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west virginia department of environmental protection

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

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

Tuesday, March 16, 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 S-12HM  
47-051-02361-00-00

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

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

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

A handwritten signature in blue ink, appearing to read 'James A. Martin', is written over a faint circular stamp.

James A. Martin  
Chief

Operator's Well Number: VAN WINKLE S-12HM  
Farm Name: XCL MIDSTREAM OPERATION  
U.S. WELL NUMBER: 47-051-02361-00-00  
Horizontal 6A New Drill  
Date Issued: 3/16/2021

# PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

## CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

## PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov).

WW-6B  
(04/15)

API NO. 47-051 -  
OPERATOR WELL NO. Van Winkle S-12HM  
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 S-12HM      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  \_\_\_\_\_

6) Existing Pad: Yes or No Yes

*Bay Stiller*  
*1-21-21*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus is the target formation at a depth of 6142' - 6192', thickness of 50' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 6,292'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 21,303'

11) Proposed Horizontal Leg Length: 14,743.19'

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

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

14) Approximate Saltwater Depths: 870'

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

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

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

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

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WW-6B  
(04/15)

4705102361  
API NO. 47-051 -  
OPERATOR WELL NO. Van Winkle S-12HM  
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 <sup>3</sup> (CTS)
Fresh Water	13 3/8"	NEW	J55	54.5#	515'	515'	708ft <sup>3</sup> (CTS)
Coal	13 3/8"	NEW	J55	54.5#	515'	515'	708ft <sup>3</sup> (CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,225'	2,225'	722ft <sup>3</sup> (CTS)
Production	5 1/2"	NEW	P110	20#	21,303'	21,303'	5422ft <sup>3</sup> (CTS)
Tubing	2 3/8"	NEW	N80	4.7#		5,961'	
Liners							

*Bang Stillep*  
1-21-21

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

470510236  
API NO. 47- 051 -  
OPERATOR WELL NO. Van Winkle S-12HM  
Well Pad Name: Hunter Pethtel

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 37,000,000 lb proppant and 665,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

*Bay Stiles*  
1-21-21

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

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

23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate 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

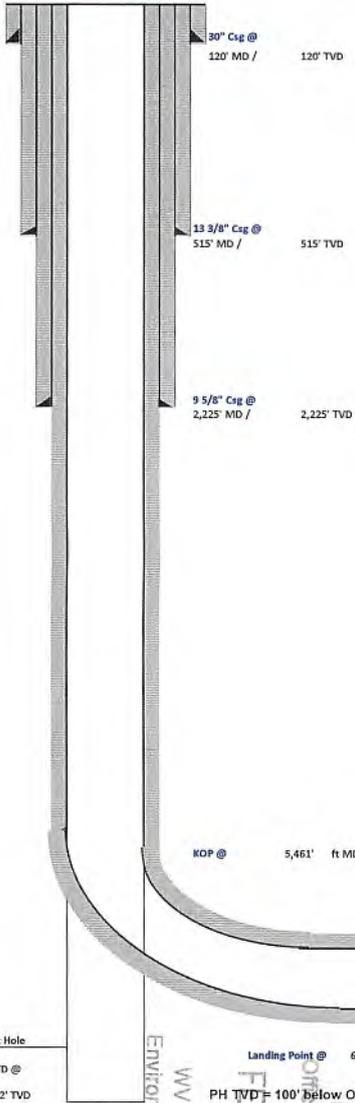
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\*Note: Attach additional sheets as needed.

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WELL NAME:	Van Winkle S-12HM		
STATE:	WV	COUNTY:	Marshall
DISTRICT:	Meade		
DF Elev:	754'	GL Elev:	754'
TD:	21,303'		
TH Latitude:	39.781676		
TH Longitude:	-80.726693		
BH Latitude:	39.745363		
BH Longitude:	-80.701774		



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	415
Sewickley Coal	314
Pittsburgh Coal	409
Big Lime	1629
Weir	1921
Berea	2120
Gordon	2390
Rhinestreet	5507
Genesee/Burkett	6012
Tully	6039
Hamilton	6074
Marcellus	6142
Landing Depth	6177
Onondaga	6192
Pilot Hole Depth	6292

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	8W	8W	Surface
Surface	17.5	13 3/8	515'	515'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,225'	2,225'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	21,303'	6,435'	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	756	A	15	Air	1 Centralizer every other jt
Production	4,990	A	14.5	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc

*Bray Stalvey 1-21-21*

Pilot Hole  
PH TD @ 6,292' TVD  
Landing Point @ 6,563' MD / 6,177' TVD  
PH TVD = 100' below Onondaga Top

Lateral TD @ 21,303' ft MD / 6,435' ft TVD

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

**Van Winkle S-12HM**

**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"	2,225'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	21,303'	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

03/19/2021

**Area of Review****Sources of information to Support 35CSR8 - 5.11: 9.3 et seq.**

Description of process to identify potential pathways for well communication during hydraulic fracturing activities.

## Data Sources Reviewed:

1. IHS Well Data service: Public nationwide data service that pulls directly from State agency Oil and Gas databases
2. Farm Maps
3. Topo Maps: Recent and older (contact WVGES)
4. Check with DPS

Contacted Adam Picard 724-485-9331, [apicard@dpslandservices.com](mailto:apicard@dpslandservices.com), DPS GIS (12/04/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

## Request maps for:

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

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

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

4705102361

Permit well - Van Winkle S-12HM  
Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101330	Tug Hill Operating	10154' MD, 6151' TVD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well. Tug Hill Operating is considering plugging this well.
4705101284	Tug Hill Operating	6340' TVD	None	None	Yes, existing vertical pilot drilled into Onondaga. Well was not perforated. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Well is not producing.
4705101859	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101860	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101866	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101846	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101847	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705100530	Manufacturers Light & Heat Co.	1809' TVD	Big Injun	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation. Well is plugged.	Well was plugged 7/24/1969.
4705100731	Hope Natural Gas Company	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.
4705130022	Hope Natural Gas Company	2456' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation. Well is plugged.	Well was plugged 5/24/1932.
4705170300	Manufacturers Light & Heat Co.	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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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100530	Marshall	530	Meade	Glen Easton	Cameron	39.778984	-80.72856	523415.9	4403262.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100530	2/25/1998		Original Loc Completed	John J Golf	1					Manufacturers Light & Heat Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705100530	2/25/1998	1/8/1998	740	Ground Level	Cameron-Garner	Big Injun (undiff)	Big Injun (undiff)	Development Well	Development Well	Gas Spudder	Acid-Frac	1809		1809	20	66	0	0			0	0	360	24			

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100530	2/25/1998	Show	Gas	Vertical			375	Pittsburgh coal	0	0			
4705100530	2/25/1998	Pay	Gas	Vertical	1375	Salt Sands (undiff)	1379	Salt Sands (undiff)	0	0			

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
4705100530	Original Loc	unidentified coal	Well Record	200	Reasonable	4	Reasonable	740 Ground Level
4705100530	Original Loc	Pittsburgh coal	Well Record	367	Reasonable	8	Reasonable	740 Ground Level
4705100530	Original Loc	Maxton	Well Record	1284	Reasonable	118	Reasonable	740 Ground Level

Wireline (E-Log) Information:

API	LOG_TOP	LOG_BOT	DEEPEST_FML	LOGS_AVAILABLE	SCAN	DIGITIZED	GR_TOP	GR_BOT	D_TOP	D_BOT	N_TOP	N_BOT	L_TOP	L_BOT	T_TOP	T_BOT	S_TOP	S_BOT	O_TOP	O_BOT	INCH2	INCH6	REDUCED	KOP	LOGMD	ELEV_KB	ELEV_GL	ELEV_DF	LOG_MSRD_FROM
4705100530	100	1822	Big Lime	G.D.N./T.C.*	Y	N	100	1622	1158	1614	109	1622	1175	1616	950	1608			1158	1614	Y	Y	N						

Comment: \*logs: caliper, tension device, casing collars

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

FILENAME
4705100530ced.tif
4705100530ceno.tif
4705100530cfr.tif
4705100530cfr.tif
4705100530a.tif

Quick Reference Guide for Log File Names For more info about WVGES scanned logs click [here](#)

Geologic log types:

- d density (includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)
- e photoelectric adsorption (PE or Pe, etc.)
- g gamma ray
- i induction (includes dual induction, medium induction, deep induction, etc.)
- l laterolog
- m dipmeter
- n neutron (includes neutron porosity, sidewall neutron--SW/N, etc.)
- o other\*
- s sonic or velocity
- t temperature (includes borehole temperature, BHT, differential temperature, etc.)
- z spontaneous potential or potential

Mechanical log types:

- b cement bond
- c caliper
- o other\*
- p perforation depth control or perforate

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100530	7/24/1969	0

There is no Sample data for this well

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4705102361

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705100731	Marshall	731	Meade	Glen Easton	Cameron	39.768979	-80.718605	524014.9	4402154.2

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100731	--		Original Loc. Completed	J M Keby			504-HOPE			Hope Natural Gas Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	P_AFT	TLAFT	BR_P_BEF	BH_P_AFT	G_MSRD_BY
4705100731	--	--	1231	Sprtl Level				unclassified	unclassified	not available	unknown	unknown																

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100731	Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	1991													
4705100731	Perkins Oil and Gas, Inc.	1997	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2001	617	66	42	44	69	83	82	60	72	70	68	83	58
4705100731	Perkins Oil and Gas, Inc.	2002	620	86	59	74	51	40	59	60	16	15	20	42	98
4705100731	Perkins Oil and Gas, Inc.	2003	639	77	73	68	61	61	82	34	28	47	70	0	38
4705100731	Perkins Oil and Gas, Inc.	2004	788	73	56	98	81	90	50	59	28	13	64	96	80
4705100731	Perkins Oil and Gas, Inc.	2005	938	25	59	95	89	85	87	70	92	84	82	93	77
4705100731	Perkins Oil and Gas, Inc.	2006	815	22	54	69	63	85	80	82	87	81	70	63	59
4705100731	Perkins Oil and Gas, Inc.	2007	435	26	10	36	38	72	48	32	41	30	36	48	18
4705100731	Perkins Oil and Gas, Inc.	2008	603	48	39	44	34	56	37	62	65	49	71	52	48
4705100731	Perkins Oil and Gas, Inc.	2009	1,005	66	63	77	69	95	97	97	89	81	94	91	76
4705100731	Perkins Oil and Gas, Inc.	2010	829	61	69	58	76	61	65	70	68	62	100	81	56
4705100731	Perkins Oil and Gas, Inc.	2011	1,043	73	72	96	90	105	94	82	74	81	87	79	110
4705100731	Perkins Oil and Gas, Inc.	2012	1,295	93	106	103	186	92	100	68	75	109	119	109	105
4705100731	Perkins Oil and Gas, Inc.	2013	1,196	111	66	88	83	102	92	79	115	108	122	112	108
4705100731	Perkins Oil and Gas, Inc.	2014	1,229	90	94	74	111	116	114	112	98	106	106	101	108
4705100731	Perkins Oil and Gas, Inc.	2015	1,199	125	95	39	81	73	63	117	154	102	119	116	115
4705100731	Perkins Oil and Gas, Inc.	2016	1,231	93	92	102	95	113	84	109	99	103	115	112	116
4705100731	Perkins Oil and Gas, Inc.	2017	2,130	214	102	168	168	174	170	229	188	208	218	210	92
4705100731	Perkins Oil and Gas, Inc.	2018	1,026	27	53	79	77	89	95	105	101	105	88	102	105
4705100731	Perkins Oil and Gas, Inc.	2019	985	0	42	101	85	89	105	97	102	90	82	63	99

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100731	Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	1991													
4705100731	Perkins Oil and Gas, Inc.	1997	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2002	8	0	8	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2006	6	0	6	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2007	3	0	0	0	0	0	0	0	0	0	0	0	3
4705100731	Perkins Oil and Gas, Inc.	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2009	6	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2011	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2012	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2013	5	0	0	0	0	0	0	5	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2014	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2016	7												
4705100731	Perkins Oil and Gas, Inc.	2017	0												
4705100731	Perkins Oil and Gas, Inc.	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2019	0	0	0	0	0	0	0	0	0	0	0	0	0

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100731	Perkins Oil and Gas, Inc.	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2014	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2019	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100731	Perkins Oil and Gas, Inc.	2016	0												
4705100731	Perkins Oil and Gas, Inc.	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100731	Perkins Oil and Gas, Inc.	2019	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: View Map

Table with columns: API, COUNTY, PERMIT, TAX\_DISTRICT, QUAD\_76, QUAD\_16, LAT\_OD, LONG\_OD, UTM\_E, UTM\_N

There is no Bottom Hole Location data for this well

Owner Information:

Table with columns: API, CMP\_ID, SUFFIX, STATUS, SURFACE\_OWNER, WELL\_NUM, CO\_NUM, LEASE, LEASE\_NUM, MINERAL\_OWN, OPERATOR, AT\_COMPLETION, PROP\_VID, PROP\_TRCT\_FM, TFM\_EST\_PR

Completion Information:

Table with columns: API, CMP\_ID, SPUD\_DT, ELEV, DATUM, FIELD, DEEPEST\_FML, DEEPEST\_FMT, INITIAL\_CLASS, FINAL\_CLASS, TYPE, RIG, CMP\_MTHD, TVD, TMD, NEW\_FTG, KOD, G\_BEF, G\_AFT, O\_BEF, O\_AFT, NGL\_BEF, NGL\_AFT, P\_BEF, T\_BEF, P\_AFT, T\_AFT, BH\_P\_BEF, BH\_P\_AFT, G\_MSRD\_BY

Pay/Show/Water Information:

Table with columns: API, CMP\_ID, ACTIVITY, PRODUCT, SECTION, DEPTH\_TOP, FM\_TOP, DEPTH\_BOT, FM\_BOT, G\_BEF, G\_AFT, O\_BEF, O\_AFT, WATER\_QNTY

Production Gas Information: (Volumes In Mcf)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_GAS, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_OIL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_NGL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

Production Water Information: (Volumes in Gallons)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_WTR, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

Stratigraphy Information:

Table with columns: API, SUFFIX, FILL, FM\_QUALITY, DEPTH\_TOP, DEPTH\_QUALITY, THICKNESS, THICKNESS\_QUALITY, ELEV, DATUM

Wireline (E-Log) Information:

Table with columns: API, LOG\_TOP, LOG\_BOT, DEEPEST\_FML, LOGS\_AVAIL, SCAN, DIGITIZED, GR\_TOP, GR\_BOT, D\_TOP, D\_BOT, N\_TOP, N\_BOT, L\_TOP, L\_BOT, T\_TOP, T\_BOT, S\_TOP, S\_BOT, O\_TOP, O\_BOT, INCH2, INCH5, REDUCED, KOP, LOGMD, ELEV\_KB, ELEV\_GL, ELEV\_DF, LOG\_MSRD\_FROM

Comment: \*logs: caliper, pe, tension, tl, amplitude, ccl, vcl, bit size,

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

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

geologic log types:

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

e photoelectric absorption (PE or Pe, etc.)

g gamma ray

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

l logging

m diameter

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

o other

s sonic or velocity

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

z spontaneous potential or potential

mechanical log types:

b cement bond

c caliper

o other

p perforation depth control or perforator

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

Table with columns: API, COUNTY, PERMIT, TAX\_DISTRICT, QUAD\_75, QUAD\_15, LAT\_DD, LON\_DD, UTM\_E, UTM\_N

Bottom Hole Location Information:

Table with columns: API, EP\_FLAG, UTM\_E, UTM\_N, LON\_DD, LAT\_DD

Owner Information:

Table with columns: API, CMP\_DT, SUFFIX, STATUS, SURFACE\_OWNER, WELL\_NUM, CO\_NUM, LEASE, LEASE\_NUM, MINERAL\_OWN, OPERATOR\_AT\_COMPLETION, PROP\_VO, PROP\_TRGT\_FM, TFM\_EST\_PR

Completion Information:

Table with columns: API, CMP\_DT, SPUD\_DT, ELEV DATUM, FIELD, DEEPEST\_FM, DEEPEST\_FMT, INITIAL\_CLASS, FINAL\_CLASS, TYPE, RIG, CMP\_MTHD, TVD, TMD, NEW\_FTG, KOD, G\_BEF, G\_AFT, O\_BEF, O\_AFT, NGL\_BEF, NGL\_AFT, P\_BEF, T\_BEF, P\_AFT, TLAFT, BH\_P\_BEF, BH\_P\_AFT, G\_MSRD\_BY

Pay/Show/Water Information:

Table with columns: API, CMP\_DT, ACTIVITY, PRODUCT, SECTION, DEPTH\_TOP, FM\_TOP, DEPTH\_BOT, FM\_BOT, G\_BEF, G\_AFT, O\_BEF, O\_AFT, WATER\_QNTY

Production Gas Information: (Volumes in Mcf)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_GAS, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_OIL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

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

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_NGL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

Production Water Information: (Volumes in Gallons)

Table with columns: API, PRODUCING\_OPERATOR, PRD\_YEAR, ANN\_WTR, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

Stratigraphy Information:

Table with columns: API, SUFFIX, FM, FM\_QUALITY, DEPTH\_TOP, DEPTH\_QUALITY, THICKNESS, THICKNESS\_QUALITY, ELEV DATUM

Wireline (E-Log) Information:

Table with columns: API, LOG\_TOP, LOG\_BOT, DEEPEST\_FML, LOGS\_AVAIL, SCAN, DIGITIZED, GR\_TOP, GR\_BOT, D\_TOP, D\_BOT, N\_TOP, N\_BOT, I\_TOP, I\_BOT, T\_TOP, T\_BOT, S\_TOP, S\_BOT, O\_TOP, O\_BOT, INCH2, INCH5, REDUCED, KOP, LOGMD, ELEV\_KB, ELEV\_GL, ELEV\_DF, LOG\_MSRD\_FROM

Comment: \*logs: ROP tool temp

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

Table with columns: FILENAME, 4705101330op\_5in\_md\_hd.pdf, 4705101330op\_5in\_md\_tds.tif

Quick Reference Guide for Log File Names For more info about WVGES scanned logs click [here](#)

- g geologic log types:
d density (includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)
e photoelectric absorption (PE or Fe, etc.)
g gamma ray
i induction (includes dual induction, medium induction, deep induction, etc.)
l laterolog
m dipmeter
n neutron (includes neutron porosity, sidewall neutron-SW/N, etc.)
o other
s sonic or velocity
t temperature (includes borehole temperature, BHT, differential temperature, etc.)
z spontaneous potential or potential
mechanical log types:
b cement bond
c caliper
o other
p perforation depth control or perforate

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101846	Marshall	1846	Meade	Glen Easton	Cameron	39.781827	-80.728602	523411.3	4403578.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101846	1 As Proposed	521973.3	4404978.5	-80.743342	39.794481

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101846	--		Divd Orgrt Loc. Canceled	Dennis W Hunter	9H		Hunter Pelitel		Dennis W Hunter et al	Stone Energy Corporation	6148	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101846	--	--	755	Ground Level																									

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

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

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

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

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

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

Production Water Information: (Volumes in Gallons)

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

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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WV Geological & Economic Survey.

Well: County = 51 Permit = 01847

Report Time: Thursday, December 03, 2020 4:01:16 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101847	Marshall	1847	Meade	Glen Easton	Cameron	39.781755	-80.72847	523422.6	4403570.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101847	1	As Proposed	523970	4401941.7	-80.720137

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101847	--		Cancelled	Dennis W Hunter	4H		Hunter Pelhtal		Dennis W Hunter et al	Stone Energy Corporation	6250	Marcellus Fm	

Completion Information:

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

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

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

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

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

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

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

Production Water Information: (Volumes in Gallons)

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

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_45	LAT_DD	LONG_DD	UTME	UTMN
4705101859	Marshall	1859	Meade	Glen Easton	Cameron	39.78158	-80.728875	523388	4403548.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101859	1	As Proposed	521903.3	4404881.6	-80.744175

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101859	---	Dwld Onqul Loc	Cancelled	Dennis W Hunter	8H		Hunter Petbitel		Dennis W Hunter et al	Stone Energy Corporation	6140	Marcellus Fm	

Completion Information:

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

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

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

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

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

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

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

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

Production Water Information: (Volumes in Gallons)

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

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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4705102361

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101860	Marshall	1860	Meade	Glen Easton	Cameron	39.751673	-80.726548	523416	4403561.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101860	1	As Proposed	522074.3	4405230.4	-80.74216

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101860	1/1/	Drill Orig Loc	Cancelled	Dennis W Hunter	10H		Hunter Petitet		Dennis W Hunter et al	Stone Energy Corporation	6140	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101860	1/1/	1/1/	755	Ground Level																									

Comment: 1/1/ Per WVDEP OOG website, well was cancelled 12/11/2017. No cancellation documents available.

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

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

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

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

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

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

Production Water Information: (Volumes in Gallons)

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

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101866	Marshall	1866	Meade	Glen Easton	Cameron	39.781782	-80.726409	523427.8	4403573.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101866	1	As Proposed	524237.2	4402287.1	-80.717005 39.77017

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101866	--	David Grant Loc.	Cancelled	Deniss W Hunter	5H		Hunter/Pehtel		Deniss W Hunter et al	Stone Energy Corporation	6250	Marcellus Fm	4200

Completion Information:

API	CMP_DT	SPUD_DT	ELEV_DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101866	--	--	795	Ground Level																								

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

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

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

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

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

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

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

Production Water Information: (Volumes in Gallons)

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

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_76	LAT_DD	LON_DD	UTME	UTMN
4705130022	Marshall	30022	Meade	Glen Easton	Cameron	39.763904	-80.713967	524489.6	4401592.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705130022	--	--	Original Loc. Completed	J.S. Richmond	281				unknown	Hope Natural Gas Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TYD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705130022	--	--	789	Ground Level	Unnamed	UDev undr/BerLoHURN	Gordon	Development Well	unclassified	Gas	Cable Tool	unknown	2456		2456		0	0	0	0	0	0	0	0	0	0	0	0	0

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705130022	--	Pay	Gas	Vertical			2365	Gordon	0	0			

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705130022	Original Loc	unidentified coal	Well Record	100	Reasonable	9	Reasonable	769	Ground Level
4705130022	Original Loc	Sevickley coal	Well Record	308	Reasonable	2	Reasonable	769	Ground Level
4705130022	Original Loc	Pittsburgh coal	Well Record	398	Reasonable	9	Reasonable	769	Ground Level
4705130022	Original Loc	Sst Sands (undrft)	Well Record	1220	Reasonable	240	Reasonable	769	Ground Level
4705130022	Original Loc	Big Lime	Well Record	1523	Reasonable	40	Reasonable	769	Ground Level
4705130022	Original Loc	Big Injan (undrft)	Well Record	1563	Reasonable	207	Reasonable	769	Ground Level
4705130022	Original Loc	Gordon Stray	Well Record	2327	Reasonable	6	Reasonable	769	Ground Level
4705130022	Original Loc	Gordon	Well Record	2374	Reasonable	26	Reasonable	769	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705130022	5/24/1932	0

There is no Sample data for this well

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705170300	Marshall	70300	Meade	Wayville	Littleton	39.747466	-80.701947	525535.2	4399771.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170300	--		unknown	Prty Msp J Scheibelhood		1				Manufacturers Light & Heat Co			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705170300	--	--						unclassified	unclassified	not available	unknown	unknown																	

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

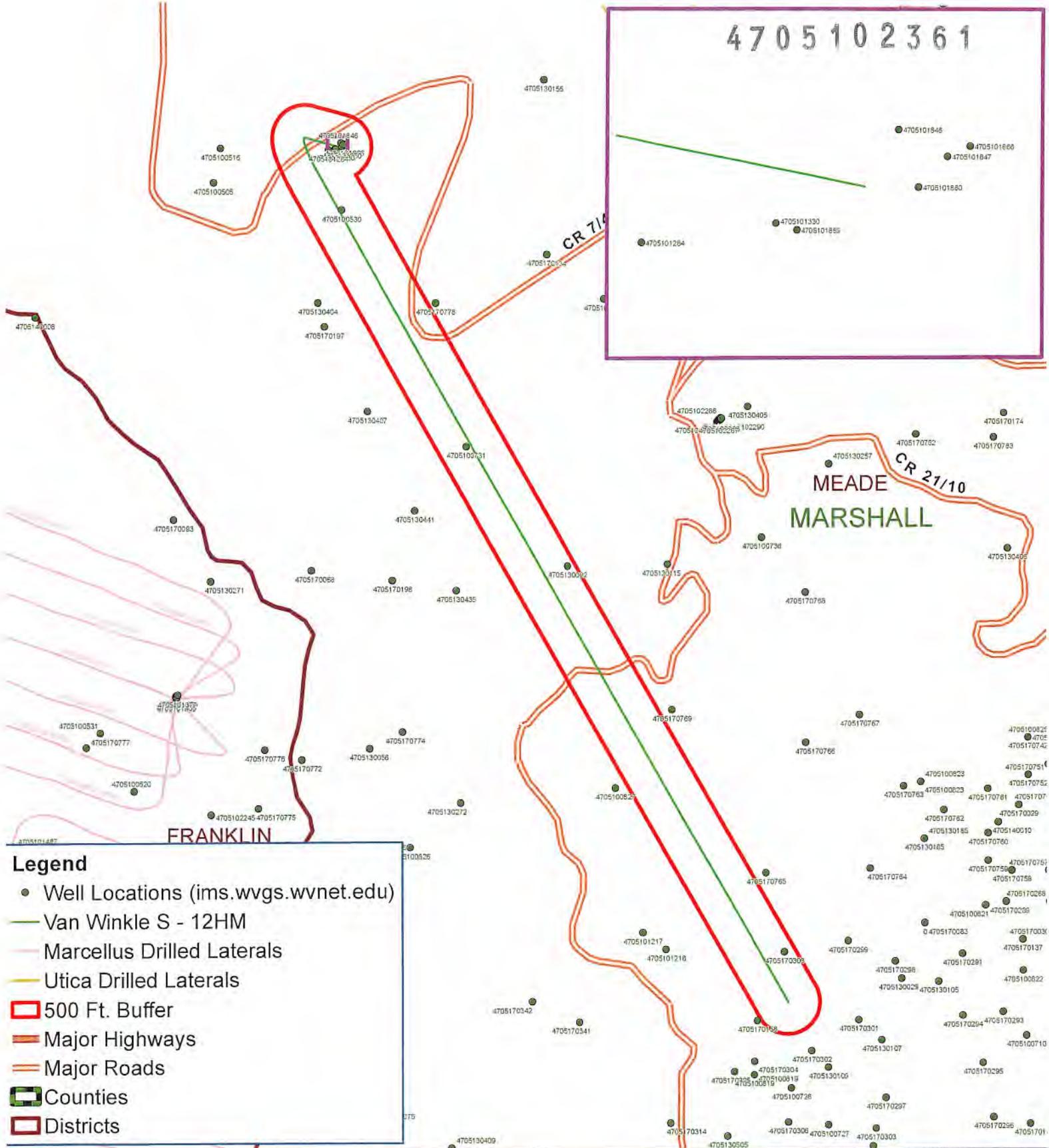
There is no Sample data for this well

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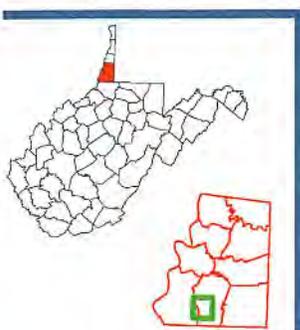
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4705102361



- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
  - Van Winkle S - 12HM
  - Marcellus Drilled Laterals
  - Utica Drilled Laterals
  - 500 Ft. Buffer
  - Major Highways
  - Major Roads
  - ▭ Counties
  - ▭ Districts



# Van Winkle S - 12HM Meade District Marshall County, WV



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03/19/2021



Map Created: December 2, 2020

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



Well: Van Winkle S-12 HM (slot M)  
 Site: Van Winkle  
 Project: Marshall County, West Virginia  
 Design: rev1  
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.000	0.00	
2	2000.00	0.00	0.000	2000.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	2500.76	10.02	284.612	2498.21	11.01	-42.24	2.00	284.612	-29.60	Begin 10.02° tangent
4	5461.06	10.02	284.612	5413.41	140.89	-540.42	0.00	0.000	-378.74	Begin 8°/100' build/turn
5	6169.13	50.00	155.978	6041.64	-112.26	-485.00	8.00	-134.242	-129.32	Begin 10°/100' build/turn
6	6562.85	89.00	150.025	6176.99	-433.23	-318.67	10.00	-9.408	232.17	Begin 89.00° lateral
7	21303.38	89.00	150.025	6435.00	13200.21	7044.82	0.00	0.000	4962.45	PBHL/TD 21303.38 MD/6435.00 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

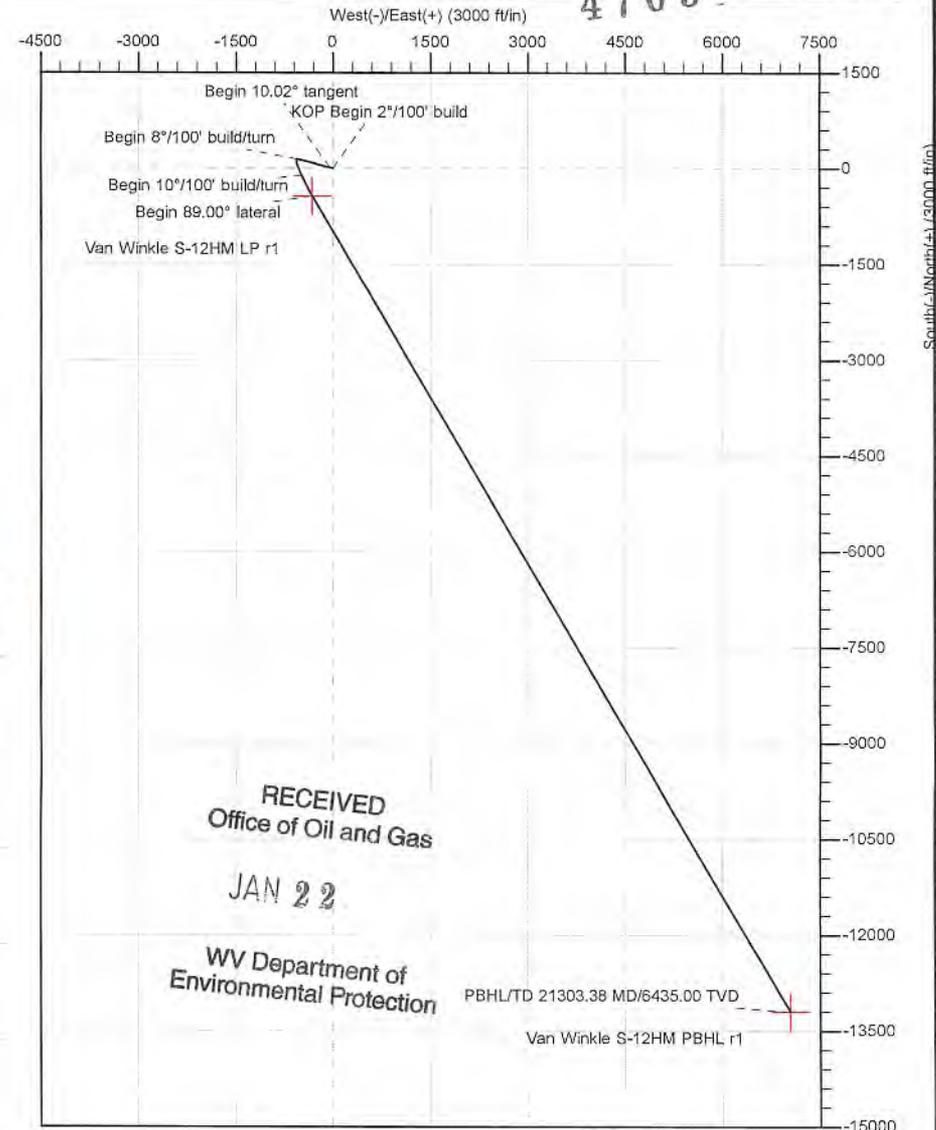
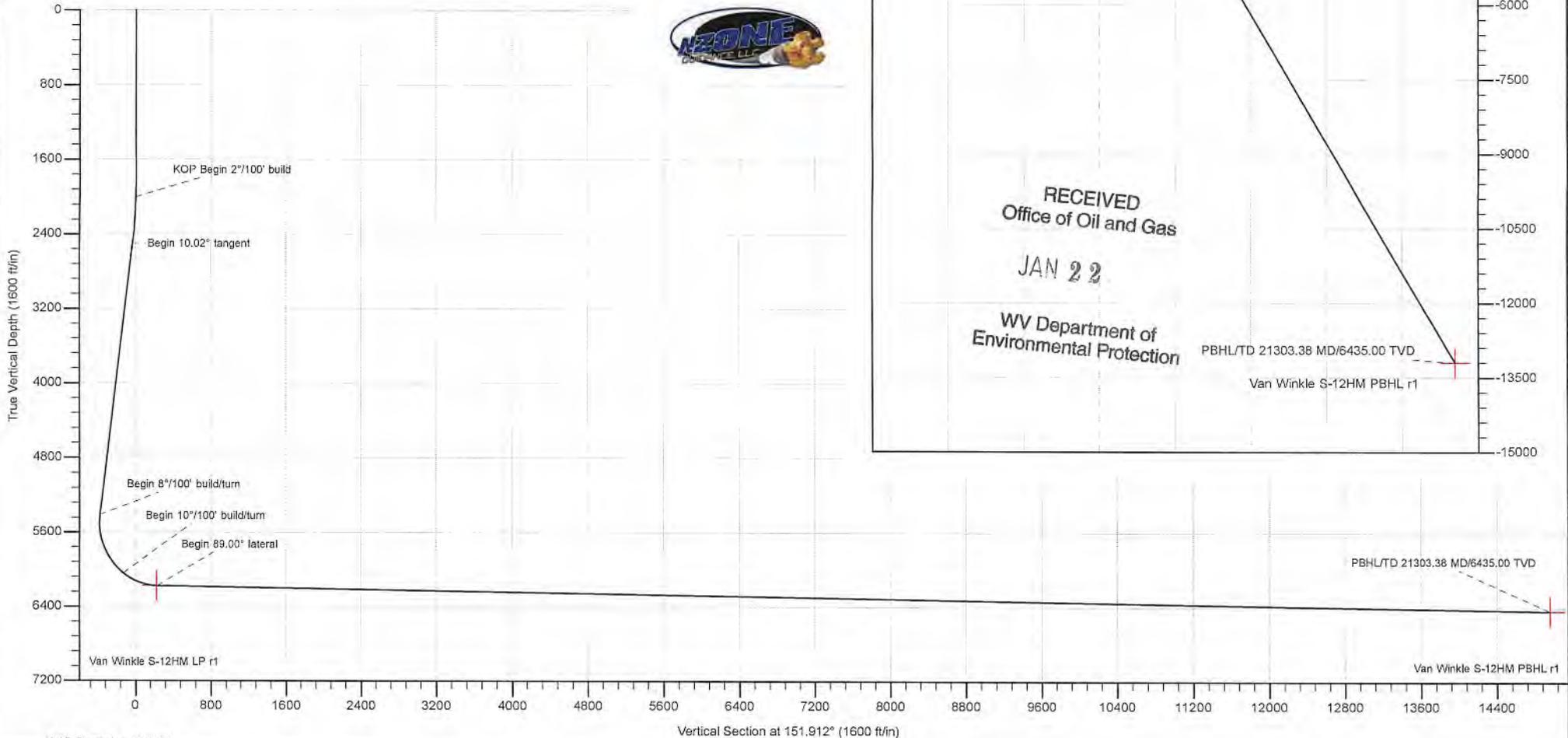
Northing: 14447351.57  
 Easting: 1717199.81  
 Latitude: 39.78167600  
 Longitude: -80.72669300

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



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

Magnetic Field  
 Strength: 51812.2snT  
 Dip Angle: 66.60°  
 Date: 11/13/2020  
 Model: IGRF2020



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PBHL/TD 21303.38 MD/6435.00 TVD  
 Van Winkle S-12HM PBHL r1

PBHL/TD 21303.38 MD/6435.00 TVD

Van Winkle S-12HM PBHL r1

4705102361

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

4705102361



Planning Report - Geographic

4705102361



Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-12 HM (slot M)
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 S-12 HM (slot M)	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 S-12 HM (slot M)					
Well Position	+N/-S	0.00 ft	Northing:	14,447,351.57 usft	Latitude:	39.78167600
	+E/-W	0.00 ft	Easting:	1,717,199.81 usft	Longitude:	-80.72669300
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	51,812.19847540

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	151.912

Plan Survey Tool Program	Date	11/17/2020		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,303.38 rev1 (Original Hole)	MWD	MWD - Standard

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	
2,000.00	0.00	0.000	2,000.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,500.76	10.02	284.612	2,498.21	11.01	-42.24	2.00	2.00	0.00	284.612	
5,461.06	10.02	284.612	5,413.41	140.89	-540.42	0.00	0.00	0.00	0.000	
6,169.13	50.00	155.978	6,041.64	-112.26	-485.00	8.00	5.65	-18.17	-134.242	
6,562.85	89.00	150.025	6,176.99	-433.23	-318.67	10.00	9.90	-1.51	-9.408	
21,303.38	89.00	150.025	6,435.00	-13,200.21	7,044.82	0.00	0.00	0.00	0.000	Van Winkle S-12HM F



<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well Van Winkle S-12 HM (slot M)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle S-12 HM (slot M)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.000	0.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
100.00	0.00	0.000	100.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
200.00	0.00	0.000	200.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
300.00	0.00	0.000	300.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
400.00	0.00	0.000	400.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
500.00	0.00	0.000	500.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
600.00	0.00	0.000	600.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
700.00	0.00	0.000	700.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
800.00	0.00	0.000	800.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
900.00	0.00	0.000	900.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,300.00	0.00	0.000	1,300.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,400.00	0.00	0.000	1,400.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,600.00	0.00	0.000	1,600.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,700.00	0.00	0.000	1,700.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,800.00	0.00	0.000	1,800.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
1,900.00	0.00	0.000	1,900.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
2,000.00	0.00	0.000	2,000.00	0.00	0.00	14,447,351.57	1,717,199.81	39.78167600	-80.72669300	
<b>KOP Begin 2°/100' build</b>										
2,100.00	2.00	284.612	2,099.98	0.44	-1.69	14,447,352.01	1,717,198.12	39.78167722	-80.72669901	
2,200.00	4.00	284.612	2,199.84	1.76	-6.75	14,447,353.33	1,717,193.05	39.78168089	-80.72671702	
2,300.00	6.00	284.612	2,299.45	3.96	-15.19	14,447,355.53	1,717,184.62	39.78168700	-80.72674701	
2,400.00	8.00	284.612	2,398.70	7.03	-26.98	14,447,358.60	1,717,172.83	39.78169554	-80.72678895	
2,500.00	10.00	284.612	2,497.47	10.98	-42.11	14,447,362.55	1,717,157.69	39.78170651	-80.72684279	
2,500.76	10.02	284.612	2,498.21	11.01	-42.24	14,447,362.58	1,717,157.56	39.78170660	-80.72684324	
<b>Begin 10.02° tangent</b>										
2,600.00	10.02	284.612	2,595.94	15.37	-58.94	14,447,366.93	1,717,140.86	39.78171870	-80.72690264	
2,700.00	10.02	284.612	2,694.42	19.75	-75.77	14,447,371.32	1,717,124.03	39.78173089	-80.72696249	
2,800.00	10.02	284.612	2,792.89	24.14	-92.60	14,447,375.71	1,717,107.21	39.78174308	-80.72702234	
2,900.00	10.02	284.612	2,891.37	28.53	-109.43	14,447,380.10	1,717,090.38	39.78175526	-80.72708219	
3,000.00	10.02	284.612	2,989.85	32.92	-126.26	14,447,384.48	1,717,073.55	39.78176745	-80.72714205	
3,100.00	10.02	284.612	3,088.32	37.30	-143.09	14,447,388.87	1,717,056.72	39.78177964	-80.72720190	
3,200.00	10.02	284.612	3,186.80	41.69	-159.91	14,447,393.26	1,717,039.89	39.78179183	-80.72726175	
3,300.00	10.02	284.612	3,285.27	46.08	-176.74	14,447,397.65	1,717,023.06	39.78180402	-80.72732160	
3,400.00	10.02	284.612	3,383.75	50.46	-193.57	14,447,402.03	1,717,006.24	39.78181621	-80.72738145	
3,500.00	10.02	284.612	3,482.23	54.85	-210.40	14,447,406.42	1,716,989.41	39.78182840	-80.72744131	
3,600.00	10.02	284.612	3,580.70	59.24	-227.23	14,447,410.81	1,716,972.58	39.78184059	-80.72750116	
3,700.00	10.02	284.612	3,679.18	63.63	-244.06	14,447,415.19	1,716,955.75	39.78185278	-80.72756101	
3,800.00	10.02	284.612	3,777.66	68.01	-260.88	14,447,419.58	1,716,938.92	39.78186497	-80.72762086	
3,900.00	10.02	284.612	3,876.13	72.40	-277.71	14,447,423.97	1,716,922.09	39.78187716	-80.72768071	
4,000.00	10.02	284.612	3,974.61	76.79	-294.54	14,447,428.36	1,716,905.27	39.78188935	-80.72774057	
4,100.00	10.02	284.612	4,073.08	81.18	-311.37	14,447,432.74	1,716,888.44	39.78190153	-80.72780042	
4,200.00	10.02	284.612	4,171.56	85.56	-328.20	14,447,437.13	1,716,871.61	39.78191372	-80.72786027	
4,300.00	10.02	284.612	4,270.04	89.95	-345.03	14,447,441.52	1,716,854.78	39.78192591	-80.72792012	
4,400.00	10.02	284.612	4,368.51	94.34	-361.86	14,447,445.91	1,716,837.95	39.78193810	-80.72797998	
4,500.00	10.02	284.612	4,466.99	98.72	-378.68	14,447,450.29	1,716,821.12	39.78195029	-80.72803983	
4,600.00	10.02	284.612	4,565.47	103.11	-395.51	14,447,454.68	1,716,804.29	39.78196248	-80.72809968	
4,700.00	10.02	284.612	4,663.94	107.50	-412.34	14,447,459.07	1,716,787.47	39.78197467	-80.72815953	
4,800.00	10.02	284.612	4,762.42	111.89	-429.17	14,447,463.45	1,716,770.64	39.78198686	-80.72821938	
4,900.00	10.02	284.612	4,860.89	116.27	-446.00	14,447,467.84	1,716,753.81	39.78199905	-80.72827924	
5,000.00	10.02	284.612	4,959.37	120.66	-462.83	14,447,472.23	1,716,736.98	39.78201123	-80.72833909	



Planning Report - Geographic

4705102361



Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-12 HM (slot M)
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 S-12 HM (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	10.02	284.612	5,057.85	125.05	-479.65	14,447,476.62	1,716,720.15	39.78202342	-80.72839894
5,200.00	10.02	284.612	5,156.32	129.43	-496.48	14,447,481.00	1,716,703.32	39.78203561	-80.72845879
5,300.00	10.02	284.612	5,254.80	133.82	-513.31	14,447,485.39	1,716,686.50	39.78204780	-80.72851865
5,400.00	10.02	284.612	5,353.27	138.21	-530.14	14,447,489.78	1,716,669.67	39.78205999	-80.72857850
5,461.06	10.02	284.612	5,413.41	140.89	-540.42	14,447,492.46	1,716,659.39	39.78206743	-80.72861505
<b>Begin 8°/100' build/turn</b>									
5,500.00	8.15	268.674	5,451.86	141.68	-546.45	14,447,493.25	1,716,653.35	39.78206965	-80.72863653
5,600.00	8.24	210.072	5,551.00	135.30	-557.15	14,447,486.87	1,716,642.66	39.78205224	-80.72867466
5,700.00	14.02	180.112	5,649.15	116.96	-560.77	14,447,468.53	1,716,639.04	39.78200188	-80.72868774
5,800.00	21.28	168.740	5,744.41	87.00	-557.24	14,447,438.57	1,716,642.57	39.78191958	-80.72867552
5,900.00	28.92	163.069	5,834.92	46.01	-546.64	14,447,397.58	1,716,653.17	39.78180692	-80.72863823
6,000.00	36.70	159.629	5,918.91	-5.21	-529.17	14,447,346.35	1,716,670.64	39.78166610	-80.72857659
6,100.00	44.55	157.258	5,994.75	-65.67	-505.17	14,447,285.89	1,716,694.64	39.78149986	-80.72849182
6,169.13	50.00	155.978	6,041.64	-112.26	-485.00	14,447,239.31	1,716,714.81	39.78137176	-80.72842053
<b>Begin 10°/100' build/turn</b>									
6,200.00	53.05	155.347	6,060.84	-134.27	-475.04	14,447,217.29	1,716,724.77	39.78131122	-80.72838532
6,300.00	62.94	153.596	6,113.78	-210.66	-438.48	14,447,140.91	1,716,761.33	39.78110113	-80.72825601
6,400.00	72.84	152.132	6,151.38	-292.99	-396.24	14,447,058.58	1,716,803.57	39.78087470	-80.72810655
6,500.00	82.76	150.817	6,172.48	-378.75	-349.60	14,446,972.82	1,716,850.20	39.78063879	-80.72794148
6,562.85	89.00	150.025	6,176.99	-433.23	-318.67	14,446,918.34	1,716,881.13	39.78048890	-80.72783199
<b>Begin 89.00° lateral</b>									
6,600.00	89.00	150.025	6,177.64	-465.41	-300.12	14,446,886.16	1,716,899.69	39.78040037	-80.72776628
6,700.00	89.00	150.025	6,179.39	-552.02	-250.16	14,446,799.55	1,716,949.64	39.78016210	-80.72758941
6,800.00	89.00	150.025	6,181.14	-638.63	-200.21	14,446,712.94	1,716,999.60	39.77992382	-80.72741254
6,900.00	89.00	150.025	6,182.89	-725.25	-150.25	14,446,626.32	1,717,049.55	39.77968555	-80.72723568
7,000.00	89.00	150.025	6,184.64	-811.86	-100.30	14,446,539.71	1,717,099.51	39.77944727	-80.72705882
7,100.00	89.00	150.025	6,186.39	-898.47	-50.35	14,446,453.10	1,717,149.46	39.77920900	-80.72688196
7,200.00	89.00	150.025	6,188.14	-985.08	-0.39	14,446,366.49	1,717,199.41	39.77897072	-80.72670510
7,300.00	89.00	150.025	6,189.89	-1,071.69	49.56	14,446,279.88	1,717,249.37	39.77873244	-80.72652824
7,400.00	89.00	150.025	6,191.65	-1,158.30	99.52	14,446,193.27	1,717,299.32	39.77849417	-80.72635138
7,500.00	89.00	150.025	6,193.40	-1,244.91	149.47	14,446,106.66	1,717,349.28	39.77825589	-80.72617452
7,600.00	89.00	150.025	6,195.15	-1,331.52	199.42	14,446,020.05	1,717,399.23	39.77801761	-80.72599767
7,700.00	89.00	150.025	6,196.90	-1,418.14	249.38	14,445,933.44	1,717,449.18	39.77777934	-80.72582081
7,800.00	89.00	150.025	6,198.65	-1,504.75	299.33	14,445,846.82	1,717,499.14	39.77754106	-80.72564396
7,900.00	89.00	150.025	6,200.40	-1,591.36	349.29	14,445,760.21	1,717,549.09	39.77730278	-80.72546711
8,000.00	89.00	150.025	6,202.15	-1,677.97	399.24	14,445,673.60	1,717,599.05	39.77706450	-80.72529026
8,100.00	89.00	150.025	6,203.90	-1,764.58	449.19	14,445,586.99	1,717,649.00	39.77682622	-80.72511341
8,200.00	89.00	150.025	6,205.65	-1,851.19	499.15	14,445,500.38	1,717,698.95	39.77658795	-80.72493656
8,300.00	89.00	150.025	6,207.40	-1,937.80	549.10	14,445,413.77	1,717,748.91	39.77634967	-80.72475971
8,400.00	89.00	150.025	6,209.15	-2,024.42	599.06	14,445,327.16	1,717,798.86	39.77611139	-80.72458287
8,500.00	89.00	150.025	6,210.90	-2,111.03	649.01	14,445,240.55	1,717,848.82	39.77587311	-80.72440602
8,600.00	89.00	150.025	6,212.65	-2,197.64	698.96	14,445,153.93	1,717,898.77	39.77563483	-80.72422918
8,700.00	89.00	150.025	6,214.40	-2,284.25	748.92	14,445,067.32	1,717,948.72	39.77539655	-80.72405234
8,800.00	89.00	150.025	6,216.15	-2,370.86	798.87	14,444,980.71	1,717,998.68	39.77515827	-80.72387550
8,900.00	89.00	150.025	6,217.90	-2,457.47	848.83	14,444,894.10	1,718,048.63	39.77491999	-80.72369866
9,000.00	89.00	150.025	6,219.65	-2,544.08	898.78	14,444,807.49	1,718,098.59	39.77468170	-80.72352182
9,100.00	89.00	150.025	6,221.40	-2,630.70	948.74	14,444,720.88	1,718,148.54	39.77444342	-80.72334498
9,200.00	89.00	150.025	6,223.15	-2,717.31	998.69	14,444,634.27	1,718,198.49	39.77420514	-80.72316815
9,300.00	89.00	150.025	6,224.90	-2,803.92	1,048.64	14,444,547.66	1,718,248.45	39.77396686	-80.72299131
9,400.00	89.00	150.025	6,226.65	-2,890.53	1,098.60	14,444,461.04	1,718,298.40	39.77372858	-80.72281448
9,500.00	89.00	150.025	6,228.40	-2,977.14	1,148.55	14,444,374.43	1,718,348.35	39.77349030	-80.72263765
9,600.00	89.00	150.025	6,230.15	-3,063.75	1,198.51	14,444,287.82	1,718,398.31	39.77325201	-80.72246081
9,700.00	89.00	150.025	6,231.90	-3,150.36	1,248.46	14,444,201.21	1,718,448.26	39.77301373	-80.72228398
9,800.00	89.00	150.025	6,233.65	-3,236.97	1,298.41	14,444,114.60	1,718,498.22	39.77277545	-80.72210716

03/19/2021



Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-12 HM (slot M)
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 S-12 HM (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,900.00	89.00	150.025	6,235.40	-3,323.59	1,348.37	14,444,027.99	1,718,548.17	39.77253716	-80.72193033	
10,000.00	89.00	150.025	6,237.15	-3,410.20	1,398.32	14,443,941.38	1,718,598.12	39.77229888	-80.72175350	
10,100.00	89.00	150.025	6,238.90	-3,496.81	1,448.28	14,443,854.77	1,718,648.08	39.77206080	-80.72157668	
10,200.00	89.00	150.025	6,240.65	-3,583.42	1,498.23	14,443,768.16	1,718,698.03	39.77182231	-80.72139985	
10,300.00	89.00	150.025	6,242.40	-3,670.03	1,548.18	14,443,681.54	1,718,747.99	39.77158403	-80.72122303	
10,400.00	89.00	150.025	6,244.15	-3,756.64	1,598.14	14,443,594.93	1,718,797.94	39.77134574	-80.72104621	
10,500.00	89.00	150.025	6,245.91	-3,843.25	1,648.09	14,443,508.32	1,718,847.89	39.77110746	-80.72086939	
10,600.00	89.00	150.025	6,247.66	-3,929.87	1,698.05	14,443,421.71	1,718,897.85	39.77086917	-80.72069257	
10,700.00	89.00	150.025	6,249.41	-4,016.48	1,748.00	14,443,335.10	1,718,947.80	39.77063089	-80.72051575	
10,800.00	89.00	150.025	6,251.16	-4,103.09	1,797.95	14,443,248.49	1,718,997.76	39.77039260	-80.72033894	
10,900.00	89.00	150.025	6,252.91	-4,189.70	1,847.91	14,443,161.88	1,719,047.71	39.77015431	-80.72016212	
11,000.00	89.00	150.025	6,254.66	-4,276.31	1,897.86	14,443,075.27	1,719,097.66	39.76991603	-80.71998531	
11,100.00	89.00	150.025	6,256.41	-4,362.92	1,947.82	14,442,988.65	1,719,147.62	39.76967774	-80.71980849	
11,200.00	89.00	150.025	6,258.16	-4,449.53	1,997.77	14,442,902.04	1,719,197.57	39.76943945	-80.71963168	
11,300.00	89.00	150.025	6,259.91	-4,536.15	2,047.72	14,442,815.43	1,719,247.53	39.76920117	-80.71945487	
11,400.00	89.00	150.025	6,261.66	-4,622.76	2,097.68	14,442,728.82	1,719,297.48	39.76896288	-80.71927806	
11,500.00	89.00	150.025	6,263.41	-4,709.37	2,147.63	14,442,642.21	1,719,347.43	39.76872459	-80.71910125	
11,600.00	89.00	150.025	6,265.16	-4,795.98	2,197.59	14,442,555.60	1,719,397.39	39.76848630	-80.71892445	
11,700.00	89.00	150.025	6,266.91	-4,882.59	2,247.54	14,442,468.99	1,719,447.34	39.76824801	-80.71874764	
11,800.00	89.00	150.025	6,268.66	-4,969.20	2,297.49	14,442,382.38	1,719,497.30	39.76800973	-80.71857084	
11,900.00	89.00	150.025	6,270.41	-5,055.81	2,347.45	14,442,295.76	1,719,547.25	39.76777144	-80.71839403	
12,000.00	89.00	150.025	6,272.16	-5,142.43	2,397.40	14,442,209.15	1,719,597.20	39.76753315	-80.71821723	
12,100.00	89.00	150.025	6,273.91	-5,229.04	2,447.36	14,442,122.54	1,719,647.16	39.76729486	-80.71804043	
12,200.00	89.00	150.025	6,275.66	-5,315.65	2,497.31	14,442,035.93	1,719,697.11	39.76705657	-80.71786363	
12,300.00	89.00	150.025	6,277.41	-5,402.26	2,547.26	14,441,949.32	1,719,747.07	39.76681828	-80.71768683	
12,400.00	89.00	150.025	6,279.16	-5,488.87	2,597.22	14,441,862.71	1,719,797.02	39.76657999	-80.71751004	
12,500.00	89.00	150.025	6,280.91	-5,575.48	2,647.17	14,441,776.10	1,719,846.97	39.76634170	-80.71733324	
12,600.00	89.00	150.025	6,282.66	-5,662.09	2,697.13	14,441,689.49	1,719,896.93	39.76610341	-80.71715645	
12,700.00	89.00	150.025	6,284.41	-5,748.70	2,747.08	14,441,602.87	1,719,946.88	39.76586512	-80.71697965	
12,800.00	89.00	150.025	6,286.16	-5,835.32	2,797.03	14,441,516.26	1,719,996.84	39.76562682	-80.71680286	
12,900.00	89.00	150.025	6,287.91	-5,921.93	2,846.99	14,441,429.65	1,720,046.79	39.76538853	-80.71662607	
13,000.00	89.00	150.025	6,289.66	-6,008.54	2,896.94	14,441,343.04	1,720,096.74	39.76515024	-80.71644928	
13,100.00	89.00	150.025	6,291.41	-6,095.15	2,946.90	14,441,256.43	1,720,146.70	39.76491195	-80.71627249	
13,200.00	89.00	150.025	6,293.16	-6,181.76	2,996.85	14,441,169.82	1,720,196.65	39.76467366	-80.71609570	
13,300.00	89.00	150.025	6,294.91	-6,268.37	3,046.81	14,441,083.21	1,720,246.60	39.76443536	-80.71591892	
13,400.00	89.00	150.025	6,296.66	-6,354.98	3,096.76	14,440,996.60	1,720,296.56	39.76419707	-80.71574213	
13,500.00	89.00	150.025	6,298.42	-6,441.60	3,146.71	14,440,909.99	1,720,346.51	39.76395878	-80.71556535	
13,600.00	89.00	150.025	6,300.17	-6,528.21	3,196.67	14,440,823.37	1,720,396.47	39.76372048	-80.71538857	
13,700.00	89.00	150.025	6,301.92	-6,614.82	3,246.62	14,440,736.76	1,720,446.42	39.76348219	-80.71521179	
13,800.00	89.00	150.025	6,303.67	-6,701.43	3,296.58	14,440,650.15	1,720,496.37	39.76324389	-80.71503501	
13,900.00	89.00	150.025	6,305.42	-6,788.04	3,346.53	14,440,563.54	1,720,546.33	39.76300560	-80.71485823	
14,000.00	89.00	150.025	6,307.17	-6,874.65	3,396.48	14,440,476.93	1,720,596.28	39.76276730	-80.71468145	
14,100.00	89.00	150.025	6,308.92	-6,961.26	3,446.44	14,440,390.32	1,720,646.24	39.76252901	-80.71450467	
14,200.00	89.00	150.025	6,310.67	-7,047.88	3,496.39	14,440,303.71	1,720,696.19	39.76229071	-80.71432790	
14,300.00	89.00	150.025	6,312.42	-7,134.49	3,546.35	14,440,217.10	1,720,746.14	39.76205242	-80.71415112	
14,400.00	89.00	150.025	6,314.17	-7,221.10	3,596.30	14,440,130.48	1,720,796.10	39.76181412	-80.71397435	
14,500.00	89.00	150.025	6,315.92	-7,307.71	3,646.25	14,440,043.87	1,720,846.05	39.76157583	-80.71379758	
14,600.00	89.00	150.025	6,317.67	-7,394.32	3,696.21	14,439,957.26	1,720,896.01	39.76133753	-80.71362081	
14,700.00	89.00	150.025	6,319.42	-7,480.93	3,746.16	14,439,870.65	1,720,945.96	39.76109923	-80.71344404	
14,800.00	89.00	150.025	6,321.17	-7,567.54	3,796.12	14,439,784.04	1,720,995.91	39.76086094	-80.71326727	
14,900.00	89.00	150.025	6,322.92	-7,654.16	3,846.07	14,439,697.43	1,721,045.87	39.76062264	-80.71309051	
15,000.00	89.00	150.025	6,324.67	-7,740.77	3,896.02	14,439,610.82	1,721,095.82	39.76038434	-80.71291374	
15,100.00	89.00	150.025	6,326.42	-7,827.38	3,945.98	14,439,524.21	1,721,145.78	39.76014604	-80.71273698	
15,200.00	89.00	150.025	6,328.17	-7,913.99	3,995.93	14,439,437.59	1,721,195.73	39.75990775	-80.71256021	
15,300.00	89.00	150.025	6,329.92	-8,000.60	4,045.89	14,439,350.98	1,721,245.68	39.75966945	-80.71238345	

03/19/2021



Planning Report - Geographic

4705102361

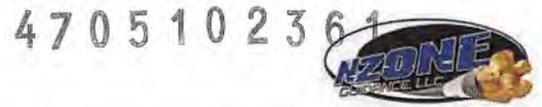


Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-12 HM (slot M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 754.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 754.00ft
Site:	Van Winkle	North Reference:	Grid
Well:	Van Winkle S-12 HM (slot M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,400.00	89.00	150.025	6,331.67	-8,087.21	4,095.84	14,439,264.37	1,721,295.64	39.75943115	-80.71220669
15,500.00	89.00	150.025	6,333.42	-8,173.82	4,145.79	14,439,177.76	1,721,345.59	39.75919285	-80.71202993
15,600.00	89.00	150.025	6,335.17	-8,260.43	4,195.75	14,439,091.15	1,721,395.55	39.75895455	-80.71185317
15,700.00	89.00	150.025	6,336.92	-8,347.05	4,245.70	14,439,004.54	1,721,445.50	39.75871625	-80.71167642
15,800.00	89.00	150.025	6,338.67	-8,433.66	4,295.66	14,438,917.93	1,721,495.45	39.75847795	-80.71149966
15,900.00	89.00	150.025	6,340.42	-8,520.27	4,345.61	14,438,831.32	1,721,545.41	39.75823965	-80.71132291
16,000.00	89.00	150.025	6,342.17	-8,606.88	4,395.56	14,438,744.71	1,721,595.36	39.75800135	-80.71114615
16,100.00	89.00	150.025	6,343.92	-8,693.49	4,445.52	14,438,658.09	1,721,645.32	39.75776305	-80.71096940
16,200.00	89.00	150.025	6,345.67	-8,780.10	4,495.47	14,438,571.48	1,721,695.27	39.75752475	-80.71079265
16,300.00	89.00	150.025	6,347.42	-8,866.71	4,545.43	14,438,484.87	1,721,745.22	39.75728645	-80.71061590
16,400.00	89.00	150.025	6,349.17	-8,953.33	4,595.38	14,438,398.26	1,721,795.18	39.75704815	-80.71043915
16,500.00	89.00	150.025	6,350.93	-9,039.94	4,645.33	14,438,311.65	1,721,845.13	39.75680985	-80.71026240
16,600.00	89.00	150.025	6,352.68	-9,126.55	4,695.29	14,438,225.04	1,721,895.09	39.75657155	-80.71008566
16,700.00	89.00	150.025	6,354.43	-9,213.16	4,745.24	14,438,138.43	1,721,945.04	39.75633324	-80.70990891
16,800.00	89.00	150.025	6,356.18	-9,299.77	4,795.20	14,438,051.82	1,721,994.99	39.75609494	-80.70973217
16,900.00	89.00	150.025	6,357.93	-9,386.38	4,845.15	14,437,965.20	1,722,044.95	39.75585664	-80.70955543
17,000.00	89.00	150.025	6,359.68	-9,472.99	4,895.10	14,437,878.59	1,722,094.90	39.75561834	-80.70937869
17,100.00	89.00	150.025	6,361.43	-9,559.61	4,945.06	14,437,791.98	1,722,144.85	39.75538003	-80.70920195
17,200.00	89.00	150.025	6,363.18	-9,646.22	4,995.01	14,437,705.37	1,722,194.81	39.75514173	-80.70902521
17,300.00	89.00	150.025	6,364.93	-9,732.83	5,044.97	14,437,618.76	1,722,244.76	39.75490342	-80.70884847
17,400.00	89.00	150.025	6,366.68	-9,819.44	5,094.92	14,437,532.15	1,722,294.72	39.75466512	-80.70867173
17,500.00	89.00	150.025	6,368.43	-9,906.05	5,144.87	14,437,445.54	1,722,344.67	39.75442682	-80.70849500
17,600.00	89.00	150.025	6,370.18	-9,992.66	5,194.83	14,437,358.93	1,722,394.62	39.75418851	-80.70831827
17,700.00	89.00	150.025	6,371.93	-10,079.27	5,244.78	14,437,272.31	1,722,444.58	39.75395021	-80.70814153
17,800.00	89.00	150.025	6,373.68	-10,165.88	5,294.74	14,437,185.70	1,722,494.53	39.75371190	-80.70796480
17,900.00	89.00	150.025	6,375.43	-10,252.50	5,344.69	14,437,099.09	1,722,544.49	39.75347360	-80.70778807
18,000.00	89.00	150.025	6,377.18	-10,339.11	5,394.65	14,437,012.48	1,722,594.44	39.75323529	-80.70761134
18,100.00	89.00	150.025	6,378.93	-10,425.72	5,444.60	14,436,925.87	1,722,644.39	39.75299698	-80.70743461
18,200.00	89.00	150.025	6,380.68	-10,512.33	5,494.55	14,436,839.26	1,722,694.35	39.75275868	-80.70725789
18,300.00	89.00	150.025	6,382.43	-10,598.94	5,544.51	14,436,752.65	1,722,744.30	39.75252037	-80.70708116
18,400.00	89.00	150.025	6,384.18	-10,685.55	5,594.46	14,436,666.04	1,722,794.26	39.75228207	-80.70690444
18,500.00	89.00	150.025	6,385.93	-10,772.16	5,644.42	14,436,579.43	1,722,844.21	39.75204376	-80.70672772
18,600.00	89.00	150.025	6,387.68	-10,858.78	5,694.37	14,436,492.81	1,722,894.16	39.75180545	-80.70655099
18,700.00	89.00	150.025	6,389.43	-10,945.39	5,744.32	14,436,406.20	1,722,944.12	39.75156714	-80.70637427
18,800.00	89.00	150.025	6,391.18	-11,032.00	5,794.28	14,436,319.59	1,722,994.07	39.75132884	-80.70619755
18,900.00	89.00	150.025	6,392.93	-11,118.61	5,844.23	14,436,232.98	1,723,044.03	39.75109053	-80.70602084
19,000.00	89.00	150.025	6,394.68	-11,205.22	5,894.19	14,436,146.37	1,723,093.98	39.75085222	-80.70584412
19,100.00	89.00	150.025	6,396.43	-11,291.83	5,944.14	14,436,059.76	1,723,143.93	39.75061391	-80.70566740
19,200.00	89.00	150.025	6,398.18	-11,378.44	5,994.09	14,435,973.15	1,723,193.89	39.75037560	-80.70549069
19,300.00	89.00	150.025	6,399.93	-11,465.06	6,044.05	14,435,886.54	1,723,243.84	39.75013729	-80.70531398
19,400.00	89.00	150.025	6,401.68	-11,551.67	6,094.00	14,435,799.92	1,723,293.80	39.74989898	-80.70513726
19,500.00	89.00	150.025	6,403.43	-11,638.28	6,143.96	14,435,713.31	1,723,343.75	39.74966067	-80.70496055
19,600.00	89.00	150.025	6,405.19	-11,724.89	6,193.91	14,435,626.70	1,723,393.70	39.74942236	-80.70478384
19,700.00	89.00	150.025	6,406.94	-11,811.50	6,243.86	14,435,540.09	1,723,443.66	39.74918405	-80.70460713
19,800.00	89.00	150.025	6,408.69	-11,898.11	6,293.82	14,435,453.48	1,723,493.61	39.74894574	-80.70443043
19,900.00	89.00	150.025	6,410.44	-11,984.72	6,343.77	14,435,366.87	1,723,543.57	39.74870743	-80.70425372
20,000.00	89.00	150.025	6,412.19	-12,071.34	6,393.73	14,435,280.26	1,723,593.52	39.74846912	-80.70407702
20,100.00	89.00	150.025	6,413.94	-12,157.95	6,443.68	14,435,193.65	1,723,643.47	39.74823081	-80.70390031
20,200.00	89.00	150.025	6,415.69	-12,244.56	6,493.63	14,435,107.03	1,723,693.43	39.74799250	-80.70372361
20,300.00	89.00	150.025	6,417.44	-12,331.17	6,543.59	14,435,020.42	1,723,743.38	39.74775418	-80.70354691
20,400.00	89.00	150.025	6,419.19	-12,417.78	6,593.54	14,434,933.81	1,723,793.34	39.74751587	-80.70337021
20,500.00	89.00	150.025	6,420.94	-12,504.39	6,643.50	14,434,847.20	1,723,843.29	39.74727756	-80.70319351
20,600.00	89.00	150.025	6,422.69	-12,591.00	6,693.45	14,434,760.59	1,723,893.24	39.74703925	-80.70301681
20,700.00	89.00	150.025	6,424.44	-12,677.61	6,743.40	14,434,673.98	1,723,943.20	39.74680093	-80.70284012
20,800.00	89.00	150.025	6,426.19	-12,764.23	6,793.36	14,434,587.37	1,723,993.15	39.74656262	-80.70266342

03/19/2021



<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well Van Winkle S-12 HM (slot M)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 754.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 754.00ft
<b>Site:</b>	Van Winkle	<b>North Reference:</b>	Grid
<b>Well:</b>	Van Winkle S-12 HM (slot M)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
20,900.00	89.00	150.025	6,427.94	-12,850.84	6,843.31	14,434,500.76	1,724,043.10	39.74632431	-80.70248673	
21,000.00	89.00	150.025	6,429.69	-12,937.45	6,893.27	14,434,414.15	1,724,093.06	39.74608599	-80.70231004	
21,100.00	89.00	150.025	6,431.44	-13,024.06	6,943.22	14,434,327.53	1,724,143.01	39.74584768	-80.70213335	
21,200.00	89.00	150.025	6,433.19	-13,110.67	6,993.17	14,434,240.92	1,724,192.97	39.74560936	-80.70195666	
21,300.00	89.00	150.025	6,434.94	-13,197.28	7,043.13	14,434,154.31	1,724,242.92	39.74537105	-80.70177997	
21,303.38	89.00	150.025	6,435.00	-13,200.21	7,044.82	14,434,151.39	1,724,244.61	39.74536300	-80.70177400	
PBHL/TD 21303.38 MD/6435.00 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 S-12HM LP - hit/miss target - Shape - Point	0.00	0.005	6,177.00	-433.22	-326.26	14,446,918.35	1,716,873.54	39.78048900	-80.72785900	
- plan misses target center by 6.57ft at 6559.10ft MD (6176.91 TVD, -429.98 N, -320.55 E)										
Van Winkle S-12HM PBI - plan hits target center - Point	0.00	0.000	6,435.00	-13,200.21	7,044.82	14,434,151.39	1,724,244.61	39.74536300	-80.70177400	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,000.00	2,000.00	0.00	0.00	KOP Begin 2°/100' build	
2,500.76	2,498.21	11.01	-42.24	Begin 10.02° tangent	
5,461.06	5,413.41	140.89	-540.42	Begin 8°/100' build/turn	
6,169.13	6,041.64	-112.26	-485.00	Begin 10°/100' build/turn	
6,562.85	6,176.99	-433.23	-318.67	Begin 89.00° lateral	
21,303.38	6,435.00	-13,200.21	7,044.82	PBHL/TD 21303.38 MD/6435.00 TVD	

4705102361

WW-9  
(4/16)

API Number 47 - 051 - \_\_\_\_\_  
Operator's Well No. Van Winkle S-12HM

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#1358426)

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 Pancake  
Company Official (Typed Name) James Pancake  
Company Official Title Vice President - Geoscience

RECEIVED  
Office of Oil and Gas  
FEB 03 2021

Subscribed and sworn before me this 13 day of JANUARY, 20 21

WV Department of Environmental Protection

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

03/19/2021

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.63 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
Annual Ryegrass	40
Spring Oats	96

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

*Bany Stiles*

Comments:

Title: Oil and Gas Inspector

Date: 1-21-21

Field Reviewed?  Yes  No

RECEIVED  
Office of Oil and Gas

FEB 03 2021

WV Department of  
Environmental Protection

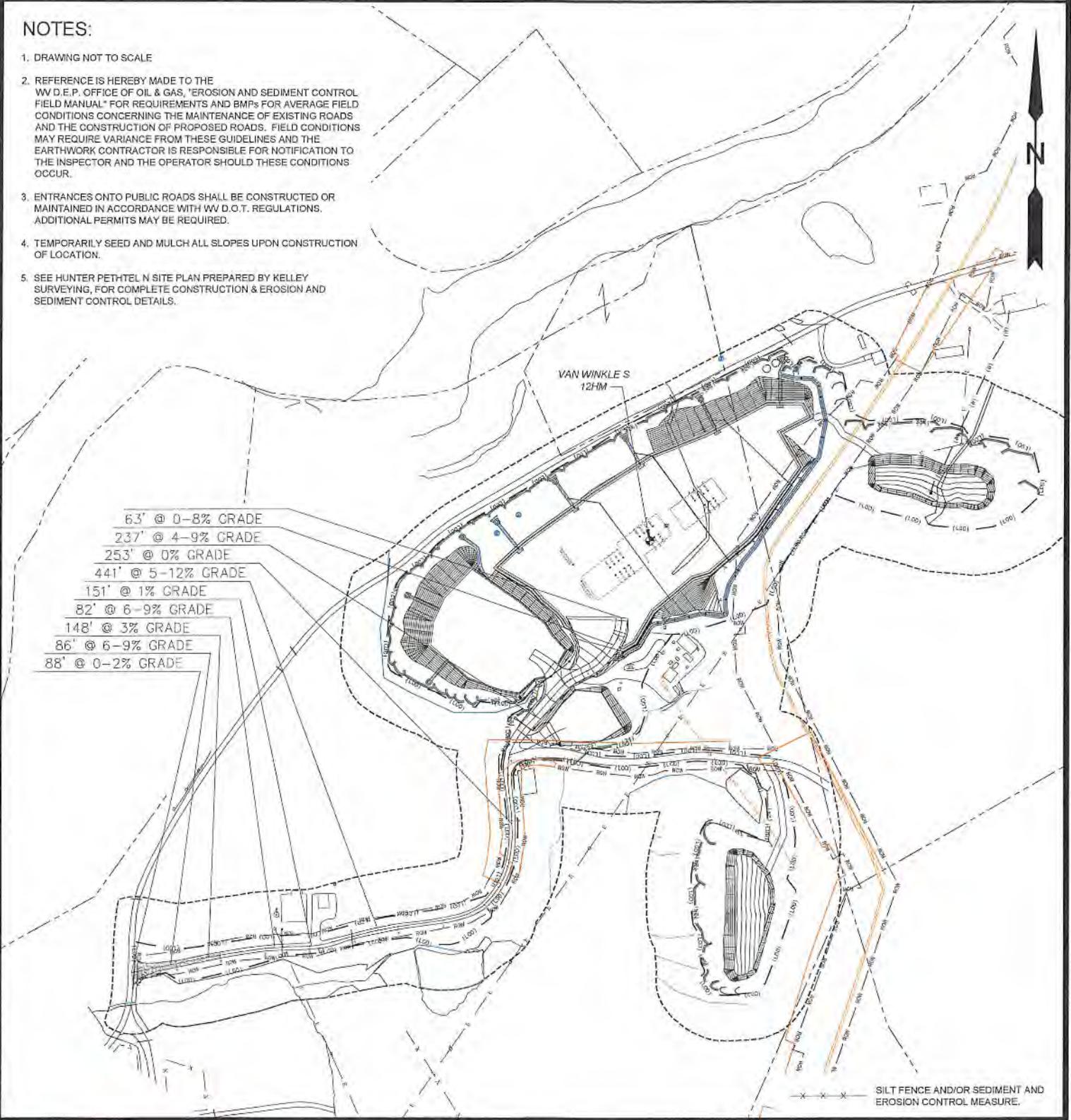
03/19/2021

# PROPOSED VAN WINKLE S - 12HM

4705102361

**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.



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

XXXXX SILT FENCE AND/OR SEDIMENT AND EROSION CONTROL MEASURE.

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

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/24/2020	NONE

**TUG HILL**  
OPERATING  
03/19/2021

4705102361



# Well Site Safety Plan

## Tug Hill Operating, LLC

*Bay Stiles*

*1-21-21*

Well Name: Van Winkle S-12HM

Pad Name: Hunter Pethel

UTM (meters), NAD83, Zone 17:

Northing: 4,403,561.61

Easting: 523,403.53

January 2021

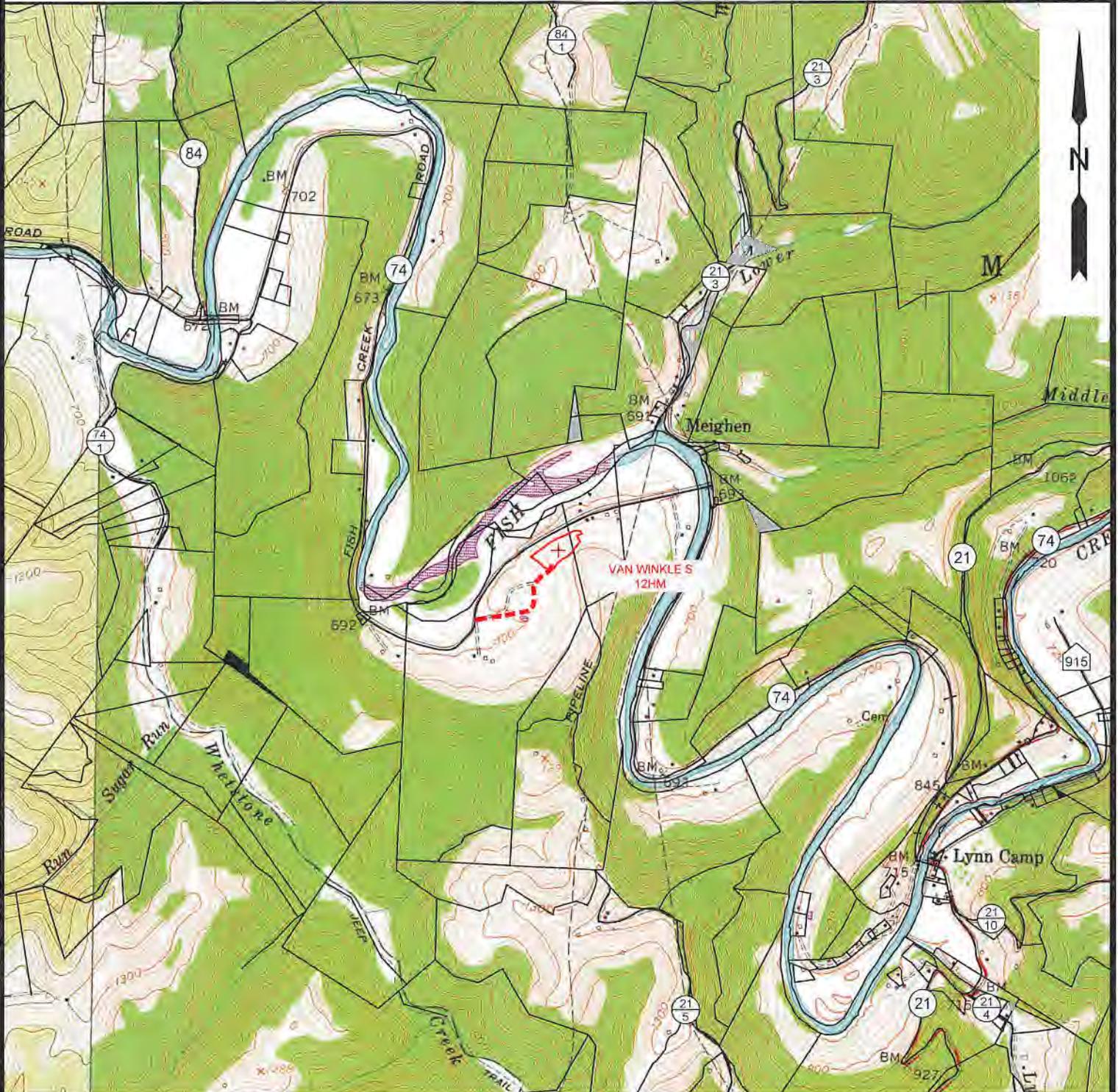
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FEB 03 2021

WV Department of  
Environmental Protection

03/19/2021

# PROPOSED VAN WINKLE S - 12HM



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   304.452.5634 1412 Kanawha Boulevard, East   Charleston, WV 25301   304.346.3952 254 East Beckley Bypass   Beckley, WV 25801   304.255.5296 slswv.com	<b>TOPO SECTION:</b>		<b>OPERATOR:</b>	
	GLEN EASTON 7.5'		PREPARED FOR:	
	<b>COUNTY</b>	<b>DISTRICT</b>	TUG HILL OPERATING, LLC	
	MARSHALL	MEADE	380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
<b>DRAWN BY</b>	<b>JOB NO.</b>	<b>DATE</b>	<b>SCALE</b>	
K.G.M.	8952	12/24/2020	1" = 2000'	



**TUG HILL**  
OPERATING  
03/19/2021

9,872' B.H.

5,160' T.H.

T.H. LATITUDE 39°47'30"  
B.H. LATITUDE 39°45'00"

**HUNTER PETHTEL LEASE  
VAN WINKLE S 12HM WELL  
TUG HILL OPERATING**

B.H.

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)		
NAD'83 S.P.C.(FT)	N. 469,180.00	E. 1,623,763.80
NAD'83 GEO.	LAT-(N) 39.781676	LONG-(W) 80.726693
NAD'83 UTM (M)	N. 4,403,561.61	E. 523,403.53
<u>LANDING POINT</u>		
NAD'83 S.P.C.(FT)	N. 468,751.8	E. 1,623,437.9
NAD'83 GEO.	LAT-(N) 39.780489	LONG-(W) 80.727832
NAD'83 UTM (M)	N. 4,403,429.5	E. 523,306.4
<u>BOTTOM HOLE</u>		
NAD'83 S.P.C.(FT)	N. 455,859.3	E. 1,630,589.5
NAD'83 GEO.	LAT-(N) 39.745363	LONG-(W) 80.701774
NAD'83 UTM (M)	N. 4,399,598.1	E. 525,550.8

T.H.

T.H. LONGITUDE 80°42'30"  
B.H. LONGITUDE 80°40'00"

PARCEL	SURFACE ADJOINER	ACRES
9-13-8	SHUTLER FAMILY TRUST	56.04
9-13-22.1	HENRY JR. & BARBARA DICK	11.82
9-16-13.1	PAUL W. BLAKE (LIFE), WESLEY D. YEATER, JR., ET AL	0.91
9-16-13.2	ELEANOR M. FOX EST.	1.570
9-16-13.3	PAUL R. BLAKE	0.7538
9-16-13.4	JOHN FOX	0.533
9-16-13.5	PAUL R. BLAKE & PAUL R. BLAKE II	2.921
9-16-13.6	WESLEY D. YEATER, ET UX	2.144
9-16-15	RONALD R. YOUNG, ET UX	52.02
9-16-16	CLINTON B. WHITELATCH, SR., ET UX, ESTS.	1 AC 5.6 P
9-16-17	ELEANOR M. FOX EST.	0.741
9-16-18.1	ROBIN D. & DAVID G. STEWART	3.333

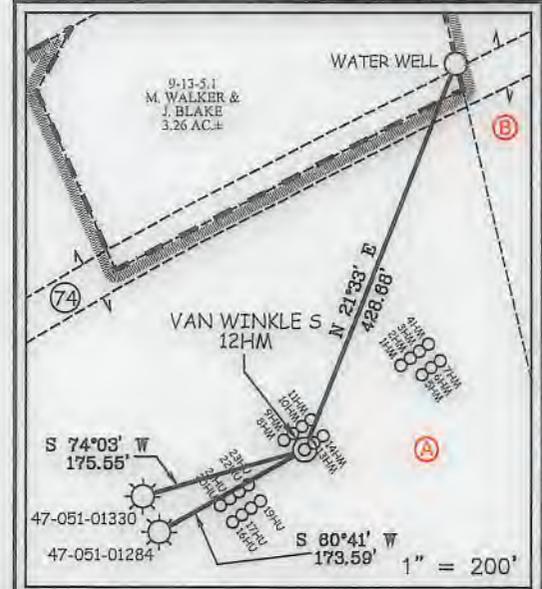
**NOTES ON SURVEY**

- 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.



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 | 304.285.9296  
slsvv.com

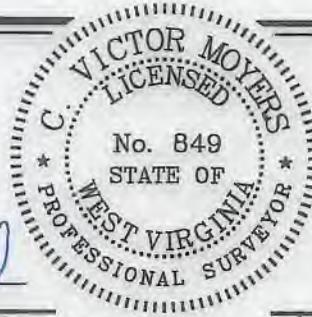
**REFERENCES**



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

P.S.  
849

*C. Victor Moyers*



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

DATE JANUARY 19, 20 21

REVISED \_\_\_\_\_

OPERATORS WELL NO. VAN WINKLE S 12HM

API WELL NO. 47 - 051 - 02361  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8952P12HM.dwg  
VAN WINKLE S 12HM-REV1  
HORIZONTAL & VERTICAL SCALE 1" = 2000'  
CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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 103.2 ±

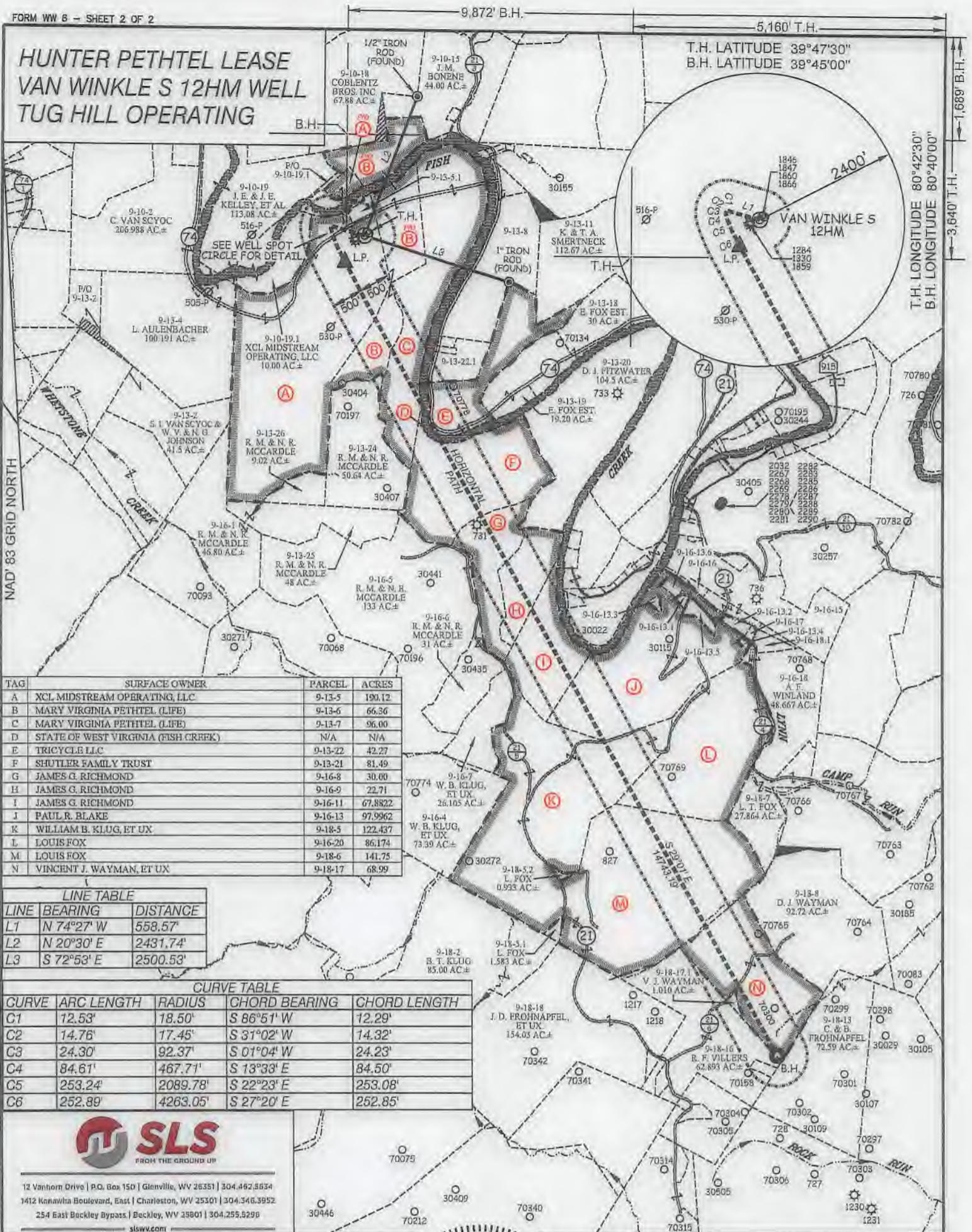
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD: 6,292' / TMD: 21,303'

COUNTY NAME  
PERMIT

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

# HUNTER PETHTEL LEASE VAN WINKLE S 12HM WELL TUG HILL OPERATING



TAG	SURFACE OWNER	PARCEL	ACRES
A	XCL MIDSTREAM OPERATING, LLC	9-13-5	190.12
B	MARY VIRGINIA PETHTEL (LIFE)	9-13-6	66.36
C	MARY VIRGINIA PETHTEL (LIFE)	9-13-7	96.00
D	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	TRICYCLE LLC	9-13-22	42.27
F	SHUTLER FAMILY TRUST	9-13-21	81.49
G	JAMES G. RICHMOND	9-16-8	30.00
H	JAMES G. RICHMOND	9-16-9	22.71
I	JAMES G. RICHMOND	9-16-11	67.8822
J	PAUL R. BLAKE	9-16-13	97.9962
K	WILLIAM B. KLUG, ET UX	9-18-5	122.437
L	LOUIS FOX	9-16-20	86.174
M	LOUIS FOX	9-18-6	141.75
N	VINCENT J. WAYMAN, ET UX	9-18-17	68.99

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 74°27' W	558.57'
L2	N 20°30' E	2431.74'
L3	S 72°53' E	2500.53'

CURVE TABLE				
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	12.53'	18.50'	S 86°51' W	12.29'
C2	14.76'	17.45'	S 31°02' W	14.32'
C3	24.30'	92.37'	S 01°04' W	24.23'
C4	84.61'	467.71'	S 13°33' E	84.50'
C5	253.24'	2089.78'	S 22°23' E	253.08'
C6	252.89'	4263.05'	S 27°20' E	252.85'



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 | 304.255.5299  
 slswv.com



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

P.S. 849 *C. Victor Moyers*

LEGEND	
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)	

SCALE 1" = 2000' FILE NO. 8952P12HM.dwg  
 VAN WINKLE S 12HM-REV1  
 DATE JANUARY 19, 20 21  
 REVISED \_\_\_\_\_  
 OPERATORS WELL NO. VAN WINKLE S 12HM  
 API WELL NO. 47 - 051 - 02361  
 NO. STATE COUNTY PERMIT

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

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

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

COUNTY NAME  
 PERMIT

03/19/2021

WW-6A1  
(5/13)

Operator's Well No. Van Winkle S-12HM

**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

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Office of Oil and Gas  
JAN 22  
WV Department of  
Environmental Protection

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

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

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

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

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

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book		Assignment	Assignment							
10*31312	9-13-5	A	DENNIS W HUNTER AND KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	155	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21						
10*31303	9-13-6	B	MARY V PETHTEL AND FRANK E PETHTEL	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	525	N/A	N/A	N/A	N/A	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/356	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31304	9-13-6	B	MARY V PETHTEL AND FRANK E PETHTEL	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	672	171	N/A	N/A	N/A	N/A	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/356	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31306	9-13-6	B	RICHARD CUNNINGHAM	STONE ENERGY CORPORATION	1/8+	859	595	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21						
10*31307	9-13-6	B	LINDA DANLEY	STONE ENERGY CORPORATION	1/8+	859	593	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21						
10*31308	9-13-6	B	SUZY WALKER	STONE ENERGY CORPORATION	1/8+	859	591	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21						
10*31303	9-13-7	C	MARY V PETHTEL AND FRANK E PETHTEL	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	525	N/A	N/A	N/A	N/A	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/356	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31304	9-13-7	C	MARY V PETHTEL AND FRANK E PETHTEL	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	672	171	N/A	N/A	N/A	N/A	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/356	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31305	9-13-7	C	MARY V PETHTEL AND FRANK E PETHTEL	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	677	401	N/A	N/A	N/A	N/A	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 38/54	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31309	9-13-7	C	RICHARD CUNNINGHAM	STONE ENERGY CORPORATION	1/8+	870	122	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21						
10*31310	9-13-7	C	SUSAN WALKER	STONE ENERGY CORPORATION	1/8+	870	139	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21						
10*31311	9-13-7	C	LINDA DANLEY	STONE ENERGY CORPORATION	1/8+	870	141	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21						
10*23458	FISH CREEK	D	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	TH EXPLORATION LLC	1/8+	1019	373	N/A	N/A	N/A						
10*27247	9-13-22	E	DANIEL R JOHNSON AND JOANNA L JOHNSON	TH EXPLORATION LLC	1/8+	1053	3	N/A	N/A	N/A						
10*27248	9-13-22	E	NILA K MOWDER AND THOMAS R MOWDER	TH EXPLORATION LLC	1/8+	1053	5	N/A	N/A	N/A						
10*27835	9-13-22	E	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1058	124	N/A	N/A	N/A						
10*28267	9-13-22	E	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1062	266	N/A	N/A	N/A						
10*29963	9-13-22	E	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1101	34	N/A	N/A	N/A						
10*29453	9-13-22	E	TRICYCLE LLC	TH EXPLORATION LLC	1/8+	1096	307	N/A	N/A	N/A						
10*31362	9-13-22	E	TRICYCLE LLC	STONE ENERGY CORPORATION	1/8+	881	615	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21						

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10*23197	9-13-21	F	J W KELLEY AND R A KELLEY	TG STILES	1/8+	63	156	N/A	TG Stiles to South Penn Oil Company: 60/367	South Penn Oil Company to Hope Natural Gas Company: 209/552	Hope natural Gas Company to AM Snider & Duane Snyder dba Hundred Gas Company: 446/186	Hundred Gas Company to Carl D Perkins: 451/132	Carl D Perkins to Perkins Oil and Gas Inc: 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: 26/322	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*23197	9-16-8	G	J W KELLEY AND R A KELLEY	TG STILES	1/8+	63	156	N/A	TG Stiles to South Penn Oil Company: 60/367	South Penn Oil Company to Hope Natural Gas Company: 209/552	Hope natural Gas Company to AM Snider & Duane Snyder dba Hundred Gas Company: 446/186	Hundred Gas Company to Carl D Perkins: 451/132	Carl D Perkins to Perkins Oil and Gas Inc: 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: 26/322	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*16481	9-16-9	H	JAMES G RICHMOND AND CINDY L RICHMOND	FOSSIL CREEK OHIO, LLC	1/8+	829	71	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/307 & 34/410	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*16481	9-16-11	I	JAMES G RICHMOND AND CINDY L RICHMOND	FOSSIL CREEK OHIO, LLC	1/8+	829	71	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/307 & 34/410	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/109
10*47051.135.0	9-16-13	J	PAUL R BLAKE	TH EXPLORATION LLC	1/8+	878	280	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27947	9-18-5	K	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	568	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28268	9-18-5	K	JOSEPH SHUTLER AND ELIZABETH SHUTLER	TG STILES	1/8+	63 81	203 451	TG Stiles to South Penn Oil Company: 60/366	South Penn Oil Company to Tri-State Gas Company: 80/150	Tri-State Gas Company to The Manufacturers Light & Heat Co: 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane Snyder dba Hundred Gas Company: 4/489	Hundred Gas Company to Carl D Perkins: 451/132	Carl D Perkins to Perkins Oil and Gas Inc: 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: 26/322	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*23726	9-16-20	L	LOUIS T FOX	TH EXPLORATION LLC	1/8+	1011	520	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27395	9-16-20	L	LYNN CAMP UNITED METHODIST CHURCH	TH EXPLORATION LLC	1/8+	1058	376	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28268	9-18-6	M	JOSEPH SHUTLER AND ELIZABETH SHUTLER	TG STILES	1/8+	63 81	203 451	TG Stiles to South Penn Oil Company: 60/366	South Penn Oil Company to Tri-State Gas Company: 80/150	Tri-State Gas Company to The Manufacturers Light & Heat Co: 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane Snyder dba Hundred Gas Company: 4/489	Hundred Gas Company to Carl D Perkins: 451/132	Carl D Perkins to Perkins Oil and Gas Inc: 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: 26/322	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*47051.136.0	9-18-17	N	VINCENT J WAYMAN AND KATHY JO WAYMAN	TH EXPLORATION LLC	1/8+	885	273	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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, L.L.C., 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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Office of Oil and Gas

JAN 22

WV Department of  
Environmental Protection



4705102361



January 15, 2021

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

RE: Van Winkle S-12HM

Subject: Marshall County Route 74, Route 21 and Route 21/6 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 74, Route 21 and Route 21/6 in the area reflected on the Van Winkle S-12HM well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

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

Sincerely,

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

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

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Office of Oil and Gas

JAN 22

WV Department of  
Environmental Protection

03/19/2021

WW-6AC  
(1/12)

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

**Date of Notice Certification:** 01/19/2021

**API No.** 47- 051 -

**Operator's Well No.** Van Winkle S-12HM

**Well Pad Name:** Hunter Pethtel

**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>523,403.53</u>
County:	<u>Marshall</u>		Northing:	<u>4,403,561.61</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><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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**Required Attachments:**

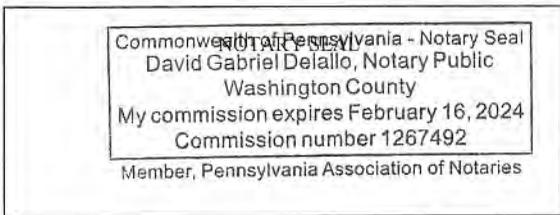
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

03/19/2021

**Certification of Notice is hereby given:**

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

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



Subscribed and sworn before me this 19 day of JANUARY 2021  
*David Gabriel Delallo* Notary Public  
 My Commission Expires 2/16/24

**Oil and Gas Privacy Notice:**

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

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WW-6A  
(9-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Van Winkle S-12HM  
Well Pad Name: Hunter Pethtel

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

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

**Date of Notice:** 1/26/2021 **Date Permit Application Filed:** 1/19/2021

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

RECEIVED  
Office of Oil and Gas  
FEB 03 2021

WV Department of  
Environmental Protection

03/19/2021

**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

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API NO. 47- 051 - \_\_\_\_\_  
OPERATOR WELL NO. Van Winkle S-12HM  
Well Pad Name: Hunter Pethtel

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

#### **Water Well Testing:**

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

#### **Water Testing Laboratories:**

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

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

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

#### **Written Comment:**

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

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

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

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WV Department of  
Environmental Protection

03/19/2021

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

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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

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WV Department of  
Environmental Regulation

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(8-13)

API NO. 47-051 -  
OPERATOR WELL NO. Van Winkle S-12HM  
Well Pad Name: Hunter Pethel

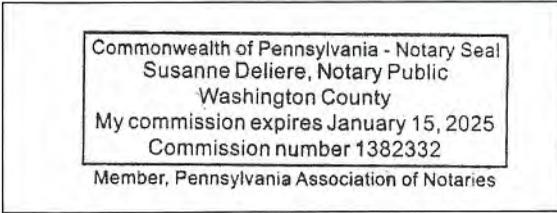
**Notice is hereby given by:**

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

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

**Oil and Gas Privacy Notice:**

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



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

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Office of Oil and Gas  
FEB 03 2021  
WV Department of  
Environmental Protection

03/19/2021

**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 S – 12HM  
District: Meade  
State: WV

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

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

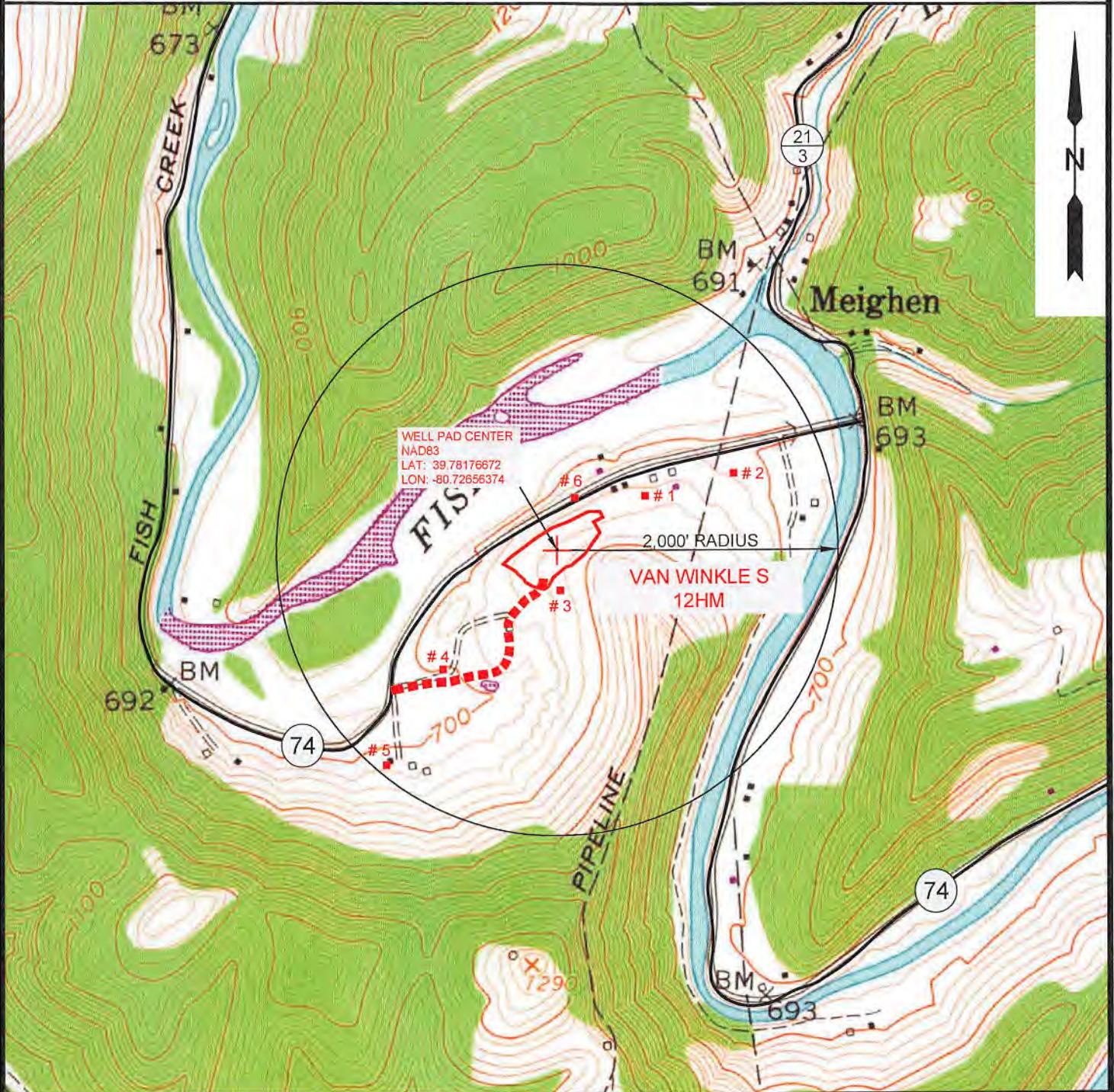
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Office of Oil and Gas

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WV Department of  
Environmental Protection

03/19/2021

# PROPOSED VAN WINKLE S - 12HM4705102361



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

 <p style="font-size: small;">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 s sw.com</p>	<b>TOPO SECTION:</b>		<b>OPERATOR:</b>	
	GLEN EASTON 7.5'		PREPARED FOR:	
	COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
	MARSHALL	MEADE	380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
<b>DRAWN BY</b>	<b>JOB NO.</b>	<b>DATE</b>	<b>SCALE</b>	
K.G.M.	8952	12/24/2020	1" = 1000'	



**03/19/2021**

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

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

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

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

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

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

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: XcL Midstream Operating, LLC (Well Pad & Access Road)

Address: 380 Southpointe Boulevard, Plaza II, Suite 215

Canonsburg, PA 15317

Name: Frank E. & Mary Virginia Pethtel, Life Estate (Well Pad)

Address: 9845 Fish Creek Road

Glen Easton, WV 26039

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

Address: 5 Mound Manor

St. Marys, WV 26170

COAL OWNER OR LESSEE

Name: CNX Land, LLC

Address: 1000 Consol Energy Drive

Canonsburg, PA 15317

MINERAL OWNER(s)

Name: Frank E. & Mary Virginia Pethtel, Life Estate

Address: 9845 Fish Creek Road

Glen Easton, WV 26039      \*\*See attached list

*\*please attach additional forms if necessary*

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**Notice is hereby given:**

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

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

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

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

**Notice is hereby given by:**

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

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

**Oil and Gas Privacy Notice:**

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

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

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



03/19/2021



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

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

January 20, 2021

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

Subject: DOH Permit for the Hunter-Pethtel Pad, Marshall County  
Van Winkle S-12HM 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. This letter is valid for permitting purposes for one year from this letter's date.

Very Truly Yours,

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

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



TUG HILL

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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Van Winkle Wells

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

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WW-6A7  
(6-12)

OPERATOR: Tug Hill Operating, LLC WELL NO: Van Winkle S-12HM

PAD NAME: Hunter Pethtel

REVIEWED BY: Amy L. Morris SIGNATURE: *Amy L. Morris*

## WELL RESTRICTIONS CHECKLIST

### HORIZONTAL 6A WELL

#### Well Restrictions

- At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR
- DEP Waiver and Permit Conditions
- At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR
- DEP Waiver and Permit Conditions
- At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR
- DEP Waiver and Permit Conditions
- At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR
- Surface Owner Waiver and Recorded with County Clerk, OR
- DEP Variance and Permit Conditions
- At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR
- Surface Owner Waiver and Recorded with County Clerk, OR
- DEP Variance and Permit Conditions
- At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR
- Surface Owner Waiver and Recorded with County Clerk, OR
- DEP Variance and Permit Conditions

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