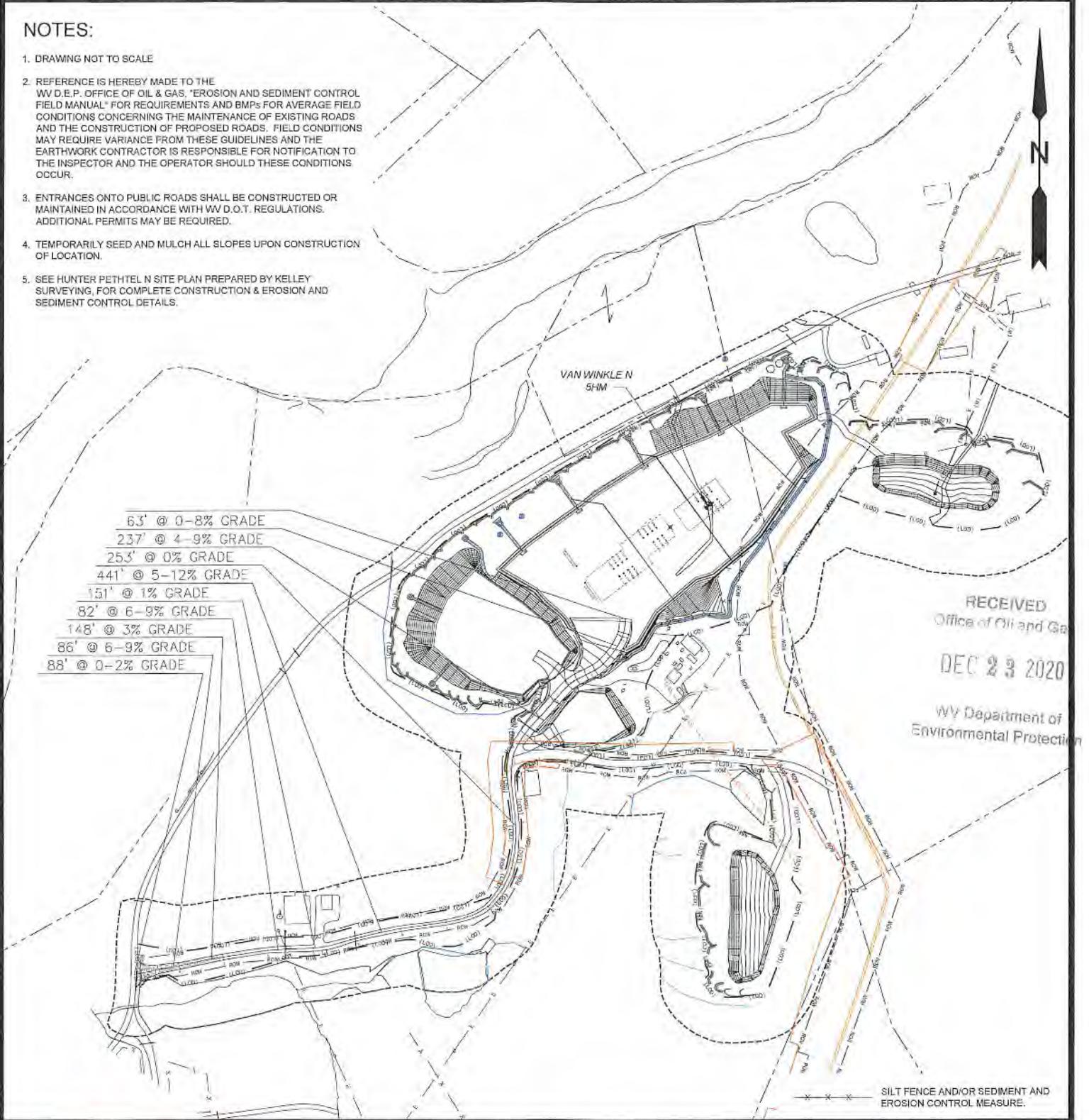
No

PROPOSED VAN WINKLE N - 5HM

4705102347

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.



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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: 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**

4705102347



Well Site Safety Plan

Tug Hill Operating, LLC

JM
12/10/2020

Well Name: Hunter Pethtel N-5HM

Pad Location: Van Winkle Pad

Marshall County, West Virginia

UTM meters , NADD83, Zone

17: Northing: 4,403,586.04

Easting: 523,440.30

December 2020

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Environmental Protection

WW-9

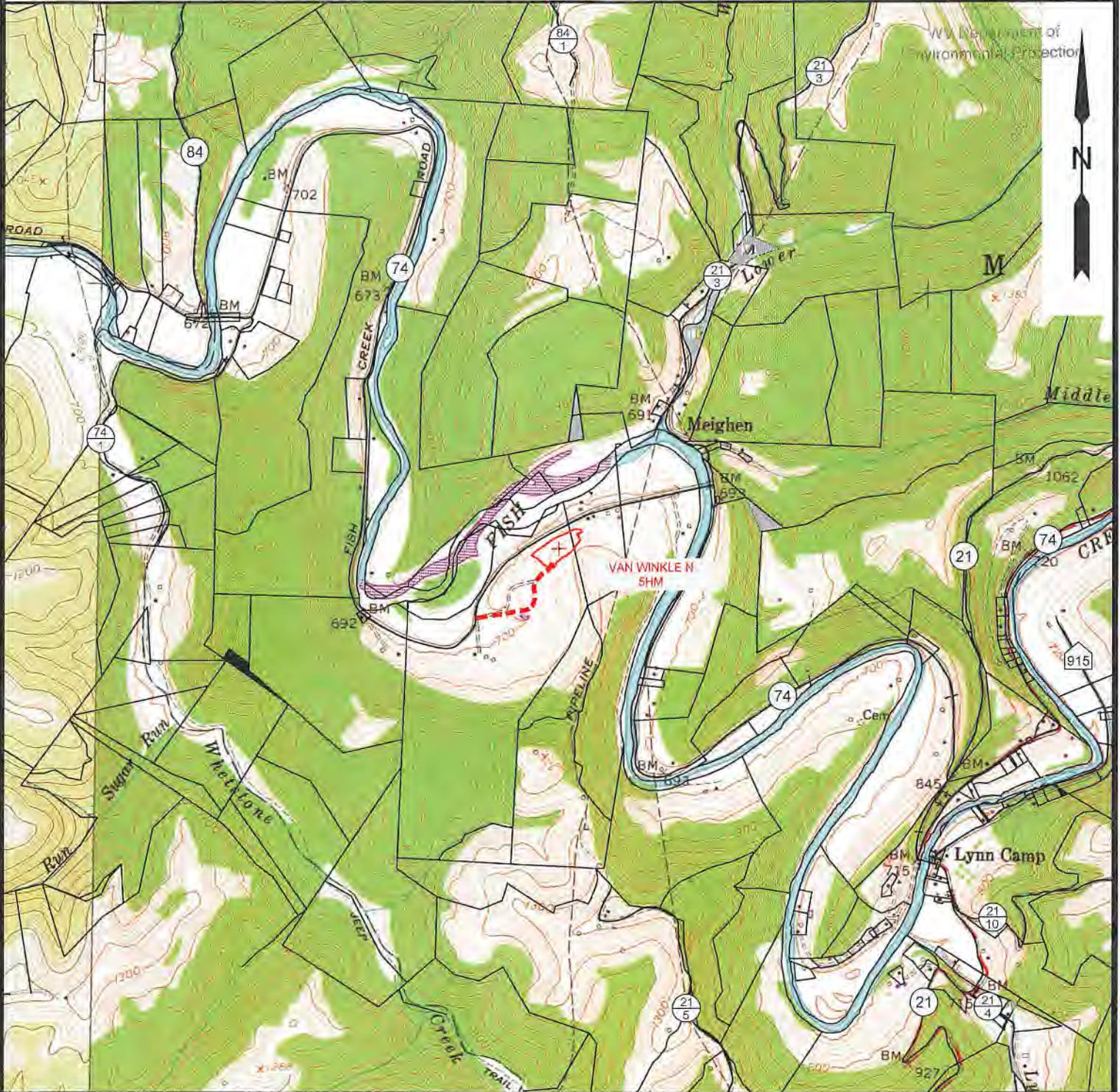
PROPOSED VAN WINKLE N - 5HM

SUPPLEMENT PG. 2
RECEIVED

Office of Oil and Gas

DEC 23 2020

4705102347



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

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



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5286
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" = 2000'



TUG HILL
OPERATING

10,513' B.H.

5,039' T.H.

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

HUNTER PETHTEL LEASE VAN WINKLE N 5HM WELL TUG HILL OPERATING

T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°42'30"
3,560' T.H.

NOTES ON SURVEY

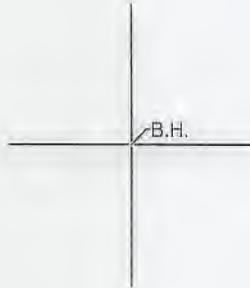
- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.



PARCEL	SURFACE ADJOINER	ACRES
9-10-1.1	CONNIE S. CUNNINGHAM	0.482
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. 469,258.14	E. 1,623,885.80
NAD'83 GEO.	LAT-(N) 39.781896	LONG-(W) 80.726263
NAD'83 UTM (M)	N. 4,403,586.04	E. 523,440.30
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 469,168.2	E. 1,623,095.1
NAD'83 GEO.	LAT-(N) 39.781619	LONG-(W) 80.729072
NAD'83 UTM (M)	N. 4,403,554.6	E. 523,199.9
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 477,493.6	E. 1,618,522.3
NAD'83 GEO.	LAT-(N) 39.804300	LONG-(W) 80.745752
NAD'83 UTM (M)	N. 4,406,067.7	E. 521,764.4



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
s3sw.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 4, 20 20
REVISED 12-10-2020, 12-22-2020
OPERATORS WELL NO. VAN WINKLE N 5HM
API WELL NO. 47 - 051 - 02347
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8952P5HM-VER2R2.dwg
VAN WINKLE N 5HM-REV1
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: 756.00' ELEVATION PROPOSED: 753.50' WATERSHED FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

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

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

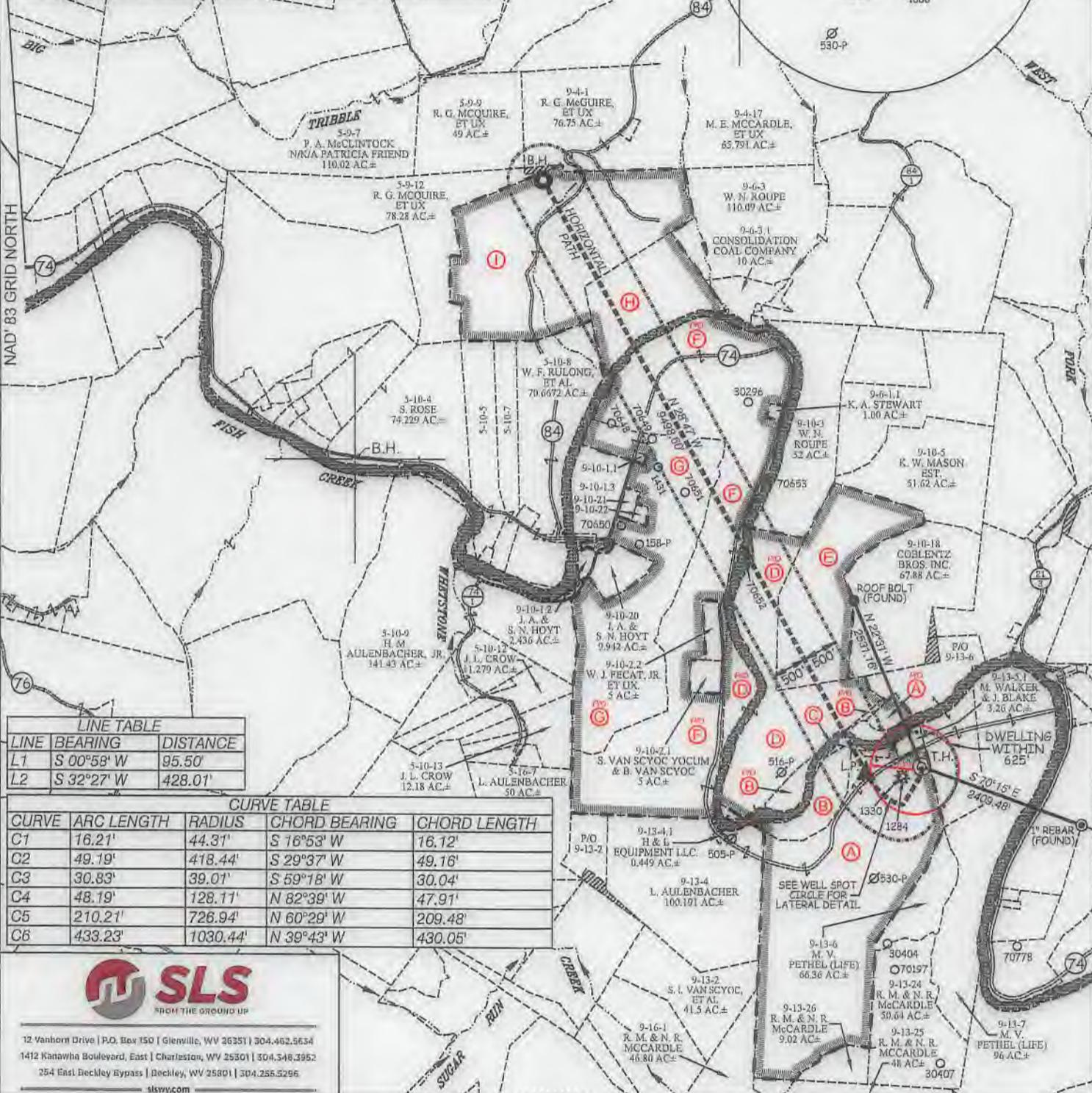
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 6,290' / TMD: 16,124'

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 5HM WELL TUG HILL OPERATING

TAG	SURFACE OWNER	PARCEL	ACRES
A	XCL MIDSTREAM OPERATING, LLC	9-13-5	190.12
B	XCL MIDSTREAM OPERATING, LLC	9-10-19.1	10.00
C	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
D	JOHN E. & JANET E. KELLEY, ET AL	9-10-19	113.08
E	KENNETH W. MASON EST.	9-10-4	67.00
F	CAROL VAN SCYOC	9-10-2	206.988
G	CAROL VAN SCYOC	9-10-1	118.087
H	WILLIAM F. RULONG, ET AL	5-9-11	56.00
I	ROBERT GREGORY MCGUIRE, ET UX	5-9-10	139.60



LINE	BEARING	DISTANCE
L1	S 00°58' W	95.50'
L2	S 32°27' W	428.01'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	16.21'	44.31'	S 16°53' W	16.12'
C2	49.19'	418.44'	S 29°37' W	49.16'
C3	30.83'	39.01'	S 59°18' W	30.04'
C4	48.19'	128.11'	N 82°39' W	47.91'
C5	210.21'	726.94'	N 60°29' W	209.48'
C6	433.23'	1030.44'	N 39°43' W	430.05'



12 Vanborn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 504.348.3952
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
 slsvv.com

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)			
NAD'83 S.P.C.(FT)	N. 469,258.14	E. 1,623,885.80	
NAD'83 GEO.	LAT-(N) 39.781896	LONG-(W) 80.726263	
NAD'83 UTM (M)	N. 4,403,586.04	E. 523,440.30	
LANDING POINT			
NAD'83 S.P.C.(FT)	N. 469,169.2	E. 1,628,095.1	
NAD'83 GEO.	LAT-(N) 39.781819	LONG-(W) 80.729072	
NAD'83 UTM (M)	N. 4,403,554.6	E. 523,199.9	
BOTTOM HOLE			
NAD'83 S.P.C.(FT)	N. 477,493.6	E. 1,618,522.3	
NAD'83 GEO.	LAT-(N) 39.804300	LONG-(W) 80.745752	
NAD'83 UTM (M)	N. 4,406,067.7	E. 521,764.4	



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

P.S. *C. Victor Moyers*
 849

SCALE 1" = 2000' FILE NO. 8952P5HM-VER2R.dwg
 VAN WINKLE N 5HM-REV/1
 DATE DECEMBER 4, 2020
 REVISED DECEMBER 10, 2020
 OPERATORS WELL NO. VAN WINKLE N 5HM
 API WELL NO. 47-051-02347
 STATE COUNTY PERMIT

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-5HM

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

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

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

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

*See attached pages

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

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

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

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WV Department of
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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 Morris*
 Its: Permitting Specialist - Appalachia Region

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 Exploration LLC to Stone Energy Corp.: DB 668/155 & AB 21/356	Stone Energy Corp. to EQT Production Company: AB 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	1/8+	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*19749	9-10-4	E	JOHN CALVERT	TH EXPLORATION LLC	1/8+	944	428	N/A	N/A	N/A
10*19750	9-10-4	E	DELORES J MYERS	TH EXPLORATION LLC	1/8+	944	430	N/A	N/A	N/A
10*19824	9-10-4	E	ROBERT BRADLEY HIGGINS	TH EXPLORATION LLC	1/8+	946	57	N/A	N/A	N/A
10*29814	9-10-4	E	DAVID P WARSINSKY	TH EXPLORATION LLC	1/8+	1101	29	N/A	N/A	N/A
10*29816	9-10-4	E	ELLEN K NYLES	TH EXPLORATION LLC	1/8+	1101	31	N/A	N/A	N/A
10*27947	9-10-4	E	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	568	N/A	N/A	N/A
10*19894	9-10-2	F	CAROL L VANSYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A
10*19894	9-10-1	G	CAROL L VANSYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A
10*18726	5-9-11	H	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941	441	N/A	N/A	N/A
10*47051.305.0	5-9-10	I	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	895	45	N/A	N/A	N/A

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 Office of Oil and Gas
 WV Department of
 Environmental Protection
 DEC 23 2020

4705102347

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 57th Street, SE
Charleston, WV 25304
Attention: Wade Stansberry

RE: Van Winkle N-5HM

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-5HM 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 amiller@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

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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-5HM

Well Pad Name: Hunter Pothel

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>523,440.30</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,403,586.04</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: 100px;"><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>OOG OFFICE USE ONLY</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>
<p>RECEIVED Office of Oil and Gas DEC 23 2020 WV Department of Environmental Protection</p>	

Required Attachments:

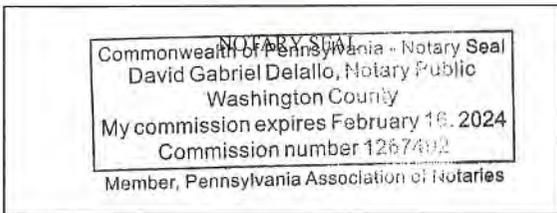
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

[Signature] 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.

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API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle N-5HM
Well Pad Name: Hunter Pethiel

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: 1/28/2021 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 Pethiel, Life Estate (Well Pad)
Address: 8845 Fish Creek Road
Glen Easton, WV 26039

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

Name: Regina M. & Aaron D. Murray, Remaindman
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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API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-5HM
Well Pad Name: Hunter Pethel

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 permit decision and a list of persons qualified to test water.

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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 purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule. JAN 27 2021

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.

WV Department of
Environmental Protection

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

Well Location Restrictions

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

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API NO. 47-051 - _____
OPERATOR WELL NO. Van Winkle N-SHM
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 57th St. SE
Charleston, WV 25304
(304) 926-0450

Office of Oil and Gas

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Environmental Protection

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

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WW-6A
(8-13)API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-5HM
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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API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-5HM
Well Pad Name: Hunter Pethel

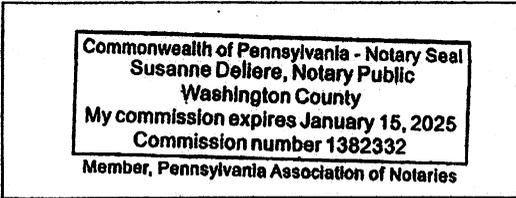
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



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

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JAN 27 2021
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Exhibit WW-6A

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

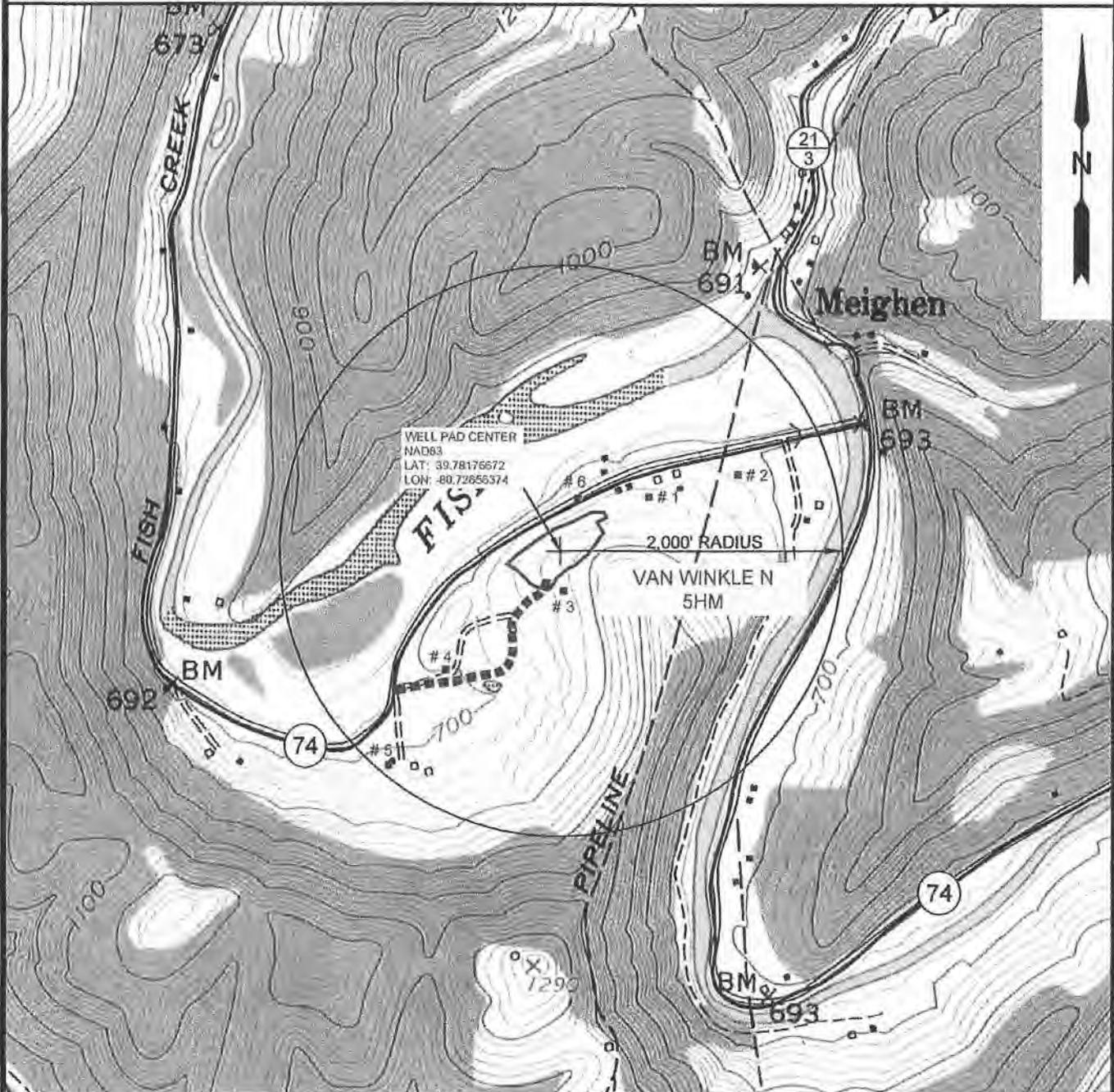
Residences within Two-Thousand Feet (2,000')

Well: Van Winkle N – 5HM
 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>Residence (#1) 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>Residence (#2) 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>Commercial/Business (#3)* 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 & Gas Well Pad.</p>
<p>Residence (#4) 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>Residence (#5) 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>* (#6) Water Well Only (No Residence) Joseph L. Blake & Michael A. Walker 1207 Roberts Ridge Rd. Moundsville, WV 26041</p>

**PROPOSED
VAN WINKLE N - 5HM**



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



12 Vanhora 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: 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
OPERATING**

Office of Oil and Gas

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stamps
endicia **Shipping Label Receipt**

Delivery Confirmation™ Service Number:

9410 8118 9956 0832 2297 71

Priority Mail 2-DAY with USPS SIGNATURE TRACKING #*

Electronic Service Fee: \$0.00

Additional Services: Insured

Total Postage and Fees: \$10.49

Weight: 1 lbs. 5 oz

Print Date: 01/28/2021

Mailing Date: 01/26/2021

From: Amy Miller
Tug Hill Operating
380 Southpointe Boulevard Ste 200
Canonsburg PA 15317-8561

To: Joseph L. Blake & Michael A. Walker
1207 Roberts Ridge Road
Moundsville WV 26041-2591

USPS
Postmark
Here

*Regular Priority Mail 2-DAY Service postage rates apply. There is no fee for Delivery Confirmation™ service on Priority Mail services with use of this electronic shipping label. Postmark required if fee refund requested. Delivery information is not available by phone for the electronic option.

Instructions:

1. Adhere shipping label to package with tape or glue - **DO NOT TAPE OVER BARCODE**. Be sure all edges are secured. Self-adhesive label is recommended.
2. Place the label so it does not wrap around the edge of the package.
3. This package may be deposited in any collection box, handed to your mail carrier, or presented to a clerk at your local Post Office.
4. Each confirmation number is unique and can be used only once - **DO NOT PHOTOCOPY**.
6. You must mail this package on the "mail date" that is specified on this label.

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JAN 27 2021

WV Department of
Environmental Protection

WW-6A
(9-13)

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API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle N-5HM
Well Pad Name: Hunter Pethtel

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

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

Date of Notice: 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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

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

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(8-13)

API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-5HM
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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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WV Department of
Environmental Protection

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle N-5HM
Well Pad Name: Hunter Pethtel

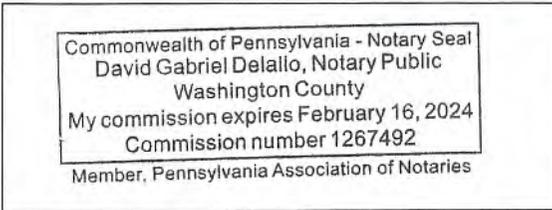
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



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

David Delallo Notary Public

My Commission Expires 2/16/24

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DEC 23 2020
WV Department of
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 – 5HM
 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>Residence (#1) 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>Residence (#2) 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>Commercial/Business (#3)* 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 & Gas Well Pad.</p>
<p>Residence (#4) 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>Residence (#5) 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>(#6) Water Well Only (No Residence)</p> <p style="text-align: center;">RECEIVED Office of Oil and Gas</p> <p style="text-align: center;">DEC 23 2020</p> <p style="text-align: center;">WV Department of Environmental Protection</p>

4705102347

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) , 6A5V
- (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-4744, N-5744 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.

Amelia Morris
(Signature of person executing service)

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

David 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

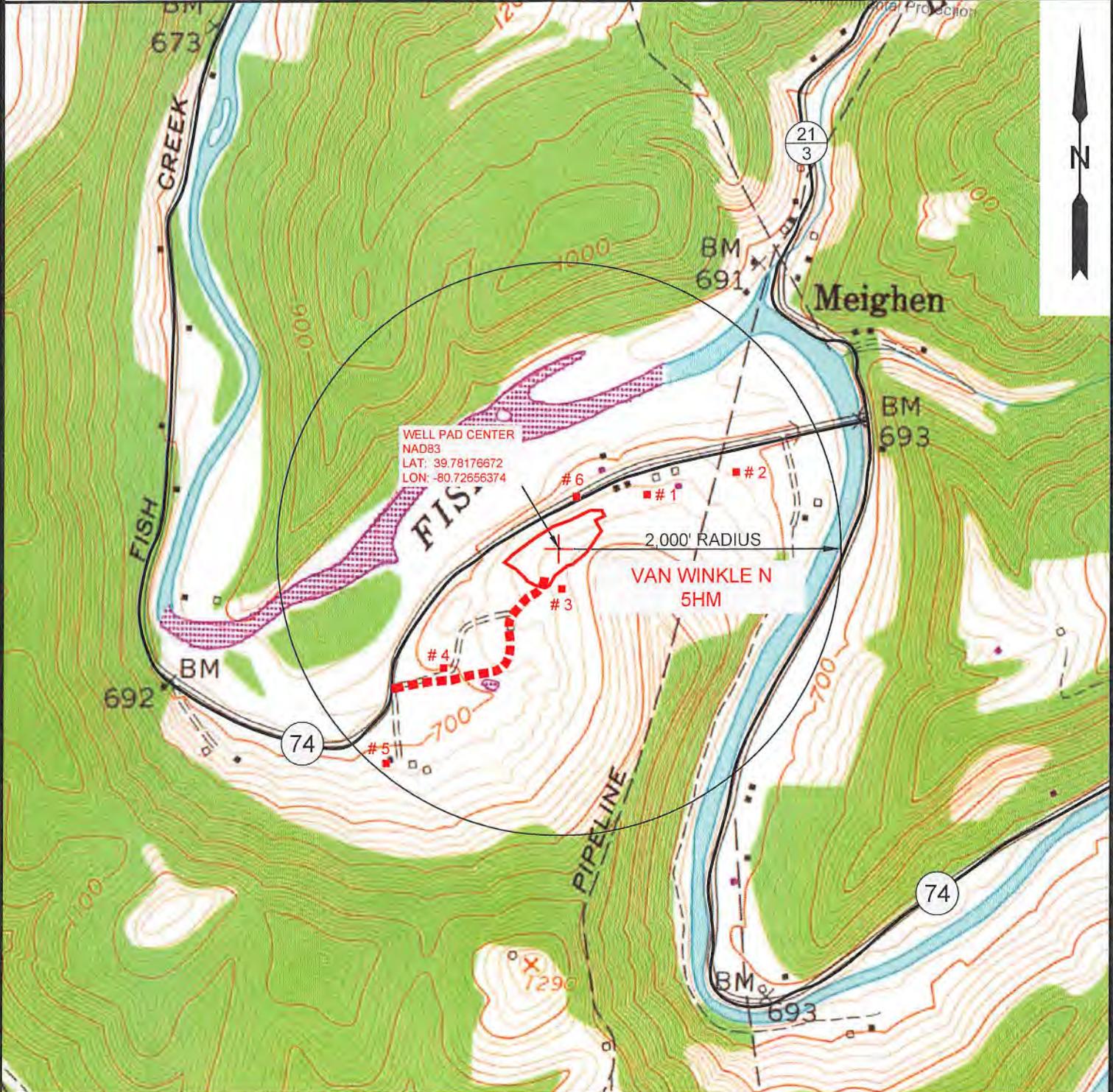
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DEC 23 2020

WV Department of
Environmental Protection

WW-6A

PROPOSED VAN WINKLE N - 5HM



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

WW-6A3
(1/12)

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 Pelhtel, 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 Pelhtel, Life Estate
 Address: 9845 Fish Creek Road
Glen Easton, WV 26039 **See attached list

*please attach additional forms if necessary

Notice is hereby given:

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

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

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

Notice is hereby given by:

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

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

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Office of Oil and Gas

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.

4705102347

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

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

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WV Department of
Environmental Protection

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 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.

anyllouis
(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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Hunter Pethel Pad – Van Winkle Well List for WW-70

Affidavit of Personal Service – XcL Midstream Operating, LLC

Van Winkle N-1HM
Van Winkle N-3HM
Van Winkle N-5HM
Van Winkle N-7HM
Van Winkle S-9HM
Van Winkle S-11HM
Van Winkle S-13HM
Van Winkle N-16HU
Van Winkle N-18HU
Van Winkle S-20HU

Van Winkle N-2HM
Van Winkle N-4HM
Van Winkle N-6HM
Van Winkle S-8HM
Van Winkle S-10HM
Van Winkle S-12HM
Van Winkle S-14HM
Van Winkle N-17HU
Van Winkle N-19HU
Van Winkle S-21HU

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4705102347

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

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

Date of Notice: 12/14/2020 **Date Permit Application Filed:** 01/04/2021

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

- CERTIFIED MAIL
RETURN RECEIPT REQUESTED
- HAND
DELIVERY

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

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

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

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

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>523,440.30</u>
County:	<u>Marshall</u>		Northing:	<u>4,403,586.04</u>
District:	<u>Meade</u>	Public Road Access:	<u>County Route 74</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>XcL Midstream Operating, LLC</u>	
Watershed:	<u>Fish Creek (HUC 10)</u>			

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Office of Oil and Gas

Well Operator: Tug Hill Operating, LLC
Telephone: 724-749-8368
Email: amorris@tug-hill-op.com

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

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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

4705102347

**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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DEC 23 2020
WV Department of
Environmental Protection

Affidavit of Personal Service

4705102347

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.

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

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Office of Oil and Gas
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



TUG HILL

4705102347

PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Van Winkle N-5HM

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
DEC 23 2020
WV Department of
Environmental Protection



4705102347

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 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Hunter-Pethtel Pad, Marshall County
Van Winkle N-5HM Well Site

Dear Mr. Martin,

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

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

Very Truly Yours,

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

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DEC 23 2020

WV Department of
Environmental Protection

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

Hunter Pethtel 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

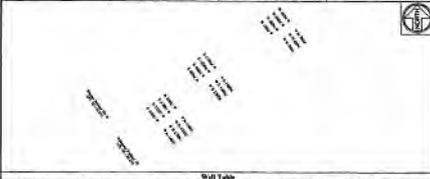
Hunter Pethtel Well Pad Site
Emergency Number: 304-845-1920
Meade District, Marshall County, WV
Watershed: Middle Fish Creek Watershed
Tug Hill Contact Number: 1-817-632-3400

WEST VIRGINIA
COUNTY MAP



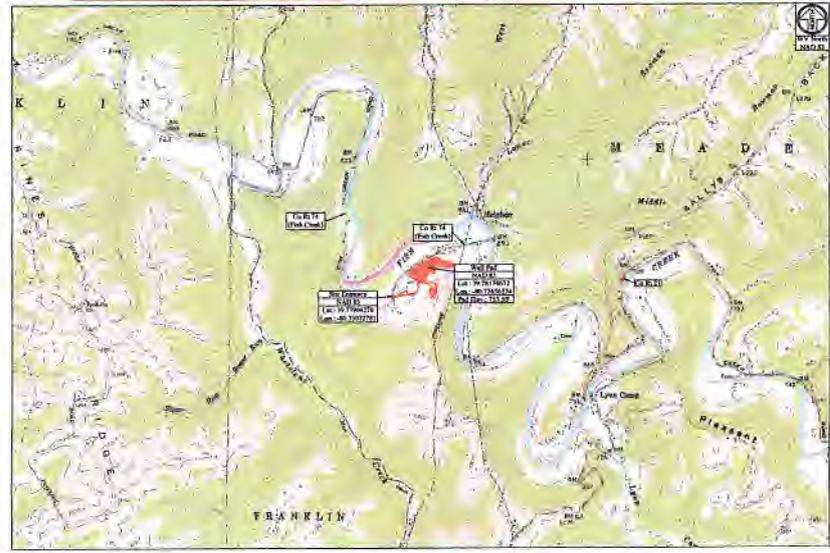
Exhibit A: Final Design: Issue for Permitting

Site Location	Center of Well Pad	Center of Production Pad	Center of Storage Pad
WV-NAD 83 48234.24 WV-NAD 83 E 32234.89 WV-NAD 17N 468 99.78 WV-NAD 17 E 48484.97 Loc. NAD 83 48237.71 Loc. NAD 83 48237.71 Loc. NAD 83 48237.71 UTM 17 NAD 83 E 48234.24 UTM 17 NAD 83 E 32234.89	WV-NAD 83 N 46922.84 WV-NAD 83 E 36248.83 WV-NAD 27 N 46922.84 WV-NAD 27 E 36248.83 Loc. NAD 83 46922.84 Loc. NAD 83 36248.83 Loc. NAD 83 46922.84 UTM 17 NAD 83 N 46922.84 UTM 17 NAD 83 E 36248.83	WV-NAD 83 N 46922.84 WV-NAD 83 E 36248.83 WV-NAD 27 N 46922.84 WV-NAD 27 E 36248.83 Loc. NAD 83 46922.84 Loc. NAD 83 36248.83 Loc. NAD 83 46922.84 UTM 17 NAD 83 N 46922.84 UTM 17 NAD 83 E 36248.83	WV-NAD 83 E 32234.89 WV-NAD 83 E 32234.89 WV-NAD 17 E 48484.97 WV-NAD 17 E 48484.97 Loc. NAD 83 48237.71 Loc. NAD 83 48237.71 Loc. NAD 83 48237.71 UTM 17 NAD 83 E 32234.89 UTM 17 NAD 83 E 32234.89



Well Pad	Production Pad	Storage Pad
Well Pad Area: 1,200 sq ft Well Pad Volume: 1,200 cu ft Well Pad Depth: 10 ft	Production Pad Area: 2,400 sq ft Production Pad Volume: 2,400 cu ft Production Pad Depth: 10 ft	Storage Pad Area: 3,600 sq ft Storage Pad Volume: 3,600 cu ft Storage Pad Depth: 10 ft

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2/24/2021



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

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



Well Pad	Production Pad	Storage Pad
Well Pad Area: 1,200 sq ft Well Pad Volume: 1,200 cu ft Well Pad Depth: 10 ft	Production Pad Area: 2,400 sq ft Production Pad Volume: 2,400 cu ft Production Pad Depth: 10 ft	Storage Pad Area: 3,600 sq ft Storage Pad Volume: 3,600 cu ft Storage Pad Depth: 10 ft

Property Owner Information - Hunter Pethtel Well Pad
Owner Name: Tug Hill Operating
Address: 1234 Main St, Marshall, WV
Phone: 304-845-1920
Website: www.tughill.com

Access Road	Width (ft)	Length (ft)	Area (sq ft)
Access Road 1	10	100	1,000
Access Road 2	10	100	1,000
Access Road 3	10	100	1,000

Disturbed Area	Area (sq ft)	Volume (cu ft)
Disturbed Area 1	1,000	10,000
Disturbed Area 2	2,000	20,000
Disturbed Area 3	3,000	30,000

Additional Information
Site Elevation: 1,200 ft
Soil Type: Clay
Vegetation: Forest

Hunter Pethtel Well Pad Site Quantities
Well Pad Area: 1,200 sq ft
Production Pad Area: 2,400 sq ft
Storage Pad Area: 3,600 sq ft
Access Road Area: 3,000 sq ft
Disturbed Area: 6,000 sq ft

Jurisdictional Impact (Linear Feet)
Stream Impact: 100 ft
Wetland Impact: 200 ft
Other Impact: 50 ft

Intermittent Stream Impact (Linear Feet)
Stream Impact: 100 ft
Wetland Impact: 200 ft
Other Impact: 50 ft

Wetland Impact (Square Feet)
Wetland Impact: 200 sq ft
Wetland Volume: 2,000 cu ft
Wetland Depth: 10 ft

Project Contacts

THE CLIENT
Tug Hill Operating, LLC
300 Boulevard Blvd
Southport, PA 15783

Service and Estimate
Kenneth Kelly
304-845-1920
304-845-1920

Method of Installation
Method of installation as provided by Adams Energy
April 29, 2020

Responsible Information
The topographic information shown herein is based on aerial photography by the Meade District Survey, Boone, WV

MISCELLANEOUS
WEST VIRGINIA
1-800-245-4848
www.wv.gov

811
Know what's below,
Call before you dig.

Tug Hill Operating will obtain an Encroachment Permit (Form MM-105) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities.

The WV Mines Website was consulted. Previous (Current) mining activities are not within the AOC.

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

Fluxcap Conditions	Notes
Fluxcap 1	Fluxcap 1
Fluxcap 2	Fluxcap 2
Fluxcap 3	Fluxcap 3

Well Location Requirements

All pad construction activities shall be in accordance with the following restrictions:

- *200 feet from existing well or abandoned spring used for human or domestic water.
- *200 feet from any existing well or abandoned spring used for human or domestic water.
- *200 feet from the edge of disturbance to a naturally occurring wet stream.
- *100 feet from the edge of disturbance to a public water supply.
- *100 feet from the edge of disturbance to a public water supply.



Sheet	Description
1	Cover Sheet
2	Schedule of Quantities
3	Site Maps
4	Pre-Construction Site Conditions
5	Site Soil Map
6	Clearing Exhibit
7	Overall Plan View
8	PAAS Plan View
9	Top Key Exhibit
10	Plan View
11	Cross Sections - Site
12	Cross Sections - Access Road
13	Geotechnical Exhibit
14	Landowner Disturbed Area Exhibit
15	Site Reclamation
16	Production Exhibit
17	Erosion and Sediment Control Details
18	Access Road Details
19	Pad Details

TUG HILL
OPERATING



THIS DOCUMENT
PREPARED FOR:
TUG HILL
OPERATING



K&S CONSULTANTS, INC.
1000 1st Street, SE
Marshall, WV 24670

Cover Sheet
Hunter Pethtel Well Pad Site
Meade District
Marshall County, WV

Date: 1/24/2020
Scale: As Shown
Designed By: ZS
Checked By: ZS
Sheet 1 of 13

Hunter Pethel Well Site
Tug Hill Operating

Exhibit A: Final Design: Issue for Permitting

Xcl. Midstream
Operating, LLC
TM: 13
Parcel: 5

Walker &
Blake
TM: 13
Parcel: 5.1

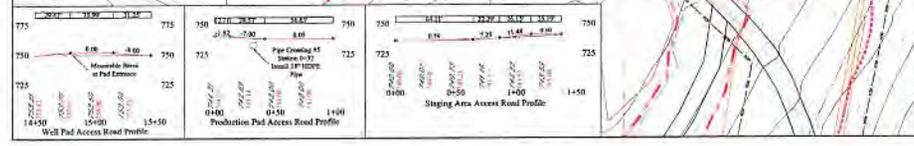
Mary
Pethel
TM: 13
Parcel: 6

Xcl. Midstream
Operating, LLC
TM: 13
Parcel: 5

Mary
Pethel
TM: 13
Parcel: 6

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2/24/2021

NOTE: All surface boundary lines always shown are based on boundary evidence collected with mapping grade (1:50) contours.



Parcel Owner	TM	Parcel	Parcel Area (Ac)	Parcel Type	Additional Information
Xcl. Midstream Operating, LLC	13	5	1,342.27	Well Pad Access Road	Parcel Area: 1,342.27 Ac
Xcl. Midstream Operating, LLC	13	5.1	1,342.27	Well Pad Access Road	Parcel Area: 1,342.27 Ac
Xcl. Midstream Operating, LLC	13	5	1,342.27	Well Pad Access Road	Parcel Area: 1,342.27 Ac

Item	Quantity	Unit
Disturbed Area	4.87	Ac
Well Pad Construction	182	Ac
Production Pad Construction	182	Ac
Staging Area Construction	182	Ac
Access Road Construction	182	Ac
Yielder - Access Material	11.8	Ac
Additional Clearing	182	Ac
Area Reserved	182	Ac
Additional Information	182	Ac
Parcel Area	1,342.27	Ac
Total Disturbed Area	1,342.27	Ac

Legend	Description
Original Ground 2' Contour	Original Ground 2' Contour
Original Ground 5' Contour	Original Ground 5' Contour
Design 2' Contour	Design 2' Contour
Design 5' Contour	Design 5' Contour
Center of Structure	Center of Structure
Proposed Area	Proposed Area
34" Copper Pile Box	34" Copper Pile Box
8" x 8" Pole	8" x 8" Pole
Line of Disturbance	Line of Disturbance
Area of Impact	Area of Impact
Fencing Gas Line	Fencing Gas Line
Fencing Utility Pole Line	Fencing Utility Pole Line
Existing Fence	Existing Fence
Property Line	Property Line
PTM Wellpad	PTM Wellpad
PTM Wellpad	PTM Wellpad
PTM Wellpad	PTM Wellpad
Production Pad	Production Pad
Staging Area	Staging Area
Access Road	Access Road
Gas Line	Gas Line
Utility Pole Line	Utility Pole Line
Existing Fence	Existing Fence
Property Line	Property Line

TUG HILL
OPERATING



THIS DOCUMENT
PREPARED FOR
TUG HILL OPERATING



K&S Surveying
INCORPORATED
1000 W. MAIN ST.
MARTINSBURG, WV 26151
TEL: 304.263.1111
WWW.KANDS.SURV.COM

Hunter Pethel Well Site
Site Plan
Meade District
Marshall County, WV

Date: 12/24/2020
Scale: As Shown
Designed By: JZ
File No:
Sheet 13 of 13