



west virginia department of environmental protection

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

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

Tuesday, July 13, 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-20HU
47-051-02353-00-00

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

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

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


James A. Martin
Chief

Operator's Well Number: VAN WINKLE S-20HU
Farm Name: XCL MIDSTREAM OPERATING
U.S. WELL NUMBER: 47-051-02353-00-00
Horizontal 6A New Drill
Date Issued: 7/13/2021

Promoting a healthy environment.

07/16/2021



west virginia department of environmental protection

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

Randall M. Albert, Chairman
dep.wv.gov

June 14, 2021

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

RE: Application for Deep Well Permit – API #47-051-02353

COMPANY: Tug Hill Operating, LLC

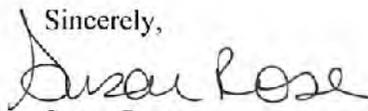
FARM: XCL Midstream Operating, LLC Van Winkle S-20HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton

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

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

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

Sincerely,

Susan Rose
Administrator

** Old Crow N-20HU 47-051-02191; Old Crow N-21HU 47-051-02335, MND 6 HHS 47-051-01732; MND20EU 47-051-02045; Knob Creek N-12HU 47-051-02268; Knob Creek N-11HU 47-051-02287; Hunter 1 47-051-01284; Van Winkle N-16HU 47-051-02349, Van Winkle N-17HU 47-051-02350, Van Winkle N-18HU 47-051-02351, Van Winkle S-23HU 47-051-02356, Van Winkle N-19HU 47-051-02352, Van Winkle S-21HU 47-051-02354, Van Winkle S-22HU 47-051-02355; Pendleton N-9HU 47-051-02245; Heaven Hill 2W-13HU 47-051-01957, Heaven Hill 2W-12HU 47-051-01952, Keith Stern N-13HU 47-051-02265; Keith Stern S-17HU 47-051-02266; Knob Creek N-13HU 47-051-02269; Knob Creek S-16HU 47-051-02290; Knob Creek S-15HU 47-051-02289; Knob Creek S-14HU 47-051-02288

07/16/2021

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

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

API Number: _____

PERMIT CONDITIONS

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

07/16/2021

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120' /	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	515'	515' /	883FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2,227'	2,227' /	1576FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,336'	10,336'	3348FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	26,758'	26,758' /	6305FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		10,978'	
Liners							

Bay Stiller
1-21-21

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30#	36#	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	20"	26#	.5	2,410	1,928	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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Kind:	N/A			FEB 03 2021
Sizes:	N/A			WV Department of Environmental Protection
Depths Set:	N/A			

WW-6B
(10/14)

API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle S-20HU
Well Pad Name: Hunter Pethel

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP. Drill curve and lateral per proposed well plan, run and cement production casing. Perform DBL from 60 deg to surface, make cleanout run, and stimulate.

Boyer 1-21-21

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

Well to be completed with approximately 35,750,000 lb. proppant and 645,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

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

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

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

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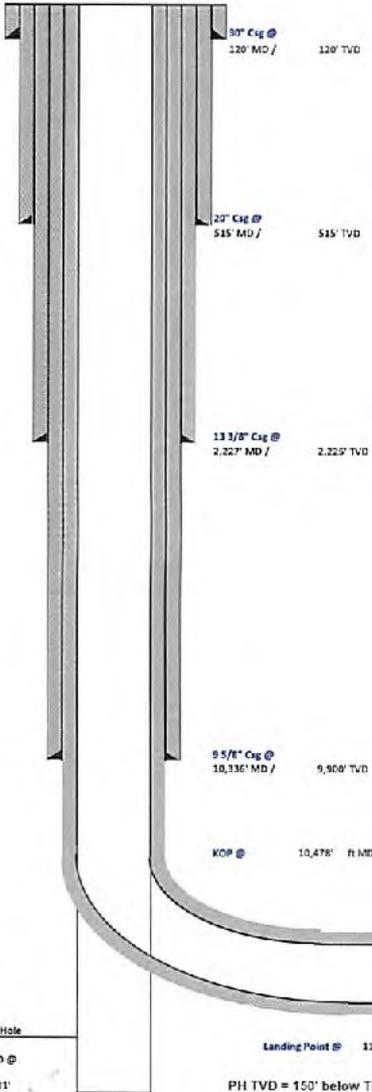
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*Note: Attach additional sheets as needed.



WELL NAME: Van Winkle S-20HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Meade
DF Elev: 754' **GL Elev:** 754'
ID: 26,758'
TH Latitude: 39.781515
TH Longitude: -80.727002
BH Latitude: 39.74200701
BH Longitude: -80.70893101



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	415'
Sewickley Coal	314'
Pittsburgh Coal	409'
Blg Lime	1,658'
Berea	2,121'
Tully	5,040'
Marcellus	5,143'
Onondaga	5,193'
Salina	5,908'
Lockport	7,958'
Utica	10,660'
Point Pleasant	10,932'
Landing Depth	10,984'
Trenton	11,591'
Pilot Hole TD	11,201'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	123'	BW	BW	Surface
Surface	26	20	515'	515'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,227'	2,225'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,336'	9,900'	47	HP110	Surface
Production	8 1/2	5 1/2	26,758'	11,242'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	949	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,708	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,861	A	14.5	Air	1 Centralizer every other jt
Production	5,619	A	15	Air / SOBMs	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to etc

Bony Miller 1-21-21

Pilot Hole
PH TD @
11,201'

Landing Point @ 11,967' MD / 10,984' TVD
PH TVD = 150' below Trenton Top

Lateral TD @ 26,758' ft MD
11,242' ft TVD

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Tug Hill Operating, LLC Casing and Cement Program

Van Winkle S-20HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	515'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,227'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,336'	CTS
Production	5 1/2"	HCP110	8 1/2"	26,758'	CTS

Cement

Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2

Intermediate 1: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2

Intermediate 2: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.99

Production: 50:50 Poz; Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.18

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Area of Review

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

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

Data Sources Reviewed:

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

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

Request maps for:

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

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

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

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Permit well - Van Winkle S-20HU

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
4705101830	Tug Hill Operating	10154' MD, 6151' TVD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well. Tug Hill Operating is considering plugging this well.
4705101284	Tug Hill Operating	6340 TVD	None	None	Yes, existing vertical pilot drilled into Onondaga. Well was not perforated. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Well is not producing.
4705101859	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101860	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101866	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101846	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101847	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705100505	Fruchtman, M.	2444' TVD	Big Injun	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.	Well was plugged 9/4/1963.
4705170196	Tri-State Oil & Gas	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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Permit well - Van Winkle S-20HU

Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101330	Tug Hill Operating	10154' MD, 6151' TVD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well. Tug Hill Operating is considering plugging this well.
4705101284	Tug Hill Operating	6340' TVD	None	None	Yes, existing vertical pilot drilled into Onondaga. Well was not perforated. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Well is not producing.
4705101859	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101860	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101866	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101846	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101847	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705100505	Fruchtman, M.	2444' TVD	Big Injun	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.	Well was plugged 9/4/1963.
4705170196	Tri-State Oil & Gas	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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Location Information: View Map

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705100505	Marshall	505	Meade	Glen Easton	Cameron	39 780144	-80 733702	522803.9	4403389.7

There is no Bottom Hole Location data for this well

Owner Information:

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

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_FTC	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
4705100505	7/17/1963	6/10/1963	662	Ground Level	Unnamed	Price Fm & eqvns	Price Fm & eqvns	Outpost (Extension)	Test	Unsuccessful	Dry w/ Gas Show	Cable Tool	Fractured	2444		2444	0	16	0	0	0	0	0	0	0	415	40	

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100505	7/17/1963	Water	Unknown Water	Vertical			160						3
4705100505	7/17/1963	Water	Unknown Water	Vertical			1042						0

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
4705100505	Original Loc	Pittsburgh coal	Well Record	319	Reasonable	7	Reasonable	661 Ground Level
4705100505	Original Loc	1st Cow Run/Roundsvie	Past WVGES Staff Geologist	672	Reasonable	18	Reasonable	661 Ground Level
4705100505	Original Loc	1st Salt Sand	Past WVGES Staff Geologist	1033	Reasonable	23	Reasonable	661 Ground Level
4705100505	Original Loc	2nd Salt Sand	Past WVGES Staff Geologist	1118	Reasonable	47	Reasonable	661 Ground Level
4705100505	Original Loc	3rd Salt Sand	Past WVGES Staff Geologist	1235	Reasonable	90	Reasonable	661 Ground Level
4705100505	Original Loc	Big Lime	Well Record	1356	Reasonable	52	Reasonable	661 Ground Level
4705100505	Original Loc	Greensboro Group	Well Record	1356	Reasonable	52	Reasonable	661 Ground Level
4705100505	Original Loc	Big Injun (PriceSec)	Past WVGES Staff Geologist	1410	Reasonable	260	Reasonable	661 Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100505	04/19/63	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_15	LAT_60	LONG_00	URIME	UTM_N
4705101284	Mingo	1304	Meade	Gen Easton	Carroll	39 741384	39 747178	522102 4	439 819 9

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	DATE_COMPLETION	PROP_YD	TRUP	TRGT_FM	TRM_EST_PR
4705101284	11/25/2009		Original Log	Completed	Dennis W Hunter	1	Hunter		Dennis W Hunter	Stone Energy Corporation		809	1	1	

Completion Information

API	CMP_DT	SPUD_DT	BLEV_DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_ITG	KDD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	P_AFT	T_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY	
4705101284	11/25/2009	02/25/2009	750	Grand Level	Carroll	614	Marshall Fm	Development Well	Development Well	Gas	Rotary	Fractured	5240	6340	200	200											5615	460

PayShow/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
4705101284	11/25/2009	Water	Water	Vertical					620	Permeability System			
4705101284	11/25/2009	Pay	Gas	Vertical	6025	Genesee Fm	6950	Genesee Fm					
4705101284	11/25/2009	Pay	Gas	Vertical	6165	Marshall Fm	6180	Marshall Fm					
4705101284	11/25/2009	Pay	Gas	Vertical	6184	Marshall Fm	6184	Marshall Fm					

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
4705101284	Stone Energy Corporation	2011	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	Stone Energy Corporation	2012	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	Stone Energy Corporation	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	Stone Energy Corporation	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2019	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
4705101284	Stone Energy Corporation	2011	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	Stone Energy Corporation	2012	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	Stone Energy Corporation	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	Stone Energy Corporation	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	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
4705101284	Stone Energy Corporation	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	Stone Energy Corporation	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	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
4705101284	EQT Production Company	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101284	EQT Production Company	2019	0	0	0	0	0	0	0	0	0	0	0	0	0

Stratigraphy Information

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM	
4705101284	Original Log	Pittsburgh coal	Well Record	415	Reasonable	4	Reasonable	752 Ground Level	
4705101284	Original Log	Little Lime	Well Record	1416	Reasonable	12	Reasonable	753 Ground Level	
4705101284	Original Log	Greenlee Group	Well Record	1461	Reasonable	333	Reasonable	753 Ground Level	
4705101284	Original Log	Big Lime	Well Record	1451	Reasonable	103	Reasonable	753 Ground Level	
4705101284	Original Log	Big Injun (Pittsboro)	Well Record	1618	Reasonable	174	Reasonable	752 Ground Level	
4705101284	Original Log	Berea Sa	Well Record	2136	Reasonable	14	Reasonable	752 Ground Level	
4705101284	Original Log	Corbin	Well Record	2422	Reasonable	26	Reasonable	752 Ground Level	
4705101284	Original Log	Lover-Huron	Electric Log	3448	Reasonable	1350	Reasonable	752 Ground Level	
4705101284	Original Log	Riley	Well Record	4522	Reasonable	20	Reasonable	752 Ground Level	
4705101284	Original Log	Briarcliff	Well Record	4676	Reasonable	36	Reasonable	752 Ground Level	
4705101284	Original Log	Nova Fm	Electric Log	4730	Reasonable	89	Reasonable	752 Ground Level	
4705101284	Original Log	Argyle Sh Mbr	Electric Log	4837	Reasonable	271	Reasonable	752 Ground Level	
4705101284	Original Log	Rhoades	Well Record	4838	Reasonable	22	Reasonable	752 Ground Level	
4705101284	Original Log	Rhoades St Sh	Electric Log	5110	Reasonable	658	Reasonable	752 Ground Level	
4705101284	Original Log	Rhoades St Sh	Electric Log	R135 Dm Sh	5448	Reasonable	275	Reasonable	753 Log Datum
4705101284	Original Log	Soyea Fm	Electric Log	R135 Dm Sh	5722	Reasonable	244	Reasonable	753 Log Datum
4705101284	Original Log	Onaka Sh Mbr	Electric Log	R135 Dm Sh	5723	Reasonable	231	Reasonable	753 Log Datum
4705101284	Original Log	Soyea Fm	Electric Log	R135 Dm Sh	5854	Reasonable	187	Reasonable	752 Ground Level
4705101284	Original Log	Modocex Sh Mbr	Electric Log	R135 Dm Sh	5954	Reasonable	13	Reasonable	753 Log Datum
4705101284	Original Log	Corneal Fm	Electric Log	R135 Dm Sh	5957	Reasonable	25	Reasonable	753 Log Datum
4705101284	Original Log	West River Sh Mbr	Electric Log	R135 Dm Sh	5977	Reasonable	65	Reasonable	753 Log Datum
4705101284	Original Log	Genesee Fm	Electric Log	R135 Dm Sh	5991	Reasonable	57	Reasonable	752 Ground Level
4705101284	Original Log	Genesee Sh Mbr	Electric Log	R135 Dm Sh	6022	Reasonable	20	Reasonable	753 Log Datum
4705101284	Original Log	Tully Ls	Electric Log	R135 Dm Sh	6052	Reasonable	34	Reasonable	753 Log Datum
4705101284	Original Log	Hamilton Op	Electric Log	R135 Dm Sh	6096	Reasonable	118	Reasonable	753 Log Datum
4705101284	Original Log	Hamilton Fm	Electric Log	R135 Dm Sh	6098	Reasonable	69	Reasonable	753 Log Datum
4705101284	Original Log	Hamilton Op	Electric Log	R135 Dm Sh	6098	Reasonable	66	Reasonable	752 Ground Level
4705101284	Original Log	Marshall Fm	Well Record	6154	Reasonable	51	Reasonable	752 Ground Level	
4705101284	Original Log	Marshall Fm	Electric Log	R135 Dm Sh	6155	Reasonable	41	Reasonable	753 Log Datum
4705101284	Original Log	Marshall Fm	Electric Log	R135 Dm Sh	6155	Reasonable	49	Reasonable	753 Log Datum
4705101284	Original Log	upper Marcellus A	Electric Log	R135 Dm Sh	6155	Reasonable	19	Reasonable	753 Log Datum
4705101284	Original Log	upper Marcellus B	Electric Log	R135 Dm Sh	6174	Reasonable	22	Reasonable	753 Log Datum
4705101284	Original Log	lower Cherry vly	Electric Log	R135 Dm Sh	6176	Reasonable	7	Reasonable	753 Log Datum
4705101284	Original Log	to Marcellus	Electric Log	R135 Dm Sh	6187	Reasonable	7	Reasonable	753 Log Datum
4705101284	Original Log	Onesquehain Op	Electric Log	R135 Dm Sh	6214	Reasonable			753 Log Datum
4705101284	Original Log	Onesquehain Ls	Well Record	6225	Reasonable				752 Ground Level

Wireline (E-Log) Information

API	LOG_TOP	LOG_BOT	DEEPEST_FM	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	D_TOP	D_BOT	INCH	INCH	REDUCED	KOP	LOGMD	ELEV_X6	ELEV_O6	ELEV_DF	LOG_MSRD	FROM
4705101284	100	6380	6184	Y	Y	Y	168	8386	2211	8386	2037	8386	2037	8386	2037	8386	2037	8386	2037	8386	2037	Y	Y	Y	Y	2011	6357	Y	Y	Y

Comment: logs: calliper, ps, tension, lt, amplitude, ccl, vol, bil, site.

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 WVDES scanned logs click here.

FILENAME	DESCRIPTION
4705101284.density.tif	d density, includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)
4705101284.gam.tif	g gamma ray
4705101284.induction.tif	i induction (includes dual induction, medium induction, deep induction, etc.)
4705101284.laser.tif	l laserlog
4705101284.laser.tif	m dipmeter
4705101284.laser.tif	n neutron (includes neutron porosity, sidewall neutron-SWN, etc.)
4705101284.laser.tif	o other
4705101284.laser.tif	s sonic or velocity
4705101284.laser.tif	t temperature (includes borehole temperature, BHT, differential temperature, etc.)
4705101284.laser.tif	z logon (includes potential or potential)
4705101284.laser.tif	mechanical log types:
4705101284.laser.tif	b cement bond
4705101284.laser.tif	c cement
4705101284.laser.tif	e other
4705101284.laser.tif	p perforation depth control or perforate

*other logs may include, but are not limited to, such curves as avoilo, bil size, CCL-casing collar locator, continuous meter, directional survey, gas detector, guided NGL-injection 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_76	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101847	Marshall	1847	Meads	Glen Easton	Cameron	39.761755	-80.72847	523422.8	4403370.4

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	CD_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101847	JJ		Cancelled	Dennis W Hunter	4H		Hunter Petfield		Dennis W Hunter et al	Stone Energy Corporation	6250	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TYD	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	JJ	JJ	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_15	LAT_DD	LONG_DD	UTME	UTMN
4705101860	Marshall	1860	Meade	Glen Easton	Cameron	39.781673	-80.726548	523416	44035613

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101860	1	As Proposed	522074.3	4405230.4	-80.74216 39.786748

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	-/-	Dvd Crpt Loc	Cancelled	Dennis W Hunter	10H		Hunter Petibel		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	TYD	YMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101860	-/-	-/-	755 Ground Level																									

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

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101860	EDT 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	EDT 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	EDT 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	EDT 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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Van Winkle S - 20HU Meade District Marshall County, WV

0 750 1,500 3,000 Feet

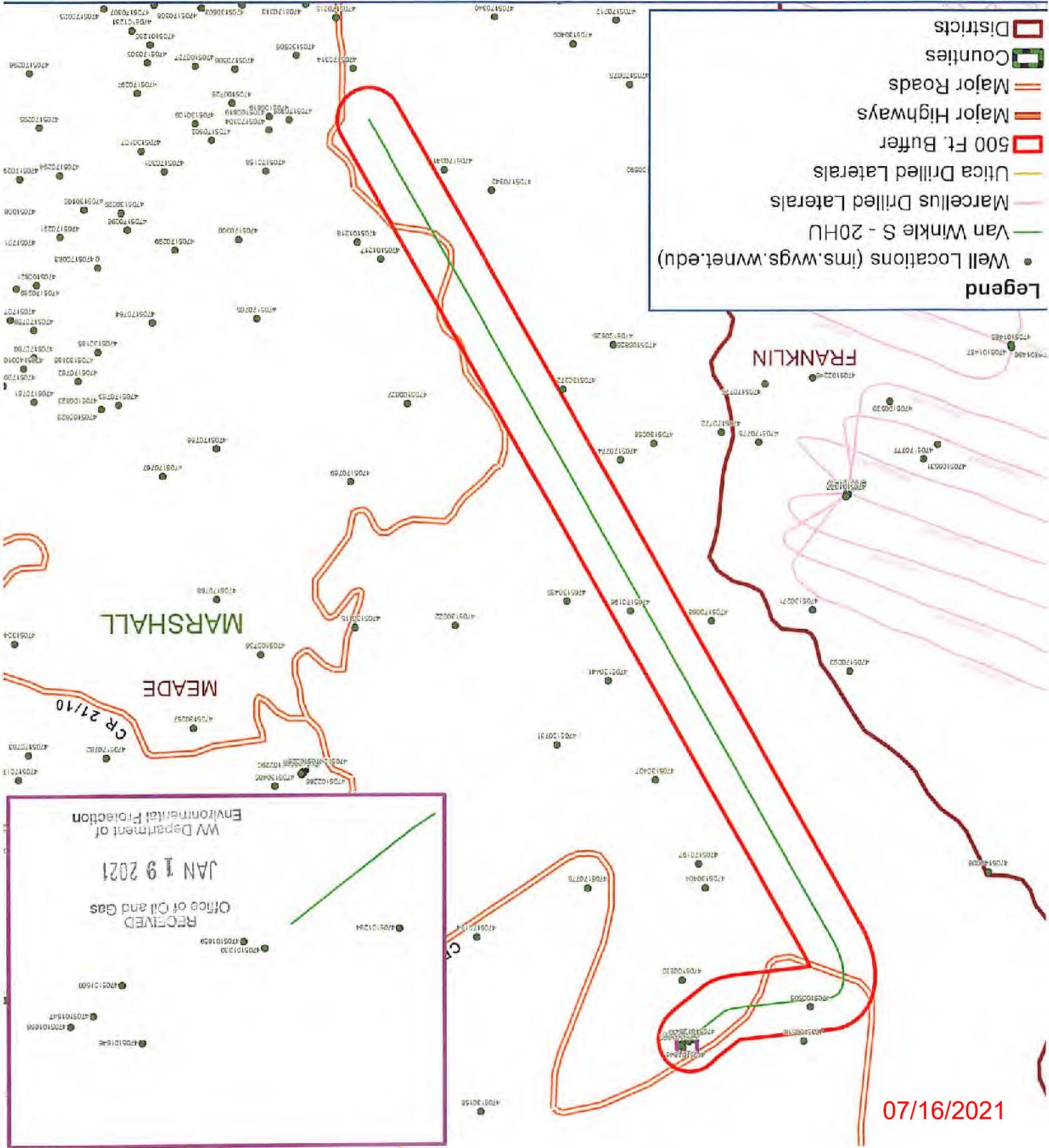
Map Created: December 7, 2020

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



Legend

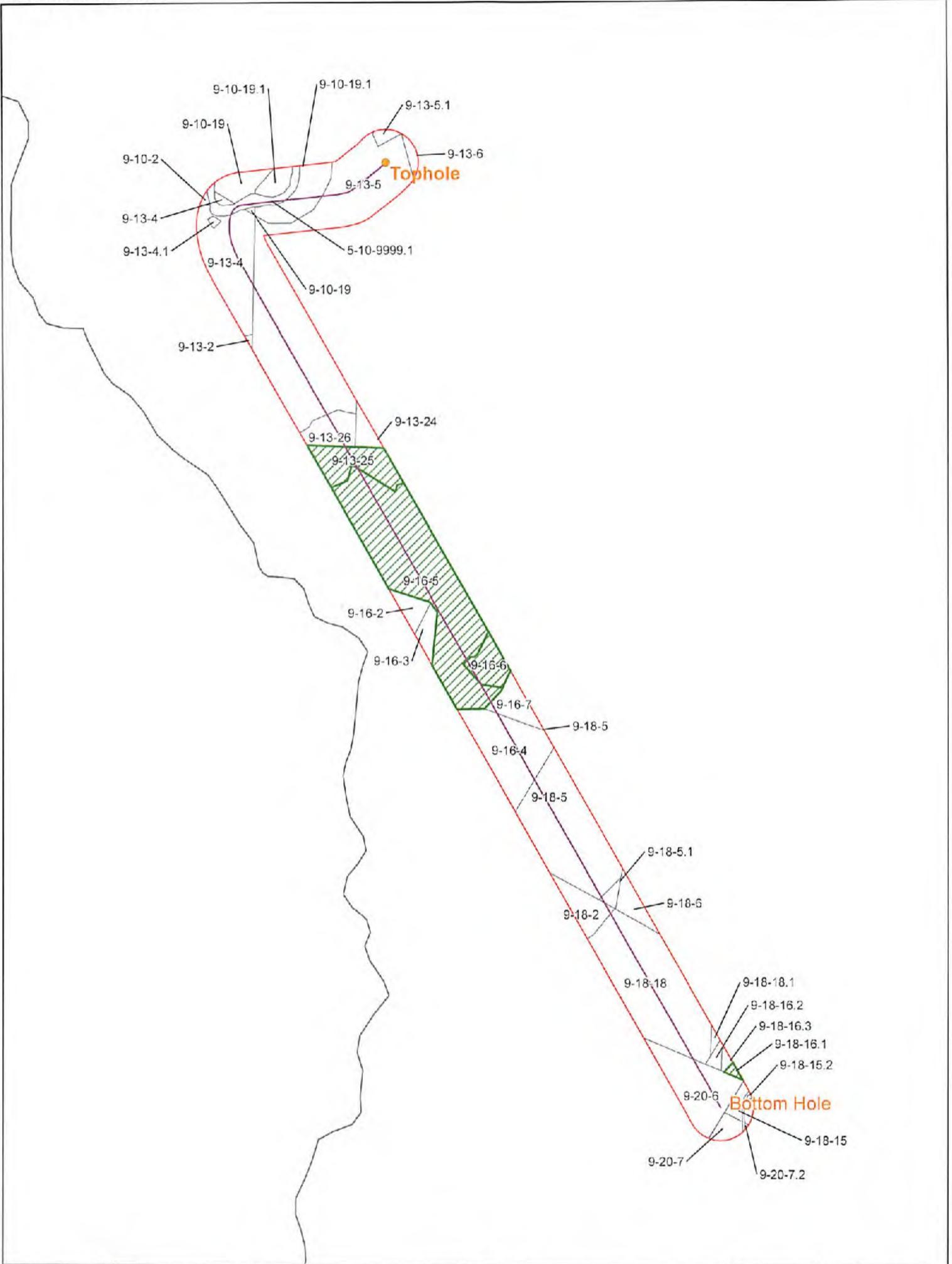
- Well Locations (ms.wvgs.wnet.edu)
- Van Winkle S - 20HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- 500 Ft. Buffer
- Major Highways
- Major Roads
- Counties
- Districts



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07/16/2021

Van Winkle S-20HU



Coordinate System: NAD 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 False Easting: 166671.000000
 False Northing: 0.000000
 Central Meridian: 81.000000
 Scale Factor: 0.999999
 Units: Feet US

CONFIDENTIAL

0 11,000 22,000 44,000 Feet

TUG HILL OPERATING

- Utica Well
- Force Pool
- 500' Buffer

Van Winkle S-20HU
 Operators within 500 Feet of Well Borehole





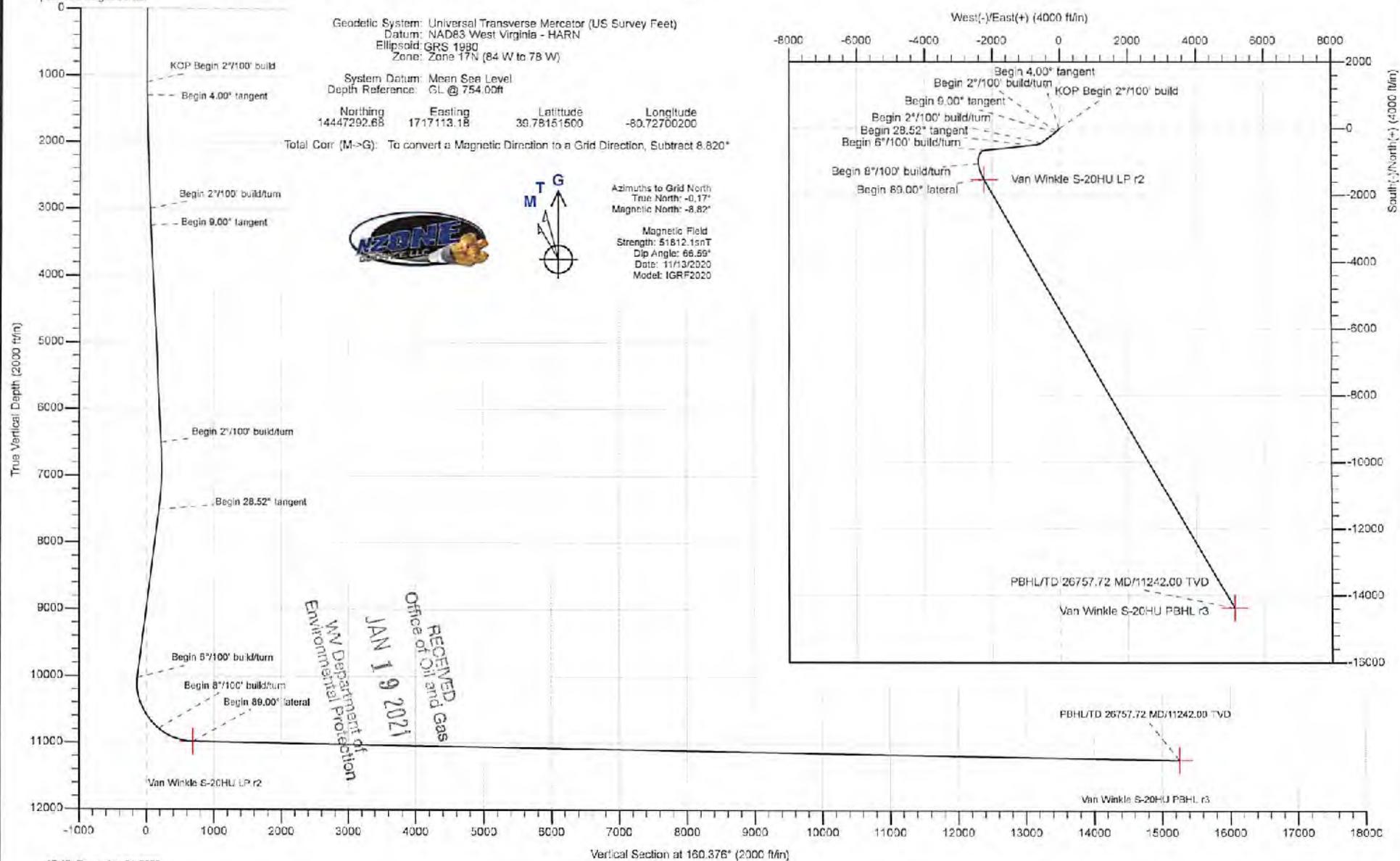
Well: Van Winkle S-20 HU (slot A)
 Site: Van Winkle
 Project: Marshall County, West Virginia
 Design: rev3
 Rig:

SECTION DETAILS

Sec	MD	Inc	Az	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.000	0.00	
2	1100.00	0.00	0.000	1100.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	1300.00	4.00	225.000	1299.84	-4.93	-4.93	2.00	225.000	2.99	Begin 4.00° tangent
4	3004.31	4.00	225.000	3000.00	-89.00	-86.00	0.00	0.000	53.94	Begin 2°/100' build/turn
5	3256.97	0.00	232.000	3250.56	-107.41	-110.82	2.00	12.500	63.95	Begin 9.00° tangent
6	6546.61	0.00	232.000	6500.00	-424.23	-516.33	0.00	0.000	226.18	Begin 2°/100' build/turn
7	7616.67	28.52	254.000	7509.35	-503.25	-836.80	2.00	43.961	191.99	Begin 28.52° tangent
8	10478.20	28.52	254.000	10024.63	-645.91	-2199.09	0.00	0.000	-130.16	Begin 6°/100' build/turn
9	11403.88	89.00	174.170	10789.69	-1054.18	-2396.73	6.00	-111.710	187.35	Begin 8°/100' build/turn
10	11662.38	89.00	150.194	10984.01	-1533.82	-2229.55	8.00	-35.298	695.95	Begin 89.00° lateral
11	26757.72	89.00	150.194	11242.00	-14359.94	5123.56	0.00	0.000	5256.05	PBHLTD 26757.72 MD/11242.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Van Winkle S-20HU LP r2	10964.00	-1533.86	-2229.54	14445758.81	1714883.64	39.77732100	-80.73485400
- plan misses target center by 0.01ft at 11962.43ft MD (10984.01 TVD, -1533.86 N, -2229.53 E)							
Van Winkle S-20HU PBHL r3	11242.00	-14369.94	5123.66	14432822.77	1722236.82	39.74200700	-80.70893100
- plan hits target center							





Planning Report - Geographic

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-20 HU (slot A)
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-20 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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:	1,717,186.44 usft	Longitude:	-80.72673327
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.175 "

Well	Van Winkle S-20 HU (slot A)					
Well Position	+N/-S	0.00 ft	Northing:	14,447,292.68 usft	Latitude:	39.78151500
	+E/-W	0.00 ft	Easting:	1,717,113.17 usft	Longitude:	-80.72700200
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	51,812.14935574

Design	rev3			
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	160.376

Plan Survey Tool Program	Date	12/21/2020		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	26,757.72 rev3 (Original Hole)	MWD	
			MWD - Standard	

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Planning Report - Geographic

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-20 HU (slot A)
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-20 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,300.00	4.00	225.000	1,299.84	-4.93	-4.93	2.00	2.00	0.00	225.000	
3,004.31	4.00	225.000	3,000.00	-89.00	-89.00	0.00	0.00	0.00	0.000	
3,256.97	9.00	232.000	3,250.96	-107.41	-110.82	2.00	1.98	2.77	12.500	
6,546.51	9.00	232.000	6,500.00	-424.23	-516.33	0.00	0.00	0.00	0.000	
7,615.57	28.52	264.009	7,509.35	-503.26	-839.80	2.00	1.83	2.99	43.961	
10,478.20	28.52	264.009	10,024.63	-645.91	-2,199.09	0.00	0.00	0.00	0.000	
11,403.88	50.00	174.170	10,789.69	-1,054.18	-2,398.73	6.00	2.32	-9.71	-111.710	
11,982.38	89.00	150.194	10,984.01	-1,533.82	-2,229.55	8.00	6.98	-4.29	-35.298	
26,757.72	89.00	150.194	11,242.00	-14,369.94	5,123.66	0.00	0.00	0.00	0.000	Van Winkle S-20HU F

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Environmental Protection



Planning Report - Geographic

Database: DB_Aug1919_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle S-20 HU (slot A)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Van Winkle S-20 HU (slot A)
 TVD Reference: GL @ 754.00ft
 MD Reference: GL @ 754.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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 Office of Oil and Gas

JAN 19 2021

Planned Survey

WV Department of Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
100.00	0.00	0.000	100.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
200.00	0.00	0.000	200.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
300.00	0.00	0.000	300.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
400.00	0.00	0.000	400.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
500.00	0.00	0.000	500.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
600.00	0.00	0.000	600.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
700.00	0.00	0.000	700.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
800.00	0.00	0.000	800.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
900.00	0.00	0.000	900.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,447,292.68	1,717,113.17	39.78151500	-80.72700200
KOP Begin 2°/100' build									
1,200.00	2.00	225.000	1,199.98	-1.23	-1.23	14,447,291.44	1,717,111.94	39.78151182	-80.72700641
1,300.00	4.00	225.000	1,299.84	-4.93	-4.93	14,447,287.74	1,717,108.24	39.78150149	-80.72701962
Begin 4.00° tangent									
1,400.00	4.00	225.000	1,399.59	-9.87	-9.87	14,447,282.81	1,717,103.31	39.78148799	-80.72703723
1,500.00	4.00	225.000	1,499.35	-14.80	-14.80	14,447,277.88	1,717,098.37	39.78147448	-80.72705484
1,600.00	4.00	225.000	1,599.11	-19.73	-19.73	14,447,272.95	1,717,093.44	39.78146098	-80.72707245
1,700.00	4.00	225.000	1,698.86	-24.66	-24.66	14,447,268.01	1,717,088.51	39.78144747	-80.72709008
1,800.00	4.00	225.000	1,798.62	-29.60	-29.60	14,447,263.08	1,717,083.58	39.78143397	-80.72710767
1,900.00	4.00	225.000	1,898.38	-34.53	-34.53	14,447,258.15	1,717,078.64	39.78142046	-80.72712528
2,000.00	4.00	225.000	1,998.13	-39.46	-39.46	14,447,253.22	1,717,073.71	39.78140696	-80.72714289
2,100.00	4.00	225.000	2,097.89	-44.39	-44.39	14,447,248.28	1,717,068.78	39.78139345	-80.72716050
2,200.00	4.00	225.000	2,197.65	-49.33	-49.33	14,447,243.35	1,717,063.85	39.78137995	-80.72717811
2,300.00	4.00	225.000	2,297.40	-54.26	-54.26	14,447,238.42	1,717,058.91	39.78136644	-80.72719572
2,400.00	4.00	225.000	2,397.16	-59.19	-59.19	14,447,233.49	1,717,053.98	39.78135294	-80.72721333
2,500.00	4.00	225.000	2,496.91	-64.12	-64.12	14,447,228.55	1,717,049.05	39.78133943	-80.72723094
2,600.00	4.00	225.000	2,596.67	-69.06	-69.06	14,447,223.62	1,717,044.12	39.78132593	-80.72724855
2,700.00	4.00	225.000	2,696.43	-73.99	-73.99	14,447,218.69	1,717,039.18	39.78131243	-80.72726616
2,800.00	4.00	225.000	2,796.18	-78.92	-78.92	14,447,213.76	1,717,034.25	39.78129892	-80.72728377
2,900.00	4.00	225.000	2,895.94	-83.85	-83.85	14,447,208.82	1,717,029.32	39.78128542	-80.72730138
3,000.00	4.00	225.000	2,995.70	-88.79	-88.79	14,447,203.89	1,717,024.39	39.78127191	-80.72731899
3,004.31	4.00	225.000	3,000.00	-89.00	-89.00	14,447,203.88	1,717,024.17	39.78127133	-80.72731975
Begin 2°/100' build/tum									
3,100.00	5.88	229.044	3,095.33	-94.57	-95.06	14,447,198.10	1,717,018.11	39.78125607	-80.72734140
3,200.00	7.87	231.196	3,194.60	-102.22	-104.27	14,447,190.46	1,717,008.91	39.78123514	-80.72737424
3,256.97	9.00	232.000	3,250.96	-107.41	-110.82	14,447,185.27	1,717,002.36	39.78122095	-80.72739761
Begin 9.00° tangent									
3,300.00	9.00	232.000	3,293.46	-111.55	-116.12	14,447,181.12	1,716,997.05	39.78120962	-80.72741654
3,400.00	9.00	232.000	3,392.22	-121.19	-128.45	14,447,171.49	1,716,984.72	39.78118327	-80.72746052
3,500.00	9.00	232.000	3,490.99	-130.82	-140.78	14,447,161.86	1,716,972.40	39.78115892	-80.72750450
3,600.00	9.00	232.000	3,589.76	-140.45	-153.10	14,447,152.23	1,716,960.07	39.78113058	-80.72754848
3,700.00	9.00	232.000	3,688.53	-150.08	-165.43	14,447,142.60	1,716,947.74	39.78110423	-80.72759246
3,800.00	9.00	232.000	3,787.30	-159.71	-177.76	14,447,132.97	1,716,935.42	39.78107788	-80.72763645
3,900.00	9.00	232.000	3,886.07	-169.34	-190.09	14,447,123.34	1,716,923.09	39.78105154	-80.72768043
4,000.00	9.00	232.000	3,984.84	-178.97	-202.41	14,447,113.71	1,716,910.76	39.78102519	-80.72772441
4,100.00	9.00	232.000	4,083.61	-188.60	-214.74	14,447,104.08	1,716,898.43	39.78099884	-80.72776839
4,200.00	9.00	232.000	4,182.38	-198.23	-227.07	14,447,094.45	1,716,886.11	39.78097250	-80.72781237
4,300.00	9.00	232.000	4,281.14	-207.86	-239.39	14,447,084.81	1,716,873.78	39.78094615	-80.72785635
4,400.00	9.00	232.000	4,379.91	-217.50	-251.72	14,447,075.18	1,716,861.45	39.78091981	-80.72790033
4,500.00	9.00	232.000	4,478.68	-227.13	-264.05	14,447,065.55	1,716,849.13	39.78089346	-80.72794432
4,600.00	9.00	232.000	4,577.45	-236.76	-276.38	14,447,055.92	1,716,836.80	39.78086711	-80.72798830
4,700.00	9.00	232.000	4,676.22	-246.39	-288.70	14,447,046.29	1,716,824.47	39.78084077	-80.72803228



Planning Report - Geographic

Database: DB_Aug1919_v14
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia
Site: Van Winkle
Well: Van Winkle S-20 HU (slot A)
Wellbore: Original Hole
Design: rev3

Local Co-ordinate Reference: Well Van Winkle S-20 HU (slot A)
TVD Reference: GL @ 754.00ft
MD Reference: GL @ 754.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,800.00	9.00	232.000	4,774.99	-256.02	-301.03	14,447,036.66	1,716,812.14	39.78081442	-80.72807626
4,900.00	9.00	232.000	4,873.76	-265.65	-313.36	14,447,027.03	1,716,799.82	39.78078807	-80.72812024
5,000.00	9.00	232.000	4,972.53	-275.28	-325.69	14,447,017.40	1,716,787.49	39.78076173	-80.72816422
5,100.00	9.00	232.000	5,071.29	-284.91	-338.01	14,447,007.77	1,716,775.16	39.78073538	-80.72820820
5,200.00	9.00	232.000	5,170.06	-294.54	-350.34	14,446,998.13	1,716,762.84	39.78070903	-80.72825219
5,300.00	9.00	232.000	5,268.83	-304.18	-362.67	14,446,988.50	1,716,750.51	39.78068269	-80.72829617
5,400.00	9.00	232.000	5,367.60	-313.81	-374.99	14,446,978.87	1,716,738.18	39.78065634	-80.72834015
5,500.00	9.00	232.000	5,466.37	-323.44	-387.32	14,446,969.24	1,716,725.85	39.78062999	-80.72838413
5,600.00	9.00	232.000	5,565.14	-333.07	-399.65	14,446,959.61	1,716,713.53	39.78060365	-80.72842811
5,700.00	9.00	232.000	5,663.91	-342.70	-411.98	14,446,949.98	1,716,701.20	39.78057730	-80.72847209
5,800.00	9.00	232.000	5,762.68	-352.33	-424.30	14,446,940.35	1,716,688.87	39.78055095	-80.72851607
5,900.00	9.00	232.000	5,861.45	-361.96	-436.63	14,446,930.72	1,716,676.54	39.78052460	-80.72856005
6,000.00	9.00	232.000	5,960.21	-371.59	-448.96	14,446,921.09	1,716,664.22	39.78049826	-80.72860403
6,100.00	9.00	232.000	6,058.98	-381.22	-461.28	14,446,911.46	1,716,651.89	39.78047191	-80.72864801
6,200.00	9.00	232.000	6,157.75	-390.86	-473.61	14,446,901.82	1,716,639.56	39.78044556	-80.72869199
6,300.00	9.00	232.000	6,256.52	-400.49	-485.94	14,446,892.19	1,716,627.24	39.78041922	-80.72873598
6,400.00	9.00	232.000	6,355.29	-410.12	-498.27	14,446,882.56	1,716,614.91	39.78039287	-80.72877996
6,500.00	9.00	232.000	6,454.06	-419.75	-510.59	14,446,872.93	1,716,602.58	39.78036652	-80.72882394
6,546.51	9.00	232.000	6,500.00	-424.23	-516.33	14,446,868.45	1,716,588.85	39.78035427	-80.72884439
Begin 2°/100' build/tum									
6,600.00	9.80	236.388	6,552.77	-429.32	-523.41	14,446,863.36	1,716,589.76	39.78034033	-80.72886967
6,700.00	11.41	242.832	6,651.06	-438.55	-539.30	14,446,854.13	1,716,573.88	39.78031512	-80.72892631
6,800.00	13.13	247.872	6,748.78	-447.38	-558.60	14,446,845.30	1,716,554.57	39.78029103	-80.72899512
6,900.00	14.91	251.390	6,845.80	-455.81	-581.30	14,446,836.87	1,716,531.87	39.78026809	-80.72907600
7,000.00	16.75	254.320	6,942.00	-463.81	-607.37	14,446,828.87	1,716,505.81	39.78024633	-80.72916887
7,100.00	18.61	256.681	7,037.26	-471.38	-636.77	14,446,821.30	1,716,476.40	39.78022579	-80.72927361
7,200.00	20.51	258.624	7,131.50	-478.51	-669.48	14,446,814.17	1,716,443.70	39.78020647	-80.72939010
7,300.00	22.42	260.250	7,224.56	-485.19	-705.44	14,446,807.49	1,716,407.73	39.78018841	-80.72951818
7,400.00	24.34	261.631	7,316.35	-491.42	-744.62	14,446,801.26	1,716,368.55	39.78017163	-80.72965770
7,500.00	26.27	262.822	7,406.75	-497.19	-786.97	14,446,795.49	1,716,326.20	39.78015615	-80.72980851
7,600.00	28.22	263.859	7,495.66	-502.48	-832.44	14,446,790.20	1,716,280.73	39.78014199	-80.72997040
7,615.57	28.52	264.009	7,509.36	-503.26	-839.80	14,446,789.42	1,716,273.38	39.78013890	-80.72999659
Begin 28.52° tangent									
7,700.00	28.52	264.009	7,583.54	-507.47	-879.89	14,446,785.21	1,716,233.29	39.78012868	-80.73013933
7,800.00	28.52	264.009	7,671.41	-512.45	-927.37	14,446,780.23	1,716,185.80	39.78011539	-80.73030839
7,900.00	28.52	264.009	7,759.27	-517.44	-974.86	14,446,775.24	1,716,138.32	39.78010209	-80.73047746
8,000.00	28.52	264.009	7,847.14	-522.42	-1,022.34	14,446,770.26	1,716,090.84	39.78008880	-80.73064652
8,100.00	28.52	264.009	7,935.01	-527.40	-1,069.82	14,446,765.28	1,716,043.35	39.78007551	-80.73081559
8,200.00	28.52	264.009	8,022.87	-532.39	-1,117.31	14,446,760.29	1,715,995.87	39.78006221	-80.73098465
8,300.00	28.52	264.009	8,110.74	-537.37	-1,164.79	14,446,755.31	1,715,948.38	39.78004892	-80.73115372
8,400.00	28.52	264.009	8,198.60	-542.35	-1,212.28	14,446,750.33	1,715,900.90	39.78003563	-80.73132278
8,500.00	28.52	264.009	8,286.47	-547.34	-1,259.76	14,446,745.34	1,715,853.42	39.78002233	-80.73149185
8,600.00	28.52	264.009	8,374.34	-552.32	-1,307.24	14,446,740.36	1,715,805.93	39.78000904	-80.73166091
8,700.00	28.52	264.009	8,462.20	-557.30	-1,354.73	14,446,735.38	1,715,758.45	39.77999575	-80.73182998
8,800.00	28.52	264.009	8,550.07	-562.29	-1,402.21	14,446,730.39	1,715,710.97	39.77998245	-80.73199904
8,900.00	28.52	264.009	8,637.93	-567.27	-1,449.70	14,446,725.41	1,715,663.48	39.77996916	-80.73216811
9,000.00	28.52	264.009	8,725.80	-572.25	-1,497.18	14,446,720.43	1,715,616.00	39.77995586	-80.73233717
9,100.00	28.52	264.009	8,813.67	-577.23	-1,544.66	14,446,715.45	1,715,568.51	39.77994257	-80.73250623
9,200.00	28.52	264.009	8,901.53	-582.22	-1,592.15	14,446,710.46	1,715,521.03	39.77992927	-80.73267530
9,300.00	28.52	264.009	8,989.40	-587.20	-1,639.63	14,446,705.48	1,715,473.55	39.77991598	-80.73284436
9,400.00	28.52	264.009	9,077.26	-592.18	-1,687.12	14,446,700.50	1,715,426.06	39.77990268	-80.73301343
9,500.00	28.52	264.009	9,165.13	-597.17	-1,734.60	14,446,695.51	1,715,378.58	39.77988938	-80.73318249
9,600.00	28.52	264.009	9,253.00	-602.15	-1,782.08	14,446,690.53	1,715,331.09	39.77987609	-80.73335155
9,700.00	28.52	264.009	9,340.86	-607.13	-1,829.57	14,446,685.55	1,715,283.61	39.77986279	-80.73352062



Planning Report - Geographic

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-20 HU (slot A)
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-20 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,800.00	28.52	264.009	9,426.73	-612.12	-1,877.05	14,446,680.56	1,715,236.13	39.77984949	-80.73388988
9,900.00	28.52	264.009	9,516.59	-617.10	-1,924.54	14,446,675.58	1,715,188.64	39.77983620	-80.73385875
10,000.00	28.52	264.009	9,604.45	-622.08	-1,972.02	14,446,670.60	1,715,141.16	39.77982290	-80.73402781
10,100.00	28.52	264.009	9,692.33	-627.07	-2,019.50	14,446,665.61	1,715,093.67	39.77980960	-80.73419687
10,200.00	28.52	264.009	9,780.19	-632.05	-2,066.99	14,446,660.63	1,715,046.19	39.77979630	-80.73436594
10,300.00	28.52	264.009	9,868.08	-637.03	-2,114.47	14,446,655.65	1,714,998.71	39.77978300	-80.73453500
10,400.00	28.52	264.009	9,955.92	-642.02	-2,161.95	14,446,650.67	1,714,951.22	39.77976971	-80.73470406
10,478.20	28.52	264.009	10,024.64	-645.91	-2,199.09	14,446,645.77	1,714,914.09	39.77975931	-80.73483627
Begin 6°/100' build/turn									
10,500.00	28.06	281.425	10,043.83	-647.22	-2,209.33	14,446,645.46	1,714,903.85	39.77975580	-80.73487275
10,600.00	26.62	248.717	10,132.74	-658.87	-2,253.51	14,446,633.81	1,714,859.67	39.77972416	-80.73503010
10,700.00	26.40	235.259	10,222.30	-679.69	-2,292.69	14,446,612.90	1,714,820.49	39.77966730	-80.73516978
10,800.00	27.42	222.171	10,311.55	-709.45	-2,326.44	14,446,583.23	1,714,786.73	39.77958584	-80.73529024
10,900.00	29.56	210.396	10,399.51	-747.83	-2,354.41	14,446,544.85	1,714,758.77	39.77948067	-80.73539019
11,000.00	32.60	200.349	10,485.20	-794.40	-2,376.28	14,446,498.28	1,714,736.90	39.77935295	-80.73546851
11,100.00	36.30	191.990	10,567.70	-848.66	-2,391.81	14,446,444.02	1,714,721.37	39.77920408	-80.73552436
11,200.00	40.49	185.062	10,648.09	-910.01	-2,400.83	14,446,382.67	1,714,712.35	39.77903565	-80.73555712
11,300.00	45.03	179.268	10,719.52	-977.78	-2,403.25	14,446,314.90	1,714,709.93	39.77884958	-80.73556842
11,400.00	49.81	174.348	10,787.19	-1,051.23	-2,399.03	14,446,241.45	1,714,714.15	39.77864783	-80.73555218
11,403.88	50.00	174.170	10,769.69	-1,054.18	-2,398.73	14,446,238.50	1,714,714.45	39.77863971	-80.73555116
Begin 8°/100' build/turn									
11,500.00	56.40	168.844	10,847.26	-1,130.20	-2,387.23	14,446,162.48	1,714,725.95	39.77843088	-80.73551101
11,600.00	63.27	184.084	10,887.50	-1,214.14	-2,386.90	14,446,078.54	1,714,748.28	39.77820016	-80.73543954
11,700.00	70.28	159.892	10,935.92	-1,301.43	-2,338.43	14,445,991.25	1,714,774.75	39.77765022	-80.73533914
11,800.00	77.38	156.047	10,984.77	-1,380.36	-2,302.38	14,445,902.32	1,714,810.80	39.77771569	-80.73521177
11,900.00	84.53	152.411	10,980.49	-1,479.21	-2,259.45	14,445,813.47	1,714,853.73	39.77747135	-80.73505990
11,962.38	89.00	150.194	10,984.01	-1,533.82	-2,229.55	14,445,758.86	1,714,863.63	39.77732112	-80.73495406
Begin 89.00° lateral									
12,000.00	89.00	150.194	10,984.86	-1,566.46	-2,210.88	14,445,726.22	1,714,902.32	39.77723134	-80.73488786
12,100.00	89.00	150.194	10,986.41	-1,653.22	-2,161.16	14,445,639.47	1,714,952.02	39.77699268	-80.73471188
12,200.00	89.00	150.194	10,988.15	-1,739.97	-2,111.46	14,445,552.71	1,715,001.72	39.77675401	-80.73453591
12,300.00	89.00	150.194	10,989.89	-1,826.73	-2,061.76	14,445,465.95	1,715,051.42	39.77651535	-80.73435994
12,400.00	89.00	150.194	10,991.64	-1,913.49	-2,012.06	14,445,379.19	1,715,101.12	39.77627668	-80.73418396
12,500.00	89.00	150.194	10,993.38	-2,000.25	-1,962.36	14,445,292.44	1,715,150.82	39.77603802	-80.73400799
12,600.00	89.00	150.194	10,995.12	-2,087.01	-1,912.66	14,445,205.68	1,715,200.52	39.77579935	-80.73383203
12,700.00	89.00	150.194	10,996.87	-2,173.76	-1,862.96	14,445,118.92	1,715,250.22	39.77556068	-80.73365606
12,800.00	89.00	150.194	10,998.61	-2,260.52	-1,813.25	14,445,032.16	1,715,299.92	39.77532202	-80.73348009
12,900.00	89.00	150.194	11,000.36	-2,347.28	-1,763.55	14,444,945.40	1,715,349.62	39.77508335	-80.73330412
13,000.00	89.00	150.194	11,002.10	-2,434.04	-1,713.85	14,444,858.65	1,715,399.32	39.77484469	-80.73312816
13,100.00	89.00	150.194	11,003.84	-2,520.79	-1,664.16	14,444,771.89	1,715,449.02	39.77460602	-80.73295220
13,200.00	89.00	150.194	11,005.59	-2,607.55	-1,614.46	14,444,685.13	1,715,498.72	39.77436735	-80.73277623
13,300.00	89.00	150.194	11,007.33	-2,694.31	-1,564.76	14,444,598.37	1,715,548.41	39.77412868	-80.73260027
13,400.00	89.00	150.194	11,009.07	-2,781.07	-1,515.06	14,444,511.62	1,715,598.11	39.77389002	-80.73242431
13,500.00	89.00	150.194	11,010.82	-2,867.83	-1,465.36	14,444,424.86	1,715,647.81	39.77365135	-80.73224836
13,600.00	89.00	150.194	11,012.56	-2,954.58	-1,415.66	14,444,338.10	1,715,697.51	39.77341268	-80.73207240
13,700.00	89.00	150.194	11,014.31	-3,041.34	-1,365.96	14,444,251.34	1,715,747.21	39.77317401	-80.73189644
13,800.00	89.00	150.194	11,016.05	-3,128.10	-1,316.26	14,444,164.59	1,715,796.91	39.77293534	-80.73172049
13,900.00	89.00	150.194	11,017.79	-3,214.86	-1,266.57	14,444,077.83	1,715,846.61	39.77269667	-80.73154453
14,000.00	89.00	150.194	11,019.54	-3,301.61	-1,216.87	14,443,991.07	1,715,896.31	39.77245801	-80.73136858
14,100.00	89.00	150.194	11,021.28	-3,388.37	-1,167.17	14,443,904.31	1,715,946.01	39.77221934	-80.73119263
14,200.00	89.00	150.194	11,023.02	-3,475.13	-1,117.47	14,443,817.56	1,715,995.71	39.77198067	-80.73101668
14,300.00	89.00	150.194	11,024.77	-3,561.89	-1,067.77	14,443,730.80	1,716,045.41	39.77174200	-80.73084073
14,400.00	89.00	150.194	11,026.51	-3,648.65	-1,018.07	14,443,644.04	1,716,095.11	39.77150333	-80.73066478
14,500.00	89.00	150.194	11,028.26	-3,735.40	-968.37	14,443,557.28	1,716,144.81	39.77126465	-80.73048884



Planning Report - Geographic

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-20 HU (slot A)
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-20 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,600.00	89.00	150.194	11,030.00	-3,822.16	-818.67	14,443,470.52	1,716,194.51	39.77102598	-80.73031289
14,700.00	89.00	150.194	11,031.74	-3,908.92	-868.97	14,443,383.77	1,716,244.21	39.77078731	-80.73013695
14,800.00	89.00	150.194	11,033.48	-3,995.68	-819.27	14,443,297.01	1,716,293.91	39.77054664	-80.72998101
14,900.00	89.00	150.194	11,035.23	-4,082.44	-769.57	14,443,210.25	1,716,343.60	39.77030997	-80.72978507
15,000.00	89.00	150.194	11,036.97	-4,169.19	-719.87	14,443,123.49	1,716,393.30	39.77007130	-80.72960912
15,100.00	89.00	150.194	11,038.72	-4,255.95	-670.17	14,443,036.74	1,716,443.00	39.76983262	-80.72943318
15,200.00	89.00	150.194	11,040.46	-4,342.71	-620.47	14,442,949.98	1,716,492.70	39.76959395	-80.72925725
15,300.00	89.00	150.194	11,042.21	-4,429.47	-570.77	14,442,863.22	1,716,542.40	39.76935528	-80.72908131
15,400.00	89.00	150.194	11,043.95	-4,516.22	-521.07	14,442,776.46	1,716,592.10	39.76911681	-80.72890538
15,500.00	89.00	150.194	11,045.69	-4,602.98	-471.37	14,442,689.71	1,716,641.80	39.76887793	-80.72872944
15,600.00	89.00	150.194	11,047.44	-4,689.74	-421.67	14,442,602.95	1,716,691.50	39.76863926	-80.72855351
15,700.00	89.00	150.194	11,049.18	-4,776.50	-371.97	14,442,516.19	1,716,741.20	39.76840059	-80.72837758
15,800.00	89.00	150.194	11,050.92	-4,863.26	-322.28	14,442,429.43	1,716,790.90	39.76816191	-80.72820165
15,900.00	89.00	150.194	11,052.67	-4,950.01	-272.58	14,442,342.68	1,716,840.60	39.76792324	-80.72802572
16,000.00	89.00	150.194	11,054.41	-5,036.77	-222.88	14,442,255.92	1,716,890.30	39.76768456	-80.72784979
16,100.00	89.00	150.194	11,056.16	-5,123.53	-173.18	14,442,169.16	1,716,940.00	39.76744589	-80.72767386
16,200.00	89.00	150.194	11,057.90	-5,210.29	-123.48	14,442,082.40	1,716,989.70	39.76720721	-80.72749794
16,300.00	89.00	150.194	11,059.64	-5,297.04	-73.78	14,441,995.64	1,717,039.40	39.76696854	-80.72732201
16,400.00	89.00	150.194	11,061.39	-5,383.80	-24.08	14,441,908.89	1,717,089.10	39.76672986	-80.72714609
16,500.00	89.00	150.194	11,063.13	-5,470.56	25.62	14,441,822.13	1,717,138.80	39.76649118	-80.72697017
16,600.00	89.00	150.194	11,064.87	-5,557.32	75.32	14,441,735.37	1,717,188.49	39.76625251	-80.72679425
16,700.00	89.00	150.194	11,066.62	-5,644.08	125.02	14,441,648.61	1,717,238.19	39.76601383	-80.72661833
16,800.00	89.00	150.194	11,068.36	-5,730.83	174.72	14,441,561.86	1,717,287.89	39.76577515	-80.72644241
16,900.00	89.00	150.194	11,070.11	-5,817.59	224.42	14,441,475.10	1,717,337.59	39.76553648	-80.72626649
17,000.00	89.00	150.194	11,071.85	-5,904.35	274.12	14,441,388.34	1,717,387.29	39.76529780	-80.72609057
17,100.00	89.00	150.194	11,073.59	-5,991.11	323.82	14,441,301.58	1,717,436.99	39.76505912	-80.72591466
17,200.00	89.00	150.194	11,075.34	-6,077.87	373.52	14,441,214.83	1,717,486.69	39.76482044	-80.72573875
17,300.00	89.00	150.194	11,077.08	-6,164.62	423.22	14,441,128.07	1,717,536.39	39.76458177	-80.72556283
17,400.00	89.00	150.194	11,078.82	-6,251.38	472.92	14,441,041.31	1,717,586.09	39.76434309	-80.72538692
17,500.00	89.00	150.194	11,080.57	-6,338.14	522.62	14,440,954.55	1,717,635.79	39.76410441	-80.72521101
17,600.00	89.00	150.194	11,082.31	-6,424.90	572.32	14,440,867.80	1,717,685.49	39.76386573	-80.72503510
17,700.00	89.00	150.194	11,084.06	-6,511.65	622.02	14,440,781.04	1,717,735.19	39.76362705	-80.72485920
17,800.00	89.00	150.194	11,085.80	-6,598.41	671.71	14,440,694.28	1,717,784.89	39.76338837	-80.72468329
17,900.00	89.00	150.194	11,087.54	-6,685.17	721.41	14,440,607.52	1,717,834.59	39.76314969	-80.72450739
18,000.00	89.00	150.194	11,089.29	-6,771.93	771.11	14,440,520.76	1,717,884.29	39.76291101	-80.72433148
18,100.00	89.00	150.194	11,091.03	-6,858.69	820.81	14,440,434.01	1,717,933.99	39.76267233	-80.72415558
18,200.00	89.00	150.194	11,092.77	-6,945.44	870.51	14,440,347.25	1,717,983.68	39.76243365	-80.72397968
18,300.00	89.00	150.194	11,094.52	-7,032.20	920.21	14,440,260.49	1,718,033.38	39.76219497	-80.72380378
18,400.00	89.00	150.194	11,096.26	-7,118.96	969.91	14,440,173.73	1,718,083.08	39.76195629	-80.72362788
18,500.00	89.00	150.194	11,098.01	-7,205.72	1,019.61	14,440,086.98	1,718,132.78	39.76171760	-80.72345198
18,600.00	89.00	150.194	11,099.75	-7,292.47	1,069.31	14,440,000.22	1,718,182.48	39.76147892	-80.72327608
18,700.00	89.00	150.194	11,101.49	-7,379.23	1,119.01	14,439,913.46	1,718,232.18	39.76124024	-80.72310019
18,800.00	89.00	150.194	11,103.24	-7,465.99	1,168.71	14,439,826.70	1,718,281.88	39.76100156	-80.72292429
18,900.00	89.00	150.194	11,104.98	-7,552.75	1,218.41	14,439,739.95	1,718,331.58	39.76076288	-80.72274840
19,000.00	89.00	150.194	11,106.72	-7,639.51	1,268.11	14,439,653.19	1,718,381.28	39.76052419	-80.72257251
19,100.00	89.00	150.194	11,108.47	-7,726.26	1,317.81	14,439,566.43	1,718,430.98	39.76028551	-80.72239662
19,200.00	89.00	150.194	11,110.21	-7,813.02	1,367.51	14,439,479.67	1,718,480.68	39.76004683	-80.72222073
19,300.00	89.00	150.194	11,111.96	-7,899.78	1,417.21	14,439,392.92	1,718,530.38	39.75980814	-80.72204484
19,400.00	89.00	150.194	11,113.70	-7,986.54	1,466.91	14,439,306.16	1,718,580.08	39.75956946	-80.72186895
19,500.00	89.00	150.194	11,115.44	-8,073.30	1,516.61	14,439,219.40	1,718,629.78	39.75933077	-80.72169307
19,600.00	89.00	150.194	11,117.19	-8,160.05	1,566.31	14,439,132.64	1,718,679.48	39.75909209	-80.72151718
19,700.00	89.00	150.194	11,118.93	-8,246.81	1,616.01	14,439,045.88	1,718,729.18	39.75885340	-80.72134130
19,800.00	89.00	150.194	11,120.67	-8,333.57	1,665.70	14,438,959.13	1,718,778.88	39.75861472	-80.72116542
19,900.00	89.00	150.194	11,122.42	-8,420.33	1,715.40	14,438,872.37	1,718,828.57	39.75837603	-80.72098954
20,000.00	89.00	150.194	11,124.16	-8,507.08	1,765.10	14,438,785.61	1,718,878.27	39.75813735	-80.72081366



Planning Report - Geographic

Database: DB_Aug1919_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle S-20 HU (slot A)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Van Winkle S-20 HU (slot A)
 TVD Reference: GL @ 754.00ft
 MD Reference: GL @ 754.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,100.00	89.00	150.194	11,125.91	-8,593.64	1,814.60	14,438,696.85	1,718,927.97	39.75789886	-80.72063778
20,200.00	89.00	150.194	11,127.65	-8,680.60	1,864.50	14,438,612.10	1,718,977.67	39.75765998	-80.72046190
20,300.00	89.00	150.194	11,129.39	-8,767.36	1,914.20	14,438,525.34	1,719,027.37	39.75742129	-80.72028603
20,400.00	89.00	150.194	11,131.14	-8,854.12	1,963.90	14,438,438.58	1,719,077.07	39.75718260	-80.72011015
20,500.00	89.00	150.194	11,132.88	-8,940.87	2,013.60	14,438,351.82	1,719,126.77	39.75694392	-80.71993428
20,600.00	89.00	150.194	11,134.62	-9,027.63	2,063.30	14,438,265.07	1,719,176.47	39.75670523	-80.71975841
20,700.00	89.00	150.194	11,136.37	-9,114.39	2,113.00	14,438,178.31	1,719,226.17	39.75646654	-80.71958253
20,800.00	89.00	150.194	11,138.11	-9,201.15	2,162.70	14,438,091.55	1,719,275.87	39.75622785	-80.71940666
20,900.00	89.00	150.194	11,139.86	-9,287.90	2,212.40	14,438,004.79	1,719,325.57	39.75598917	-80.71923080
21,000.00	89.00	150.194	11,141.60	-9,374.66	2,262.10	14,437,918.04	1,719,375.27	39.75575048	-80.71905493
21,100.00	89.00	150.194	11,143.34	-9,461.42	2,311.80	14,437,831.28	1,719,424.97	39.75551179	-80.71887906
21,200.00	89.00	150.194	11,145.09	-9,548.18	2,361.50	14,437,744.52	1,719,474.67	39.75527310	-80.71870320
21,300.00	89.00	150.194	11,146.83	-9,634.94	2,411.20	14,437,657.76	1,719,524.37	39.75503441	-80.71852733
21,400.00	89.00	150.194	11,148.57	-9,721.69	2,460.90	14,437,571.00	1,719,574.07	39.75479572	-80.71835147
21,500.00	89.00	150.194	11,150.32	-9,808.45	2,510.60	14,437,484.25	1,719,623.76	39.75455703	-80.71817561
21,600.00	89.00	150.194	11,152.06	-9,895.21	2,560.30	14,437,397.49	1,719,673.46	39.75431834	-80.71799975
21,700.00	89.00	150.194	11,153.81	-9,981.97	2,609.99	14,437,310.73	1,719,723.16	39.75407965	-80.71782389
21,800.00	89.00	150.194	11,155.55	-10,068.73	2,659.69	14,437,223.97	1,719,772.86	39.75384096	-80.71764803
21,900.00	89.00	150.194	11,157.29	-10,155.48	2,709.39	14,437,137.22	1,719,822.56	39.75360227	-80.71747217
22,000.00	89.00	150.194	11,159.04	-10,242.24	2,759.09	14,437,050.46	1,719,872.26	39.75336358	-80.71729632
22,100.00	89.00	150.194	11,160.78	-10,329.00	2,808.79	14,436,963.70	1,719,921.96	39.75312489	-80.71712046
22,200.00	89.00	150.194	11,162.52	-10,415.75	2,858.49	14,436,876.94	1,719,971.66	39.75288620	-80.71694461
22,300.00	89.00	150.194	11,164.27	-10,502.51	2,908.19	14,436,790.19	1,720,021.36	39.75264750	-80.71676876
22,400.00	89.00	150.194	11,166.01	-10,589.27	2,957.89	14,436,703.43	1,720,071.06	39.75240881	-80.71659291
22,500.00	89.00	150.194	11,167.76	-10,676.03	3,007.59	14,436,616.67	1,720,120.76	39.75217012	-80.71641706
22,600.00	89.00	150.194	11,169.50	-10,762.79	3,057.29	14,436,529.91	1,720,170.46	39.75193143	-80.71624121
22,700.00	89.00	150.194	11,171.24	-10,849.55	3,106.99	14,436,443.15	1,720,220.16	39.75169273	-80.71606536
22,800.00	89.00	150.194	11,172.99	-10,936.30	3,156.69	14,436,356.40	1,720,269.86	39.75145404	-80.71588952
22,900.00	89.00	150.194	11,174.73	-11,023.06	3,206.39	14,436,269.64	1,720,319.56	39.75121535	-80.71571367
23,000.00	89.00	150.194	11,176.47	-11,109.82	3,256.09	14,436,182.88	1,720,369.26	39.75097665	-80.71553783
23,100.00	89.00	150.194	11,178.22	-11,196.58	3,305.79	14,436,096.12	1,720,418.95	39.75073796	-80.71536199
23,200.00	89.00	150.194	11,179.96	-11,283.33	3,355.49	14,436,009.37	1,720,468.65	39.75049926	-80.71518615
23,300.00	89.00	150.194	11,181.71	-11,370.09	3,405.19	14,435,922.61	1,720,518.35	39.75026057	-80.71501031
23,400.00	89.00	150.194	11,183.45	-11,456.85	3,454.89	14,435,835.85	1,720,568.05	39.75002188	-80.71483447
23,500.00	89.00	150.194	11,185.19	-11,543.61	3,504.59	14,435,749.09	1,720,617.75	39.74978316	-80.71465863
23,600.00	89.00	150.194	11,186.94	-11,630.37	3,554.29	14,435,662.34	1,720,667.45	39.74954448	-80.71448280
23,700.00	89.00	150.194	11,188.68	-11,717.12	3,603.98	14,435,575.58	1,720,717.15	39.74930579	-80.71430696
23,800.00	89.00	150.194	11,190.42	-11,803.88	3,653.68	14,435,488.82	1,720,766.85	39.74906709	-80.71413113
23,900.00	89.00	150.194	11,192.17	-11,890.64	3,703.38	14,435,402.06	1,720,816.55	39.74882840	-80.71395530
24,000.00	89.00	150.194	11,193.91	-11,977.40	3,753.08	14,435,315.31	1,720,866.25	39.74858970	-80.71377946
24,100.00	89.00	150.194	11,195.66	-12,064.16	3,802.78	14,435,228.55	1,720,915.95	39.74835100	-80.71360363
24,200.00	89.00	150.194	11,197.40	-12,150.91	3,852.48	14,435,141.79	1,720,965.65	39.74811231	-80.71342781
24,300.00	89.00	150.194	11,199.14	-12,237.67	3,902.18	14,435,055.03	1,721,015.35	39.74787361	-80.71325198
24,400.00	89.00	150.194	11,200.89	-12,324.43	3,951.88	14,434,968.27	1,721,065.05	39.74763491	-80.71307615
24,500.00	89.00	150.194	11,202.63	-12,411.19	4,001.58	14,434,881.52	1,721,114.75	39.74739621	-80.71290033
24,600.00	89.00	150.194	11,204.37	-12,497.94	4,051.28	14,434,794.76	1,721,164.45	39.74715752	-80.71272450
24,700.00	89.00	150.194	11,206.12	-12,584.70	4,100.98	14,434,708.00	1,721,214.15	39.74691882	-80.71254868
24,800.00	89.00	150.194	11,207.86	-12,671.46	4,150.68	14,434,621.24	1,721,263.84	39.74668012	-80.71237286
24,900.00	89.00	150.194	11,209.61	-12,758.22	4,200.38	14,434,534.49	1,721,313.54	39.74644142	-80.71219704
25,000.00	89.00	150.194	11,211.35	-12,844.98	4,250.08	14,434,447.73	1,721,363.24	39.74620272	-80.71202122
25,100.00	89.00	150.194	11,213.09	-12,931.73	4,299.78	14,434,360.97	1,721,412.94	39.74596402	-80.71184540
25,200.00	89.00	150.194	11,214.84	-13,018.49	4,349.48	14,434,274.21	1,721,462.64	39.74572532	-80.71166958
25,300.00	89.00	150.194	11,216.58	-13,105.25	4,399.18	14,434,187.46	1,721,512.34	39.74548662	-80.71149377
25,400.00	89.00	150.194	11,218.32	-13,192.01	4,448.88	14,434,100.70	1,721,562.04	39.74524792	-80.71131795
25,500.00	89.00	150.194	11,220.07	-13,278.76	4,498.58	14,434,013.94	1,721,611.74	39.74500922	-80.71114214



Planning Report - Geographic

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Van Winkle S-20 HU (slot A)
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-20 HU (slot A)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
25,600.00	89.00	150.194	11,221.81	-13,365.52	4,546.28	14,433,927.18	1,721,651.44	39.74477052	-80.71096633	
25,700.00	89.00	150.194	11,223.56	-13,452.28	4,597.97	14,433,840.43	1,721,711.14	39.74453182	-80.71079052	
25,800.00	89.00	150.194	11,225.30	-13,539.04	4,647.67	14,433,753.67	1,721,750.84	39.74429312	-80.71061471	
25,900.00	89.00	150.194	11,227.04	-13,625.80	4,697.37	14,433,666.91	1,721,810.54	39.74405442	-80.71043890	
26,000.00	89.00	150.194	11,228.79	-13,712.55	4,747.07	14,433,580.15	1,721,850.24	39.74381571	-80.71026309	
26,100.00	89.00	150.194	11,230.53	-13,799.31	4,796.77	14,433,493.39	1,721,890.94	39.74357701	-80.71008729	
26,200.00	89.00	150.194	11,232.27	-13,886.07	4,846.47	14,433,406.64	1,721,930.64	39.74333831	-80.70991148	
26,300.00	89.00	150.194	11,234.02	-13,972.83	4,896.17	14,433,319.88	1,722,009.34	39.74309861	-80.70973568	
26,400.00	89.00	150.194	11,235.76	-14,059.59	4,945.87	14,433,233.12	1,722,050.03	39.74286090	-80.70955988	
26,500.00	89.00	150.194	11,237.51	-14,146.34	4,995.57	14,433,146.36	1,722,108.73	39.74262220	-80.70938408	
26,600.00	89.00	150.194	11,239.25	-14,233.10	5,045.27	14,433,059.61	1,722,158.43	39.74238350	-80.70920828	
26,700.00	89.00	150.194	11,240.99	-14,319.86	5,094.97	14,432,972.85	1,722,208.13	39.74214479	-80.70903248	
26,757.72	89.00	150.194	11,242.00	-14,369.94	5,123.66	14,432,922.77	1,722,236.82	39.74200701	-80.70893101	

PBHL/TD 26757.72 MD/11242.00 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-20HU LP1 - hit/miss target - Shape - Point	0.00	0.000	10,984.00	-1,533.86	-2,229.54	14,445,758.82	1,714,883.64	39.77732100	-80.73495400	
- plan misses target center by 0.01ft at 11962.43ft MD (10984.01 TVD, -1533.86 N, -2229.53 E)										
Van Winkle S-20HU PB1 - plan hits target center - Point	0.00	0.000	11,242.00	-14,369.94	5,123.66	14,432,922.77	1,722,236.82	39.74200700	-80.70893100	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,100.00	1,100.00	0.00	0.00	KOP Begin 2°/100' build	
1,300.00	1,299.84	-4.93	-4.93	Begin 4.00° tangent	
3,004.31	3,000.00	-89.00	-89.00	Begin 2°/100' build/turn	
3,256.97	3,250.96	-107.41	-110.82	Begin 9.00° tangent	
6,546.51	6,500.00	-424.23	-516.33	Begin 2°/100' build/turn	
7,615.57	7,509.36	-503.26	-839.80	Begin 28.52° tangent	
10,478.20	10,024.64	-645.91	-2,199.09	Begin 6°/100' build/turn	
11,403.88	10,789.69	-1,054.18	-2,398.73	Begin 8°/100' build/turn	
11,962.38	10,984.01	-1,533.82	-2,229.55	Begin 89.00° lateral	
26,757.72	11,242.00	-14,369.94	5,123.66	PBHL/TD 26757.72 MD/11242.00 TVD	

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JAN 19 2021
WV Department of Environmental Protection

4705102353

WW-9
(4/16)

API Number 47 - 051 -
Operator's Well No. Van Winkle S-20HU

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 cordal

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number UIC 2459; UIC 985, 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? Wezel County Sanitary Landfill (SWF 102.1 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386426)

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

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

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

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

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FEB 03 2021

Subscribed and sworn before me this 8 day of JANUARY, 2021

[Signature]

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

Notary Public

WV Department of Environmental Protection

My commission expires

07/16/2021

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

Boyd Stiles

Comments:

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FEB 03 2021

WV Department of
Environmental Protection

Title: Oil and Gas Inspector

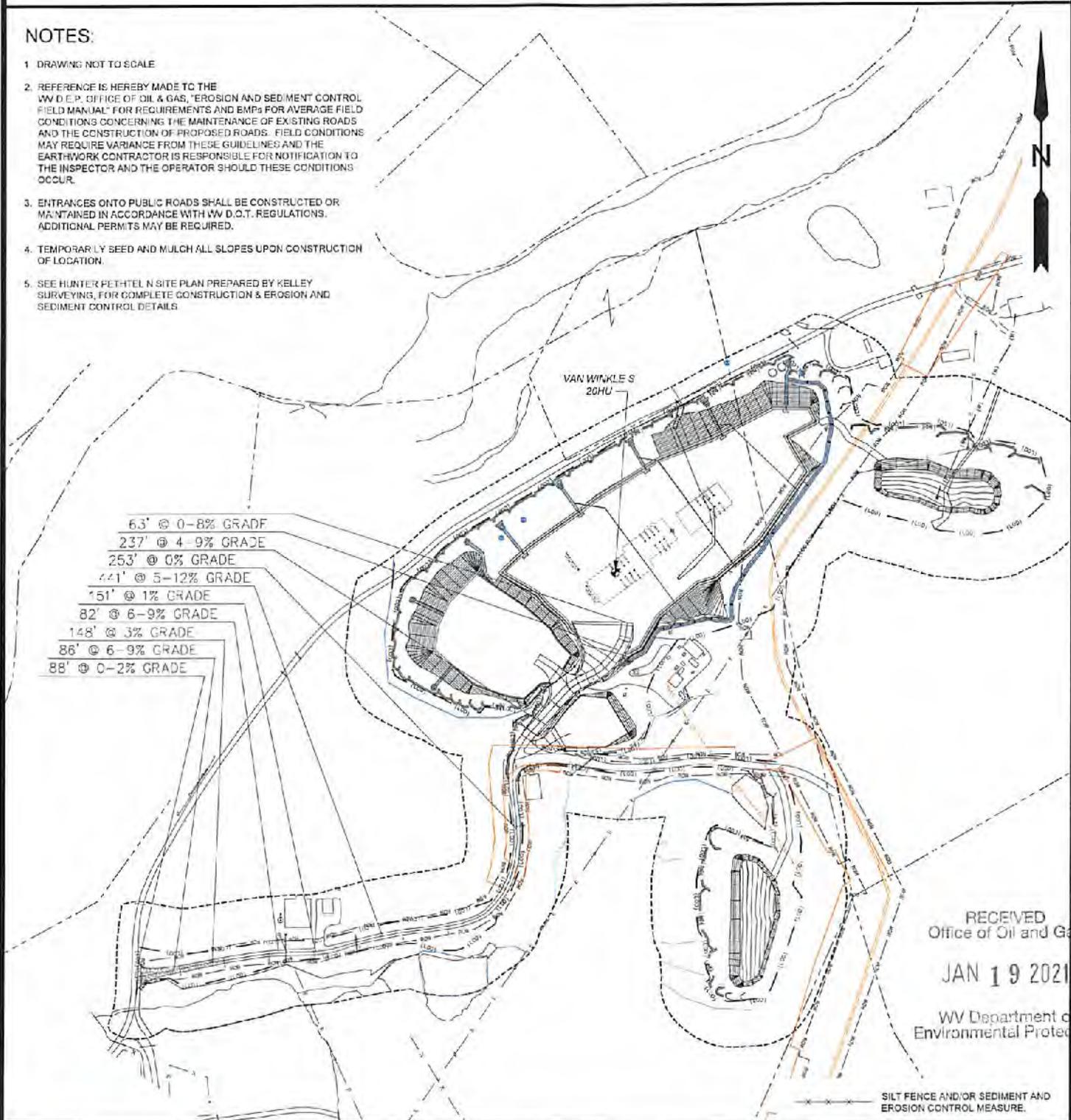
Date: 1-21-21

Field Reviewed? () Yes () No

PROPOSED VAN WINKLE S - 20HU

NOTES:

1. DRAWING NOT TO SCALE
2. REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
3. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
4. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.
5. SEE HUNTER PETHTEL N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



12 Vaihorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5834
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3932
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
 slsvv.com

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



**TUG HILL
OPERATING**

07/16/2021

4705102353



Well Site Safety Plan

Tug Hill Operating, LLC

Boyd Stites 1-21-21

Well Name: Van Winkle S-20HU

Location: Hunter Pethel

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,403,543.59

Easting: 523,377.11

January 2021

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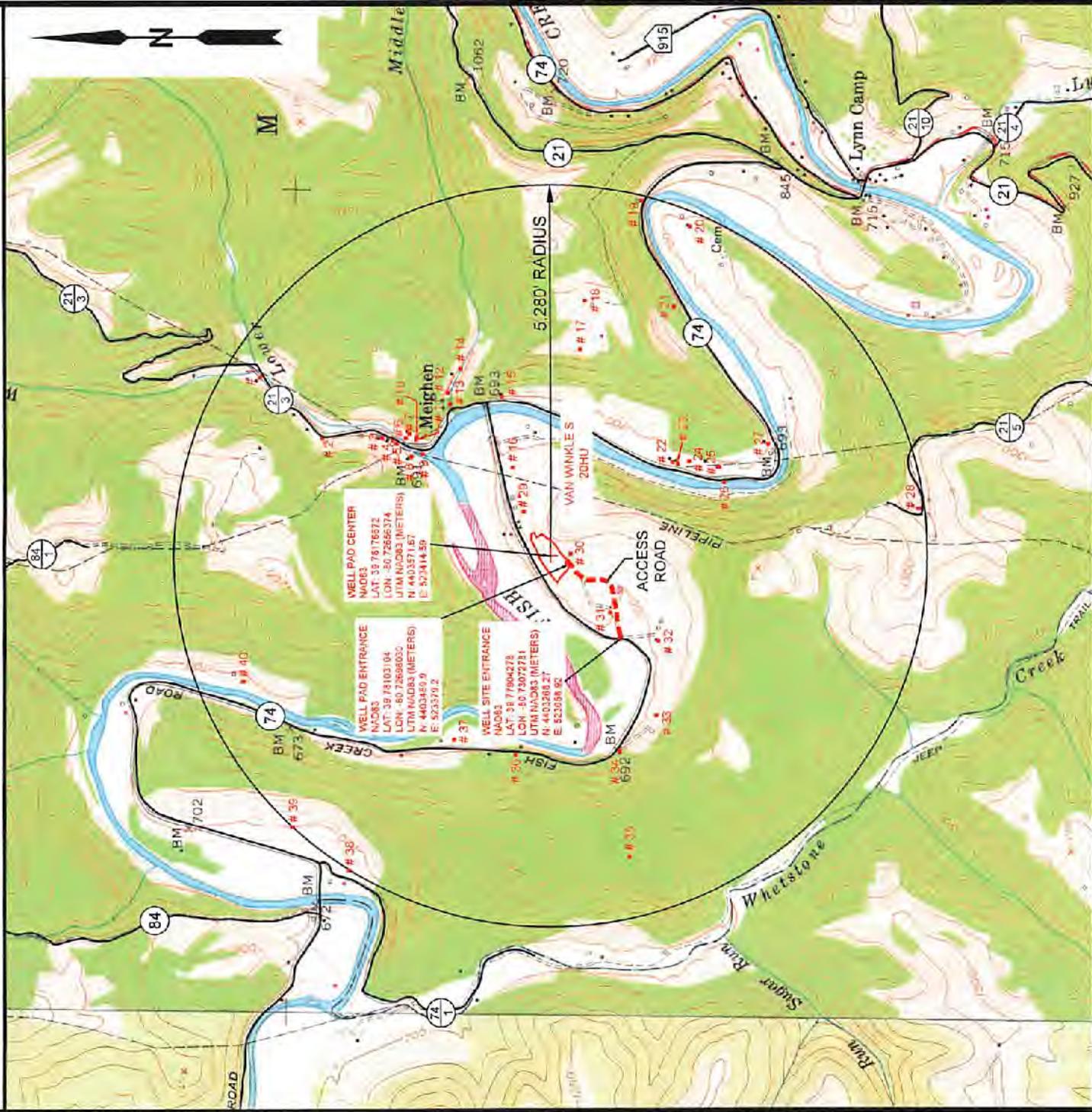
FEB 03 2021

WV Department of
Environmental Protection

07/16/2021

PROPOSED VAN WINKLE S - 20HU

EXHIBIT 2



NOTE: THERE APPEARS TO BE THIRTY-SEVEN (37) POSSIBLE RESIDENCES, TWO (2) POSSIBLE BUSINESSES, TWO (2) POSSIBLE COMMERCIAL SITES, ONE (1) ABANDONED SCHOOL AND NO CHURCHES OR EMERGENCY FACILITIES WITHIN 5,280'.

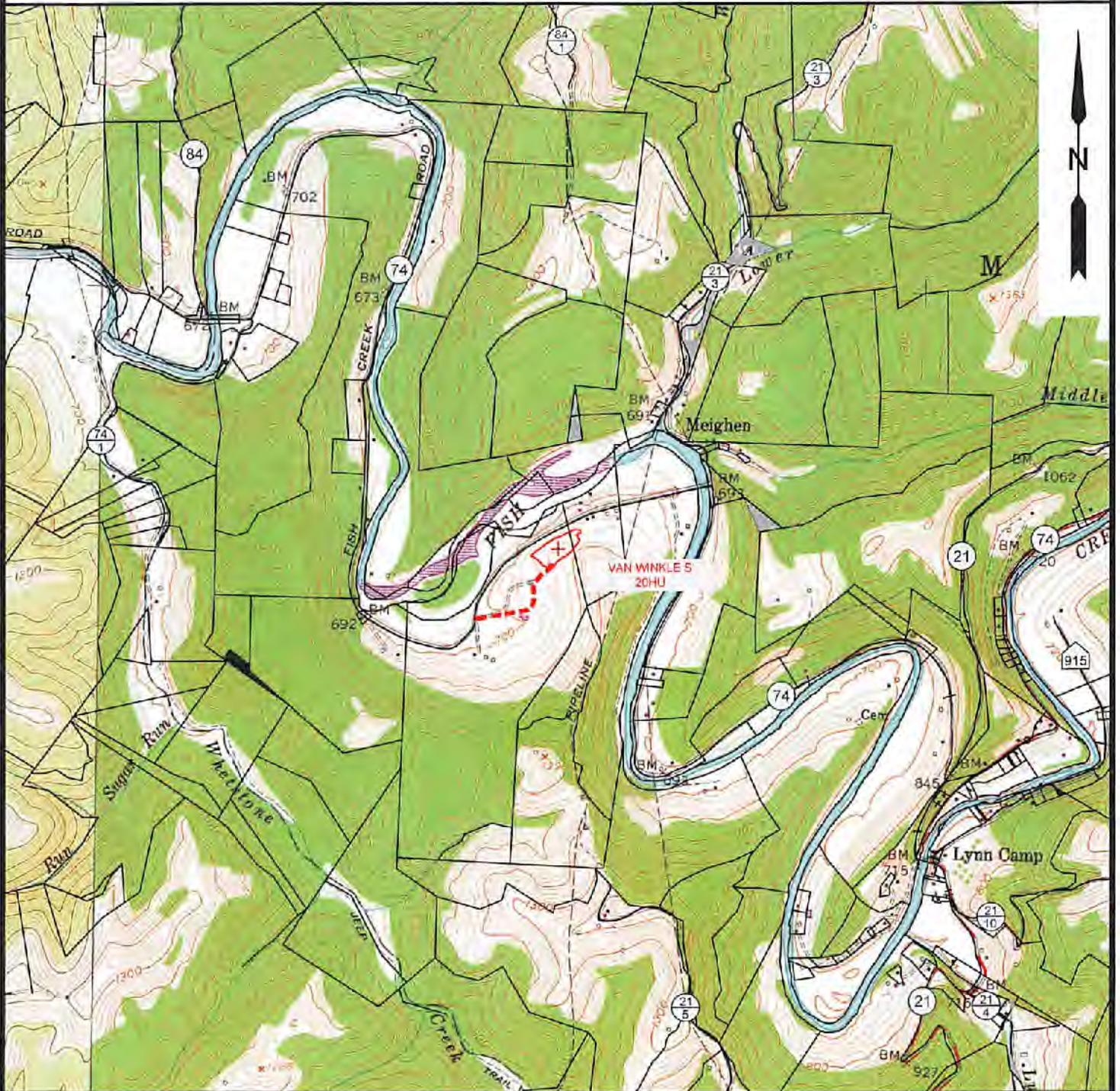


18 Marston Drive | 4100 Blue Bell | Pottsville, PA 17857 | 610-463-2611
 1412 Kline/28th Roadways, East | Christy, WV 25201 | 204-346-3353
 453 East Liberty | Liberty | 407-2-5831 | 104-213-3206
sls-wv.com

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



PROPOSED VAN WINKLE S - 20HU



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

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



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.6634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.345.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.8298
slsww.com

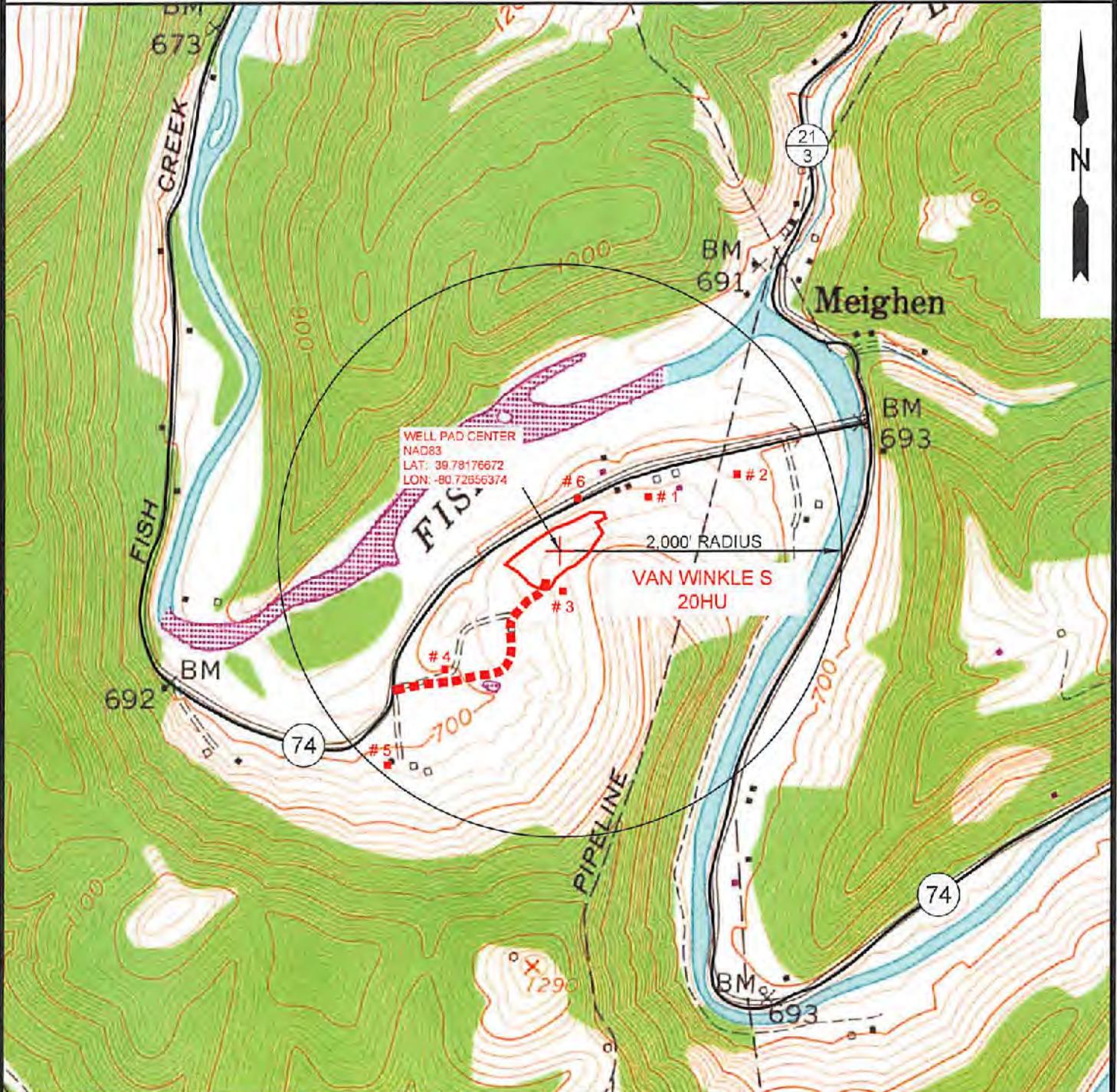
TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
DRAWN BY	JOB NO.	SUITE 200	
K.G.M.	8952	CANONSBURG, PA 15317	
		DATE	SCALE
		12/24/2020	1" = 2000'



TUG HILL
OPERATING

07/16/2021

PROPOSED VAN WINKLE S - 20HU



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



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5298
sllswv.com

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

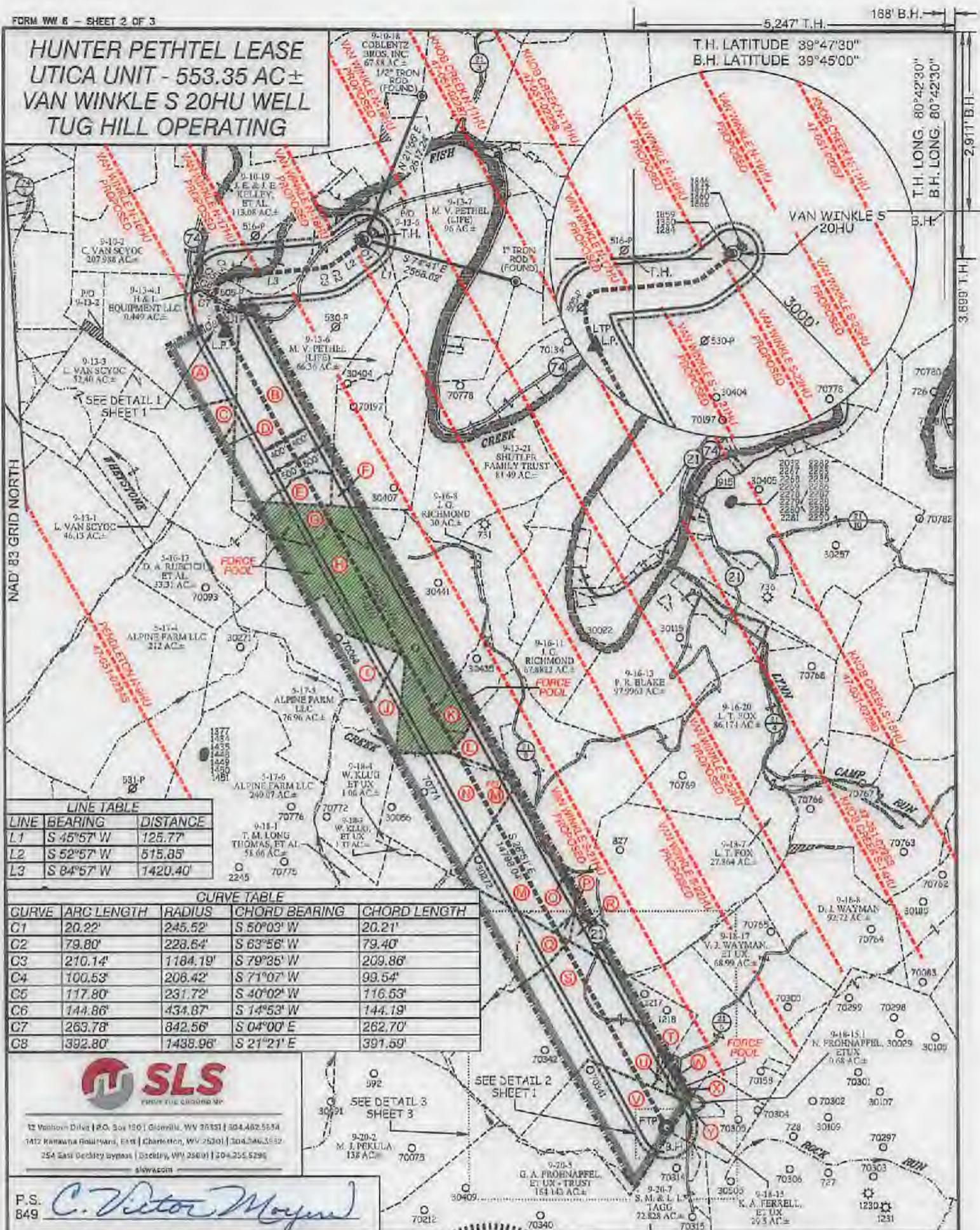


TUG HILL
OPERATING

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WV Department of
Natural Resources

07/16/2021

**HUNTER PETHTEL LEASE
UTICA UNIT - 553.35 AC±
VAN WINKLE S 20HU WELL
TUG HILL OPERATING**



LINE TABLE

LINE	BEARING	DISTANCE
L1	S 45°57' W	125.77'
L2	S 52°57' W	515.85'
L3	S 84°57' W	1420.40'

CURVE TABLE

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	20.22'	245.52'	S 50°03' W	20.21'
C2	79.80'	228.64'	S 63°56' W	79.40'
C3	210.14'	1184.19'	S 79°35' W	209.86'
C4	100.53'	208.42'	S 71°07' W	99.54'
C5	117.80'	231.72'	S 40°02' W	116.53'
C6	144.86'	434.87'	S 14°53' W	144.19'
C7	263.78'	842.56'	S 04°00' E	262.70'
C8	392.80'	1438.98'	S 21°21' E	391.59'



12 Vanhook Drive | P.O. Box 1501 | Glenview, WV 26031 | 304.462.5534
1412 Kanawha Mall | Parkersburg, WV 26101 | 304.266.3892
254 East Denkey Street | Beckley, WV 26001 | 304.255.5296
sls.com

P.S. 849 *C. Victor Moyers*



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

LEGEND

- UNIT BOUNDARY
- LEASED TRACTS INSIDE
- UNIT BOUNDARY
- SURFACE LINE
- PROPOSED UTICA
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- FORCE POOL TRACT
- CREEK
- ROAD
- PROPOSED FIRST TAKE POINT
- PROPOSED LAST TAKE POINT
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE ADDITIONAL SHEETS)

SCALE 1" = 2000' FILE NO. 8852P20HUR.dwg
VAN WINKLE S 20HU-REV3
DATE JANUARY 14 20 21
REVISED MARCH 2, 2021
OPERATORS WELL NO. VAN WINKLE S 20HU
API WELL NO. 47 - 051 - 02353
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

07/16/2021

**HUNTER PETHTEL LEASE
UTICA UNIT - 553.35 AC ±
VAN WINKLE S 20HU WELL
TUG HILL OPERATING**

TAG	SURFACE OWNER	PARCEL	ACRES
A	LOUIS AULENBACHER	9-13-4	100.191
B	XCL MIDSTREAM OPERATING, LLC	9-13-5	190.12
C	SYLVIA L. VAN SCYOC, ET AL	9-13-2	41.5
D	ROBERT M. & NANCY MCCARDLE	9-16-1	46.80
E	ROBERT M. & NANCY MCCARDLE	9-13-26	9.02
F	ROBERT M. & NANCY MCCARDLE	9-13-24	50.64
G	ROBERT M. & NANCY MCCARDLE	9-13-25	48.00
H	ROBERT M. & NANCY MCCARDLE	9-16-5	133.00
I	ROBERT M. & NANCY MCCARDLE	9-16-2	53.40
J	WILLIAM B. KLUG, ET UX	9-16-3	71.00
K	ROBERT M. & NANCY MCCARDLE	9-16-6	31.00
L	WILLIAM B. KLUG, ET UX	9-16-7	26.105
M	WILLIAM B. KLUG, ET UX	9-18-4	123.437
N	WILLIAM B. KLUG, ET UX	9-16-4	73.39
O	LOUIS FOX	9-18-5.2	0.933
P	LOUIS FOX	9-18-5.1	1.583
Q	BRIAN T. KLUG	9-18-2	85.00
R	LOUIS FOX	9-18-6	141.75
S	JAMES D. FROHNAPFEL, ET UX	9-18-18	154.03
T	JOHN F. WAYMAN	9-18-18.1	1.1
U	JOHN F. WAYMAN	9-18-16.2	2.17
V	KEITH A. FERRELL, ET UX	9-20-6	64.74
W	BERNARD KLUG, ET UX ESTS.	9-18-16.3	1.818
X	ROBERT F. VILLERS	9-18-16	62.893
Y	NICHOLAS C. FROHNAPFEL, ET UX	9-18-16.1	1.50

5,247' T.H. 168' B.H.

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

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

NAD'83 S.P.C. (FT)	N. 469,122.31	E. 1,623,876.11
NAD'83 GEO.	LAT-(N) 39.791515	LONG-(W) 80.727002
NAD'83 UTM (M)	N. 4,403,543.59	E. 523,877.11

LANDING POINT

NAD'83 S.P.C. (FT)	N. 467,625.5	E. 1,621,420.6
NAD'83 GEO.	LAT-(N) 39.777321	LONG-(W) 80.734954
NAD'83 UTM (M)	N. 4,403,076.1	E. 522,697.6

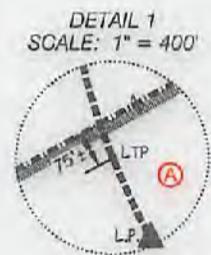
BOTTOM HOLE

NAD'83 S.P.C. (FT)	N. 454,664.0	E. 1,628,560.7
NAD'83 GEO.	LAT-(N) 39.742007	LONG-(W) 80.708931
NAD'83 UTM (M)	N. 4,399,163.7	E. 524,938.8

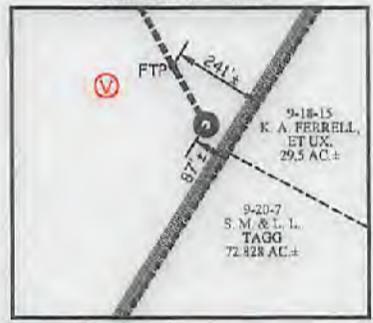
T.H.

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

3,609' T.H. 2,611' B.H.

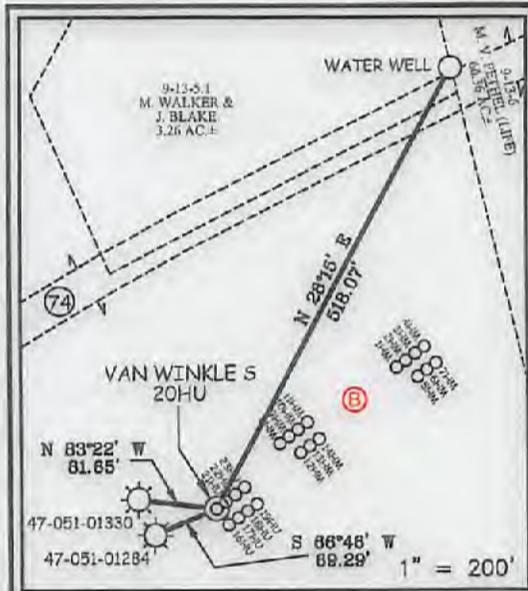


DETAIL 2
SCALE: 1" = 500'



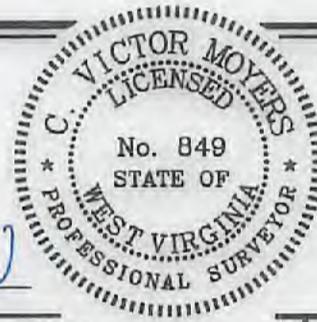
NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1" = 2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.
- PROPOSED LATERAL OR TOP HOLE OF VAN WINKLE S-20HU IS WITHIN 3000' OF TOP HOLES OR LATERALS OF: PROPOSED VAN WINKLE N-16HU, PROPOSED VAN WINKLE N-17HU, PROPOSED VAN WINKLE N-18HU, PROPOSED VAN WINKLE N-19HU, PROPOSED VAN WINKLE S-21HU, PROPOSED VAN WINKLE S-22HU, PROPOSED VAN WINKLE S-23HU, KNOB CREEK N-11HU (47-051-02287).



12 Vashon Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5554
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 Bail Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE JANUARY 14, 20 21
REVISED MARCH 2, 2021
OPERATORS WELL NO. VAN WINKLE S 20HU
API WELL NO. 47-051-01330 051-02353 02353
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8952P20HUR.dwg
VAN WINKLE S 20HU-REV3
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

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

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

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

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

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT
ESTIMATED DEPTH TVD: 11,201' / TMD: 26,758'

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

COUNTY NAME PERMIT

07/16/2021

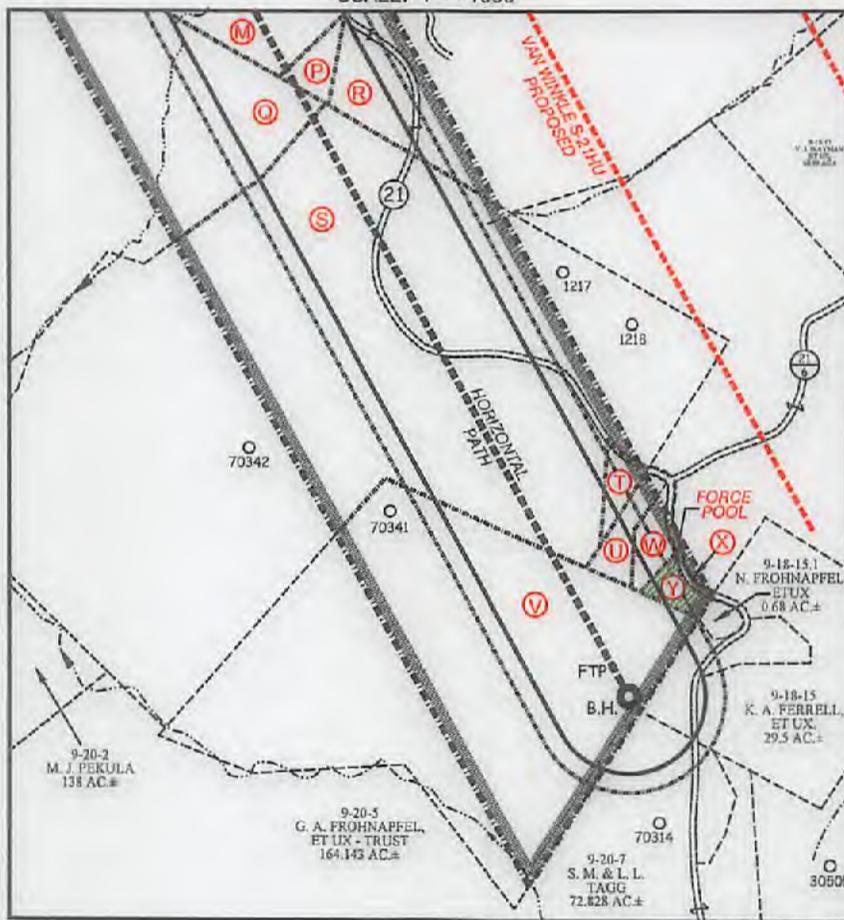
**HUNTER PETHTEL LEASE
UTICA UNIT - 553.35 AC±
VAN WINKLE S 20HU WELL
TUG HILL OPERATING**



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Dynamite | Beckley, WV 25801 | 304.266.5296
slsw.com

NO.	Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Deed Book/Page
1	10*19250	9-13-4	A	LOUIS AULENBACHER ET AL	902 444
2	10*31312	9-13-5	B	DENNIS W & KATHY A HUNTER	668 155
3	10*19256	9-13-2	C	RACHEL B OSTRANDER, ET AL	915 516
4	10*21131	9-16-1	D	ROBERT M MCCARDLE & NANCY R MCCARDLE, ET AL	951 621
5	10*31380	9-13-26	E	OPAL M BLAKE	683 1
6	10*21131	9-13-24	F	ROBERT M MCCARDLE & NANCY R MCCARDLE, ET AL	951 621
7	10*27947	9-13-25	G	STONE HILL MINERALS HOLDINGS LLC, ET AL	1063 568
8	10*28268	9-16-5	H	JOSEPH & ELIZABETH SHUTLER	63 203
9	10*19083	9-16-2	I	RITA RAE STEPHENS, ET AL	683 302
10	10*19638	9-16-3	J	GREGORY J HALL, ET AL	944 461
11	10*28268	9-16-6	K	JOSEPH & ELIZABETH SHUTLER	63 203
12	10*28268	9-16-7	L	JOSEPH & ELIZABETH SHUTLER	63 203
13	10*28268	9-18-5	M	JOSEPH & ELIZABETH SHUTLER	63 203
14	10*18035	9-16-4	N	JFANETTE A SHUTLER DAVIS AND ROY J DAVIS, ET AL	927 84
15	10*28268	9-18-5.2	O	JOSEPH & ELIZABETH SHUTLER	63 203
16	10*28268	9-18-5.1	P	JOSEPH & ELIZABETH SHUTLER	63 203
17	10*28262	9-18-2	Q	JAMES W MESSEY ET AL	67 487
18	10*28268	9-18-6	R	JOSEPH & ELIZABETH SHUTLER	63 203
19	10*47051.047.1	9-18-18	S	JAMES E BLATT, ET AL	869 587
20	10*18326	9-18-18.1	T	JOHN F WAYMAN AND DOROTHY A WAYMAN	938 13
21	10*19952	9-18-16.2	U	JOHN F WAYMAN AND DOROTHY A WAYMAN	938 11
22	10*17899	9-20-6	V	JOHN CALVERT, ET AL	924 608
23	10*28265	9-18-16.3	W	ROBERT F VILLERS AND APRIL VILLERS	Pending
24	10*28265	9-18-16	X	ROBERT F VILLERS AND APRIL VILLERS	1073 381
25	**	9-18-16.1	Y	Nicholas Frohnapfel an Glenda J. Frohnapfel (a/k/a Jean Frohnapfel), his wife	

DETAIL 3
SCALE: 1" = 1000'



FILE NO. 8952P20HUR.dwg
VAN WINKLE S 20HU-REV3

DATE JANUARY 14, 20 21

REVISED MARCH 2, 2021

OPERATORS WELL NO. VAN WINKLE S 20HU

API WELL NO. 47 — 051 — 02353 Deep
STATE COUNTY PERMIT



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



COUNTY NAME

P.S. 849 *C. Victor Moyers*

PERMIT

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

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

WW-6A1
(5/13)

Operator's Well No. Van Winkle S-20HU

**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
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*See attached pages

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

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

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

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

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

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

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Bo	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*19250	9-13-4	A	LOUIS AULENBACHER	CHEVRON USA INC	1/8+	902	444	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*22355	9-13-4	A	DEL T KELLEY AND DEBORAH A KELLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22962	9-13-4	A	TOD M KELLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22382	9-13-4	A	BETTY LOU KAMPE	AMERICAN PETROLEUM PARTNERS LLC	1/8+	919	399	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*31312	9-13-5	B	DENNIS W & KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	155	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/497	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31380	9-13-26	E	OPAL M BLAKE	CHESAPEAKE APPALACHIA LLC	1/8+	683	1	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 23/26	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to Stone Energy Corporation: AB 33/325 & 34/143	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	
10*27947	9-13-25	G	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	N/A	N/A
10*28268	9-13-25	G	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	63	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Hea Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	
10*28268	9-16-5	H	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	63	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Hea Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	
10*28268	9-16-6	K	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	63	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Hea Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Bo	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*28268	9-16-7	L	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	63	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Hea Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*28268	9-18-5	M	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	63	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Hea Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*18038	9-16-4	N	JEANETTE A SHUTLER DAVIS AND ROY J DAVIS	TH EXPLORATION LLC	1/8+	927	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18039	9-16-4	N	CLEMENT R SHUTLER AND NANCY L SHUTLER	TH EXPLORATION LLC	1/8+	927	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18337	9-16-4	N	VIRIGNIA LEA SHUTLER	TH EXPLORATION LLC	1/8+	929	552	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18338	9-16-4	N	MARY MARGARET SHUTLER	TH EXPLORATION LLC	1/8+	929	554	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18439	9-16-4	N	MARTIN E FAHEY AND PAMELA S FAHEY	TH EXPLORATION LLC	1/8+	933	85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18440	9-16-4	N	JOHN M FAHEY AND SANDY Y FAHEY	TH EXPLORATION LLC	1/8+	933	87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18538	9-16-4	N	KRIS & JULIE BECKER	TH EXPLORATION LLC	1/8+	933	644	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18667	9-16-4	N	DONNA K FAHEY	TH EXPLORATION LLC	1/8+	936	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18668	9-16-4	N	THOMAS M FAHEY AND PATRICIA FAHEY	TH EXPLORATION LLC	1/8+	936	85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18669	9-16-4	N	ANDREW E POWELL AND MARIE C POWELL	TH EXPLORATION LLC	1/8+	936	139	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22384	9-16-4	N	VIVIAN SHUTLER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916	642	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22429	9-16-4	N	DENNIS E BOGER AND MARY BETH BOGER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	921	19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22477	9-16-4	N	NANCY E MCFARLAND AND SHAWN B MCFARLAND	AMERICAN PETROLEUM PARTNERS LLC	1/8+	921	24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22478	9-16-4	N	URBAN SHUTLER AIF KEVIN C SHUTLER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	921	29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22479	9-16-4	N	KEVIN SHUTLER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	920	115	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22482	9-16-4	N	MICHAEL J SHUTLER & PATRICIA SHUTLER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	930	193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*22484	9-16-4	N	TERRENCE A SHUTLER AND DAWN I SHUTLER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	928	28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22945	9-16-4	N	MARTHA J SHUTLER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	917	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*29413	9-16-4	N	JANA K PARRY	TH EXPLORATION LLC	1/8+	1096	319	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29646	9-16-4	N	RED STONE RESOURCES LLC*	TH EXPLORATION LLC	1/8+	1100	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28268	9-18-5.1	P	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	63	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Heat Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 98/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*28262	9-18-2	Q	JAMES W MESSEY ET AL	ECLIPSE OIL COMPANY	1/8+	67	487	Eclipse Oil Company to C. H. Stolzenbach: DB 68/507	Eclipse Oil Company to J.P. Sweeney: DB 129/32	J.P. Sweeney to H.M. Reigle, J.H. McIsaac & A.E. McIsaac: DB 132/68	H.M. Reigle, J.H. McIsaac to Venture Oil Company: DB 132/483	Wheeling Natural Gas Company to Manufacturers Light & Heat Company: DB 148/389 & AB 3/40	The Manufacturers L&H Co. to A.M. Snider & Duane Snider dba Hundred Gas Company: AB 4/489	A.M. Snider, Duane M. Snider & Kathleen Rinehart, partner dba Hundred Gas Co. to Hundred Gas Co.: DB 256/189	Hundred Gas Company to Carl D. Perkins: DB 451/132 & 451/418	Carl D. Perkins to Perkins Oil & Gas Inc.: DB 583/72	Perkins Oil & Gas Inc. to TH Exploration LLC: AB 45/87
10*47051.047.1	9-18-18	S	JAMES E BLATT	TH EXPLORATION LLC	1/8+	869	587	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.047.2	9-18-18	S	JOHN WILLIAM BLATT	TH EXPLORATION LLC	1/8+	869	590	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.047.3	9-18-18	S	CAROL LEE BURNSIDE	TH EXPLORATION LLC	1/8+	869	593	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.047.4	9-18-18	S	LOIS JEAN CECIL	TH EXPLORATION LLC	1/8+	869	596	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17899	9-20-6	V	JOHN CALVERT	TH EXPLORATION LLC	1/8+	924	608	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17900	9-20-6	V	DELORES J MYERS	TH EXPLORATION LLC	1/8+	924	606	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17589	9-20-6	V	JANET F HIGGINS	TH EXPLORATION LLC	1/8+	925	445	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17990	9-20-6	V	EDWARD TYLA AND MARY TYLA	TH EXPLORATION LLC	1/8+	925	385	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17994	9-20-6	V	ELAINE BEAL	TH EXPLORATION LLC	1/8+	943	528	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17995	9-20-6	V	THOMAS E BEAL AND LOIS BEAL	TH EXPLORATION LLC	1/8+	925	383	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18116	9-20-6	V	SUSANNE KRENTZ	TH EXPLORATION LLC	1/8+	927	80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18277	9-20-6	V	JOHN J ZAGORSKI AND PAMELA L WOODHULL	TH EXPLORATION LLC	1/8+	929	110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18279	9-20-6	V	ELAINE BOBINCHECK	TH EXPLORATION LLC	1/8+	929	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18282	9-20-6	V	ROBERT G TAYLOR AND JUDITH B TAYLOR	TH EXPLORATION LLC	1/8+	929	112	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18328	9-20-6	V	ROBERT E BEIFUSS AND PATRICIA J BEIFUSS	TH EXPLORATION LLC	1/8+	929	558	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18365	9-20-6	V	JEAN M JONES	TH EXPLORATION LLC	1/8+	931	309	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18372	9-20-6	V	JAMES RIDER	TH EXPLORATION LLC	1/8+	931	455	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18380	9-20-6	V	LEROY SUMMERHILL AND JUNE E SUMMERHILL	TH EXPLORATION LLC	1/8+	932	443	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18382	9-20-6	V	GAIL V RYBA	TH EXPLORATION LLC	1/8+	932	445	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18383	9-20-6	V	WILLIAM MATUSINEC AND CAROL A MATUSINEC	TH EXPLORATION LLC	1/8+	932	488	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18384	9-20-6	V	GEORGE S AUGUSTIN	TH EXPLORATION LLC	1/8+	932	490	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18431	9-20-6	V	DARYL W ERRICHELLO AND CATHERINE L ERRICHELLO	TH EXPLORATION LLC	1/8+	941	631	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18435	9-20-6	V	JOSEPH F BORK AND SUSAN A BORK	TH EXPLORATION LLC	1/8+	933	75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18441	9-20-6	V	HAROLD SHELDON JR AND ANNETTE M SHELDON	TH EXPLORATION LLC	1/8+	933	89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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|----------|--------|-----|--|-----------------------|---------|---------|------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 10*18442 | 9-20-6 | V | ARTHUR J OCHSNER JR AND SANDRA J OCHSNER | TH EXPLORATION LLC | 1/8+ | 933 | 91 | N/A |
| 10*18489 | 9-20-6 | V | MARJORIE E KRAUSE | TH EXPLORATION LLC | 1/8+ | 933 | 73 | N/A |
| 10*18814 | 9-20-6 | V | BEATRICE WAYMAN | TH EXPLORATION LLC | 1/8+ | 938 | 28 | N/A |
| 10*19556 | 9-20-6 | V | KEITH A FERRELL AND KRISTY J FERRELL | TH EXPLORATION LLC | 1/8+ | 936 | 544 | N/A |
| 10*21827 | 9-20-6 | V | JANET PUCCI AND JOHN PUCCI | TH EXPLORATION LLC | 1/8+ | 960 | 218 | N/A |
| 10*21829 | 9-20-6 | V | RONALD ROSE & BARBARA ROSE | TH EXPLORATION LLC | 1/8+ | 960 | 185 | N/A |
| 10*22591 | 9-20-6 | V | MICHAEL ZAMAGIAS AND ELIZABETH ZAMAGIAS | TH EXPLORATION LLC | 1/8+ | 966 | 478 | N/A |
| 10*22595 | 9-20-6 | V | DUANE WOLLANT | TH EXPLORATION LLC | 1/8+ | 984 | 511 | N/A |
| 10*22596 | 9-20-6 | V | DOUGLAS WOLLANT AND LISA M STOEFLER | TH EXPLORATION LLC | 1/8+ | 966 | 480 | N/A |

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10*19256	9-13-2	C	RACHEL B OSTRANDER	CHEVRON USA INC	1/8+	915	516	N/A	Chevron USA Inc to TH Exploration LLC: AB 40/127		
10*19257	9-13-2	C	DELBERT M VAN SCYOC & SYLVIA I VAN SCYOC	CHEVRON USA INC	1/8+	911	485	N/A	Chevron USA Inc to TH Exploration LLC: AB 40/127		
10*19258	9-13-2	C	SHARON G VANSYOC	CHEVRON USA INC	1/8+	911	488	N/A	Chevron USA Inc to TH Exploration LLC: AB 40/127		
10*25236	9-13-2	C	MINERAL ACQUISITION COMPANY I LP	TH EXPLORATION LLC	1/8+	1030	121	N/A	N/A		
10*21131	9-16-1	D	ROBERT M MCCARDLE & NANCY R MCCARDLE	TH EXPLORATION LLC	1/8+	951	621	N/A	N/A		
10*22295	9-16-1	D	RACHEL B OSTRANDER	FOSSIL CREEK OHIO, LLC	1/8+	822	210	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporaion: AB 32/54 & AB 34/266	Gulfport Energy Corp. & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*22319	9-16-1	D	SHARON G VAN SCYOC	FOSSIL CREEK OHIO, LLC	1/8+	822	204	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporaion: AB 32/54 & AB 34/266	Gulfport Energy Corp. & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	American Petroleum Partners LLC to TH Exploration LLC: AB 42/109
10*21131	9-13-24	F	ROBERT M MCCARDLE & NANCY R MCCARDLE	TH EXPLORATION LLC	1/8+	951	621	N/A	N/A		
10*28341	9-13-24	F	WILLIAM BRAD FOX	TH EXPLORATION LLC	1/8+	1071	466	N/A	N/A		
10*28622	9-13-24	F	LINDA SMITH	TH EXPLORATION LLC	1/8+	1075	33	N/A	N/A		
10*28623	9-13-24	F	ANN MILLER	TH EXPLORATION LLC	1/8+	1075	31	N/A	N/A		
10*31313	9-13-24	F	MARY V & FRANK E PETHTEL	STONE ENERGY CORPORATION	1/8+	674	354	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	
10*31314	9-13-24	F	JOHN FOX	STONE ENERGY CORPORATION	1/8+	703	276	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	
10*31315	9-13-24	F	MICHAEL SHUTLER	STONE ENERGY CORPORATION	1/8+	715	207	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	
10*31316	9-13-24	F	SUSAN WALKER	STONE ENERGY CORPORATION	1/8+	864	563	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	
10*31317	9-13-24	F	RICHARD CUNNINGHAM	STONE ENERGY CORPORATION	1/8+	164A	416	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21	

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10*31318	9-13-24	F	LINDA DANLEY	STONE ENERGY CORPORATION	1/8+	868	438	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31319	9-13-24	F	AARON & REGINA MURRAY	STONE ENERGY CORPORATION	1/8+	868	436	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31328	9-13-24	F	DEBRA COURTWRIGHT	STONE ENERGY CORPORATION	1/8+	702	376	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31329	9-13-24	F	DAVID C YEAGER	STONE ENERGY CORPORATION	1/8+	702	368	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31330	9-13-24	F	HEBERT YEAGER	STONE ENERGY CORPORATION	1/8+	702	370	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31331	9-13-24	F	HOWARD FOX	STONE ENERGY CORPORATION	1/8+	697	431	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31332	9-13-24	F	ROBERT L SHUTLER	STONE ENERGY CORPORATION	1/8+	697	435	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31333	9-13-24	F	CHARLOTTE JACKLEY	STONE ENERGY CORPORATION	1/8+	697	433	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31334	9-13-24	F	BETTY PERSINGER	STONE ENERGY CORPORATION	1/8+	702	374	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31335	9-13-24	F	BETTY JEAN OTTE	STONE ENERGY CORPORATION	1/8+	702	346	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31336	9-13-24	F	JEANIUE HUFF	STONE ENERGY CORPORATION	1/8+	702	357	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21

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10*31337	9-13-24	F	JANE FOX	STONE ENERGY CORPORATION	1/8+	702	354	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31338	9-13-24	F	KIM JONES	STONE ENERGY CORPORATION	1/8+	702	364	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31339	9-13-24	F	MARY V & FRANK E PETHTEL	STONE ENERGY CORPORATION	1/8+	702	362	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31340	9-13-24	F	MARY JANE FERKOL	STONE ENERGY CORPORATION	1/8+	702	350	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31341	9-13-24	F	MARY KAY FRENCH	STONE ENERGY CORPORATION	1/8+	702	348	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31342	9-13-24	F	MARY ELLEN YEAGER	STONE ENERGY CORPORATION	1/8+	702	366	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31343	9-13-24	F	ROBERTA FROHNAPFEL	STONE ENERGY CORPORATION	1/8+	702	356	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31344	9-13-24	F	MARTI SNYDER	STONE ENERGY CORPORATION	1/8+	702	384	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31345	9-13-24	F	JAMES D FROHNAPFEL	STONE ENERGY CORPORATION	1/8+	702	360	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31346	9-13-24	F	HELEN SHUTLER	STONE ENERGY CORPORATION	1/8+	702	382	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*31347	9-13-24	F	DOROTHY ARGENTA	STONE ENERGY CORPORATION	1/8+	702	352	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21

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10*31348	9-13-24	F	KAREN EVANS	STONE ENERGY CORPORATION	1/8+	703	274	N/A	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21						
10*31349	9-13-24	F	ROBERT L FROHNAPFEL	STONE ENERGY CORPORATION	1/8+	703	278	N/A	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21						
10*31350	9-13-24	F	RUTH ANN SOUTH	STONE ENERGY CORPORATION	1/8+	702	378	N/A	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21						
10*31351	9-13-24	F	CAROLINE J SHUTLER CANALES	STONE ENERGY CORPORATION	1/8+	702	380	N/A	N/A	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21						
10*19083	9-16-2	I	RITA RAE STEPHENS	CHESAPEAKE APPALACHIA LLC	1/8+	683	302	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19084	9-16-2	I	GEORGE WILLIAM MCCAIN	CHESAPEAKE APPALACHIA LLC	1/8+	683	308	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 23/26	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19085	9-16-2	I	LESTER M MERCER	CHESAPEAKE APPALACHIA LLC	1/8+	683	305	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 23/26	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19086	9-16-2	I	HILDA IOLA MCCAIN	CHESAPEAKE APPALACHIA LLC	1/8+	684	151	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19087	9-16-2	I	BECKY ANN ROSS	CHESAPEAKE APPALACHIA LLC	1/8+	684	126	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19088	9-16-2	I	CHRISTY JO ROSS WHITE	CHESAPEAKE APPALACHIA LLC	1/8+	685	613	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19090	9-16-2	I	JENNIFER M. FOSTER	CHESAPEAKE APPALACHIA LLC	1/8+	683	314	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127

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10*19091	9-16-2	I	HELEN LOUISE MCCAIN GATTS	CHESAPEAKE APPALACHIA LLC	1/8+	685	618	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19093	9-16-2	I	LEROY EUGENE RICHARDS	CHESAPEAKE APPALACHIA LLC	1/8+	685	621	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 23/26	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19094	9-16-2	I	MICHAEL EARL RICHARDS	CHESAPEAKE APPALACHIA LLC	1/8+	685	630	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 23/26	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19095	9-16-2	I	BETTY ANN STROSNIER	CHESAPEAKE APPALACHIA LLC	1/8+	684	148	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19096	9-16-2	I	RONNIE CUSANO	CHESAPEAKE APPALACHIA LLC	1/8+	683	326	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 22/481	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19112	9-16-2	I	CHARLES E FOOCE AND MARY FOOCE	CHESAPEAKE APPALACHIA LLC	1/8+	695	539	N/A	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127						
10*19113	9-16-2	I	GEORGE DAVID FOOCE	CHESAPEAKE APPALACHIA LLC	1/8+	695	543	N/A	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127						
10*19114	9-16-2	I	LARRY WAYNE FOOCE	CHESAPEAKE APPALACHIA LLC	1/8+	694	371	N/A	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127						
10*19115	9-16-2	I	KATHY WILLIAMS	CHESAPEAKE APPALACHIA LLC	1/8+	694	522	N/A	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127						
10*19119	9-16-2	I	MICHAEL WESLEY HALL	CHESAPEAKE APPALACHIA LLC	1/8+	694	366	N/A	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127						
10*19120	9-16-2	I	SHARON L SCHULER AND JOSEPH A SCHULER	CHESAPEAKE APPALACHIA LLC	1/8+	694	503	N/A	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127						

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Bo	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*19122	9-16-2	I	JAMES L. FOOCE	CHESAPEAKE APPALACHIA LLC	1/8+	696	631	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 24/84	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19123	9-16-2	I	TAMMY SUE FOOCE	CHESAPEAKE APPALACHIA LLC	1/8+	696	635	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 24/84	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19124	9-16-2	I	JENNIFER LYNN FOOCE	CHESAPEAKE APPALACHIA LLC	1/8+	696	627	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 24/84	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*19125	9-16-2	I	MARK A. FOOCE	CHESAPEAKE APPALACHIA LLC	1/8+	694	344	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: AB 23/479	Statoil USA Onshore Properties Inc to Chevron USA Inc: AB 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: AB 30/461	Chevron USA Inc to TH Exploration LLC: AB 40/127
10*21082	9-16-2	I	HUBERT C AND JANE E OTTE	TH EXPLORATION LLC	1/8+	951	618	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21083	9-16-2	I	KARLA JO ALLEN	TH EXPLORATION LLC	1/8+	949	372	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21119	9-16-2	I	MICHAEL WESLEY HALL DNU	TH EXPLORATION LLC	1/8+	952	199	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21120	9-16-2	I	SHARON L SCHULER AND JOSEPH A SCHULER	TH EXPLORATION LLC	1/8+	952	201	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21131	9-16-2	I	ROBERT M. MCCARDLE & NANCY R MCCARDLE	TH EXPLORATION LLC	1/8+	951	621	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22438	9-16-2	I	H3 LLC MICHAEL E HOEFT MANAGING MEMBER	TH EXPLORATION LLC	1/8+	1028	556	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26578	9-16-2	I	GARNET GAS CORP	TH EXPLORATION LLC	1/8+	1045	426	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26579	9-16-2	I	GARNET GAS CORP	TH EXPLORATION LLC	1/8+	1045	424	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*19538	9-16-3	J	GREGORY J HALL	TH EXPLORATION LLC	1/8+	944	461	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*19639	9-16-3	J	RANDALL S HALL	TH EXPLORATION LLC	1/8+	944	459	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27393	9-16-3	J	VICTOR LEWIS LANHAM	TH EXPLORATION LLC	1/8+	1058	404	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27520	9-16-3	J	MICHAEL L HALL JR AND DIANNE HALL	TH EXPLORATION LLC	1/8+	1060	194	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27558	9-16-3	J	CRYSTAL L CUNNINGHAM AND TIMOTHY CUNNINGHAM	TH EXPLORATION LLC	1/8+	1060	476	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27570	9-16-3	J	ENOCH R HYDE AND ELIZABETH HYDE	TH EXPLORATION LLC	1/8+	1060	478	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27572	9-16-3	J	JOHN W HYDE AND ALYCE F HYDE	TH EXPLORATION LLC	1/8+	1060	481	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27573	9-16-3	J	RUSSELL H HATCHER AND ELIZABETH HATCHER	TH EXPLORATION LLC	1/8+	1061	258	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27833	9-16-3	J	TIMOTHY A HOLLEY AND DEBRA J HOLLEY	TH EXPLORATION LLC	1/8+	1063	256	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29086	9-16-3	J	BETTY L COX	TH EXPLORATION LLC	1/8+	1084	197	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29515	9-16-3	J	NANCY M HYDE	TH EXPLORATION LLC	1/8+	1097	507	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29686	9-16-3	J	FAMILY TREE CORPORATION	TH EXPLORATION LLC	1/8+	1100	254	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29725	9-16-3	J	JANICE GUMP DEBOLT*	TH EXPLORATION LLC	1/8+	1100	76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28268	9-18-5.2	D	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	53	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Heat Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*28268	9-18-5	R	JOSEPH & ELIZABETH SHUTLER	TG STILES	1/8+	53	203	N/A	TG Stiles to South Penn Oil Company: DB 60/366	South Penn Oil Company to Tri-State Gas Company: DB 80/150	Tri-State Gas Company to The Manufacturers Light & Heat Company: DB 148/388	The Manufacturers Light & Heat Company to AM Snider & Duane M Sniders, Partners dba Hundred Gas Company: AB 4/489	Hundred Gas Company to Carl D Perkins: DB 451/132	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to Stone Energy Corporation: AB 26/322	Stone Energy Corporation to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: AB 48/21
10*18326	9-18-18.1	T	JOHN F WAYMAN AND DOROTHY A WAYMAN	TH EXPLORATION LLC	1/8+	938	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*19352	9-18-16.2	U	JOHN F WAYMAN AND DOROTHY A WAYMAN	TH EXPLORATION LLC	1/8+	938	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

BOOK 0040 PAGE 0127

STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

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

ASSIGNMENT AND CONVEYANCE

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

WITNESSETH:

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

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

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

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

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

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

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Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

ASHLEY FAVINGER
AMERICAN PETROLEUM PARTNERS OPERATING LLC.
4600 J BARRY COURT STE 310
CANNONBURG PA 15317-5854

4705102353

BOOK 0042 PAGE 0109

STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

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

WITNESSETH:

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

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

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

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

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

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

Marshall County
Jan Pest, Clerk
Instrument 1440860
05/25/2018 @ 02:36:09 PM
ASSIGNMENTS
Book 42 @ Page 109
Pages Recorded 9
Recording Cost \$ 15.00

RECEIVED
Office of Oil and Gas

JAN 19 2021

WV Department of
Environmental Protection

WV-AGIR-0009

07/16/2021

IN COUNTY OF MARSHALL
6000 TISH CENTER BUILDING, SUITE 145
CHARLESTON, PA 15317-5941

BOOK 6648 PAGE 882 F

ASSIGNMENT AND BILL OF SALE

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

RECITALS

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

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

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

ARTICLE I DEFINED TERMS

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

ARTICLE II ASSIGNMENT OF ASSETS

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

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

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

RECEIVED
Office of Oil and Gas

JAN 19 2021

WV Department of
Environmental Protection

07/16/2021



March 15, 2021

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

RE: Van Winkle S-20HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

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

9-13-25

9-16-5

9-16-6

9-18-16.1

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

Sincerely,

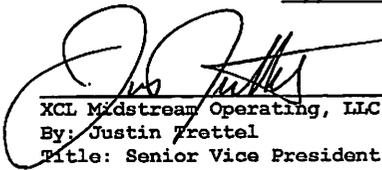
A handwritten signature in blue ink that reads "Amy L. Morris".

Amy L. Morris
Permitting Specialist – Appalachia Region
Tug Hill Operating

CERTIFICATE OF CONSENT AND EASEMENT

I, the undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being all the owners of the surface of that certain lot, tract or parcel of land located in Meade District, Marshall County, State of West Virginia, shown on the attached plat or survey, or hereby consent and grant an easement, pursuant to West Virginia Code, Section 22C-9-7(b) (4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 11 day of FEBRUARY, 2021.



XCL Midstream Operating, LLC
By: Justin Trettel
Title: Senior Vice President

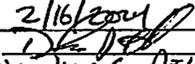
Marshall County
Jan Pest, Clerk
Instrument 1475005
02/18/2021 @ 12:30:42 PM
RIGHT OF WAY W/O CONSIDERATION
Book 1104 @ Page 189
Pages Recorded 2
Recording Cost \$ 11.00

ACKNOWLEDGMENT

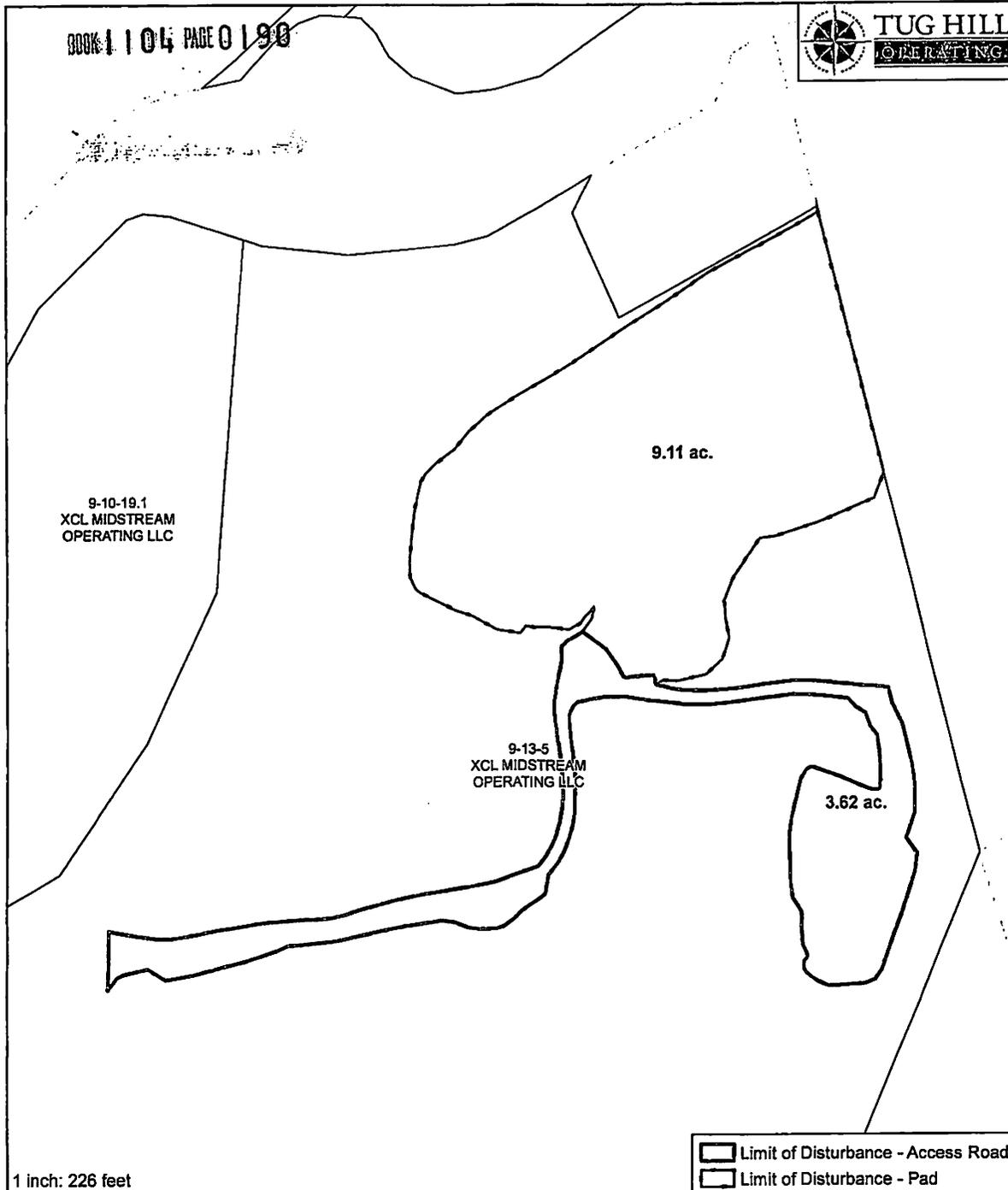
COMMONWEALTH OF PENNSYLVANIA §
§ SS:
COUNTY OF WASHINGTON §

On this, the 11 day of FEBRUARY 2021, before me, a notary public, the undersigned authority, personally appeared Justin Trettel, who acknowledged himself to be the Senior Vice President of XcL Midstream Operating, a Delaware limited liability company, and that he as such Senior Vice President being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company by himself as Senior Vice President.

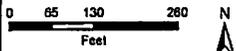
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Commonwealth of Pennsylvania - Notary Seal
David Gabriel Delallo, Notary Public
Washington County
My commission expires February 18, 2024
Commission number 1267492
Member, Pennsylvania Association of Notaries
Commission Expires: 2/18/2024
Signature/Notary Public: 
Notary Public (print): David G. Delallo

This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304



1 inch: 226 feet



NOTE: THE APPROVED WELL LOCATION FOR THE SURFACE ESTABLISHED SHALL BE THE LOCATION OF THE PROPERTY AS SHOWN ON ALL RECORDS OF RECORDS. THE LOCATION OF THE PROPERTY AS SHOWN ON ALL RECORDS SHALL BE THE LOCATION OF THE PROPERTY AS SHOWN ON ALL RECORDS. THE LOCATION OF THE PROPERTY AS SHOWN ON ALL RECORDS SHALL BE THE LOCATION OF THE PROPERTY AS SHOWN ON ALL RECORDS.

"Plat"
XCL MIDSTREAM OPERATING LLC
Marshall County, WV

Date: _____

Name: _____

Name: _____



STATE OF WEST VIRGINIA, MARSHALL COUNTY, SCT.:

I, JAN PEST, Clerk of the County Commission of said County, do hereby certify that the annexed writing, bearing date on the 11th day of February, 2021, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 18th day of February, 2021 at 12:30 o'clock P M.

TESTE: Jan Pest Clerk



west virginia department of environmental protection

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

Randall M. Albert, Chairman
dep.wv.gov

April 2, 2021

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

9489 0090 0027 6201 3317 10

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC Van Winkle S-20HU

Dear Sir or Ma'am:

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

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

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

Sincerely,

A handwritten signature in black ink that reads "Susan Rose".

Susan Rose
Administrator

encl:

07/16/2021



May 12, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6201 3317 10.

Item Details

Status:	Delivered, Front Desk/Reception/Mail Room
Status Date / Time:	April 9, 2021, 2:07 pm
Location:	FORT WORTH, TX 76107
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	10lb, 3.1oz
----------------	-------------

Recipient Signature

Signature of Recipient:	<i>JB</i>
Address of Recipient:	<i>JB Rt 711 Covid-19 1320 S University # 500 76107</i>

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

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

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

07/16/2021



west virginia department of environmental protection

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

Randall M. Albert, Chairman
dep.wv.gov

April 2, 2021

SWN Production Company, LLC
10000 Energy Dr
Spring TX 77389

9489 0090 0027 6201 3317 41

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – Van Winkle S-20HU

Dear Sir or Ma'am:

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

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

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

Sincerely,

A handwritten signature in cursive script that reads "Susan Rose".

Susan Rose
Administrator

encl:

07/16/2021



May 12, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6201 3317 41.

Item Details

Status:	Delivered, Front Desk/Reception/Mail Room
Status Date / Time:	April 8, 2021, 12:18 pm
Location:	MORGANTOWN, WV 26508
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	8lb, 7.8oz
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Recipient Signature

Signature of Recipient:	CO-19 MN 24
Address of Recipient:	1300 Forest Pueblapoint Dr #201

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Washington, D.C. 20260-0004

07/16/2021



west virginia department of environmental protection

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

Randall M. Albert, Chairman
dep.wv.gov

April 2, 2021

Nicholas Frohnappel
Glenda Frohnappel
3125 St. Joseph Rd
Proctor WV 26055

9489 0090 0027 6201 3317 58

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – Van Winkle S-20HU

Dear Sir or Ma'am:

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

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

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

Sincerely,

A handwritten signature in cursive script that reads "Susan Rose".
Susan Rose
Administrator

encl:

07/16/2021



May 12, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6201 3317 58.

Item Details

Status:	Delivered, Left with Individual
Status Date / Time:	April 8, 2021, 11:47 am
Location:	PROCTOR, WV 26055
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	2lb, 14.0oz
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Recipient Signature

Signature of Recipient:	 Lizbeth C-11
Address of Recipient:	325 St Joseph Rd

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

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

07/16/2021

COUNTY	DISTRICT	PARCEL	OWNER	ADDRESS
Marshall	Franklin	5-10-9999.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-24	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-25	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-26	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-4.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-5.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-16-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-16-3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-16-4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

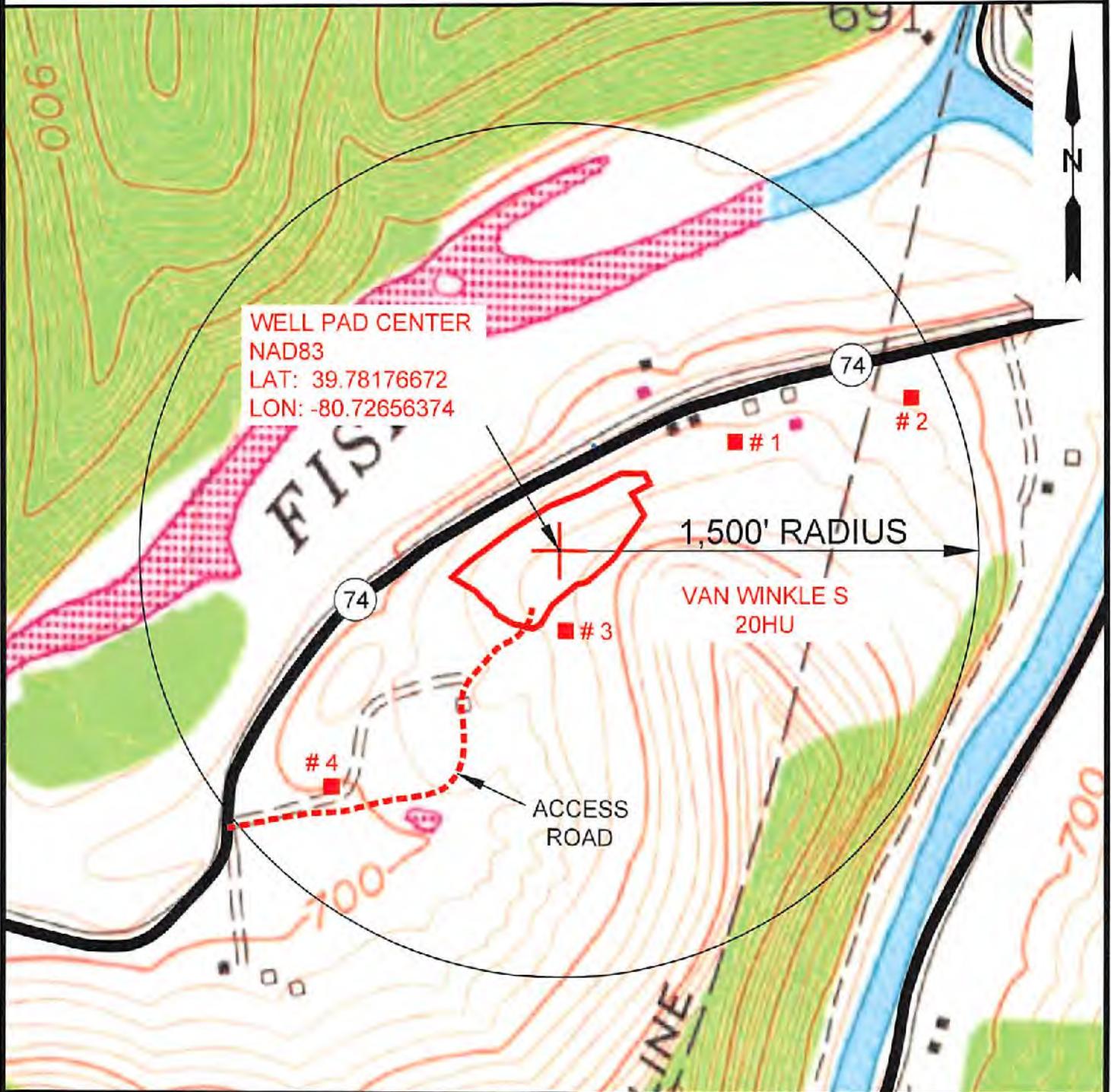
07/16/2021

Marshall	Meade	9-16-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-16-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-16-7	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-15	SWN PRODUCTION COMPANY, LLC	10000 Energy Drive Spring, TX 77389
Marshall	Meade	9-18-15.2	SWN PRODUCTION COMPANY, LLC	10000 Energy Drive Spring, TX 77389
Marshall	Meade	9-18-16.1	NICHOLAS & GLENDA FROHNAPFEL	3125 St. Joseph Road Proctor, WV 26055
Marshall	Meade	9-18-16.2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-16.3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-18	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-18.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-5.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-18-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-20-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-20-7	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-20-7.2	SWN PRODUCTION COMPANY, LLC	10000 Energy Drive Spring, TX 77389

07/16/2021

PROPOSED VAN WINKLE S - 20HU

EXHIBIT 3



NOTE: THERE APPEARS TO BE FOUR (4) POSSIBLE RESIDENCES WITHIN 1,500'.



12 Manhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5654
1412 Kanawha Boulevard, East | Charleston, WV 25201 | 304.246.3952
754 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
sllwv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/24/2020	1" = 500'



TUG HILL
OPERATING

Exhibit 3A

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

Residences within Fifteen-Hundred Feet 1,500'

Well: Van Winkle S – 20HU
District: Meade
State: WV

There are three (3) possible residences, one (1) possible commercial or business site, no churches, no schools and no emergency facilities within fifteen-hundred feet (1,500') of the above referenced well location.

Residence (#1) TM 13 Pcl. 6 Mary Virginia Pethtel Phone: 304-684-2646, 304-845-3423 Physical Address: None Found – Possible Mobile Home Tax Address: 9845 Fish Creek Rd Glen Easton, WV 26039	Residence (#2) TM 13 Pcl. 7 Mary Virginia Pethtel Phone: 304-684-2646, 304-845-3423 Physical Address: 9845 Fish Creek Rd Glen Easton, WV 26039 Tax Address: Same	Commercial/Business (#3)* TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: 9269 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107 *Physical address appears to be related to Oil & Gas Well Pad.
Residence (#4) TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: None Found – Appears to be newer home Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107		

Exhibit 2A

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

Residences within 1 Mile

Well: Van Winkle S – 20HU
 District: Meade
 State: WV

There are thirty-seven (37) possible residences, two (2) possible business or commercial sites, no churches, one (1) abandoned school and no emergency facilities within 1 mile (5,280 feet) of the above referenced well location.

<p>Residence (#1)* TM 10 Pcl. 9 or TM 10 Pcl. 11 J. F. Crow Estate, et al c/o Lloyd Baker (Tax Address); Tim James Crow (Physical Address) Phone: 304-277-3908; 740-277-3908; 304-810-0512; 304-845-0824 Physical Address: 3529 Blake Ridge RD Glen Easton, WV 26039 Tax Address: ** 4918 Taylors Ridge RD Moundsville, WV 26041 *Appears to be a damaged home and may not be occupied. ** Tax Address same for both parcels.</p>	<p>Residence (#2) TM 10 Pcl. 7 David P. & Pamela M. Schimmel Phone: 304-843-5413, 616-583-0446, 304-780-7494 (reverse tax address) Physical Address: 3759 Blake Ridge RD Glen Easton, WV 26039 Tax Address: 800 Blaris Ridge Rd Moundsville, WV 26041</p>	<p>Residence (#3)* TM 10 Pcl. 15 Joseph Michael Bonene Phone: 304-843-1807, 717-792-0914, 717-870-3509 (reverse tax address) Physical Address: 3925 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 560 Cloverleaf RD York, PA 17406-8450 *Unable to determine if physical address represents an actual residence.</p>
<p>Residence (#4)* TM 10 Pcl. 15 Joseph Michael Bonene Phone: 304-843-1807, 717-792-0914, 717-870-3509 (reverse tax address) Physical Address: 3955 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 560 Cloverleaf RD York, PA 17406-8450 *Unable to determine if physical address represents an actual residence.</p>	<p>Residence (#5)* TM 10 Pcl. 15 Joseph Michael Bonene Phone: 304-843-1807, 717-792-0914, 717-870-3509 (reverse tax address) Physical Address: 3969 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 560 Cloverleaf RD York, PA 17406-8450 *Unable to determine if physical address represents an actual residence.</p>	<p>Residence (#6)* TM 10 Pcl. 14 William McConnell Phone: 304-845-4318, 304-845-9381, 304-845-4872, 740-845-4872, 209-253- 2205, 304-281-4261, 304-843-1474 (reverse tax address) Physical Address: None Found Tax Address: 1100 Jefferson Ave Moundsville, WV 26041-2443 *Unable to determine actual type of building or its use. Unknown occupancy.</p>
<p>Residence (#7)* TM 10 Pcl. 14 William McConnell Phone: 304-845-4318, 304-845-9381, 304-845-4872, 740-845-4872, 209-253-</p>	<p>Abandoned School (#8)* TM 10 Pcl. 16 William McConnell Phone: 304-845-4318, 304-845-9381, 304-845-4872, 740-845-4872, 209-253-</p>	<p>Residence (#9) TM 10 Pcl. 14 William McConnell Phone: 304-845-4318, 304-845-9381, 304-845-4872, 740-845-4872, 209-253-</p>

<p>2205, 304-281-4261, 304-843-1474 (reverse tax address) Physical Address: 4020 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 1100 Jefferson Ave Moundsville, WV 26041-2443 *Appears to be mobile home. Unknown occupancy.</p>	<p>2205, 304-281-4261, 304-843-1474 (reverse tax address) Physical Address: 4009 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 1100 Jefferson Ave Moundsville, WV 26041-2443 *Appears to be an abandoned school or church. Tax ticket lists as Meighen School. Historical Topographic maps show school and/or church symbols.</p>	<p>2205, 304-281-4261, 304-843-1474 (reverse tax address) Physical Address: 4071 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 1100 Jefferson Ave Moundsville, WV 26041-2443 *Appears to be part of community building/pavilion or playground area. Does not appear to be an occupied residence.</p>
<p>Residence (#10)* TM 10 Pcl. 14 William McConnell Phone: 304-845-4318, 304-845-9381, 304-845-4872, 740-845-4872, 209-253-2205, 304-281-4261, 304-843-1474 (reverse tax address) Physical Address: 4028 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 1100 Jefferson Ave Moundsville, WV 26041-2443 *Appears to be adjacent to or a part of a larger residence or home (see #11).</p>	<p>Residence (#11)* TM 10 Pcl. 14 William McConnell (Tax Address) William H. Baker (Physical Address) Phone: 304-845-4318, 304-845-9381, 304-845-4872, 740-845-4872, 209-253-2205, 304-281-4261, 304-843-1474 (reverse tax address); 304-845-0967 (reverse physical address) Physical Address: 4024 Blake Ridge Rd Glen Easton, WV 26039 Tax Address: 1100 Jefferson Ave Moundsville, WV 26041-2443 *Appears to be adjacent to a smaller residence or home (see #10).</p>	<p>Residence (#12) TM 11 Pcl. 2.2 Judith L. Padlow – TOD, c/o Brent Padlow Phone: 304-232-0747; 740-232-0747, 304-233-8929, 304-845-0137, 304-233-7914, 740-233-7914, 304-232-2003, 304-845-9544 (c/o reverse name) Physical Address: 42 Padlow LN Glen Easton, WV 26039 Tax Address: 48 21st ST McMechen, WV 26040 Possible Current c/o Address: 37 21st ST McMechen, WV 26040</p>
<p>Residence (#13) TM 11 Pcl. 1 Judith L. Padlow - TOD Phone: 304-232-0747, 304-845-0137, 304-233-8929, 740-232-0747 (reverse name & address) Physical Address: 4186 Blake Ridge RD Glen Easton, WV 26039 Tax Address: 29 Sixth ST McMechen, WV 26040-1053</p>	<p>Residence (#14) TM 11 Pcl. 2.1 Pamela P. Colvin c/o Pamela Colvin Phone: 304-845-0750 Physical Address: 51 Padlow LN Glen Easton, WV 26039 Tax Address: 1405 Center ST Moundsville, WV 26041</p>	<p>Residence (#15) TM 13 Pcl. 9 TH Exploration LLC Phone: None Found Physical Address: 10084 Fish Creek RD Glen Easton, WV 26039 Tax Address: 1320 S University Dr Ste 500 Fortworth, TX 76107</p>
<p>Residence (#16) TM 13 Pcl. 7 Mary Virginia Pethtel Phone: 304-684-2646, 304-845-3423 Physical Address: 9845 Fish Creek Rd Glen Easton, WV 26039 Tax Address: Same</p>	<p>Residence (#17) TM 13 Pcl. 11 Kenneth & Teresa A. Smertneck Phone: 304-845-0265, 304-280-3303, 304-845-0213, 304-845-1635 Physical Address:* 4287 Sally's Backbone Dr. Glen Easton, WV 26039 Tax Address: 309 7th St. Glen Dale, WV 26038 *Address appears to be in right of way /driveway for 2 homes (Sites 17 & 18)</p>	<p>Residence (#18) TM 13 Pcl. 11 Kenneth & Teresa A. Smertneck Phone: 304-845-0265, 304-280-3303, 304-845-0213, 304-845-1635 Physical Address:* 4287 Sally's Backbone Dr. Glen Easton, WV 26039 Tax Address: 309 7th St. Glen Dale, WV 26038 *Address appears to be in right of way /driveway for 2 homes (Sites 17 & 18)</p>

<p>Residence (#19) TM 13 Pcl. 12.1 Robert T. & Barbara A. Ankrom Phone: 304-845-4657; 304-845-4762 Physical Address: 11698 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 55 Sentimental Dr. Moundsville, WV 26041</p>	<p>Residence (#20) TM 13 Pcl. 20 Daniel J. Fitzwater Phone: 304-845-0517; 740-845-0517 Physical Address: None Found – Appears to be an old home location. Unknown Occupancy. Tax Address: 840 Round Bottom Hill Rd. Moundsville, WV 26041</p>	<p>Residence (#21) TM 13 Pcl. 18 Eleanor M. Fox Est.; Thomas John Fox Phone: 304-845-6016; 304-845-6683 Physical Address: 11562 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 100 Lynn Camp Ln. Glen Easton, WV 26039</p>
<p>Residence (#22) TM 13 Pcl. 23 Margaret Fox, C/O Paul Fox Phone: 304-455-3817; 304-845-0597 Physical Address: None Found – Second dwelling. Unknown occupancy. Tax Address: 5761 Saint Joseph Rd. Proctor, WV 26055</p>	<p>Residence (#23) TM 13 Pcl. 23 Margaret Fox, C/O Paul Fox Phone: 304-455-3817; 304-845-0597 Physical Address: 10590 Fish Creek Rd. Glen Easton, WV Tax Address: 5761 Saint Joseph Rd. Proctor, WV 26055</p>	<p>Residence (#24) TM 13 Pcl. 22.2 Eugene A. Sherrer Phone: 304-232-9129; 304-242-9807; 304-232-9729 Physical Address: None Found – Appears to be trailer/ mobile home. Unknown Occupancy. Tax Address: 10698 Fish Creek Rd. Glen Easton, WV 26039</p>
<p>Residence (#25) TM 13 Pcl. 22.1 Henry Jr. & Barbara Dick Phone: 304-845-4636, 937-865-5376, 937-859-0361 Physical Address: 10698 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: Same</p>	<p>Residence (#26) TM 13 Pcl. 22 Tricycle LLC Notice of Process: Robert W. Wheeler Phone: 304-599-4995, 304-685-0289 Physical Address: None Found – Possible Hunting/Fishing Cabin. Unknown occupancy. Tax Address: 908 Briarwood St. Morgantown, WV 26505</p>	<p>Residence (#27) TM 13 Pcl. 22 Tricycle LLC Notice of Process: Robert W. Wheeler Phone: 304-599-4995, 304-685-0289 Physical Address: 10936 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 908 Briarwood St. Morgantown, WV 26505</p>
<p>Residence (#28) TM 16 Pcl. 5 Robert M. & Nancy R. McCardle Phone: 304-455-2259, 304-845-6188, 304-843-1687, 904-737-2828 Physical Address: 1081 Shutler Ln. Proctor, WV 26055 Tax Address: Same</p>	<p>Residence (#29) TM 13 Pcl. 6 Mary Virginia Pethtel Phone: 304-684-2646, 304-845-3423 Physical Address: None Found – Possible Mobile Home Tax Address: 9845 Fish Creek Rd Glen Easton, WV 26039</p>	<p>Commercial/Business (#30)* TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: 9269 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107 *Physical address appears to be related to Oil & Gas Well Pad.</p>
<p>Residence (#31) TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: None Found – Appears to be newer home Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107</p>	<p>Residence (#32) TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: 9201 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107</p>	<p>Residence (#33) TM 13 Pcl. 4 Louis Aulenbacher Phone: 740-671-0077, 304-845-6184, 304-845-7025, 610-845-7025 Physical Address: 8919 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 96 Aulenbacher LN Glen Easton, WV 26039</p>

<p>Residence (#34) TM 13 Pcl. 4.1 H & L Equip LLC c/o Herbert Aulenbacher Phone: 304-845-0349 Physical Address: 8905 Fish Creek Rd. Tax Address: 844 Aulenbacher Ln. Proctor, WV 26055</p>	<p>Commercial (#35) TM 13 Pcl. 4 Louis Aulenbacher Phone: 740-671-0077, 304-845-6184, 304-845-7025, 610-845-7025 Physical Address: Unknown – Appears to be possible hunting cabin or newer home. Unknown occupancy. Tax Address: 96 Aulenbacher LN Glen Easton, WV 26039</p>	<p>Residence (#36) TM 10 Pcl. 2 Carol Vanscyoc Phone: 304-845-6139 Physical Address: 8577 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 7523 Fish Creek Rd. Glen Easton, WV 26039</p>
<p>Residence (#37) TM 10 Pcl. 19 Alan Arn Kelley Phone: 304-843-2747, 973-838-5783, 973-291-4871, 201-838-5783 Physical Address: 8458 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: Same</p>	<p>Residence (#38) TM 10 Pcl. 20 Joshua A. & Shannon N. Hoyt Phone: 304-845-1446, 304-281-0368, 304-810-0706, 304-905-3126, 304-845- 6150, 304-843-2280 Physical Address: 86 Whetstone Run Ln. Glen Easton, WV 26039 Tax Address: RR 1 Box 46B Glen Easton, WV 26039-9710</p>	<p>Residence (#39) TM 10 Pcl. 22 James & Vickie J. Mason Phone: 304-845-6138, 412-855-7588, 724-727-7851 Physical Address: 6821 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: Same</p>
<p>Residence (#40) TM 10 Pcl. 3 William N. Roupe Phone: 304-845-9062, 304-845-6062 Physical Address: 7934 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 85 Kirkman Ln. Proctor, WV 26055</p>		

4705102353



January 15, 2021

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

RE: Van Winkle S-20HU

Subject: Marshall County Route 74 and 21 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 and 21 in the area reflected on the Van Winkle S-20HU 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.

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

RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

07/16/2021

WW-6AC
(1/12)

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

Date of Notice Certification: 01/15/2021

API No. 47- 051

Operator's Well No. Van Winkle S-20HU

Well Pad Name: Hunter Pathtel

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>523,377.11</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,403,543.59</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: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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JAN 19 2021
WV Department of
Environmental Protection

Required Attachments:

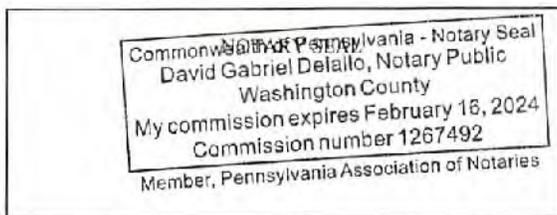
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

WW-6AC
(1/12)

Certification of Notice is hereby given:

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

Well Operator:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
By:	<u><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-hilop.com</u>



Subscribed and sworn before me this 15 day of JANUARY, 2021
David Gabriel Delallo Notary Public

My Commission Expires 2/18/24

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.

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07/16/2021

WW-6A
(9-13)

API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle S-20HU
Well Pad Name: Hunter Pethtel

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

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

Date of Notice: 1/26/2021 **Date Permit Application Filed:** 1/15/2021

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

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

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

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

Name: Regina M. & Aaron D. Murray, Remainderman
Address: 5 Mound Manor
St. Mary's, WV 26170

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

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

COAL OPERATOR

Name: _____
Address: _____

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

Name: *See attached
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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Environmental Protection
07/16/2021

WW-6A
(8-13)**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 water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

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

Well Location Restrictions

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

WW-6A
(8-13)

API NO. 47-051 - _____
OPERATOR WELL NO. Van Winkle S-20HU
Well Pad Name: Hunter Pethel

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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WV Department of
Environmental Protection

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

07/16/2021

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 Protection

07/16/2021

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API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle S-20HU
Well Pad Name: Hunter Pethtel

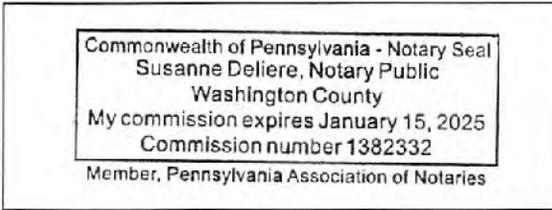
Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC
Telephone: 724-749-3308
Email: amorris@tug-hill-op.com *Amorris*

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

Oil and Gas Privacy Notice:

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



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

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Environmental Protection

07/16/2021

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 – 20HU
 District: Meade
 State: WV

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

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

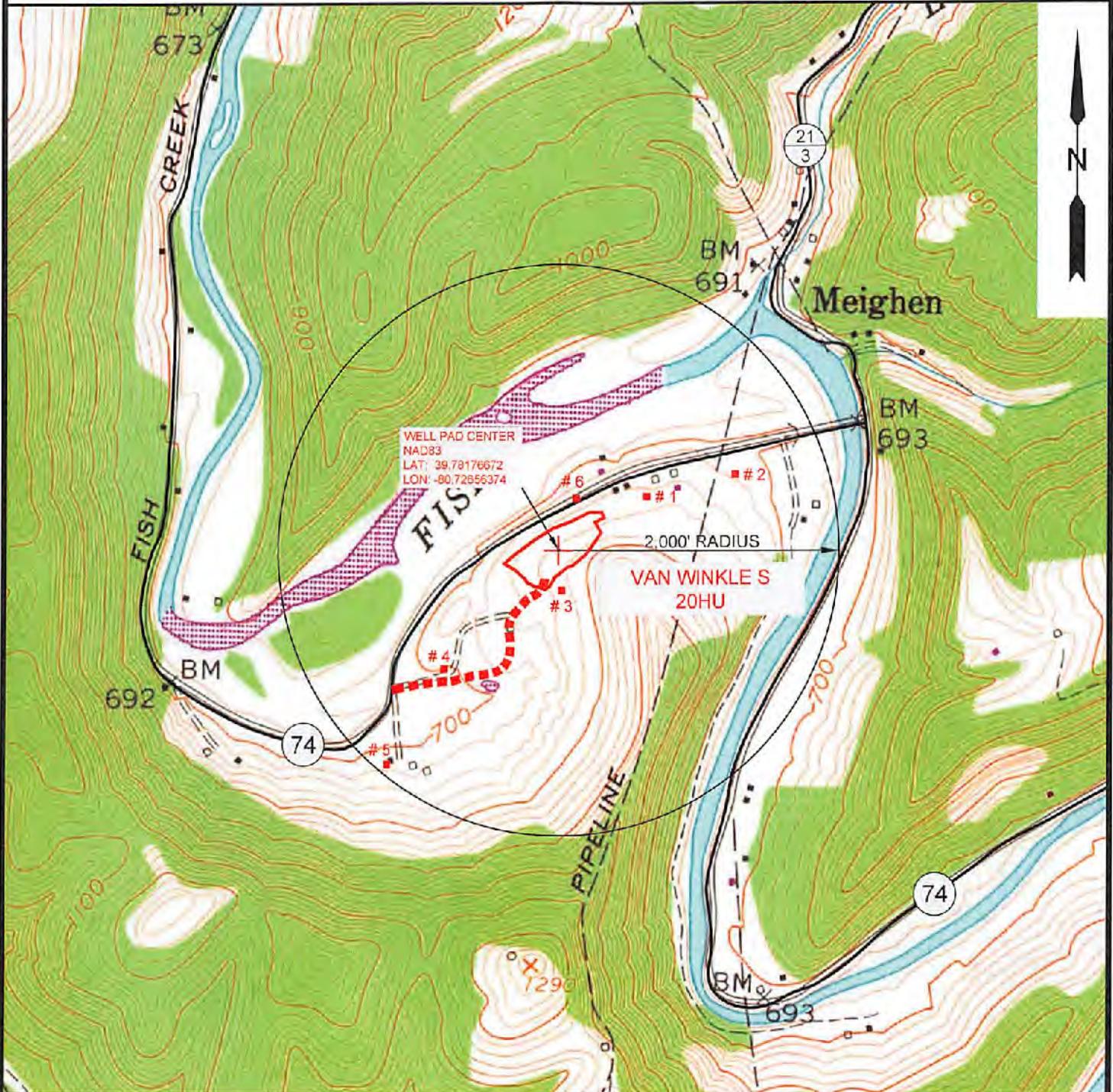
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07/16/2021

PROPOSED VAN WINKLE S - 20HU



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



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3932
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
 slswv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
DRAWN BY		DATE	SCALE
K.G.M.		12/24/2020	1" = 1000'



TUG HILL
OPERATING

07/16/2021

WW-6A
(9-13)

API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle S-20HU
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: 1/14/2021 Date Permit Application Filed: 1/15/2021

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: 9945 Fish Creek Road
Glen Easton, WV 26039
- SURFACE OWNER(s) (Road and/or Other Disturbance)
 - Name: Regina M. & Aaron D. Murray, Remaindermen
 - Address: 5 Mound Manor
St. Mary's, WV 26170
 - Name: _____
 - Address: _____
- SURFACE OWNER(s) (Impoundments or Pits)
 - Name: _____
 - Address: _____

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

*Please attach additional forms if necessary

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Environmental Protection

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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WW-6A
(8-13)

API NO. 47-051 -
OPERATOR WELL NO. Van Winkle S-20HU
Well Pad Name: Hunter Pethel

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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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.**

07/16/2021

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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Environmental Protection

WW-6A
(8-13)

API NO. 47-051 -
OPERATOR WELL NO. Van Winkle S-20HU
Well Pad Name: Hunter Pethtel

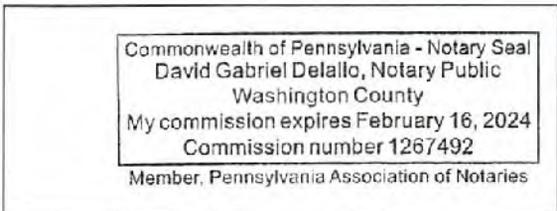
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 14 day of JANUARY, 2021.
[Signature] Notary Public
My Commission Expires 2/16/2024

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

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

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

Well: Van Winkle S – 20HU
 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.

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

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 WV Department of
 Environmental Protection

Affidavit of Personal Service

State of WEST VIRGINIA
County Of MARSHALL



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

- (1) Notice on Form WW-2(A) ___ / WW-3(A) ___ / WW-4(A) ___ / WW-5(A) ___ / WW-6(A) LA5
- (2) Application on Form WW-2(B) ___ / WW-3(B) ___ / WW-4(B) ___ / WW-5(B) ___ / WW-6(B) X
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

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

--by delivering the same in Marshall County, State of WEST VIRGINIA on the 15 day of JANUARY, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

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

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

For a partnership:

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

For a limited partnership:

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

For a corporation:

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

[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 15 day of January 2021.
My commission expires August 8, 2021

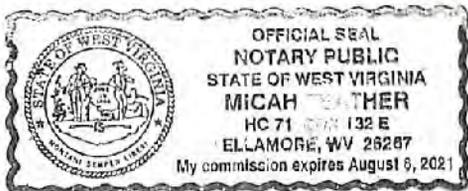
[Signature]
Notary Public

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JAN 19 2021

WV Department of Environmental Protection

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



07/16/2021

Affidavit of Personal Service

State Of Pennsylvania
County Of Washington



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

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

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

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

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

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

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

For a partnership:

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

For a limited partnership:

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

For a corporation:

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

Amey Morris
(Signature of person executing service)

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

David Delallo
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

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

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WW-70 Attachment

Well List

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

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07/16/2021

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

*please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.76176850; -80.72661368</u>
County: <u>Marshall</u>	Public Road Access: <u>County Route 74</u>
District: <u>Meade</u>	Watershed: <u>Middle Fish Creek</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>XcL Midstream Operating, LLC</u>

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

Notice is hereby given by:

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

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

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JAN 19 2021
WV Department of
Environmental Protection

Oil and Gas Privacy Notice:

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

07/16/2021

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

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



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JAN 19 2021
WW Department of
Environmental Protection

07/16/2021

Affidavit of Personal Service

State Of Pennsylvania
County Of Washington

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

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

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

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

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

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

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

For a partnership:

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

For a limited partnership:

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

For a corporation:

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

Amy Blouvis
(Signature of person executing service)

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

David Gabriel Delallo
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

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

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Environmental Protection

WW-70 Attachment

Well List

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



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4705102353

Additional Surface Owner – Van Winkle Wells
WW-6A5

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

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WV Department of
Environmental Protection

07/16/2021

Affidavit of Personal Service

State Of WEST VIRGINIA
County Of MARSHALL

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

- (1) Notice on Form WW-2(A) / WW-3(A) / WW-4(A) / WW-5(A) / WW-6(A) 6A5
- (2) Application on Form WW-2(B) / WW-3(B) / WW-4(B) / WW-5(B) / WW-6(B) X
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. seelist located in Meade District, Marshall County, West Virginia, upon the person or organization named--

FRANK E. PETHER Frank E. Pether
--by delivering the same in MARSHALL County, State of WEST VIRGINIA on the 15 day of JANUARY, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

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

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

For a partnership:

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

For a limited partnership:

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

For a corporation:

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

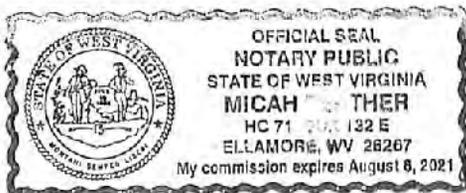
[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 15 day of January
My commission expires August 8, 2021

[Signature]
Notary Public

RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of Environmental Protection

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



Affidavit of Personal Service

State Of Pennsylvania
County Of Washington



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

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

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

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

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

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

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

For a partnership:

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

For a limited partnership:

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

For a corporation:

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

anyllowis
(Signature of person executing service)

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

David Delallo
Notary Public

RECEIVED
Office of Oil and Gas
JAN 19 2021

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

Commonwealth of Pennsylvania - Notary Seal
David Gabriel Delallo, Notary Public
Washington County
My commission expires February 16, 2024
Commission number 1287492
Member, Pennsylvania Association of Notaries
WV Department of Environmental Protection

WW-70 Attachment

Well List

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

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WV Department of
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07/16/2021



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

January 14, 2021

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

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

Subject: DOH Permit for the Hunter-Pethtel Pad, Marshall County
Van Winkle S-20HU Well Site

Dear Mr. Martin,

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

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

Very Truly Yours,

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

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

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WV Department of
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07/16/2021



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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Hunter Pethtel Well Pad Site

Site Design, Construction Plan, &
Erosion and Sediment Control Plans

Tug Hill Operating
Marshall County
Meade District

Latitude 39.78176672°
Longitude -80.72656374°
Middle Fish Creek Watershed

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

Owner	TM Point	North	West	East	South	Area (Ac)	Approx. Elevation (ft)	Approx. Area (Ac)	Total (Ac)
Owner	15.5	443	1.82	6.80	1.20	6.60	440	17.74	
Public	15.4	3.81	2.60	0.00	0.00	0.00	0.00	0.00	
Site Underway	4.87	1.81	0.80	1.20	1.17	7.86		14.63	

Exhibit A: Final Design: Issue for Permitting



Site Features	Center of Access Road	Center of Production Pad	Center of Loading Pad
NW 1/4 NAD 83 E 38236.26 NW 1/4 NAD 83 E 38236.89 NW 1/4 NAD 83 E 38237.52 NW 1/4 NAD 83 E 38238.15 NW 1/4 NAD 83 E 38238.78 NW 1/4 NAD 83 E 38239.41 NW 1/4 NAD 83 E 38239.78 NW 1/4 NAD 83 E 38240.15 NW 1/4 NAD 83 E 38240.52 NW 1/4 NAD 83 E 38240.89 NW 1/4 NAD 83 E 38241.26 NW 1/4 NAD 83 E 38241.63 NW 1/4 NAD 83 E 38241.99 NW 1/4 NAD 83 E 38242.36 NW 1/4 NAD 83 E 38242.73 NW 1/4 NAD 83 E 38243.10 NW 1/4 NAD 83 E 38243.47 NW 1/4 NAD 83 E 38243.84 NW 1/4 NAD 83 E 38244.21 NW 1/4 NAD 83 E 38244.58 NW 1/4 NAD 83 E 38244.95 NW 1/4 NAD 83 E 38250.26 NW 1/4 NAD 83 E 38250.63 NW 1/4 NAD 83 E 38251.00 NW 1/4 NAD 83 E 38251.37 NW 1/4 NAD 83 E 38251.74 NW 1/4 NAD 83 E 38252.11 NW 1/4 NAD 83 E 38252.48 NW 1/4 NAD 83 E 38252.85 NW 1/4 NAD 83 E 38253.22 NW 1/4 NAD 83 E 38253.59 NW 1/4 NAD 83 E 38253.96 NW 1/4 NAD 83 E 38254.33 NW 1/4 NAD 83 E 38254.70 NW 1/4 NAD 83 E 38255.07 NW 1/4 NAD 83 E 38255.44 NW 1/4 NAD 83 E 38255.81 NW 1/4 NAD 83 E 38256.18 NW 1/4 NAD 83 E 38256.55 NW 1/4 NAD 83 E 38256.92 NW 1/4 NAD 83 E 38257.29 NW 1/4 NAD 83 E 38257.66 NW 1/4 NAD 83 E 38258.03 NW 1/4 NAD 83 E 38258.40 NW 1/4 NAD 83 E 38258.77 NW 1/4 NAD 83 E 38259.14 NW 1/4 NAD 83 E 38259.51 NW 1/4 NAD 83 E 38259.88 NW 1/4 NAD 83 E 38260.25 NW 1/4 NAD 83 E 38260.62 NW 1/4 NAD 83 E 38260.99 NW 1/4 NAD 83 E 38261.36 NW 1/4 NAD 83 E 38261.73 NW 1/4 NAD 83 E 38262.10 NW 1/4 NAD 83 E 38262.47 NW 1/4 NAD 83 E 38262.84 NW 1/4 NAD 83 E 38263.21 NW 1/4 NAD 83 E 38263.58 NW 1/4 NAD 83 E 38263.95 NW 1/4 NAD 83 E 38264.32 NW 1/4 NAD 83 E 38264.69 NW 1/4 NAD 83 E 38265.06 NW 1/4 NAD 83 E 38265.43 NW 1/4 NAD 83 E 38265.80 NW 1/4 NAD 83 E 38266.17 NW 1/4 NAD 83 E 38266.54 NW 1/4 NAD 83 E 38266.91 NW 1/4 NAD 83 E 38267.28 NW 1/4 NAD 83 E 38267.65 NW 1/4 NAD 83 E 38268.02 NW 1/4 NAD 83 E 38268.39 NW 1/4 NAD 83 E 38268.76 NW 1/4 NAD 83 E 38269.13 NW 1/4 NAD 83 E 38269.50 NW 1/4 NAD 83 E 38269.87 NW 1/4 NAD 83 E 38270.24 NW 1/4 NAD 83 E 38270.61 NW 1/4 NAD 83 E 38270.98 NW 1/4 NAD 83 E 38271.35 NW 1/4 NAD 83 E 38271.72 NW 1/4 NAD 83 E 38272.09 NW 1/4 NAD 83 E 38272.46 NW 1/4 NAD 83 E 38272.83 NW 1/4 NAD 83 E 38273.20 NW 1/4 NAD 83 E 38273.57 NW 1/4 NAD 83 E 38273.94 NW 1/4 NAD 83 E 38274.31 NW 1/4 NAD 83 E 38274.68 NW 1/4 NAD 83 E 38275.05 NW 1/4 NAD 83 E 38275.42 NW 1/4 NAD 83 E 38275.79 NW 1/4 NAD 83 E 38276.16 NW 1/4 NAD 83 E 38276.53 NW 1/4 NAD 83 E 38276.90 NW 1/4 NAD 83 E 38277.27 NW 1/4 NAD 83 E 38277.64 NW 1/4 NAD 83 E 38278.01 NW 1/4 NAD 83 E 38278.38 NW 1/4 NAD 83 E 38278.75 NW 1/4 NAD 83 E 38279.12 NW 1/4 NAD 83 E 38279.49 NW 1/4 NAD 83 E 38279.86 NW 1/4 NAD 83 E 38280.23 NW 1/4 NAD 83 E 38280.60 NW 1/4 NAD 83 E 38280.97 NW 1/4 NAD 83 E 38281.34 NW 1/4 NAD 83 E 38281.71 NW 1/4 NAD 83 E 38282.08 NW 1/4 NAD 83 E 38282.45 NW 1/4 NAD 83 E 38282.82 NW 1/4 NAD 83 E 38283.19 NW 1/4 NAD 83 E 38283.56 NW 1/4 NAD 83 E 38283.93 NW 1/4 NAD 83 E 38284.30 NW 1/4 NAD 83 E 38284.67 NW 1/4 NAD 83 E 38285.04 NW 1/4 NAD 83 E 38285.41 NW 1/4 NAD 83 E 38285.78 NW 1/4 NAD 83 E 38286.15 NW 1/4 NAD 83 E 38286.52 NW 1/4 NAD 83 E 38286.89 NW 1/4 NAD 83 E 38287.26 NW 1/4 NAD 83 E 38287.63 NW 1/4 NAD 83 E 38288.00 NW 1/4 NAD 83 E 38288.37 NW 1/4 NAD 83 E 38288.74 NW 1/4 NAD 83 E 38289.11 NW 1/4 NAD 83 E 38289.48 NW 1/4 NAD 83 E 38289.85 NW 1/4 NAD 83 E 38290.22 NW 1/4 NAD 83 E 38290.59 NW 1/4 NAD 83 E 38290.96 NW 1/4 NAD 83 E 38291.33 NW 1/4 NAD 83 E 38291.70 NW 1/4 NAD 83 E 38292.07 NW 1/4 NAD 83 E 38292.44 NW 1/4 NAD 83 E 38292.81 NW 1/4 NAD 83 E 38293.18 NW 1/4 NAD 83 E 38293.55 NW 1/4 NAD 83 E 38293.92 NW 1/4 NAD 83 E 38294.29 NW 1/4 NAD 83 E 38294.66 NW 1/4 NAD 83 E 38295.03 NW 1/4 NAD 83 E 38295.40 NW 1/4 NAD 83 E 38295.77 NW 1/4 NAD 83 E 38296.14 NW 1/4 NAD 83 E 38296.51 NW 1/4 NAD 83 E 38296.88 NW 1/4 NAD 83 E 38297.25 NW 1/4 NAD 83 E 38297.62 NW 1/4 NAD 83 E 38297.99 NW 1/4 NAD 83 E 38298.36 NW 1/4 NAD 83 E 38298.73 NW 1/4 NAD 83 E 38299.10 NW 1/4 NAD 83 E 38299.47 NW 1/4 NAD 83 E 38299.84 NW 1/4 NAD 83 E 38300.21 NW 1/4 NAD 83 E 38300.58 NW 1/4 NAD 83 E 38300.95 NW 1/4 NAD 83 E 38301.32 NW 1/4 NAD 83 E 38301.69 NW 1/4 NAD 83 E 38302.06 NW 1/4 NAD 83 E 38302.43 NW 1/4 NAD 83 E 38302.80 NW 1/4 NAD 83 E 38303.17 NW 1/4 NAD 83 E 38303.54 NW 1/4 NAD 83 E 38303.91 NW 1/4 NAD 83 E 38304.28 NW 1/4 NAD 83 E 38304.65 NW 1/4 NAD 83 E 38305.02 NW 1/4 NAD 83 E 38305.39 NW 1/4 NAD 83 E 38305.76 NW 1/4 NAD 83 E 38306.13 NW 1/4 NAD 83 E 38306.50 NW 1/4 NAD 83 E 38306.87 NW 1/4 NAD 83 E 38307.24 NW 1/4 NAD 83 E 38307.61 NW 1/4 NAD 83 E 38307.98 NW 1/4 NAD 83 E 38308.35 NW 1/4 NAD 83 E 38308.72 NW 1/4 NAD 83 E 38309.09 NW 1/4 NAD 83 E 38309.46 NW 1/4 NAD 83 E 38309.83 NW 1/4 NAD 83 E 38310.20 NW 1/4 NAD 83 E 38310.57 NW 1/4 NAD 83 E 38310.94 NW 1/4 NAD 83 E 38311.31 NW 1/4 NAD 83 E 38311.68 NW 1/4 NAD 83 E 38312.05 NW 1/4 NAD 83 E 38312.42 NW 1/4 NAD 83 E 38312.79 NW 1/4 NAD 83 E 38313.16 NW 1/4 NAD 83 E 38313.53 NW 1/4 NAD 83 E 38313.90 NW 1/4 NAD 83 E 38314.27 NW 1/4 NAD 83 E 38314.64 NW 1/4 NAD 83 E 38315.01 NW 1/4 NAD 83 E 38315.38 NW 1/4 NAD 83 E 38315.75 NW 1/4 NAD 83 E 38316.12 NW 1/4 NAD 83 E 38316.49 NW 1/4 NAD 83 E 38316.86 NW 1/4 NAD 83 E 38317.23 NW 1/4 NAD 83 E 38317.60 NW 1/4 NAD 83 E 38317.97 NW 1/4 NAD 83 E 38318.34 NW 1/4 NAD 83 E 38318.71 NW 1/4 NAD 83 E 38319.08 NW 1/4 NAD 83 E 38319.45 NW 1/4 NAD 83 E 38319.82 NW 1/4 NAD 83 E 38320.19 NW 1/4 NAD 83 E 38320.56 NW 1/4 NAD 83 E 38320.93 NW 1/4 NAD 83 E 38321.30 NW 1/4 NAD 83 E 38321.67 NW 1/4 NAD 83 E 38322.04 NW 1/4 NAD 83 E 38322.41 NW 1/4 NAD 83 E 38322.78 NW 1/4 NAD 83 E 38323.15 NW 1/4 NAD 83 E 38323.52 NW 1/4 NAD 83 E 38323.89 NW 1/4 NAD 83 E 38324.26 NW 1/4 NAD 83 E 38324.63 NW 1/4 NAD 83 E 38325.00 NW 1/4 NAD 83 E 38325.37 NW 1/4 NAD 83 E 38325.74 NW 1/4 NAD 83 E 38326.11 NW 1/4 NAD 83 E 38326.48 NW 1/4 NAD 83 E 38326.85 NW 1/4 NAD 83 E 38327.22 NW 1/4 NAD 83 E 38327.59 NW 1/4 NAD 83 E 38327.96 NW 1/4 NAD 83 E 38328.33 NW 1/4 NAD 83 E 38328.70 NW 1/4 NAD 83 E 38329.07 NW 1/4 NAD 83 E 38329.44 NW 1/4 NAD 83 E 38329.81 NW 1/4 NAD 83 E 38330.18 NW 1/4 NAD 83 E 38330.55 NW 1/4 NAD 83 E 38330.92 NW 1/4 NAD 83 E 38331.29 NW 1/4 NAD 83 E 38331.66 NW 1/4 NAD 83 E 38332.03 NW 1/4 NAD 83 E 38332.40 NW 1/4 NAD 83 E 38332.77 NW 1/4 NAD 83 E 38333.14 NW 1/4 NAD 83 E 38333.51 NW 1/4 NAD 83 E 38333.88 NW 1/4 NAD 83 E 38334.25 NW 1/4 NAD 83 E 38334.62 NW 1/4 NAD 83 E 38334.99 NW 1/4 NAD 83 E 38335.36 NW 1/4 NAD 83 E 38335.73 NW 1/4 NAD 83 E 38336.10 NW 1/4 NAD 83 E 38336.47 NW 1/4 NAD 83 E 38336.84 NW 1/4 NAD 83 E 38337.21 NW 1/4 NAD 83 E 38337.58 NW 1/4 NAD 83 E 38337.95 NW 1/4 NAD 83 E 38338.32 NW 1/4 NAD 83 E 38338.69 NW 1/4 NAD 83 E 38339.06 NW 1/4 NAD 83 E 38339.43 NW 1/4 NAD 83 E 38339.80 NW 1/4 NAD 83 E 38340.17 NW 1/4 NAD 83 E 38340.54 NW 1/4 NAD 83 E 38340.91 NW 1/4 NAD 83 E 38341.28 NW 1/4 NAD 83 E 38341.65 NW 1/4 NAD 83 E 38342.02 NW 1/4 NAD 83 E 38342.39 NW 1/4 NAD 83 E 38342.76 NW 1/4 NAD 83 E 38343.13 NW 1/4 NAD 83 E 38343.50 NW 1/4 NAD 83 E 38343.87 NW 1/4 NAD 83 E 38344.24 NW 1/4 NAD 83 E 38344.61 NW 1/4 NAD 83 E 38344.98 NW 1/4 NAD 83 E 38345.35 NW 1/4 NAD 83 E 38345.72 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NW 1/4 NAD 83 E 38360.89 NW 1/4 NAD 83 E 38361.26 NW 1/4 NAD 83 E 38361.63 NW 1/4 NAD 83 E 38362.00 NW 1/4 NAD 83 E 38362.37 NW 1/4 NAD 83 E 38362.74 NW 1/4 NAD 83 E 38363.11 NW 1/4 NAD 83 E 38363.48 NW 1/4 NAD 83 E 38363.85 NW 1/4 NAD 83 E 38364.22 NW 1/4 NAD 83 E 38364.59 NW 1/4 NAD 83 E 38364.96 NW 1/4 NAD 83 E 38365.33 NW 1/4 NAD 83 E 38365.70 NW 1/4 NAD 83 E 38366.07 NW 1/4 NAD 83 E 38366.44 NW 1/4 NAD 83 E 38366.81 NW 1/4 NAD 83 E 38367.18 NW 1/4 NAD 83 E 38367.55 NW 1/4 NAD 83 E 38367.92 NW 1/4 NAD 83 E 38368.29 NW 1/4 NAD 83 E 38368.66 NW 1/4 NAD 83 E 38369.03 NW 1/4 NAD 83 E 38369.40 NW 1/4 NAD 83 E 38369.77 NW 1/4 NAD 83 E 38370.14 NW 1/4 NAD 83 E 38370.51 NW 1/4 NAD 83 E 38370.88 NW 1/4 NAD 83 E 38371.25 NW 1/4 NAD 83 E 38371.62 NW 1/4 NAD 83 E 38371.99 NW 1/4 NAD 83 E 38372.36 NW 1/4 NAD 83 E 38372.73 NW 1/4 NAD 83 E 38373.10 NW 1/4 NAD 83 E 38373.47 NW 1/4 NAD 83 E 38373.84 NW 1/4 NAD 83 E 38374.21 NW 1/4 NAD 83 E 38374.58 NW 1/4 NAD 83 E 38374.95 NW 1/4 NAD 83 E 38375.32 NW 1/4 NAD 83 E 38375.69 NW 1/4 NAD 83 E 38376.06 NW 1/4 NAD 83 E 38376.43 NW 1/4 NAD 83 E 38376.80 NW 1/4 NAD 83 E 38377.17 NW 1/4 NAD 83 E 38377.54 NW 1/4 NAD 83 E 38377.91 NW 1/4 NAD 83 E 38378.28 NW 1/4 NAD 83 E 38378.65 NW 1/4 NAD 83 E 38379.02 NW 1/4 NAD 83 E 38379.39 NW 1/4 NAD 83 E 38379.76 NW 1/4 NAD 83 E 38380.13 NW 1/4 NAD 83 E 38380.50 NW 1/4 NAD 83 E 38380.87 NW 1/4 NAD 83 E 38381.24 NW 1/4 NAD 83 E 38381.61 NW 1/4 NAD 83 E 38381.98 NW 1/4 NAD 83 E 38382.35 NW 1/4 NAD 83 E 38382.72 NW 1/4 NAD 83 E 38383.09 NW 1/4 NAD 83 E 38383.46 NW 1/4 NAD 83 E 38383.83 NW 1/4 NAD 83 E 38384.20 NW 1/4 NAD 83 E 38384.57 NW 1/4 NAD 83 E 38384.94 NW 1/4 NAD 83 E 38385.31 NW 1/4 NAD 83 E 38385.68 NW 1/4 NAD 83 E 38386.05 NW 1/4 NAD 83 E 38386.42 NW 1/4 NAD 83 E 38386.79 NW 1/4 NAD 83 E 38387.16 NW 1/4 NAD 83 E 38387.53 NW 1/4 NAD 83 E 38387.90 NW 1/4 NAD 83 E 38388.27 NW 1/4 NAD 83 E 38388.64 NW 1/4 NAD 83 E 38389.01 NW 1/4 NAD 83 E 38389.38 NW 1/4 NAD 83 E 38389.75 NW 1/4 NAD 83 E 38390.12 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