

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

Austin Caperton, Cabinet Secretary www.dep.wv.gov

Monday, June 22, 2020 WELL WORK PERMIT Horizontal 6A / New Drill

TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD

CANONSBURG, PA 15317

Re: Permit approval for FITZGERALD S-19HU 47-051-02326-00-00

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: Farm Name: U.S. WELL NUMBER: Horizontal 6A Date Issued: 6/22/2020

Promoting a healthy environment.

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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

¢



west virginia department of environmental protection

Oil and Gas Conservation Commission 601 57th Street SE, Charleston, WV 25304 304-926-0499 Ext 41239

Randall M. Albert, Chairman dep.wv.gov

June 11, 2020

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

RE: Application for Deep Well Permit - API #47-051-02326

COMPANY: Tug Hill Operating, LLC

FARM: Danny and Frances Kerns Estate

Fitzgerald S-19HU

COUNTY: Marshall DISTRICT: Liberty QUAD: Glen Easton

The deep well review of the application for the above company is <u>Approved to drill to Trenton for</u> <u>Point Pleasant completion. Pooling Docket No. 294-298.</u>

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? Yes
- 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; Docket 294-298 Exception Location Hearing
- 4. Provided a plat showing that the proposed location is a distance of <u>400+</u> feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely

Susan Rose Administrator

** Hudson S-13HU 47-051-02293; Hudson S-12HU 47-051-02292; Hudson S-11HU 47-051-02296, Ten High 1N-20HU 47-051-02021, Ten High 1N-13HU 47-051-01965; Ten High 1S-17HU 47-051-02033; Ten High 1S-16HU 47-051-02028; Ten High 1S-15HU 47-051-02027; Ten High 1S-14HU 47-051-01966; Fitzgerald S-17HU 47-051-02324; Fitzgerald S-18HU 47-051-02325

WW-6B (04/15) API NO. 47- 051 OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

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

1) Well Operator: Tug Hill Op	erating, LLC	494510851	Marshall	Liberty	Glen Easton 7.5'
		Operator ID	County	District	Quadrangle
2) Operator's Well Number: Fit	zgerald S-19HU	Well Pa	d Name: Fitzg	erald	
3) Farm Name/Surface Owner:	Danny R. Kerns	Public Roa	ad Access: Con	unty Route	90
4) Elevation, current ground:	1316.5' El	evation, proposed	post-construct	ion: <u>1293.</u>	30'
5) Well Type (a) Gas <u>x</u>	Oil	Und	lerground Stora	ge	
Other					
(b)If Gas Sha	llow	Deep	X		
Hor	izontal <u>×</u>			03/11	12020
6) Existing Pad: Yes or No No			_	03(1	
7) Proposed Target Formation(s) Point Pleasant is the target formation at a depth of 11,793				ressure(s):	
8) Proposed Total Vertical Dept	h: 12,076'				
9) Formation at Total Vertical D	epth: Trenton,	plug back to Ree	dsville 🗸		
10) Proposed Total Measured De	epth: 22,323'				
11) Proposed Horizontal Leg Le	ngth: 9,059.18'	\checkmark			
12) Approximate Fresh Water St	trata Depths:	70' ; 927'			
13) Method to Determine Fresh	Water Depths:	Offset well reports or ne	oticeable flow at th	e flowline or wh	en need to start soaping
14) Approximate Saltwater Dept	hs: 2,167'				
15) Approximate Coal Seam Dep	pths: Sewickley	Coal - 835' ; Pitt	sburgh Coal -	921'	
16) Approximate Depth to Possi	ble Void (coal mi	ne, karst, other):	none		Office of Oil and Gas
17) Does Proposed well location directly overlying or adjacent to		ns Yes X	No		MAR 17 2020
(a) If Yes, provide Mine Info:	Name: Mars	shall County Coa	I Co./Marshall	County Mir	Environmental Protection
	Depth: 1059	' TVD and 291' s	ubsea level		
	Seam: Pittsb	ourgh #8			
	Owner: Murra	ay Energy / Cons	olidated Coal	Co.	

APINO. 47-051 _ 02326

OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

WW-6B (04/15)

18)

CASING AND TUBING PROGRAM

ТҮРЕ	Size (in)	<u>New</u> <u>or</u> <u>Used</u>	Grade	Weight per ft. (lb/ft)	<u>FOOTAGE: For</u> <u>Drilling (ft)</u>	INTERVALS: Left in Well (ft)	<u>CEMENT:</u> <u>Fill-up</u> (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	1020'	1020'	1,644FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2900'	2900'	2,044FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	11,600'	11,600'	3,777FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	22,323'	22,323'	5,311FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		12,330'	
Liners							

ТҮРЕ	Size (in)	<u>Wellbore</u> Diameter (in)	<u>Wall</u> <u>Thickness</u> <u>(in)</u>	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	<u>Cement</u> <u>Type</u>	<u>Cement</u> <u>Yield</u> (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	1.99
Production	5 1/2"	8 1/2"	.415	16,510	10,864	SEE #24	1.18
Tubing	2 7/8"			11,385	9,108		_
Liners							

PACKERS

N/A	
N/A	
N/A	
	N/A

RECEIVED Office of Oil and Gas

APR 30 REC'D

API NO. 47-_____

OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

WW-6B (04/15)

18)

CASING AND TUBING PROGRAM

ТҮРЕ	Size (in)	<u>New</u> <u>or</u> <u>Used</u>	Grade	<u>Weight per ft.</u> (lb/ft)	<u>FOOTAGE: For</u> <u>Drilling (ft)</u>	INTERVALS: Left in Well (ft)	<u>CEMENT:</u> <u>Fill-up</u> (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	1020'	1020'	1,644FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2900'	2900'	2,044FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	11,600'	11,600'	3,777FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	22,323'	22,323'	5,311FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		12,330'	
Liners							

8 3/11/2020

ТҮРЕ	Size (in)	<u>Wellbore</u> Diameter (in)	<u>Wall</u> <u>Thickness</u> <u>(in)</u>	<u>Burst Pressure</u> (psi)	<u>Anticipated</u> <u>Max. Internal</u> <u>Pressure (psi)</u>	<u>Cement</u> <u>Type</u>	<u>Cement</u> <u>Yield</u> (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	1.99
Production	5 1/2"	8 1/2"	.415	16,510	10,864	SEE #24	1.18
Tubing	2 7/8"			∗ 11,385	★ 11,624		
Liners							

PACKERS

			Office
Kind:	N/A		Office of Oilland Gas MAR 1 7 2020
Sizes:	N/A		Environmental Protection
Depths Set:	N/A		

API NO. 47-_051 -OPERATOR WELL NO. _Fitzgerald S-19HU Well Pad Name: Fitzgerald

3/11/2020

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 (11,830'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 22,645,000 lb proppant and 350,108 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 21.21 acres

22) Area to be disturbed for well pad only, less access road (acres): 7.44 acres

23) Describe centralizer placement for each casing string:

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

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

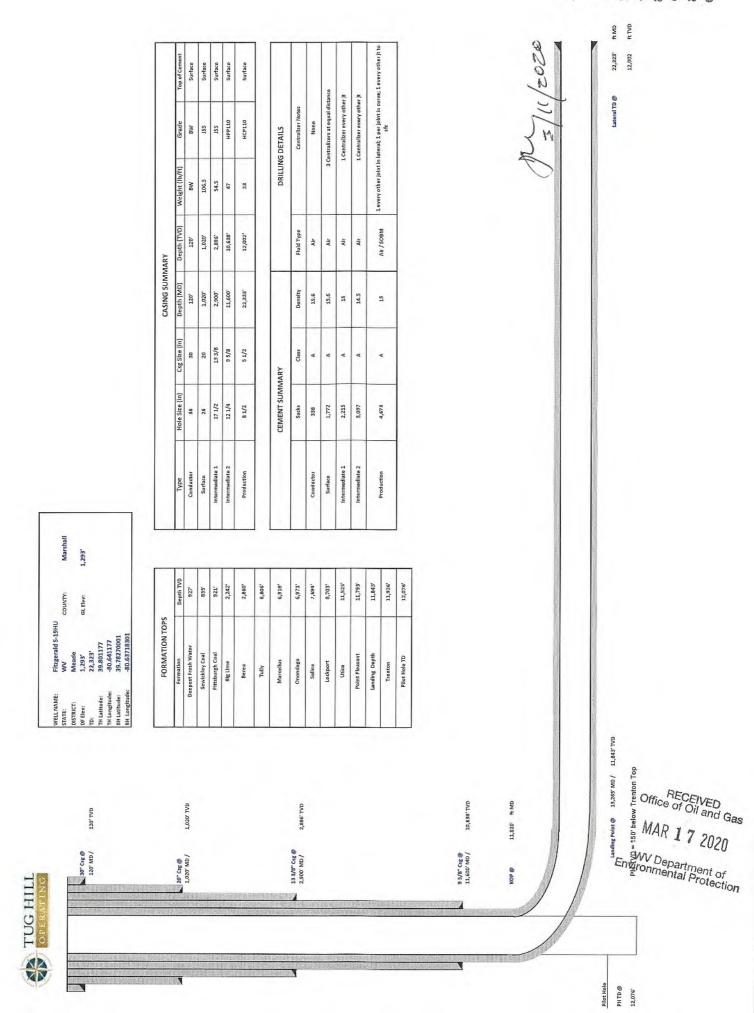
*See Attachment

25) Proposed borehole conditioning procedures:

Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, 2020 POOH

RECEIVED Office of Oil and Gas

WW-6B (10/14)





Tug Hill Operating, LLC Casing and Cement Program

Fitzgerald S-19HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,020'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,900'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	11,600'	CTS
Production	5 1/2"	HCP110	8 1/2"	22,323'	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

RECEIVED Office of Oil and Gas MAR 1 7 2020



Well Site Safety Plan Tug Hill Operating, LLC

Ju 2020

Well Name: Fitzgerald S-19HU

Location: Fitzgerald Pad

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,405,751.78 Easting: 530,717.69

February 2020

Office of Oil and Gas MAR 1 7 2020

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 Devin Ducoeur 724-705-0444, dducoeur@dpslandservices.com DPS GIS (03/06/2020) 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 .
- There can be duplication between wens in the 3 series Phil indicated that other Operators are providing a screenshot of the WVGES map with their RECEIVED Office of Oil and Gas .

MAR 1 7 2020

WV Department of Environmental Protection

Page 1 of 6

Permit well - Fitzgerald S-19HU Wells within SOO'Buffer Note: Well spots depicted on Area of Review map (page 3) 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
4705170626	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705102232	Tug Hill Operating, LLC	7070' TVD	None	None	No, existing Marcellus permit. The well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	Currently a permit.
4705170625	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705100957	Consolidation Coal Co.	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705170612	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705100599	Consolidation Coal Co.	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 1/07/7004,
4705100939	Consolidation Coal Co.	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 10/20/2005.
4705100956	Consolidation Coal Co.	3121' TVD	Gordon	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is tao shallow to be effected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 8/19/1949.
4705130297	Raad Supply Company	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705170611	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705100911	Consolidation Coal Co.	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705100962	Consolidation Coal Co.	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 9/8/2005.
4705100978	Consolidation Coal Co.	Unknown	Pittsburgh Coal	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 3/24/2006.

Page 2 of 6

RECEIVED Office of Oil and Gas

MAR 1 7 2020

4705170596	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705100918	Consolidation Coal Co.	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 4/14/2004.
4705170597	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705170600	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705100980	Consolidation Coal Co.	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 1/24/2006.
4705170598	Unknown	Unknown	Unknown	Unknown	Uknown but unlikley. The well likley represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.

•

Page 3 of 6

RECEIVED Office of Oil and Gas

MAR 1 7 2020

BY Gamped & Barrant Know	Well: County = 61 Permit = 79626	Report Torus - Protog March 54, 2020 A 32 SA Phi
La cartere la formation d'alla della cartere carta de la carta Carta della carta della carta della carta carta della carta della carta della carta della carta della carta della Carta della carta della ca		
There is an Bottom Hele Lacadon data for the well Construction of the second data for the well Well well and the second data for the second data for the second data for the second data for the second data Well well as a second the second data for the second data for the second data for the second data for the second	ר להגינוינים אנגי עם הגיע האין דער דער דער דער אין	
Consistion Information		
The case of the set	הנסגועם הערכהו עברכהו זער דער שנה עבר עבר הערמי עם גם הערס ענס הערם באום מנו גועאה מנה היה הגיע שט הרומאים	
There is an Production Cite Late In Mis well There is a ne Production Cite Late In Mis well		
There is no Production OX data for this well. ** some operators may have reported NGL under OX There is no Production NGL data for this well. ** some operators may have reported NGL under OR		
There is no Production Water date for this well There is no Stratigraphy data for this well		
There is no Weaken (E-Log) data for this well		
Toise is no Plugging data for this well Toise is no Sample data for this well		
We Compare & Basema Auron	Well: County = 61 Permit = 02232	Report Tons - Friday March (M. 2020 + 23 35 P
Lectere minimum of the visa statement output a carbot (at the composition of the statement		
Anton Hon Locates Milanaton Art		
One therein and a series while and and and and the series while and the series an	AND ALL COMPLETION HOLD IN HOLD THE THE LET HE	
	רגמאונס זארטא שניטא אור וארי זעטי שני זעני אנטי שני אונט אונס ואנט שני אנט אונא אוראון אוראוניט	
There is no Pay data for this well		
Thans is na Freeduction Gas 2.223 for 1946 well Thans is na Freeduction Ga data for 1946 well come operative may have reported HGL under G3		
Thure is no Freduction Will, data for this wall. '' some operators may have reported Will, under Of There is no Production Willow class for this wall.		
There is no Bratigraphy data for this well		
These is no theolog (B-Log) data for this well There is no Plugging data for this well		
There is no Sacrate data for this well		
atv Georges & Recome Incom	Well: County = 61 Permit = 70825	Report Torre - Freitry March 04, 2826 + 34 17 F
Lacente information When Mins and an and the same of the same and set of the same when the same the sa		
There is no Battom Hale Location data for this well		
Denter Manuelist Denter Denter Denter Manuelist Denter Denter Dente		
	אינאואס דור, אין דער אינען דער זען דער זען דער דער אינער אינער אינער אינער אינער אינער אינעראין אינער אינעראין אינדער	
There is no Pey data for Cas well There is no Production Gas data for this well		
There is no Production (28 data for this well: ** some operators may name reported NGL under OB There is no Production NGL data for this well: ** some operators cary have reported NGL under OB		
There is no Production Water date for this well		
There is no Saratgraphy data for this well There is no vitradine (E-Log) data for this well		
There is no Pungsing data tot title west There is no Sampto data for this west		
•		
NY Georges - Seamone Barry	Well: County = 51 Permit = 00967	Report Fore Prices March 20, 2023 4 24 42 M
Lesten instruction (Minor Marker) could be could		
There is an darker from large and the trained Conserve without the second of the second Conserver the second of the Conserver the second of the		
		-
дин Сай от бай ор баг бай	ער אינקע אינקעע אינק אינקע אינקע	<u>•</u>]
There is no Production Gas cats for this well		
Thure is as Production O3 data far Ibia well. 🐃 same sportiars may have reported NGL under O4 There is as Preduction IrOL data far das well. 🐃 same operations may have reported NGL under O4		
There is as Production Water date for this well		
There is no disployaging gala for this well. There is no viewline (Z-Leg) data for the well.		
There is no Peeging data for this well. There is no Sample data for this well.		
An County a Basedone Burray	Wel: County = 61 Permit = 70812	Report Toto - Friday March 36, 3429 + 36 (1 F
An County a Basedone Burray	Wed: County = 61 Paretic = 79612	
an Gampan Baama Baam Anthen Meridia Chailing Carlon and Carlon Carlo 14 Gan 1 (27 (27 Gan 20 File) and Chailing Carlon All Anthe Mar as a Bacter and Carlo Anthen and Anthen Carlo 15 (28 (2010) 100) 100 (2010)		Rayun Tato - Proto Mandr M, 2020 4 28 51 P
	Tomalie Hole Hole Hole In The Child	Sayun Tana - Anday Majada M. 2020 o 26 61 M
	Tomalie Hole Hole Hole In The Child	бация Токо - Риску Манар IX, 3429 + 38 61 М
		Report Type - Guing Mappi M, 2004 + 26 (1 H
	Tomalie Hole Hole Hole In The Child	Agun Tao, Anny Agus IA 337 i 36 ft A
	Tomalie Hole Hole Hole In The Child	Agunting Andy Mape II, X29-13417
M Stanges I beams have And Departure Internet: Section I beams have Mark I beams have Section I beams hav	Tomalie Hole Hole Hole In The Child	Ngun Tana Anang Kang Ka Kata Ka
	Tomalie Hole Hole Hole In The Child	Rayad Yano Anay Kana Ik 300 + 33 (17
	Tomalie Hole Hole Hole In The Child	
ny fanges havan kana tani ana ana ana ana ana ana ana ana ana	יינטאט אנגע ענגע אסראני עט עני אנגע אנגע אנגע אנגע אינער איז אנגע אינער אינער איז אינער איז אינער איז איז איז א איינער אינער אנגע אינער אינער אנגע אער אנגע אינער אינער אינער אינער אינער אינער אינער איז אינער איז איז איז אינ איינער אינער אי	Rayan Turan A Andary Magan M. Mills a Sill of M Rayan Turan A Madary Mana M. Sill of M (1994)
	ראנוער אינעראי אינדער איז אינדער אינער אינער אינער אינערער אינער א אינער אינער אינ	
	באשנונוס אפיני אפיראניני וווווויז איניט אונטראן איייייי אייייייייייייייייייייייייייי	
	באשנונוס אפיני אפיראניני וווווויז איניט אונטראן איייייי אייייייייייייייייייייייייייי	
	באשנונוס אפיני אפיראניני וווווויז איניט אונטראן איייייי אייייייייייייייייייייייייייי	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג בטעוניטר אטיגער או אינוער אינוער אינוער אינוער אינוער בטעונטר אטיגער או אינוער אינוערער	Ngan Tao Ang kao it 100 1 10 0 10
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג בטעוניטר אטיגער או אינוער אינוער אינוער אינוער אינוער בטעונטר אטיגער או אינוער אינוערער	Ngan Tao Ang kao it 100 1 10 0 10
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג בטעוניטר אטיגער או אינוער אינוער אינוער אינוער אינוער בטעונטר אטיגער או אינוער אינוערער	Ngan Tao Ang kao it 100 1 10 0 10
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan Tao Ang kao it 100 1 10 0 10
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa B Kata M U Ar
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan Tao Ang kao it 100 1 10 0 10
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	Ngan San Ang Kasa N 100 1 1 1 1 1
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סיינגע אסיג אינוער איניער איניער איניג איניער איניער איניג איניער איניער איניער איניער איניער איניערער	hyan tao kao kao kao kao kao kao kao
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג געאוין אינוער אינוער אינוער געאויטר אינוער אינוער אינוער אינוער אינוער א	hyan tao kao kao kao kao kao kao kao
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג געאוין אינוער אינוער אינוער געאויטר אינוער אינוער אינוער אינוער אינוער א	Ngan San Ang Kasa B Kata M U Ar
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג געאוין אינוער אינוער אינוער געאויטר אינוער אינוער אינוער אינוער אינוער א	Ngal Na Ang Kasa B 100 131 3 Ak
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג געאוין אינוער אינוער אינוער געאויטר אינוער אינוער אינוער אינוער אינוער א	Ngal Na Ang Kasa B 100 131 3 Ak
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג געאוין אינוער אינוער אינוער געאויטר אינוער אינוער אינוער אינוער אינוער א	Ngal Na Ang Kasa B 100 131 3 Ak
	במשרכונה אסיגה אסיג אסינונינא אנטינגע אינונינא סינולא אסינג אינוער אינוער אינו ג געאוין אינוער אינוער אינוער געאויטר אינוער אינוער אינוער אינוער אינוער א	

There is no concerning to an an and a second second

RECEIVED Office of Oil and Gas

ι

MAR 1 7 2020

er omreget basen kom Not: County = \$1 Permit = 00859	Report Tons - Poday Mando 26, 2023 4 37 41 PM
Constructions and and a set of the set of th	T & UASAC JAT
Tave and Nya cital for the well Tave is his Andreadan Cas data for his well Tave as his Assess Call data for his well — Sense syntaxism dary have reported HDL, welder Cal	
Then a sea Phasagement (2), data for the sea of the sea of the second field, under OP Then a sea Phasagement (2) and the second field of the secon	
Ukomman zerossi concerni marter in arter in Laterne in arter in Laterne in antikali. Posta sa stress (al cle fin antikali in arter in Posta sa stress in arter in	
Namita Januar Lana (Kata) (Kat	Ramon Tana - Proces March 26, 2233 4 32 33 FM
Auf Builty and Hamping Builty and Islam	
Anthen interaction, when following source you by a loss of the source of	
ากลายครับสายเป็นการสายครับสายครับสายสายสายสายสายสายสายสายสายสายสายสายสายส	AN 6 1840 87
There is no Photoclet On disk for the well. There is an Photoclet Cistalis for an example of the state of the Cistalis of the Cistalis of the Cistalis for the Cistalis of the	
Ten bas handlan Wan dan be Pe ed Handbalan Man dan be Pe ed Handbalan Man dan berter dan berter dan berter dan berter dan berter dan berter Handbalan dan berter dan berter dan berter dan berter dan berter Handbalan dan berter dan berter dan berter dan berter dan berter Handbalan berter dan berter dan berter dan berter dan berter Handbalan berter dan berter dan berter dan berter dan berter dan berter Handbalan berter dan berter da	
Tones in na Vientna (E-Lag) data te tria viet	
Appendix Manageria Autorization Colonomia Autoria and There is us funçes can for the west	
Ar Support Laures have Web: County = 61 Permit = 30237	Regner Tana - Franç Mandi M. 2023 é 28 63 Mé
Legiterativenedio free day interna suary a sub u ang a takan fan en an Gunnar Lover (La Martin Balancia III) (La Calassa Latical Lando) Ten a na Balan ma Lacata da a ma	
לא איז איז איז איז איז איז איז איז איז אי	
Than's Bail Pay Gall for die well. Than's Bail Physical Gall Color for the well. Than's Bail Physical Color for the well.	
There is as Production Will, food for this and " cannot appear to report the index OA There is as Index Neur All and the Annual There is as Index Neur All and the All	
There is an industry of Leg jace for the west There is no Physical and the west	
Well: County - 61 Percit - 70611	Region Terra - Portas Month M. 2022 4 49 42 Ma
ל בירואלים איראלים. האורים בירואלים בירואלים בארואלים בארואלים בארואלים בירואלים בירואלים בירואלים בירואלים באראלים בארואלים בירואלים בירואלים בעינהלים בירואלים בירואלים בירואלים בירואלים בירו	
There is an Analogue Can acta for the and There is an Analogue Can acta for the unit — "annota synthemic and can acta There is an Analogue Can and " annot " annota synthesis and unit and can acta	
There are in the Processor strate state to the source of the Processor strate state of the Processor strate state strate state strate state strate state strate strat	
There is an Registry and to this wad There is a Stapey made for this wad with the stapey made for this wad with there is a stapey made for this wad with there is a stape made is a stape made in the stape made i	Region Town - Freinig Mission SA, 2423 - 11 10 Feb
(Human Baran Bar Hara sa balan mang Latasa asa baran Ba Angan Baran Bar Baran Baran Bar Baran Baran Bar Baran Baran Bar Baran Baran Bar	
ישמער אין	•]
	_
Transfer Dyna Hannarden, Darte B. Charles Hanne B. Charles Hanne Hanne Hanne Hanne H	
There is an intervent diverse the west	
Whet: County = 11 Percel = 00802 Hydrothystein, May Mar Market and Tarten and T	Region Tools - Friday shareh 50, 3620 4 +1 64 File
ווייזיא איז איז איז איז איז איז איז איז אי	
באיינט אייינט איייט א איייט איייט איי איייט איייט איי	87
Then a sin Prancise Cale Cale The net and Then a sin Prancise Cale Cale The net of Home particles may have against full, using Cal Then a sin Prancise Mill Cale Cale The net of Home particles may have facility of Cale	
The is an Manadan may dia tar and Application (organized) Annual	
The B is a wreak (L-14) and it for a weak <u> </u>	

-

RECEIVED Office of Oil and Gas

MAR 1 7 2020

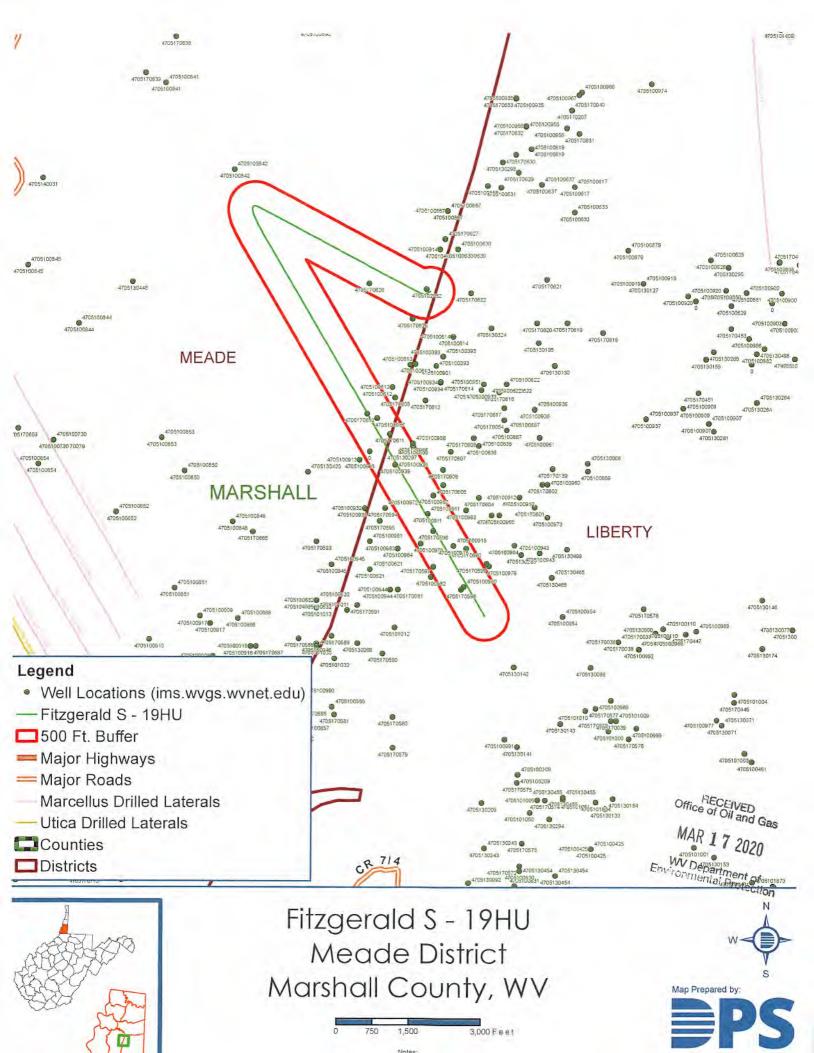
w Company & Science & Juny Welt: County = 61 Permit = 00978	
	Rapart Tene - Frainy Marth 66 2029 4 42 54 664
1 (2010) Meneraldya (Nar Vian Meneraldya (Nar Vian) Meneraldya (Nar Vian) (Nar Vian) (Naraya (Naraya (Nar Vian)) Menarada (Naraya (Na Naraya (Naraya	
nan sa anton na katan na katan Da Garan na katan na k Danan na katan na katan katan katan na k	
באיזאר באליו איזאר וביאר באיזגר בא האיזגר באיזגר באיזגר לאיזגר באיזגר	
Changes 12/2/11 12/2/2 Cale April and April and April 2 April	
There is no Production Gas data for the well There is an Production Dat data for this well. " Genus issues and provide MDS water Da	
There is an Production Mill, data for the under " some appendies may have reported Mill, under OB There is an Production Marine data for the und	
n ne se an success mar data in ne ne References internet and an an anna anna anna anna anna ann	
Chinese Leader Course influent in the feesion information City developed	
Puoza teoretta Data alta partiti della della Contrata zonaria	
There is as Sample data for this well	
Walt: County = 61 Perett = 70886	Baset Time - Fraing Marie M. 2020 4 42 47 FM
אנשער אין	
Chinema and a second seco	
There is an Production Class cars for Phil wall There is an Production Cla data for Phil wall ··· some normalism may have reported MCL wave CN	
There is an Annual call for the over a constant may here reported KGL under OA There as an Annual call for the over	
There is no Stratycycy cas for the well	
Thure is no Vivoleo. (E.4.og) data for the well There is no Phogging data for the well	
W Mangada Samana Jawa Ang Ang Ang Ang Ang Ang Ang Ang Ang Ang	Report Tura: Freilig Starts DE 2023 + ++ 66 PAr
Locate Management Ver Boo Control Management (Salari Salari Salari Salari Salari Vina) Control and Salari Salari Salari Salari Salari Salari Salari Salari Salari Chan sa Management Lacate da Wang Wang	
Love therein the constraints the const	
Հատման հարութ։ ԱՄՀ Համ Համ Համ Հայ	<u>"</u>]
There is an Persona Antone was There is an Productor Antone was	
Them a log Production CH data for the well — same operatory may have reported MD known Co Them a log Production MDL data for the well — same operatory may nove reported MDL under CH	
Toers is no Productor Vision data for this wed	
Them is no Beinginging data for this well. Them is no Wondow (C. Leg) data for this well.	
Process Information The Construction of Construction	
Torre is no Europe calls for the end	
IN Caunty a \$1 Parmil = 70587	Report Tona - France March 18 3230 + 44 42 PCI
ວັກສະຫວັກສາຍ. ມີພາກ ແລະ	
ייייייייייייייייייייייייייייייייייייי	
There is an Pay speak for this west	
Than's a në Praduces Gas ata to Pak net Than's a në Praduces da ata to Pak ne me në men njërsan me tere njërsat Mal usere Gr	
Tare a ne Presiden NC, stal ter dan well. " weden openaans mey new raported NC, under OB There a en Presidente Nape dats for the well.	
There is an Standarden data for the not There is an Vitable SL day cars to the not	
Teles un o Kongis data la tal end Marte causa han han Marte Causato e Si Parmili e 70600	Barried Tuna - France Science (d. 2228 a del 87 Phil
W Galagest & Essave Sung. Walt: County = \$1 Permit = 70600	Pagant Tona - Prany Mirris On 2228 + 64 (2 ⁹ PM
W Compute Laures Laure W Communication Communications (Second Second Se	Regnet Tenn – Penny Marca (d. 2238 i 44 67 196
W Galagest & Essave Sung. Walt: County = \$1 Permit = 70600	Pagar Tran. Pasay kina (k. 228 + 44 (* PA
W Serverse Hannes Inner Serverse Hannes Serverse Internet Serverse	Reput Toon - France Science (de 1228 + 64 6 ³ Fils
What Coastly = 61 Parmin = 76000	August Yana - Fanig Alexes (d. 2018 - 645 ⁷ Fel
With Standard Lange Weit: County = 61 Permit = 75000 Microsophile Manager, Ma	Agar Tao, Ana, Mari & 221 (<i>J O R</i> i
שי איז איז איז איז איז איז איז איז איז אי	Aquertina: Faca, since ID 228 c II 976
The stage of Lance Lance The Stage of S and S an	kaparthan Fana sina (b. 2014) (f. 1976)
To Annual I Lance. Long Whit: County = 11 Premit = 700000000000000000000000000000000000	Report Teas - France State City of State
The stage of Lance Lance The Stage of S and S an	Aquettus Facultus B 23113976
	Regarition franç since il 2014 d'Alfred
Between team of the second	
Bit cardinal	
Bester Handling Description Bester Handling <td< td=""><td></td></td<>	
Bit cardinal	السواري أرتوا بعوة إلكاء كالأل
	السواري أرتوا بعوة إلكاء كالأل
Beneralized and any	السواري أرتوا بعوة إلكاء كالأل
Answer of a start of a s	
Answer: Description: Provide and	السواري أرتوا بعوة إلكاء كالأل
An expertance in any any any any any any any any any an	
An expertance in any any any any any any any any any an	 1 /co.ueo 2010071
Interstant and the second s	 1 /co.ueo 2010071
status Status Provide Status Status	манта, карина (Вакави) П
status 2. Sector 3.	манта, карина (Вакави) П
status Status Provide Status Status	 1 /co.ueo 2010071
status Categorie 10 Public Pathol Status Status Status Status <td>1 /co.ueo 2010071</td>	 1 /co.ueo 2010071
status Carters 11 Norms 2000 Status Status	 1 /co.ueo 2010071
status Description	 1 /co.ueo 2010071
Image: District State S	 1 /co.ueo 2010071
intercent Description intercent De	 1 /co.ueo 2010071

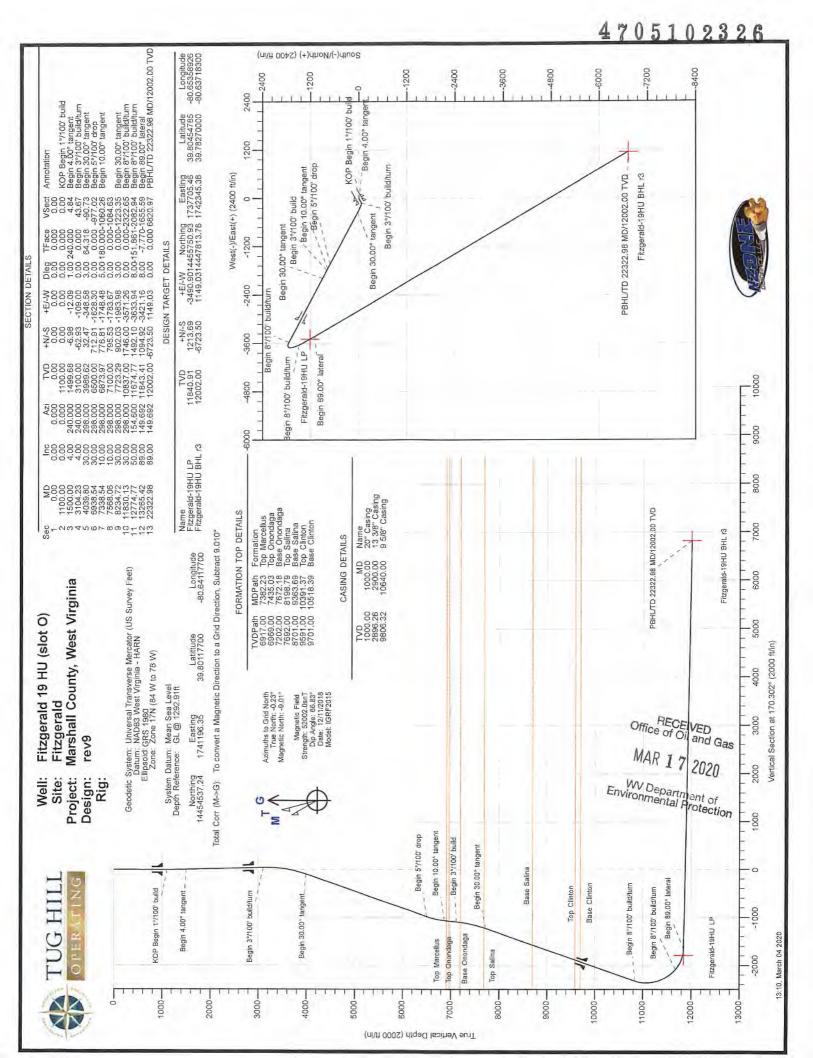
RECEIVED Office of Oil and Gas

MAR 1 7 2020

WV Department of Environmental Protection

Page 6 of 6







4705102326

Database: Company: Project: Site: Nell: Nellbore: Design:	DB_Aug1919_v1 Tug Hill Operating Marshall County, Fitzgerald Fitzgerald 19 HU Original Hole rev9	g LLC West Virgi	nia	TVD Reference MD Reference North Reference	e:	GL @ 12 GL @ 12 Grid		(slot O)	
Project	Marshall County, V	West Virgin	ia						- TS - State
Map System: Geo Datum: Map Zone:	Universal Transvers NAD83 West Virgini Zone 17N (84 W to	a - HARN	(US Survey Feet)) System Datum	:	Mean Sea	Level		
Site	Fitzgerald					dis di			
Site Position: From: Position Uncertainty:	Lat/Long	0.00 ft	Northing: Easting: Slot Radius:	14,454,56 1,741,090 1	6.26 usft Longit				0126184 4153292 0.229
Well	Fitzgerald 19 HU (s	slot O)							
Well Position	+N/-S +E/-W	0.00 ft 0.00 ft 0.00 ft		1,	454,537.24 usft 741,196.35 usft	Latitude: Longitude: Ground Lev		-80.6	011770 411770 292.91
Position Uncertainty		0.00 1	Weinfead Lie			Ground Lev		.,	
Wellbore	Original Hole	ale o contra o	alantes art anno 1	Barris and the Barris a	····· ··· ···				
Magnetics	Model Name		Sample Date	Declination (°)	1	Dip Angle (°)		Field Strength (nT)	
	IGRF20)15	12/11/2018		-8.781	66	.834	52,002.03928139	
Design	rev9		00000						
Audit Notes: Version:			Phase:	PLAN	Tie On De	oth:	0.00		
Vertical Section:			rom (TVD) ft)	+N/-S (ft)	+E/-W (ft)		Direction (°)		
		0	.00	0.00	0.00	Phys. 1000 (Const.	170.302	and a second and a s	
	and and the second s		20						0 0
Plan Survey Tool Pro	ogram Da	te 3/4/20							
Plan Survey Tool Pro Depth From (ft)	Depth To	te 3/4/20 vey (Wellbo		Tool Name	Rem	arks			

Office of Oil and Gas

MAR 1 7 2020



4705102326

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Fitzgerald 19 HU (slot O)	
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1292.91ft	
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1292.91ft	
Site:	Fitzgerald	North Reference:	Grid	
Well:	Fitzgerald 19 HU (slot O)	Survey Calculation Method:	Minimum Curvature	
Wellbore:	Original Hole			
Design:	rev9			

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	
1,500.00	4.00	240.000	1,499.68	-6.98	-12.09	1.00	1.00	0.00	240.000	
3,104.23	4.00	240.000	3,100.00	-62.93	-109.00	0.00	0.00	0.00	0.000	
4,039.80	30.00	298.000	3,989.62	32.47	-348.58	3.00	2.78	6.20	64.318	
6,938.54	30.00	298.000	6,500.00	712.91	-1,628.30	0.00	0.00	0.00	0.000	
7,338.54	10.00	298.000	6,873.97	776.81	-1,748.48	5.00	-5.00	0.00	180.000	
7,568.06	10.00	298.000	7,100.00	795.53	-1,783.67	0.00	0.00	0.00	0.000	
8,234.72	30.00	298.000	7,723.29	902.03	-1,983.98	3.00	3.00	0.00	0.000	
11,830.13	30.00	298.000	10,837.00	1,746.00	-3,571.26	0.00	0.00	0.00	0.000	
12,774.77	50.00	154.600	11,674.77	1,492.10	-3,633.94	8.00	2.12	-15.18	-151.861	
13,265.42	89.00	149.692	11,843.41	1,094.92	-3,421.16	8.00	7.95	-1.00	-7.770	
22,322.98	89.00	149.692	12,002.00	-6,723.50	1,149.03	0.00	0.00	0.00	0.000	Fitzgerald-19HU BH

RECEIVED Office of Oil and Gas MAR 1 7 2020 WV Department of Environmental Protection



4705102326

Design: Planned Survey				MAR 17 2020
Wellbore:	Original Hole rev9			Office of Oil and Gas
Well:	Fitzgerald 19 HU (slot O)	Survey Calculation Method:	Minimum Curvature	Office of CIVED
Site:	Fitzgerald	North Reference:	Grid	
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1292.91ft	
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1292.91ft	
Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Fitzgerald 19 HU (slot O)	

Planned Survey

leasured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting	E	WV Department Invironmental Prote
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
100.00	0.00	0.000	100.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
200.00	0.00	0.000	200.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
300.00	0.00	0.000	300.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
400.00	0.00	0,000	400.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
500.00	0.00	0.000	500.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
600.00	0.00	0.000	600.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
700.00	0.00	0.000	700.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
800.00	0.00	0.000	800.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
900.00	0.00	0.000	900.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,454,537.24	1,741,196.35	39.80117700	-80.64117700
	in 1°/100' bui	b							
1,200.00	1.00	240.000	1,199.99	-0.44	-0.76	14,454,536.81	1,741,195.59	39.80117581	-80.64117970
1,300.00	2.00	240.000	1,299.96	-1.75	-3.02	14,454,535.50	1,741,193.32	39.80117224	-80.64118779
1,400.00	3.00	240.000	1,399.86	-3.93	-6.80	14,454,533.32	1,741,189.55	39.80116629	-80.64120127
1,500.00	4.00	240.000	1,499.68	-6.98	-12.09	14,454,530.26	1,741,184.26	39.80115797	-80.64122013
	0° tangent						diamatic and a		
1,600.00	4.00	240.000	1,599.43	-10.47	-18.13	14,454,526,78	1,741,178.22	39.80114846	-80.64124169
1,700.00	4.00	240.000	1,699,19	-13.95	-24.17	14,454,523.29	1,741,172.18	39.80113895	-80.64126325
1,800.00	4.00	240.000	1,798.94	-17.44	-30,21	14,454,519.80	1,741,166.14	39.80112943	-80.64128481
1,900.00	4.00	240.000	1,898.70	-20.93	-36.25	14,454,516.31	1,741,160.10	39.80111992	-80.64130637
2,000.00	4.00	240.000	1,998.46	-24.42	-42.29	14,454,512.82	1,741,154.05	39.80111041	-80.64132793
2,000.00	4.00	240.000	2,098.21	-27.91	-48.33	14,454,509.34	1,741,148.01	39.80110090	-80.64134949
2,200.00	4.00	240.000	2,197.97	-31.39	-54.37	14,454,505.85	1,741,141.97	39.80109139	-80.64137104
2,200.00	4.00	240.000	2,197.97	-34.88	-60.42	14,454,503.85	1,741,135.93	39.80108188	-80.64139260
2,400.00	4.00	240.000	2,397.48	-38.37	-66.46	14,454,498.87	1,741,129.89	39.80107236	-80.64141416
2,400.00	4.00	240.000	2,397.48	-41.86	-72.50	14,454,495.39	1,741,123.85	39.80106285	-80.64143572
2,600.00	4.00	240.000	2,497.24	-41.00	-78.54	14,454,491.90	1,741,125.85	39.80105334	-80.64145728
2,700.00	4.00	240.000	2,696.75	-48.83	-84.58	14,454,488.41	1,741,111.77	39.80104383	-80.64147884
2,800.00	4.00	240.000	2,796.51	-40.03	-90.62	and the second second	1,741,105.73	39.80103432	-80.64150039
2,900.00	4.00	240.000	2,896.26	-52.52	-96.66	14,454,484.92 14,454,481.43	1,741,099.68	39.80102480	-80.64152195
3,000.00	4.00	240.000	2,096.20	-59.30	-102.70	14,454,477.95	1,741,093.64	39.80101529	-80.64154351
3,100.00	4.00	240.000	3,095.78	-62.78	-102.70	14,454,474.46	1,741,093.64	39.80100578	-80.64156507
3,100.00	4.00	240.000	3,100.00	-62.93	-109.00	14,454,474.31	1,741,087.35	39.80100538	-80.64156598
			5,100.00	-02.95	-109.00	14,454,474.51	1,741,007.33	53.00100350	-00.04100000
	100' build/tur		0.405.40	04.00	440 70	44 454 470 00	1,741,079.58	00 00400004	-80.64159365
3,200.00	5.85	266.315	3,195.42 3,294.65	-64.92	-116.76	14,454,472.33		39.80100001	-80.64163748
3,300.00 3,400.00	8.41 11.20	279.062 285.710	3,294.65	-64.09 -60.31	-129.08 -145.65	14,454,473.15	1,741,067.27	39.80100242 39.80101298	-80.64169644
	14.07	202000				14,454,476.93	1,741,050.69	39.80103169	-80.64177038
3,500.00 3,600.00	16.98	289.706 292.362	3,490.75 3,587.09	-53.58 -43.92	-166.45 -191.40	14,454,483.66	1,741,029.90 1,741,004.94	39.80105849	-80.64185910
3,700.00	19.92	294.256	3,681.94	-31.36	-220.45	14,454,493.32 14,454,505.88	1,740,975.89	39.80109330	-80.64196234
3,800.00	22.88	295.679	3,775.03	-15.93	-253.51	14,454,521.31	1,740,942.83	39.80113603	-80.64207984
3,900.00	25.84	296.791	3,866.12	2.32	-290.50	14,454,539.56	1,740,905.85	39.80118656	-80.64221126
4,000.00	28.82	297.689	3,954.95	23.35	-331.31	14,454,560.59	1,740,865.04	39.80124476	-80.64235625
4,039.80	30.00	298.000	3,989.62	32.47	-348.58	14,454,569.72	1,740,847.76	39.80127002	-80.64241764
		200.000	0,000.02	52.47	-0-0,00	14,404,000.72	1,140,041.10	00.0012/002	-00.04241704
	00° tangent 30.00	208 000	4 044 75	16 61	375 16	14 454 593 95	1 740 901 10	20 90120011	-80.64251206
4,100.00		298.000	4,041.75	46.61	-375.16	14,454,583.85	1,740,821.19	39.80130911	
and the second	30.00	298.000	4,128.36	70.08	-419.31	14,454,607.32	1,740,777.04	39,80137406	-80.64266891
4,300.00	30.00 30.00	298.000 298.000	4,214.96 4,301.56	93.55	-463.46	14,454,630.80	1,740,732.89	39.80143901	-80.64282576
				117.03	-507.60	14,454,654.27	1,740,688.74	39.80150396	-80.64298261
4,500.00	30.00 30.00	298.000 298.000	4,388.16 4,474.77	140.50 163.97	-551.75	14,454,677.74	1,740,644.60	39.80156890	-80.64313946
	30.00	298.000	and the second		-595.90	14,454,701.22	1,740,600.45	39.80163385	-80.64329631
4,700.00	30,00	230.000	4,561.37	187.45	-640.05	14,454,724.69	1,740,556.30	39.80169880	-80.64345316



4705102326

Well Fitzgerald 19 HU (slot O) DB_Aug1919_v14 Local Co-ordinate Reference: Database: Office of Oil and Gas Tug Hill Operating LLC GL @ 1292.91ft Company: **TVD Reference:** Marshall County, West Virginia GL @ 1292.91ft Project: MD Reference: Fitzgerald Grid Site: North Reference: MAR 1 7 2020 Fitzgerald 19 HU (slot O) Survey Calculation Method: Minimum Curvature Well: Wellbore: Original Hole WV Department of Environmental Protection Design: rev9

Planned Survey

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting		-540
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
4,800.0	0 30.00	298,000	4,647.97	210.92	-684.19	14,454,748.16	1,740,512.16	39,80176375	-80.64361001
4,900.0	0 30.00	298.000	4,734.57	234.39	-728.34	14,454,771.64	1,740,468.01	39.80182869	-80.64376686
5,000.0	0 30.00	298.000	4,821.18	257.87	-772.49	14,454,795.11	1,740,423.86	39.80189364	-80.64392371
5,100.0	0 30.00	298.000	4,907.78	281.34	-816.63	14,454,818.58	1,740,379.71	39.80195858	-80.64408056
5,200.0	0 30.00	298,000	4,994.38	304.82	-860.78	14,454,842.06	1,740,335.57	39.80202353	-80.64423741
5,300.0	0 30.00	298.000	5,080.98	328.29	-904.93	14,454,865.53	1,740,291.42	39.80208848	-80.64439427
5,400.0	0 30.00	298.000	5,167.59	351.76	-949.08	14,454,889.00	1,740,247.27	39.80215342	-80.64455112
5,500.0	0 30.00	298.000	5,254.19	375.24	-993.22	14,454,912.48	1,740,203.12	39.80221837	-80.64470797
5,600.0	0 30.00	298.000	5,340.79	398.71	-1,037.37	14,454,935.95	1,740,158.98	39,80228331	-80.64486482
5,700.0	0 30.00	298.000	5,427.39	422.18	-1,081.52	14,454,959.42	1,740,114.83	39.80234826	-80.64502168
5,800.0	0 30.00	298.000	5,514.00	445.66	-1,125.67	14,454,982.90	1,740,070.68	39.80241320	-80.64517853
5,900.0	0 30.00	298.000	5,600.60	469.13	-1,169.81	14,455,006.37	1,740,026.53	39.80247815	-80.64533538
6,000.0	0 30.00	298.000	5,687.20	492.60	-1,213.96	14,455,029.85	1,739,982.39	39.80254309	-80.64549224
6,100.0	0 30.00	298.000	5,773.80	516.08	-1,258.11	14,455,053.32	1,739,938.24	39.80260803	-80,64564909
6,200.0	0 30.00	298.000	5,860.41	539.55	-1,302.26	14,455,076.79	1,739,894.09	39.80267298	-80.64580595
6,300.0	0 30.00	298.000	5,947.01	563.02	-1.346.40	14,455,100.27	1,739,849.95	39.80273792	-80.64596280
6,400.0	0 30.00	298.000	6,033.61	586.50	-1,390.55	14,455,123.74	1,739,805.80	39,80280286	-80.64611966
6,500.0	0 30.00	298.000	6,120.21	609.97	-1,434.70	14,455,147.21	1,739,761.65	39.80286781	-80.64627651
6,600.0	0 30.00	298.000	6,206.82	633.45	-1,478.85	14,455,170.69	1,739,717.50	39.80293275	-80.64643337
6,700.0		298.000	6,293.42	656.92	-1,522.99	14,455,194.16	1,739,673.36	39.80299769	-80.64659023
6,800.0		298.000	6,380.02	680.39	-1,567.14	14,455,217.63	1,739,629.21	39.80306263	-80.64674708
6,900.0		298.000	6,466.62	703.87	-1,611.29	14,455,241.11	1,739,585.06	39.80312758	-80.64690394
6,938.5	4 30.00	298.000	6,500.00	712.91	-1,628.30	14,455,250.15	1,739,568.05	39.80315261	-80.64696439
Begin	5°/100' drop								10110000000
7,000.0	0 26.93	298.000	6,554.02	726.66	-1,654.16	14,455,263.90	1,739,542.19	39.80319065	-80.64705627
7,100.0	0 21.93	298.000	6,645.04	746.07	-1,690.66	14,455,283.31	1,739,505.69	39.80324434	-80.64718596
7,200.0		298.000	6,739.32	761.68	-1,720.02	14,455,298.92	1,739,476.33	39.80328753	-80.64729027
7,300.0		298.000	6,836.14	773.37	-1,742.01	14,455,310.61	1,739,454.34	39.80331988	-80.64736841
7,338.5	4 10.00	298,000	6,873.97	776.81	-1,748.48	14,455,314.06	1,739,447,87	39.80332940	-80.64739140
Begin	10.00° tangent								and the second second
7,400.0	0 10.00	298.000	6,934.50	781.82	-1,757.91	14,455,319.07	1,739,438.44	39.80334326	-80.64742489
7,500.0	0 10.00	298.000	7,032.98	789.98	-1,773.24	14,455,327.22	1,739,423.11	39.80336581	-80.64747936
7,568.0	6 10.00	298.000	7,100.00	795.53	-1,783.67	14,455,332.77	1,739,412.68	39.80338116	-80.64751644
7,588.0	6 10.60	298.000	7,119.68	797.20	-1,786.83	14,455,334.45	1,739,409.52	39.80338581	-80,64752766
Begin :	3°/100' build								
7,600.0	0 10.96	298.000	7,131.41	798.25	-1,788.80	14,455,335.49	1,739,407.55	39.80338871	-80.64753466
7,700.0	0 13.96	298.000	7,229.05	808.38	-1,807.85	14,455,345.62	1,739,388.50	39.80341672	-80.64760233
7,800.0	0 16.96	298.000	7,325.42	820.89	-1,831.38	14,455,358.13	1,739,364.97	39.80345134	-80.64768594
7,900.0	0 19.96	298.000	7,420.26	835.75	-1,859.33	14,455,372.99	1,739,337.02	39.80349246	-80.64778526
8,000.0		298.000	7,513.32	852.93	-1,891.63	14,455,390.17	1,739,304.72	39.80353996	-80.64790001
8,100.0		298.000	7,604.34	872.36	-1,928.18	14,455,409.60	1,739,268.17	39.80359373	-80.64802988
8,200.0		298.000	7,693.06	894.01	-1,968.89	14,455,431.25	1,739,227.46	39.80365361	-80.64817452
8,234.7		298.000	7,723.28	902.03	-1,983,98	14,455,439.27	1,739,212.37	39.80367581	-80.64822812
	30.00° tangent								and the second
8,300.0		298.000	7,779.82	917.35	-2,012.80	14,455,454.59	1,739,183.55	39.80371820	-80.64833052
8,400.0		298.000	7,866.42	940.83	-2,056.94	14,455,478.07	1,739,139.41	39.80378314	-80.64848738
8,500.0		298.000	7,953.02	964.30	-2,101.09	14,455,501.54	1,739,095.26	39.80384808	-80.64864424
8,600.0		298.000	8,039.63	987.77	-2,145.24	14,455,525.01	1,739,051.11	39.80391302	-80.64880110
8,700.0		298.000	8,126.23	1,011.25	-2,189.39	14,455,548.49	1,739,006,97	39,80397796	-80.64895796
8,800.0		298.000	8,212.83	1,034.72	-2,233.53	14,455,571.96	1,738,962.82	39.80404290	-80.64911483
8,900.00		298.000	8,299.43	1,058.19	-2,277.68	14,455,595.43	1,738,918.67	39.80410784	-80.64927169
9,000.00		298.000	8,386.04	1,081.67	-2,321.83	14,455,618.91	1,738,874.52	39.80417277	-80.64942855
9,100.0		298.000	8,472.64	1,105.14	-2,365.97	14,455,642.38	1,738,830.38	39.80423771	-80.64958541
9,200.00	30.00	298.000	8,559.24	1,128.61	-2,410.12	14,455,665.85	1,738,786.23	39.80430265	-80.64974227



4705102326

Well Fitzgerald 19 HU (slot O) DB_Aug1919_v14 Local Co-ordinate Reference: Database: Tug Hill Operating LLC TVD Reference: GL @ 1292.91ft Company: Marshall County, West Virginia GL @ 1292.91ft Project: MD Reference: Office of Oil and Gas Fitzgerald Grid Site: North Reference: Minimum Curvature Fitzgerald 19 HU (slot O) Survey Calculation Method: Well: Wellbore: Original Hole MAR 1 7 2020 rev9 Design:

Planned Survey

Planned Surv	ey							F. 4	WD
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting	Envi	W Department of onmental Protection
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
9,300.0	30.00	298.000	8,645.84	1,152.09	-2,454.27	14,455,689.33	1,738,742.08	39.80436759	-80.64989913
9,400.0	30.00	298.000	8,732.45	1,175.56	-2,498.42	14,455,712.80	1,738,697.93	39,80443253	-80.65005600
9,500.0	30.00	298.000	8,819.05	1,199.03	-2,542.56	14,455,736.27	1,738,653.79	39.80449747	-80.65021286
9,600.0	30.00	298.000	8,905.65	1,222.51	-2,586.71	14,455,759.75	1,738,609.64	39.80456240	-80.65036972
9,700.0	30.00	298.000	8,992.25	1,245.98	-2,630.86	14,455,783.22	1,738,565.49	39.80462734	-80.65052659
9,800.0	30.00	298.000	9,078.86	1,269.46	-2,675.01	14,455,806.70	1,738,521.35	39.80469228	-80.65068345
9,900.0	30.00	298.000	9,165.46	1,292.93	-2,719.15	14,455,830.17	1,738,477.20	39.80475721	-80.65084032
10,000.0	30.00	298.000	9,252.06	1,316.40	-2,763.30	14,455,853.64	1,738,433.05	39.80482215	-80.65099718
10,100.0	30.00	298.000	9,338.66	1,339.88	-2,807.45	14,455,877.12	1,738,388.90	39.80488709	-80.65115405
10,200.0	30.00	298.000	9,425.27	1,363.35	-2,851.60	14,455,900.59	1,738,344.76	39.80495202	-80,65131091
10,300.0	30.00	298.000	9,511.87	1,386.82	-2,895.74	14,455,924.06	1,738,300.61	39.80501696	-80.65146778
10,400.0	30.00	298.000	9,598.47	1,410.30	-2,939.89	14,455,947.54	1,738,256.46	39.80508190	-80.65162464
10,500.0	30,00	298.000	9,685.07	1,433.77	-2,984.04	14,455,971.01	1,738,212,31	39.80514683	-80.65178151
10,600.0		298.000	9,771.68	1,457.24	-3,028.19	14,455,994.48	1,738,168.17	39.80521177	-80.65193837
10,700.0	30.00	298.000	9,858.28	1,480.72	-3,072.33	14,456,017.96	1,738,124.02	39.80527670	-80.65209524
10,800.0		298.000	9,944.88	1,504.19	-3,116.48	14,456,041.43	1,738,079.87	39,80534164	-80.65225211
10,900.0		298,000	10,031.49	1,527,66	-3,160.63	14,456,064.90	1,738,035,73	39.80540657	-80.65240898
11,000.0		298,000	10,118.09	1,551.14	-3,204.78	14,456,088.38	1,737,991.58	39.80547151	-80.65256584
11,100.0		298.000	10,204.69	1,574.61	-3,248.92	14,456,111.85	1,737,947.43	39.80553644	-80.65272271
11,200.0		298.000	10,291.29	1,598.09	-3,293.07	14,456,135.32	1,737,903.28	39.80560138	-80.65287958
11,300.0		298.000	10,377.90	1,621.56	-3,337.22	14,456,158.80	1,737,859,14	39.80566631	-80.65303645
11,400.0		298.000	10,464.50	1,645.03	-3,381,36	14,456,182.27	1,737,814.99	39,80573124	-80.65319332
11,500.0		298.000	10,551.10	1,668.51	-3,425.51	14,456,205.75	1,737,770.84	39.80579618	-80.65335019
11,600.0		298.000	10,637.70	1,691.98	-3,469.66	14,456,229.22	1,737,726.69	39.80586111	-80.65350705
11,700.0		298.000	10,724.31	1,715.45	-3,513.81	14,456,252.69	1,737,682.55	39.80592604	-80.65366392
11,800.0		298.000	10,810.91	1,738.93	-3,557.95	14,456,276.17	1,737,638.40	39.80599098	-80.65382079
11,830.1		298.000	10,837.00	1,746.00	-3,571.26	14,456,283.24	1,737,625.10	39.80601054	-80.65386806
	8°/100' build/tu		10,001.00	1,740.00	0,071,20	14,400,200.24	1,707,020,10	55.00001004	-00.00000000
			10 000 00	4 750 74	0.000 54	44 450 000 07	4 707 505 04	00 0000 4057	00 05207004
11,900.0		291.806	10,898.92	1,759.74	-3,600.51	14,456,296,97	1,737,595.84	39.80604857	-80.65397204
12,000.0		278.127	10,991.58	1,769.96	-3,636.47	14,456,307.20	1,737,559.89	39.80607704	-80.65409992
12,100.0		254.665	11,087.38	1,768.92	-3,664.84	14,456,306.16	1,737,531.51	39.80607448	-80.65420097
12,200.0		221.917	11,184.45	1,756.63	-3,685.08	14,456,293.87	1,737,511.27	39.80604095	-80.65427321
12,300.0		194.392	11,280.91	1,733.33	-3,696.79	14,456,270.57	1,737,499.56	39.80597709	-80.65431523
12,400.0		177.857	11,374.87	1,699.48	-3,699.75	14,456,236.72	1,737,496.61	39.80588414	-80.65432621
12,500.0		168.059	11,464.51	1,655.73	-3,693.89	14,456,192.96	1,737,502.46	39.80576393	-80.65430596
12,600.0		161.718	11,548.08	1,602.93	-3,679.33	14,456,140.17	1,737,517.02	39.80561878	-80.65425484
12,700.0		157.231	11,623.96	1,542.11	-3,656.35	14,456,079.35	1,737,540.00	39.80545152	-80.65417387
12,774.7		154.600	11,674.77	1,492.11	-3,633.94	14,456,029.34	1,737,562.42	39.80531395	-80.65409474
	8°/100' build/tu								A STORES
12,800.0		154.254	11,690.65	1,474.42	-3,625.47	14,456,011.66	1,737,570.88	39,80526530	-80.65406485
12,900.0		153.043	11,746.57	1,400.24	-3,588.68	14,455,937.48	1,737,607.67	39.80506119	-80.65393487
13,000.0		152.013	11,790.51	1,320.63	-3,547.26	14,455,857.87	1,737,649.09	39.80484213	-80.65378848
13,100.0		151.093	11,821.62	1,237.15	-3,502.02	14,455,774.39	1,737,694.34	39.80461240	-80.65362853
13,200.0		150.236	11,839.29	1,151.43	-3,453.83	14,455,688.67	1,737,742.53	39.80437645	-80.65345813
13,265.4	2 89.00	149.692	11,843.41	1,094.92	-3,421.16	14,455,632.16	1,737,775.20	39.80422094	-80.65334259
	89.00° lateral								
13,300.0	0 89.00	149,692	11,844.01	1,065.07	-3,403.71	14,455,602.31	1,737,792.64	39.80413878	-80.65328088
13,400.0	0 89.00	149.692	11,845.76	978.75	-3,353,25	14,455,515.99	1,737,843.10	39.80390119	-80.65310241
13,500.0	0 89.00	149.692	11,847.51	892.43	-3,302.79	14,455,429.68	1,737,893.56	39.80366360	-80.65292395
13,600.0	0 89.00	149.692	11,849.27	806.12	-3,252.34	14,455,343.36	1,737,944.02	39.80342601	-80.65274549
13,700.0	0 89.00	149.692	11,851.02	719.80	-3,201.88	14,455,257.04	1,737,994.47	39.80318842	-80.65256703
13,800.0	0 89.00	149.692	11,852.77	633.48	-3,151.42	14,455,170.72	1,738,044.93	39.80295083	-80.65238857
13,900.0	0 89.00	149.692	11,854.52	547.16	-3,100.97	14,455,084.40	1,738,095.39	39.80271324	-80.65221011
14,000.0	0 89.00	149 692	11 856 27	460 84	-3 050 51	14 454 008 08	1 738 145 84	30 80247565	80 65202165

14,000.00

89.00

149.692

11,856.27

460.84

14,454,998.08

1,738,145.84

-3,050.51

-80.65203165

39.80247565



4705102326

EnviroDena

DB_Aug1919_v14 Local Co-ordinate Reference: Well Fitzgerald 19 HU (slot O) Database: Tug Hill Operating LLC GL @ 1292.91ft Company: TVD Reference: Project: Marshall County, West Virginia GL @ 1292.91ft MD Reference: Office of Oil and Gas Site: Fitzgerald Grid North Reference: Fitzgerald 19 HU (slot O) Survey Calculation Method: Minimum Curvature Well: Wellbore: Original Hole MAR 1 7 2020 rev9 Design:

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Environmental Prote Longitude
14,100.00	89.00	149.692	11,858.02	374.52	-3,000.05	14,454,911.76	1,738,196.30	39,80223806	-80,65185320
14,200.00	89.00	149,692	11,859.77	288.20	-2,949.59	14,454,825.44	1,738,246.76	39.80200046	-80.65167474
14,300.00	89.00	149.692	11,861.52	201.88	-2,899.14	14,454,739.12	1,738,297.22	39.80176287	-80,65149629
14,400.00	89.00	149.692	11,863.27	115.56	-2,848.68	14,454,652.80	1,738,347.67	39.80152528	-80.65131784
14,500.00	89.00	149.692	11,865.02	29.24	-2,798.22	14,454,566.48	1,738,398,13	39.80128769	-80.65113938
14,600.00	89.00	149.692	11,866.78	-57.08	-2,747.77	14,454,480.17	1,738,448.59	39,80105009	-80.65096094
14,700.00	89.00	149,692	11,868.53	-143.40	-2,697.31	14,454,393.85	1,738,499.04	39.80081250	-80.65078249
14,800.00	89.00	149.692	11,870.28	-229.72	-2,646.85	14,454,307.53	1,738,549.50	39.80057491	-80,65060404
14,900.00	89.00	149.692	11,872.03	-316.03	-2,596.39	14,454,221.21	1,738,599.96	39.80033731	-80.65042559
15,000.00	89.00	149.692	11,873.78	-402.35	-2,545.94	14,454,134.89	1,738,650,41	39.80009972	-80.65024715
15,100.00	89.00	149.692	11,875.53	-488.67	-2,495.48	14,454,048.57	1,738,700.87	39.79986213	-80.65006871
15,200.00	89.00	149.692	11,877.28	-574.99	-2,445.02	14,453,962.25	1,738,751.33	39.79962453	-80.64989026
15,300.00	89.00	149.692	11,879.03	-661.31	-2,394.57	14,453,875.93	1,738,801.79	39.79938694	-80.64971182
15,400.00	89.00	149.692	11,880.78	-747.63	-2,344.11	14,453,789.61	1,738,852.24	39.79914934	-80.64953338
15,500.00	89.00	149.692	11,882.53	-833.95	-2,293.65	14,453,703.29	1,738,902,70	39.79891175	-80.64935494
15,600.00	89.00	149.692	11,884.28	-920.27	-2,243.19	14,453,616.98	1,738,953.16	39.79867415	-80.64917651
15,700.00	89.00	149,692	11,886.04	-1,006.59	-2,192.74	14,453,530.66	1,739,003.61	39.79843656	-80.64899807
15,800.00	89.00	149,692	11,887.79	-1,092.91	-2,142.28	14,453,444.34	1,739,054.07	39.79819896	-80,64881964
15,900.00	89.00	149.692	11,889.54	-1,179.23	-2,091.82	14,453,358.02	1,739,104.53	39.79796136	-80.64864120
16,000.00	89.00	149.692	11,891.29	-1,265.55	-2,041.36	14,453,271.70	1,739,154.99	39.79772377	-80.64846277
16,100,00	89.00	149.692	11,893.04	-1,351.87	-1,990.91	14,453,185.38	1,739,205.44	39.79748617	-80,64828434
16,200.00	89.00	149,692	11,894.79	-1,438.18	-1,940.45	14,453,099.06	1,739,255.90	39.79724857	-80.64810591
16,300.00	89.00	149.692	11,896,54	-1,524.50	-1,889.99	14,453,012.74	1,739,306,36	39.79701098	-80.64792748
16,400.00	89.00	149.692	11,898.29	-1,610.82	-1,839.54	14,452,926.42	1,739,356.81	39.79677338	-80.64774905
16,500.00	89.00	149.692	11,900.04	-1,697.14	-1,789.08	14,452,840.10	1,739,407.27	39.79653578	-80,64757063
16,600.00	89.00	149.692	11,901.79	-1,783.46	-1,738.62	14,452,753.78	1,739,457.73	39.79629818	-80.64739220
16,700.00	89.00	149.692	11,903.54	-1,869.78	-1,688.16	14,452,667.47	1,739,508.19	39.79606058	-80.64721378
16,800.00	89.00	149.692	11,905.30	-1,956.10	-1,637.71	14,452,581.15	1,739,558.64	39.79582298	-80.64703535
16,900.00	89.00	149.692	11,907.05	-2,042.42	-1,587.25	14,452,494.83	1,739,609.10	39.79558538	-80,64685693
17,000.00	89.00	149.692	11,908.80	-2,128.74	-1,536.79	14,452,408.51	1,739,659,56	39.79534778	-80.64667851
17,100.00	89.00	149.692	11,910.55	-2,215.06	-1,486.34	14,452,322.19	1,739,710.01	39,79511019	-80.64650009
17,200,00	89.00	149.692	11,912.30	-2,301.38	-1,435.88	14,452,235.87	1,739,760,47	39.79487259	-80.64632168
17,300.00	89.00	149.692	11,914.05	-2,387.70	-1,385.42	14,452,149.55	1,739,810.93	39.79463498	-80.64614326
17,400.00	89.00	149.692	11,915.80	-2,474.01	-1,334.96	14,452,063.23	1,739,861.38	39.79439738	-80.64596484
17,500.00	89.00	149.692	11,917.55	-2,560.33	-1,284.51	14,451,976.91	1,739,911.84	39.79415978	-80.64578643
17,600.00	89.00	149.692	11,919.30	-2,646,65	-1,234.05	14,451,890.59	1,739,962.30	39,79392218	-80,64560802
17,700.00	89.00	149.692	11,921.05	-2,732.97	-1,183.59	14,451,804.28	1,740,012.76	39.79368458	-80.64542961
17,800.00	89.00	149.692	11,922.81	-2,819.29	-1,133.14	14,451,717.96	1,740,063.21	39.79344698	-80.64525120
17,900.00	89.00	149.692	11,924.56	-2,905.61	-1.082.68	14,451,631.64	1,740,113.67	39.79320938	-80.64507279
18,000.00	89.00	149.692	11,926.31	-2,991.93	-1,032.22	14,451,545.32	1,740,164.13	39.79297177	-80.64489438
18,100.00	89.00	149.692	11,928.06	-3,078.25	-981.76	14,451,459.00	1,740,214.58	39,79273417	-80.64471597
18,200.00	89.00	149.692	11,929.81	-3,164.57	-931.31	14,451,372.68	1,740,265.04	39,79249657	-80.64453757
18,300.00	89.00	149.692	11,931.56	-3,250.89	-880.85	14,451,286.36	1,740,315.50	39.79225897	-80.64435916
18,400.00	89.00	149.692	11,933.31	-3,337.21	-830.39	14,451,200.04	1,740,365.96	39.79202136	-80.64418076
18,500.00	89.00	149.692	11,935.06	-3,423.53	-779.94	14,451,113.72	1,740,416.41	39.79178376	-80.64400236
18,600.00	89.00	149.692	11,936.81	-3,509.85	-729,48	14,451,027.40	1,740,466.87	39.79154616	-80.64382396
18,700.00	89.00	149,692	11,938.56	-3,596.16	-679.02	14,450,941.08	1,740,517.33	39,79130855	-80.64364556
18,800.00	89.00	149.692	11,940.31	-3,682.48	-628.56	14,450,854.77	1,740,567.78	39.79107095	-80.64346716
18,900.00	89.00	149.692	11,942.07	-3,768.80	-578.11	14,450,768.45	1,740,618.24	39.79083334	-80.64328876
19,000.00	89.00	149.692	11,943.82	-3,855.12	-527.65	14,450,682.13	1,740,668.70	39.79059574	-80.64311037
19,100.00	89.00	149.692	11,945.57	-3,941.44	-477.19	14,450,595.81	1,740,719.15	39.79035813	-80.64293197
19,200.00	89.00	149.692	11,947.32	-4,027.76	-426.74	14,450,509.49	1,740,769.61	39.79012053	-80.64275358
19,300.00	89.00	149.692	11,949.07	-4,114.08	-376.28	14,450,423,17	1,740,820.07	39,78988292	-80.64257519
		149.692	11,950.82	-4,200.40	-325.82	14,450,336.85	1,740,870.53	39.78964531	-80.64239680

19,500.00

89.00

149.692

11,952.57

-4,286.72

14,450,250.53

1,740,920.98

-80.64221841

39.78940771



4705102326

Well Fitzgerald 19 HU (slot O) DB_Aug1919_v14 Local Co-ordinate Reference: Database: Tug Hill Operating LLC GL @ 1292.91ft Company: TVD Reference: Office of Oil and Gas Marshall County, West Virginia GL @ 1292.91ft Project: MD Reference: Site: Fitzgerald North Reference: Grid Fitzgerald 19 HU (slot O) Minimum Curvature Well: Survey Calculation Method: MAR 1 7 2020 Wellbore: Original Hole Design: rev9 WV Department of Environmental Protection

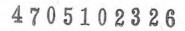
Planned Survey

19,600.00 19,700.00 19,800.00 19,900.00	89.00 89.00 89.00 89.00	149.692 149.692	11,954.32	-4,373.04			(usft)	Latitude	Longitude
19,800.00 19,900.00	89.00			-4,373.04	-224.91	14,450,164.21	1,740,971.44	39.78917010	-80.64204002
19,900.00		110 000	11,956.07	-4,459.36	-174.45	14,450,077.89	1,741,021.90	39.78893249	-80.64186163
	89.00	149.692	11,957.82	-4,545.68	-123.99	14,449,991.58	1,741,072.35	39.78869489	-80.64168324
00 000 00		149.692	11,959.58	-4,632.00	-73.54	14,449,905.26	1,741,122.81	39.78845728	-80.64150486
20,000.00	89.00	149.692	11,961.33	-4,718.31	-23.08	14,449,818.94	1,741,173.27	39.78821967	-80.64132648
20,100.00	89.00	149.692	11,963.08	-4,804.63	27.38	14,449,732.62	1,741,223.73	39.78798206	-80.64114809
20,200.00	89.00	149.692	11,964.83	-4,890.95	77.84	14,449,646.30	1,741,274.18	39.78774446	-80.6409697
20,300.00	89.00	149.692	11,966.58	-4,977.27	128.29	14,449,559.98	1,741,324.64	39.78750685	-80.64079133
20,400.00	89.00	149.692	11,968.33	-5,063.59	178.75	14,449,473.66	1,741,375.10	39.78726924	-80.6406129
20,500.00	89.00	149.692	11,970.08	-5,149.91	229.21	14,449,387.34	1,741,425.55	39.78703163	-80.6404345
20,600.00	89.00	149.692	11,971.83	-5,236.23	279.67	14,449,301.02	1,741,476.01	39.78679402	-80.6402562
20,700.00	89.00	149.692	11,973.58	-5,322.55	330.12	14,449,214.70	1,741,526.47	39.78655641	-80.6400778
20,800.00	89.00	149.692	11,975.33	-5,408.87	380.58	14,449,128.38	1,741,576.93	39.78631880	-80.6398994
20,900,00	89.00	149.692	11,977.08	-5,495.19	431.04	14,449,042.07	1,741,627.38	39.78608119	-80,6397210
21,000.00	89.00	149.692	11,978.84	-5,581.51	481.49	14,448,955.75	1,741,677.84	39.78584358	-80.6395427
21,100.00	89.00	149.692	11,980.59	-5,667.83	531.95	14,448,869.43	1,741,728.30	39.78560597	-80.6393643
21,200.00	89.00	149.692	11,982.34	-5,754.15	582.41	14,448,783.11	1,741,778.75	39.78536836	-80.6391859
21,300.00	89.00	149,692	11,984.09	-5,840.46	632.87	14,448,696.79	1,741,829.21	39.78513074	-80.6390076
21,400.00	89.00	149.692	11,985.84	-5,926.78	683.32	14,448,610.47	1,741,879.67	39.78489313	-80.63882924
21,500.00	89.00	149.692	11,987.59	-6,013.10	733.78	14,448,524.15	1,741,930.12	39.78465552	-80.6386508
21,600.00	89.00	149.692	11,989.34	-6,099.42	784.24	14,448,437.83	1,741,980.58	39,78441791	-80.6384725
21,700.00	89.00	149.692	11,991.09	-6,185.74	834.69	14,448,351.51	1,742,031.04	39.78418030	-80.63829414
21,800.00	89.00	149.692	11,992.84	-6,272.06	885.15	14,448,265.19	1,742,081.50	39.78394268	-80.63811578
21,900.00	89.00	149.692	11,994.59	-6,358.38	935.61	14,448,178.88	1,742,131.95	39.78370507	-80.63793742
22,000.00	89.00	149.692	11,996.34	-6,444.70	986.07	14,448,092.56	1,742,182.41	39,78346746	-80.6377590
22,100.00	89.00	149.692	11,998.10	-6,531.02	1,036.52	14,448,006.24	1,742,232.87	39.78322984	-80.6375807
22,200.00	89.00	149.692	11,999.85	-6,617.34	1,086.98	14,447,919.92	1,742,283.32	39.78299223	-80.6374023
22,300.00	89.00	149.692	12,001.60	-6,703.66	1,137.44	14,447,833.60	1,742,333.78	39.78275462	-80.6372239
22,322.98	89.00	149.692	12,002.00	-6,723.49	1,149.03	14,447,813.76	1,742,345.38	39.78270001	-80.6371830

PBHL/TD 22322.98 MD/12002.00 TVD

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Fitzgerald-19HU LP - plan misses target - Point	0.00 t center by 13.0	0.000 08ft at 1312	11,840.91 3.93ft MD (11	1,213.69 828.14 TVD,	-3,490.90 1212.51 N, -34	14,455,750.93 488.34 E)	1,737,705.46	39.80454785	-80.65358926
Fitzgerald-19HU BHL r3 - plan hits target cer - Point		0.005	12,002.00	-6,723.50	1,149.03	14,447,813.76	1,742,345.38	39,78270000	-80.63718300

Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
1,000.00	1,000.00	20" Casing		20	26
2,900.00	2,896.26	13 3/8" Casing		13-3/8	17-1/2
10,640.00	9,806.32	9 5/8" Casing		9-5/8	12-1/4





Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Fitzgerald 19 HU (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1292.91ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1292.91ft
Site:	Fitzgerald	North Reference:	Grid
Well: Wellbore: Design:	Fitzgerald 19 HU (slot O) Original Hole rev9	Survey Calculation Method:	Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip Dip Direction (°) (°)
7,382.23	6,917.00	Top Marcellus		0.000
7,435.03	6,969.00	Top Onondaga		0.000
7,672.18	7,202.00	Base Onondaga		0.000
8,198.79	7,692.00	Top Salina		0.000
9,363.69	8,701.00	Base Salina		0.000
10,391.37	9,591.00	Top Clinton		0.000
10,518.39	9,701.00	Base Clinton		0.000

Plan Annotations

Measured	Vertical	Local Coor	dinates	
Depth (ft)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,100.00	1,100.00	0.00	0.00	KOP Begin 1°/100' build
1,500.00	1,499.68	-6.98	-12.09	Begin 4.00° tangent
3,104.23	3,100.00	-62.93	-109.00	Begin 3°/100' build/turn
4,039.80	3,989.62	32.47	-348.58	Begin 30.00° tangent
6,938.54	6,500.00	712.91	-1,628.30	Begin 5°/100' drop
7,338.54	6,873.97	776.81	-1,748.48	Begin 10.00° tangent
7,588.06	7,119.68	797.20	-1,786.83	Begin 3°/100' build
8,234.72	7,723.28	902.03	-1,983.98	Begin 30.00° tangent
11,830.13	10,837.00	1,746.00	-3,571.26	Begin 8°/100' build/turn
12,774.77	11,674.77	1,492.11	-3,633.94	Begin 8°/100' build/turn
13,265.42	11,843.41	1,094.92	-3,421.16	Begin 89.00° lateral
22,322.98	12,002.00	-6,723.49	1,149.03	PBHL/TD 22322.98 MD/12002.00 TVD

RECEIVED Office of Oil and Gas

MAR 1 7 2020

Member, Pennsylvania Association of Notaries

WW-9 (4/16)

API Number 47 - 051

Operator's Well No. Fitzgerald S-19HU

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) Upper Fish Creek	Quadrangle Glen Easton 7.5'
Do you anticipate using more than 5,000 bbls of water to com Will a pit be used? Yes No	plete the proposed well work? Yes 🖌 No
If so, please describe anticipated pit waste:AST Tank Will a synthetic liner be used in the pit? Yes Proposed Disposal Method For Treated Pit Wastes:	s with proper containment will be used for staging fresh water for frac and flow back water No If so, what ml.?AST Tanks will be used with proper contain
Land Application Underground Injection (UIC Perm Reuse (at API Number Off Site Disposal (Supply form W Other (Explain)
Will closed loop system be used? If so, describe: Yes - For V	ertical 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

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

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

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

Company Official Signature James A Pancake	MAR 1 7 2020
Company Official (Typed Name) Jim Pancake	For WV Denay
Company Official Title Vice President - Geosciences	WV Department of Environmental Protection
Subscribed and sworn before me this, 25h day of February	, 20 20 20 20 20 20 20 20 20 20 20 20 20
My commission expires 2-10-2024	My commission expires February 10, 2024 Commission number 1267179

Form	W	W	-9

Operator's Well No. Fitzgerald S-19HU

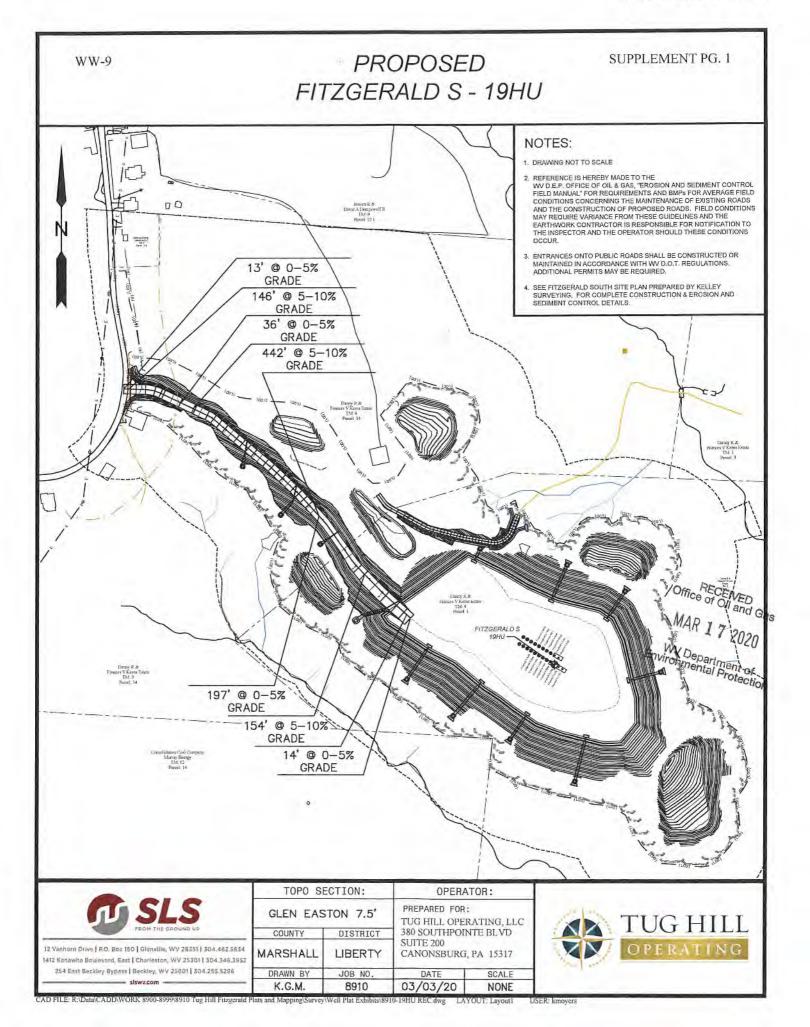
Tug Hill Operating, L			
Proposed Revegetation Treatm	ent: Acres Disturbed 7.44	Prevegetation pH	6.0
Lime 3	Tons/acre or to correct to pH	6.5	
Fertilizer type 10-20)-20		
Fertilizer amount 50	0lbs/	acre	
Mulch 2.5	Tons/ac	re	
	Seed	Mixtures	
Tem	porary	Perma	nent
Ten Seed Type	aporary lbs/acre	Perma Seed Type	nent lbs/acre
Seed Type			
	lbs/acre	Seed Type	lbs/acre

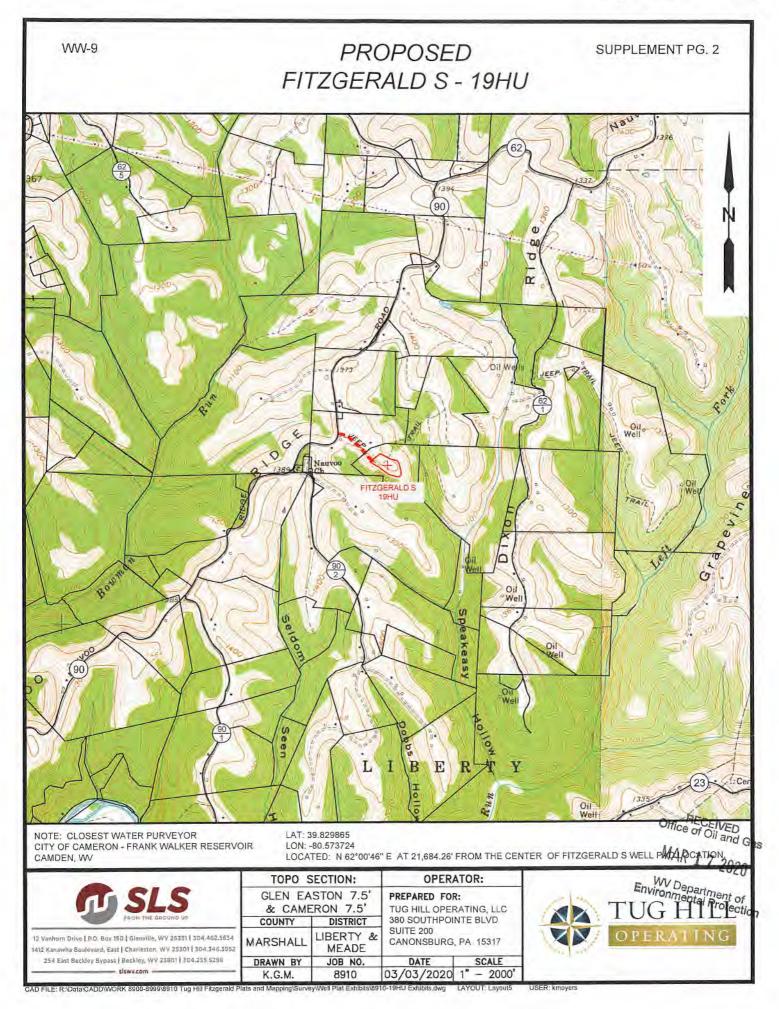
Attach:

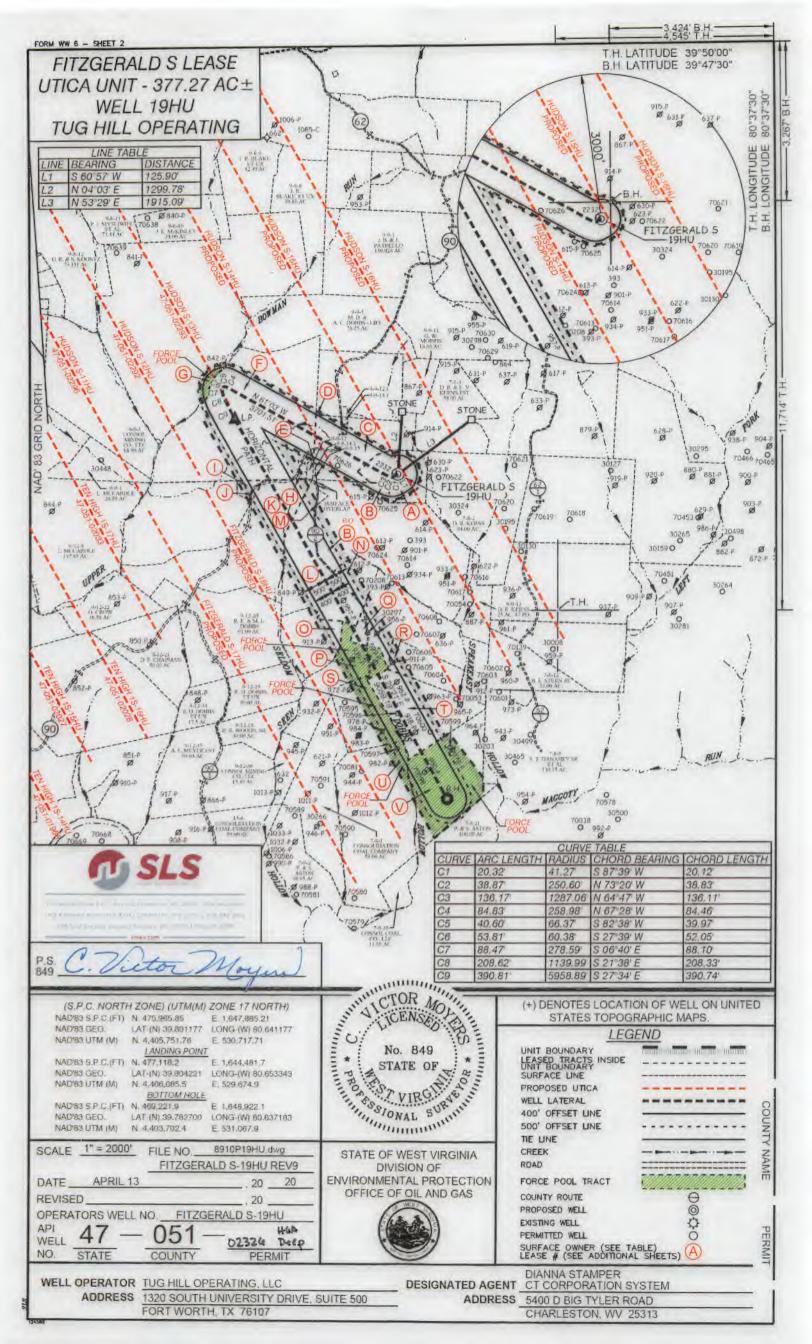
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions ($L \times W \times D$) of the pit, and dimensions ($L \times W$), and area in acreage, of the land application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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:	Juic Un	hole	~~~		
Comments:					
					Office of Oil and Gau MAR 1 7 2020
_{Title:} Oil and G	as Inspector				WV Department of Environmental Protection
Title: Chi and Ca Field Reviewed?		(Date:) No	3/11/2020	







DRM WW 6 - SHEET 1	3,424' B.H
FITZGERALD S LEASE	T.H. LATITUDE 39°50'00" B.H. LATITUDE 39°47'30"
JTICA UNIT - 377.27 AC±	
WELL 19HU	(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH) NAD'83 S.P.C.(FT) N. 475,965.85 E. 1,647,885.21 00 00 NAD'83 GEO. LAT-(N) 39.801177 LONG-(W) 80.641177 00 00
TUG HILL OPERATING	(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH) NAD'83 S.P.C.(FT) N. 475,965.85 E. 1,647,885.21 のでの NAD'83 GEO. LAT-(N) 39.801177 LONG-(W) 80.641177 888
TAG SURFACE OWNER PARCEL ACR A DANNY R. & FRANCES V. KERNS ESTATE 7-8-1 27.0	
B CONSOL MINING CO., LLC 9-12-14 127. C DANNY R. & FRANCES V. KERNS ESTATE 9-914 48.3	NAD'83 GEO. LAT-(N) 39.804221 LONG-(W) 80.653343 O O 18 NAD'83 UTM (M) N. 4,406,085.5 E. 529,674.9 Z Z
D GARY W. MORRIS 9-9-12 54.7 E NAUVOO CEMETERY ASSOC. INC. 9-9-16.1 0.12	
F TODD L. SCHERICH ET AL 9-9-16 168.2 G MARY LOU RUBINI, DAVID & ERIC KATZMEYER 9-9-4 268.	04 NAD193 GEO LAT (N) 39 782700 LONG (M) 80 637183
H GARY W. MORRIS 9-9-22 0.1: I ROBERT W. KNIGHT 9-12-10 3.0:	NAD'83 UTM (M) N. 4,403,702.4 E. 531,067.9
J CHARLES WILLIAM DOBBS, ET AL 9-12-9 82.2 K WARREN BERYLE & ELEANOR LOU CHAMBERS - LIFE 9-12-11 91.0	6
L WHIPKEY TRUST 9-12-12 61.0 M VIRGINIA MCILVAIN ESTATE & THE WHIPKEY TRUST 9-9-18 LO	0
N WHIPKEY TRUST 9-12-15 12.0 O VIRGINIA MCILVAIN ESTATE & THE WHIPKEY TRUST 9-12-16 30.0	
P VIRGINIA MCILVAIN ESTATE & THE WHIPKEY TRUST 9-12-17 37.2 Q JOHN ALFRED & LEORA JEAN DOBBS - LIFE 7-8-4 65.6	
R JOHN ALFRED & LEORA JEAN DOBBS - LIFE 7-8-5 24.0 S CONSOL MINING CO., LLC 7-8-7 31.9	
T JOHN ALFRED & LEORA JEAN DOBBS - LIFE 7-8-8 51.5 U CONSOL MINING CO., LLC 7-9-22 101.	7
V JOHN ALFRED & LEORA JEAN DOBBS - LIFE 7-9-23 60.2	
MAP/PARCEL ADJOINING SURFACE OWNER LIST ACRES 9-9-12.1 JESSICA R. & DAVID A. II DEMPEWOLF 1.26	
9-9-14.1 AMERICAN ENERGY-MARCELLUS, LLC 0.40 9-9-14.2 NAUVOO CEMETERY ASSOCIATION, INC. 0.292	
9-9-15 TRUSTEES OF THE REORGANIZED CHURCH OF LATTER DAY SAINTS LOT	
9-9-17 NAUVOO CEMETERY ASSOCIATION, INC. 1.00	PECEDENCES
NOTES	ON SURVEY
	WERE FOUND WITHIN 250' OF
PROPOSED GAS WEL ≥ 2500 SQ. FT. OR	L. NO AGRICULTURAL BUILDINGS DWELLINGS WERE FOUND WITHIN
	ER OF PROPOSED WELL PAD. CLE & TOPO MARK SCALE ARE 1"=2000'
	ATERAL OR TOP HOLE OF
3000' OF THE T PROPOSED	PP HOLES OR LATERALS OF FITZGERALD S-17HU,
HUDSON S-	FITZGERALD S-18HU, 11HU (47-051-02296), 12HU (47-051-02292),
HUDSON S- PROPOSE	13HU (47-051-02293), D HUDSON S-14HU,
PROPOSE PROPOSE	D HUDSON S-15HU, D HUDSON S-16HU.
	55%
TI SLS	3 45
FROM THE GROUND UP	5/8"
12 Vanhorn Drive P.O. Box 150 Glenville, WV 26351 304.462.5534 1412 Kanawha Boulevard, East Charleston, WV 25301 304.346.3952	(B) REBAR
254 East Beckley Bypass Bockley, WV 25801 304.255.5296	1" = 200'
	CTOR (+) DENOTES LOCATION OF WELL ON UNITED
I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY	STATES TOPOGRAPHIC MAPS.
KNOWLEDGE AND BELIEF AND SHOWS ALL	DATE MARCH 13 , 20 _ 20
THE REGULATIONS ISSUED AND PRESCRIBED	No. 849 REVISED, 20
BY THE DIVISION OF ENVIRONMENTAL PROTECTION.	API API
P.S. CTATAN	VIR WELL 47 - 051 - 2222 Der
849 C. Occor Mayne	STATE COUNTY PERMIT
MINIMUM DEGREE SUG 8910P19E	U.dwg STATE OF WEST VIRGINIA
FILE NO 0910P19F	RALD S-19HU REV9
	1" = 2000'
HORIZONTAL & VERTICAL SCALE	OFFICE OF OIL AND GAS
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO	J CORS INE TWORK)
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE	OFFICE OF OIL AND GAS
HORIZONTAL & VERTICAL SCALE HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X INJECTION DISPOSAL _ LOCATION : GROUND = 1,320.00'	IF "GAS" PRODUCTION X_ STORAGE DEEP_X_ SHALLOW
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X INJECTION DISPOSAL _ LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE	IF "GAS" PRODUCTION <u>X</u> STORAGE DEEP <u>X</u> SHALLOW D SPEAKEASY HOLLOW OF MAGGOTY RUN
HORIZONTAL & VERTICAL SCALE HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO NELL LIQUID WASTE TYPE: OIL GAS_X_ INJECTION DISPOSAL LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT	IF "GAS" PRODUCTION <u>X</u> STORAGE DEEP <u>X</u> SHALLOW D SPEAKEASY HOLLOW OF MAGGOTY RUN
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE THE TO VELL LIQUID WASTE "YPE: OIL GAS_X_INJECTION DISPOSAL COCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE	IF "GAS" PRODUCTION _XSTORAGE DEEPXSHALLOW EDSPEAKEASY HOLLOW OF MAGGOTY RUN YMARSHALLQUADRANGLEGLEN EASTON 7.5' ACREAGE27.00±
HORIZONTAL & VERTICAL SCALE HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X_INJECTION DISPOSAL LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ROYALTY OWNER DANNY S. KERNS, ET AL	IF "GAS" PRODUCTION _XSTORAGE DEEPXSHALLOW TOSPEAKEASY HOLLOW OF MAGGOTY RUN Y MARSHALLQUADRANGLEGLEN EASTON 7.5' ACREAGE27.00±ACREAGE27.00±ACREAGE27.00±ACREAGE27.00±ACREAGE27.00±ACREAGE27.00±ACREAGE27.00±ACREAGEACREAGEACREAGEACREAGEACREAGEACREAGEACREAGEACREAGEACREAGEACREAGEACREAGE
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X_ INJECTION DISPOSAL _ LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ROYALTY OWNER DANNY S. KERNS, ET AL PROPOSED WORK :	IF "GAS" PRODUCTION X STORAGE DEEP X SHALLOW D SPEAKEASY HOLLOW OF MAGGOTY RUN Y MARSHALL QUADRANGLE GLEN EASTON 7.5' ACREAGE 27.00± ACREAGE 27.00± LEASE NO. SEE WW-6A1
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X_INJECTION DISPOSAL _ LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ROYALTY OWNER DANNY S. KERNS, ET AL PROPOSED WORK : DRILLX CONVERT DRILL DEEPER	IF
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X_ INJECTION DISPOSAL _ LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICTLIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ROYALTY OWNER DANNY S. KERNS, ET AL PROPOSED WORK : DRILLX_ CONVERT DRILL DEEPER FORMATION PERFORATE NEW FORMATION	IF "GAS" PRODUCTION X STORAGE DEEP X SHALLOW ED SPEAKEASY HOLLOW OF MAGGOTY RUN OVERATION OF MAGGOTY RUN Y MARSHALL QUADRANGLE GLEN EASTON 7.5' Y MARSHALL QUADRANGLE 27.00± ACREAGE 27.00± IEASE NO. SEE WW-6A1 REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X_ INJECTION DISPOSAL _ LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ROYALTY OWNER DANNY S. KERNS, ET AL PROPOSED WORK :	IF "GAS" PRODUCTION X STORAGE DEEP X SHALLOW ED SPEAKEASY HOLLOW OF MAGGOTY RUN OUNTRANGLE GLEN EASTON 7.5' Y MARSHALL QUADRANGLE GLEN EASTON 7.5' OUNTRANGLE Y MARSHALL QUADRANGLE 27.00± MARSHALL LEASE NO. SEE WW-6A1 MARSHALL MARSHALL REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO WELL LIQUID WASTE TYPE: OIL GAS_X INJECTION DISPOSAL LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ROYALTY OWNER DANNY S. KERNS, ET AL PROPOSED WORK : DRILL A CONVERT DRILL DEEPER PROPOSED WORK : PHYSICAL CHANGE IN WELL (SPECIFY)	IF "GAS" PRODUCTION X_STORAGEDEEP_X_SHALLOW
HORIZONTAL & VERTICAL SCALE HORIZONTAL & VERTICAL SCALE CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO NELL LIQUID WASTE INJECTION DISPOSAL LOCATION : GROUND = 1,320.00' ELEVATION PROPOSED = 1,344.81' WATERSHE DISTRICT LIBERTY COUNT SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ROYALTY OWNER DANNY S. KERNS, ET AL PROPOSED WORK : DRILLX CONVERT DRILL DEEPER FORMATION PERFORATE NEW FORMATION	IF IF <td< td=""></td<>

FORM WW 6 - SHEET 3 FITZGERALD S LEASE UTICA UNIT - 377.27AC± WELL 19HU TUG HILL OPERATING



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3552 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296 slsw.com

NO.	Lease ID	Tags	Parcel	Grantor, Lessor, Etc.	Deed Bo	ok/Page
1	10*25518	A	7-8-1	DANNY S KERNS, MARRIED MAN DEALING WITH HIS SOLE AND SEPARATE PROPERTY	1010	532
2	10*18339	В	9-12-14	RESOURCE MINERALS HEADWATER I LP	940	448
3	PENDING	C	9-9-14	REGINA DANETTE FIGUEROA	1075	137
4	10*21859	D	9-9-12	GARY WAYNE MORRIS	960	192
5	10*19987	E	9-9-16.1	LESLEY D BALLA	955	103
6	10*19987	F	9-9-16	LESLEY D BALLA	955	103
7	**	G	9-9-4	MARY LOU RUBINI AKA MARY LOU MILLER	793	287
8	10*24535	н	9-9-22	BOARD OF EDUCATION OF MARSHALL COUNTY	1026	64
9	10*23656	I.	9-12-10	ROBERT W KNIGHT AND BARBARA J KNIGHT	1011	504
10	10*15999	J	9-12-9	CHARLES W DOBBS AND JUDITH M DOBBS	702	171
11	10*15494	К	9-12-11	CHRISTOPHER SINGER AND SHEREA SINGER	898	433
12	10*19557	L	9-12-12	TERRY L BLAKE	944	649
13	10*22524	M	9-9-18	ALYCE LYNN MCGUFFIE	1027	233
14	10*21512	N	9-12-15	THE WHIPKEY TRUST ACTING TRUSTEES DAVID LAND CAROLJ WHIPKEY	949	265
15	10*21512	0	9-12-16	THE WHIPKEY TRUST	949	266
16	10*21532	Р	9-12-17	CHARLES E RICHARDSON AND SHIRLEY S RICHARDSON	957	327
17	10*18988	Q	7-8-4	MICHAEL R DOBBS AND LEANNE DOBBS	957	307
18	10*21112	R	7-8-5	CLARENCE C STOVER JR AND LOU E STOVER	952	382
19	10*21532	5	7-8-7	CHARLES E RICHARDSON AND SHIRLEY S RICHARDSON	1017	620
20	10*21112	T	7-8-8	CLARENCE C STOVER JR AND LOU E STOVER	952	382
21	10*17930	U	7-9-22	BOUNTY MINERALS LLC	928	396
22	**	V	7-9-23	O E BURGE AND SARAH L BURGE ET AL	395	586

		0
FILE NO. 8910P19HU.dwg FITZGERALD S-19HU REV	19 SUNT CTOR MOL	STATE OF WEST VIRGINIA
DATE	- Inomographie	
REVISED, 20	No. 849	ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS
OPERATORS WELL NO	STATE OF	
API WELL <u>47</u> <u>051</u> <u>02324</u> WELL <u>5777</u> <u>02324</u> WELL <u>6777</u>	A TONAL SURVINITION	P.S. C. Victor Moyne
WELL OPERATOR TUG HILL OPERATING, LLC	DESIGNATED AG	DIANNA STAMPER ENT CT CORPORATION SYSTEM
ADDRESS 1320 SOUTH UNIVERSITY DRIV FORT WORTH, TX 76107	<u>(E, SUITE 500</u> ADDR	CHARLESTON WAY 25313

WW-6A1 (5/13) Operator's Well No. Fitzgerald S-19HU

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:

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

*See attached pages

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

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

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

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

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. Miller My Jull										
lts:	Permitting Specialist - Appalachia Region										

Operator's Well No. Fitzgerald S-19HU

٤
Ś
6A
1 Su
pp
len
len
t

10°23315		10*7777	87577 -DT	97577_DT	SC3CC=01	10*77203	10*22202	10*22201	10°22199	10*21322	7117-0T	10*21117	10*19993	10*19987	10°24413	10*24398	10*24397	10*24047	10°23315	10*22783	10*22553	10*17576	10*22203		10*22202	10*22201	10°22199	10°21322	10*21117	10*19993	10*19987	10°21859	PENDING	PENDING	10*22524	10"18339	10*25522	10*25520	10*25518
F		-	, ,				7	-	"	-	-	n -	-	F	m	m	m	m	m	$\left \cdot \right $		+	- m	\rightarrow	m	m	m	-		+-	⊢		n	n	•		A	>	>
9-9-16		9-9-16	01-6-6	9-9-10	0.0.16	9.9-16	9-9-16	9-9-16	9-9-16	9-9-16	01-6-6			1 1		9-9-16.1	9-9-16.1	9- <u>9-</u> 16.1		9-9-16.1					9-9-16.1	9-9-16.1	9-9-16.1			9-9-16.1		9-9-14 9-9-12		9-9-14	9-12-14	9-12-14	7-8-1		7-8-1
DIANE CLARE WILLIS	TIM A WILLIS AND			BONAI D DAKAN			MARK DAVID HUNT	FREDERICK MAXWELL YEATER	DONALD BROOKS WESLEY	BILLIE A WAYT		LOFITANE & FONTES				WANDA D SCHERICH	MARK D CHAMBERS AND SHERYL CHAMBERS	AL SHANE M MALLETT, SPECIAL COMMISSIONER	DIANE CLARE WILLIS	SUZANNE SWIFT	DAVID H DAKAN	BONALD DAKAN	SCHROTH		MARK DAVID HUNT	FREDERICX MAXWELL YEATER	DONALD BROOKS WESLEY		JOELLYN JOHNSON		LESLEY D BALLA	RIS	DEENA JANINE PALOMO	FIGUEROA	ALYCE LYNNE MCGUFFIE	RESOURCE MINERALS HEADWATER I LP	REGINA D FIGUEROA	DEENA J PALOMO	DANNY S KEKNS, MARRIED MAN DEALING WITH HIS SOLE AND SEPARATE PROPERTY
TH EXPLORATION, LLC		TH EXPLORATION, LLC	TH EVELOPATION ILC	TH EXPLORATION IIC	TH EXPLORATION. LLC	BLUE ROAN RESOURCES	BLUE ROAN RESOURCES	BLUE ROAN RESOURCES	BLUE ROAN RESOURCES	TH EXPLORATION, LLC		TH EXPLORATION, LLC	5 TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION LLC		BLUE ROAN RESOURCES	BLUE ROAN RESOURCES	BLUE ROAN RESOURCES	BLUE ROAN RESOURCES	TH EXPLORATION, LLC	TH EXPLORATION, LLC	AMERICAN PETROLEUM PARTNERS LLC	AMERICAN PETROLEUM PARTNERS LLC	AMERICAN PETROLEUM PARTNERS LLC											
1/8+		1/8+					1/8+	1/8+	1/8+	1/8+	44.	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+				1/8+		1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+
988		972	966	f i	9 <u>64</u>	934	935	926	926	953		952	955	955	1023	1023	1023	1021	988	972	966	ŝ	934		935	926	926	953	952	960	955	960	1075	1075	964	940	1010	1009	1010
138		8	120	530	528	471	109	422	424	293		392	105	103	157	160	163	117	138	58	130	530	471		109	422	424	293	392	36	103	192	140	137	446	448	535	357	532
NA		NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA		NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA				NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA		NA				-	NA	NA	NA	NA		NA				NA	NA	NA	NA				NA		NA	NA	NA	NA					NA	NA	NA	NA	NA	NA	NA
NA		NA					NA	NA	NA	NA		NA AN				NA	NA	NA	NA				NA		NA	NA	NA	NA					NA	NA	NA	NA	NA	NA	NA
NA		NA NA					NA	NA	NA	NA NA		NA NA				NA NA	NA	NA	NA				NA NA		NA	NA	NA	NA					NA NA	NA	NA	NA	NA	NA	NA
NA NA		NA					NA	NA	NA	NA NA		NA					NA	NA	A NA				NA										NA				A		A
NA		NA					NA	NA	NA	NA		NA				NA		NA	NA				NA		NA	NA	NA						NA				NA	NA	NA
NA		NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MA
NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	_	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	_	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	МА
NA		NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA		NA	AN A	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N
NA		NA	AIA I	NA	NA	A1) Res	Res	Rea	Ret	NA 41/		NA				NA	NA	NA	NA																NA				
						41/405 Blue Roan Resources LLC to TH Exploration LLC	sources LLC to TH Noration LLC	Resources LLC to TH Exploration LLC	Resources LLC to TH Exploration LLC	405 Blue Roan											-		Exploration LLC	41/405 Blue Roan Resources LLC to TH	41/405 Blue Roan Resources LLC to TH Exploration LLC	41/405 Blue Roan Resources LLC to TH Exploration LLC	A1/405 Blue Koan Resources LLC to TH Exploration LLC									-	Petroleum Partners Operating LLC to TH Exploration LLC	43/515 American Petroleum Partners Operating LLC to TH Exploration LLC	43/515 American Petroleum Partners Operating LLC to TH Exploration LLC

.

	10°21781 L	10*19696 L	10*19633 L	10*19632 L	10*19631 L	10*19571 L		10*19567 L	-	10*19558 L	10*19557 L	10*27947 K	*	$\left \right $	~ ~			10*28510 J	10*28509 J	10*16001 J		10*16000 J		10*15999 J		10*23656	10*24535 H	د		:	10*24413 F	10°24398 F	10°24397 F	10*24047 F		WW-6A1 Supplement		
	9-12-12	9-12-12	9-12-12	9-12-12	9-12-12	9-12-12		9-12-12		9-12-12	9-12-12			9-12-11						9-12-9		9-12-9		9-12-9		9-12-10	9-9-22	9-9-4		9-9-4	9-9-16	9-9-16	9-9-16	9-9-16		ipplem		
PEGGY ANNETTE GARDNER & ROBERT W	LINDA SUE BENNETT AND THOMAS BENNETT	DORIS E BLAKE	WANDA D SCHERICH	UDITH M DOBBS	AND LEIGH SCHERICH	MARLENE GARIN	CAROLE J WOOD	BRENDA S PURDY	JAMES R BLAIR	LYN BLAKE	TERRY L BLAKE	HOLDINGS LLC	ELEANOR CHAMBERS	HICHELLE ANN KNAUFF	AND SHEREA SINGER	CHRISTOPHER SINGER	REBECCA LYNN RITZ	LINDA S & THOMAS L BENNETT	PEGGY & ROBERT GARDNER	MARLENE D GARIN		DAVID J KLUKAS ET UX		CHARLES W DOBBS AND JUDITH M DOBBS		ROBERT W KNIGHT AND BARBARA J KNIGHT	OF MARSHALL COUNTY	DAVID KATZMEYER AND SHIRLEY KATZMEYER BOARD OF FOULTATION	ERIC KATZMEYER	MARY LOU RUBINI AKA MARY LOU MILLER	AND LEIGH SCHERICH	WANDA D SCHERICH	MARK D CHAMBERS	SPECIAL COMMISSIONER	BESSIE CARMICHAEL ET	ent		
	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	IH EXPLORATION, LLC	_		TH EXPLORATION, LLC	TRIENERGY HOLDINGS, LLC		TRIENERGY HOLDINGS,		TRIENERGY HOLDINGS,		TH EXPLORATION, LLC	TH EXPLORATION, LLC	CHEVRON USA LLC	CHEVRON USA LLC	HEVRON	TH EXPLORATION, LLC	TH EXPLORATION, LLC	S TH EXPLORATION, LLC	TH EXPLORATION, LLC				
	1/8+	1/8+	1/8+	1/8+	1/8+	+	1/8+	1	╈	1/8+	-	1/8+	1	1/8+			4 /0.	1/8+	1/8+	1/8+		1/8+		1/8+		1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+				
	958	946	945	944	946	945	944 947	944	944	944	944	1063	1023	942	942	10/6	1076	1073	1073	702		702		702		1011	1026	792	16/	793	1023	1023	1023	1021				
	426	395	-	64.4	302	-	561	637	640	646	649	568	166	447	445	5	;	350	348	173		175		171		504	2	226	Z26	287	157	160	163	117				
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA		NA		NA		NA	NA				NA	NA	NA	NA				
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA		NA		NA		NA	NA				NA	NA	NA	N				
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	LC Ho	24	14/		H0 110		NA	NA				NA	NA	NA	NA				
																				dings LLC to NPAR	24/190 TriEnergy	180 TriEnergy dings LLC to NPAR		24/180 Intenergy Holdings LLC to NPAR LLC														
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	NA	NA	Radler 2000 Limited Partnership	24/466 AB Resources LLC and NPAR LLC to Chief Exploration & Development LLC and	LLC and NPAR LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	24/466 AB Resources	Partnership	24/466 AB Resources LLC and NPAR LLC to Chief Exploration &	NA	NA				NA	NA	NA	NA EN	4	MAL	Office of C	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	NA	NA	Enerplus Resources USA Corp to Chevron USA Inc	25/1 Chief Explora Development LLC, Oil & Gas LLC, Rad 2000 Umlted Partnership and	Oil & Gas LLC, Radler 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc		Enerplus Resources USA Corp to Chevron USA Inc		NA	NA				NA	NA	NA	NA	onne	apatine The second	office of New Motion	50
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**	NA	NA	nc Corp to Chevron USA Inc		Oil & Gas LLC, Radler 2000 Limited Partnership and Enerplus Resources USA Inc Corp to Chevron USA Inc	25/105 Chief & Exploration & ef Development LLC, Chief	SA Enerplus Resources USA Inc Corp to Chevron USA Inc		NA	NA				NA	NA	NA	NA			otion	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inc USA Inc	<u> </u>	28/356 TriEnergy Holdings LLC and ISA TriEnergy Inc to Chevron Inc USA Inc	lef	Includings LLC and Inc USA Inc Inc USA Inc	ief 28/356 TriEnergy	NA	N				NA	NA	NA	NA				
	NA	NA	NA	NA	NA	NA	NA	NA	INA	NA	**	NA	NA	Properties Inc	30/494 Chevron US/	30/494 Chevron USA Inc vron to Statoil USA Onshore Properties Inc		vron to Statoil USA Onshore Properties Inc		NA	NA	FORCE POOL		FORCE POOL	NA	NA	NA	NA										
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**	NA	NA	Appalachia U.C	Inc 30/532 Chevron USA	A Inc 30/532 Chevron USA Inc ore to Chesapeake Appalachia LLC	<u> </u>	A Inc. 30/332 Chevron USA Inc. ore to Chesapeake Appalachia LLC		NA	NA				NA	NA	NA	NA				
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	Production Con LLC	33/110 Chesapeake A Inc Appalachia LLC to SWN	33/110 Chesapeake A Inc Appalachia LLC to SWN Production Company LLC		A Inc. Apparacnia LLC to SWN Production Company LLC	33/110 Chesape	NA	NA				NA	NA	NA	NA				
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	npany to SWN Ext Titleholder	eake 33/424 Statoll USA	eake 33/424 Statoil USA to SWN Onshore Properties In mpany to SWN Exchange Titleholder LLC		npany to SWN Exchange Titleholder LLC	vake 33/424 Stat	NA	NA				NA	NA	NA	NA	_			
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ţ	NA	NA		5	1 2		20		NA	NA				NA	NA	NA	NA				
	NA	NA	NA	NA	NA	2	2 7	NA		NA	2	2		2	2 -			Z	7	nerger E	19/624 SWN Exchange Titleholder LLC and SWN 3	19/624 SWN Exchange Titleholder LLC and SWN 3 Production Company LLC merger		Production Company C	24 SWN Exchange						_					Operator's Well No.		
	>												ĨĂ	NA	× ×	NA	•	NA	NA	Company LLC to TH Exploration LLC	6/431 SWN Production	36/431 SWN Production Company LLC to TH Exploration LLC		Exploration LLC		NA	NA				NA	NA	NA	NA		s Well No. <u>F</u>		
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	Onshore Properties Inc to TH Exploration LLC	36/455 Statoil USA	36/455 Statoll USA Onshore Properties Inc to TH Exploration LLC		36/455 Statoil USA Onshore Properties Inc to TH Exploration LLC		NA	NA				NA	NA	NA	NA		Fitzgerald S-19HU		

5
2.
1
S

N N	WW-6A1 Supplement	Subbl	ement												office a Oil	Containe Provide State	orection				Opera	Operator's Well No. <u>Fitzgerald S-19HU</u>
	10*21890 L	9-12		TH EXPLORATION.	+	+			NA	NA	NA	NA	NA	NA	42	MANE	NN	NA		NA	NA NA	
I I	10*21896 1	9-12			1	-	+		NA	NA	NA	NA	NA	NA NA	EN NA		NA	NN	1	NA		NA
	10*22396 L 10*23227 L	9-12 9-12							NA	NA	NA	NA	NA	UN No	VN NN		NA.	NN	 I 	NA		NA
	10*24396 L	9-12				-	-		NA	NA	NA	NA	NA	N/	NA NA		NA	NA	- H. I.	NA	NA NA	
1 1	Ħ	-			11	+	+ +		NA	NA	NA	NA	NA	NA.	NN		NA	NN	1.1	NA		NA
No. No. <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td>NA</td> <td>NN</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td></td> <td>NA</td> <td>NA</td> <td></td> <td>AK</td> <td>NA NA</td> <td></td>		-				-	-		NA	NN	NA	NA	NA	NA	NA		NA	NA		AK	NA NA	
No. No. <td></td> <td></td> <td>ACTING TRUSTEES DAVID LIAND CAROLJ</td> <td></td> <td>_</td> <td>-</td> <td>-</td> <td>_</td> <td>-</td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td></td> <td></td>			ACTING TRUSTEES DAVID LIAND CAROLJ		_	-	-	_	-			_	_				1	1		1		
	1	9-12			1	-	-		NA -	NA	NA	NA	NA	NA	NA NA		NA	NA		NA		NA
	1	9.12		TH EXPLORATION, LL			++		NA	NA	NA	NA	NA	NA	NA		NA	NA		NA	NA NA	
		-		Y TH EXPLORATION, LL		-			NA	NA	NA	NA	NN	N	NN		NN	NA		NA		NA
1 1					1	-		-	NA	NA	NN	NA	NA	NA	NA		NA	NN	1	NA		NA
Image: space							-		NA	NA	NA		NA	N	22		Z	NA		N	NA	
I Activity Ac									South Penn Oil Company (1968 Ich Penn Oil aka Pennzoil Co		1.000		6		V493 McElroy Coal mpany, Consolidation					4	· FORCE POOL	· · · FORCE POOL
Index Marche Marcha Marcha Marcha Marche Marche Marcha Marche Marche Marche March	-	-			N		UNLEASED		without Australia	Timbros comos s		The second second			** FORCE P	100						
Interface Interface <thinterface< th=""> Interface <thinterface< th=""> Interface Interface</thinterface<></thinterface<>	-		1 1	h	z	-	UNLEASE	0	-	_				_	•• FORCE P	JOL						-
No. No. <td></td> <td>, ,</td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>20</td> <td>2</td> <td>NA.</td> <td>8</td> <td></td> <td>2</td> <td></td> <td></td> <td>NA</td> <td></td> <td>E A</td> <td>~</td> <td></td>		, ,			-					20	2	NA.	8		2			NA		E A	~	
No. NUMBER MARK NUMARK NUMARK NUMARK		2			-	-	-		NA	MA	NA	NA	NA	N	NA		NA	NA	2	IA		NA
No. No. No. No. No. No. <th< td=""><td></td><td>9-12</td><td>-</td><td></td><td>-</td><td>-</td><td>-</td><td></td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td></td><td>NA</td><td>NA</td><td></td><td>NA</td><td></td><td>NA</td></th<>		9-12	-		-	-	-		NA	NA	NA	NA	NA	NA	NA		NA	NA		NA		NA
1 1	-	9-12					-		NA	NA	NA.	NA	NA	NA	NA		NA	NA		NA		NA
No. STATE INTRODUCTIONAL INTRODUCTIONAL INTRODUCTIONAL INT		9 1					-		NA	NA	NA	NA	NA	NA	NA		NA	NA		NA		NA
Noticity Monory Yange	-	9-12					-		NA	NA	NA	NA	AN NA	VN AV	NA		NN	NN		NA	NA NA	
Image: Normal content of the state		9-12	1.0				-		NA	NA	NA	NA	NN	NA	NA		NA	NA	1	NA		NA
No. Monther Name		9-12		-	-			1.1	NA	NN	WA	NA	NA	NA	NA		NA	AN		NA		NA
		9.12		TH EXPLORATION, LL		-	-		NA	NA	NA	NA	NA	NA	NA		NA	NA		NA	NA	NA
		9.12		TH EXPLORATION, LL		-	1		NN	NA	NA	NA	NA	NA	NA		NA	NA		NA		NA
1 912-17 INTERNANCE	1	9-12				-	1	11.	NA	NA	NA	NA.	NA	NA	NA		NA	NN		NA		NA
Image: product of the state of the	-	9-12	-				1		NA	NA	NA	NA	NA	NA	NA		NA	NA		NA		
No. Solution		9-12	-	1.1		-		1.5	NA	NA	NA	NA.	NA	NA	NA		NA	NA		NA		NA NA
b 57.217 OWNORCE HERMORATION LLC 1/8 101 600 NA NA <th< td=""><td>-</td><td>9-12</td><td></td><td>TH EXPLORATION, LL</td><td></td><td>-</td><td></td><td></td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td></td><td>NA</td><td>NN</td><td></td><td>NA</td><td></td><td>NA</td></th<>	-	9-12		TH EXPLORATION, LL		-			NA	NA	NA	NA	NA	NA	NA		NA	NN		NA		NA
Image: space		9-12		TH EXPLORATION, LL		-	1	-	NA	NN	NA	NA	NA	NA	NA		NA	NA		NA		NA
p 9:2:17 MARGE M DAVENUENT THEREORATION, LC 1/4* 1017 601 MA MA <td>-</td> <td>-</td> <td>1.00</td> <td>TH EXPLORATION, LL</td> <td></td> <td>-</td> <td></td> <td>12.</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA.</td> <td>NA</td> <td>NN</td> <td></td> <td>NA</td> <td>NA</td> <td></td> <td>NA</td> <td>NA NA</td> <td>NA</td>	-	-	1.00	TH EXPLORATION, LL		-		12.	NA	NA	NA	NA	NA.	NA	NN		NA	NA		NA	NA NA	NA
p 9-52-27 MARGART R JOHNSON HERPEORATION, LC 1/a 101 0.07 NA NA <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td>1</td> <td></td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td></td> <td>NA</td> <td>NN</td> <td></td> <td>NA</td> <td></td> <td>NA</td>		-		-		-	1		NA	NA	NA	NA	NA	NA	NA		NA	NN		NA		NA
P 9-12-37 WILLMAN NOGEDOW THE DPEGRATION, LIC 1/8- 1005 451 NA NA </td <td></td> <td>-</td> <td>_</td> <td>N TH EXPLORATION</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA.</td> <td>NA</td> <td></td> <td>NA</td> <td>NA</td> <td></td> <td>NA</td> <td></td> <td>MA</td>		-	_	N TH EXPLORATION	-	-	-		NA	NA	NA	NA	NA	NA.	NA		NA	NA		NA		MA
Image: Process of the set of the	Ħ	-		TH EXPLORATION	tt	+			NA	NA	NA	NA	NN	NA	NN		NA	NN		NA	NA NA	
μ 9.23.27 MANKHELE DNRAM THE SPECIATION, LIC 1/8 1021 340 NA NA <td></td> <td>-</td> <td></td> <td>ID IER TH EXPLORATION, U</td> <td></td> <td></td> <td>-</td> <td>1</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td></td> <td>NA</td> <td>NA</td> <td></td> <td>NA</td> <td>NA</td> <td></td>		-		ID IER TH EXPLORATION, U			-	1	NA	NA	NA	NA	NA	NA	NA		NA	NA		NA	NA	
p 917.17 SHEMARY IMPERIDIATION IMPERIDIATION 112 113 113 114 NA	-	-		AN TH EXPLORATION, IL		-	+	- E	NA	NN	NA	NA	NA	NA	NA		NA	NA		NA		MA
P 9-12-17 AND MICHAE ADAVIS THE (2010BATION, LIC 1/8+ 1023 531 NA	-			-	-		-	1	NA	NA	NA	NA	NA	NA	NA		NA	NA	1	NA.	NA	
	10*24268 P	-		-		-	1	-	NA	NA	NA	NA	NA	NA	NA		NA	NA	1.1	NA		NA

×-	
6A1	
S	
E.	
þ	
σ	
P	
З	
e	

NA NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	584 NA	962	uc	TH EXPLORATION, LLC	HAZEL M KENDALL	7-8-4	10*22393 Q
NA	100	NH												+		AND .			
NA	Dial D	N/A	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	94 NA		ON, LLC 1/8+	TH EXPLORATION, LLC	CAREY I KENDALL AND	7-8-4	10*22392 Q
NA							-						-	-	-	_	AND BONNIE J		
	NA	NA	NA	NA	NN	NA	NA	NA	NA	NA	NA,	NN	481 NA	964	ON, LLC 1/8+	-	CUNNINGHAM	7-8-4	
NA	NA	NA	NA	NA	NA	NA	NA	NN	NA.	NA	NA	NA	580 NA	962	ON, LLC 1/8+	TH EXPLORATION, LLC	AARON & PARRY	7-8-4	10*22390 Q
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	282 NA	962	ON, ILC 1/8+	M THEXPLORATION, LLC	CUNNINGHAM AND CORA CUNNINGHAM	7-8-4	10*22383 Q
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	416 NA	963	ON, LLC 1/8+	TH EXPLORATION, LLC	KAREN SUE BLAKE CHARLES S	7-8-4	10*22306 Q
NA	NA	NA	NN	NA	NA	NA	NA	NA	NA	NA	NA	NA			-		MARY LOU RUSSELL AND		
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	526 NA		-		DEIRDE & DORIA AND		
NA	NA	NA	NA	AN	NA	NA	NA	NA	NA	NA	NA	МА	524 NA	. 961	ON, LLC 1/8+	HAL THEXPLORATION, LLC	EDWARD S ROSENTHAL AND NANCY ANN GOLDBERG ROSENTHAL	7-8-4	10*22267 Q
NA	NA	NA	NA	NA	NN	NA	NA	NA	NA.	NA	NA	NA	VN DES	961	ON, LLC 1/8-	BBS TH EXPLORATION, LLC	BRIAN WILLIAM DOBBS AND LISA DOBBS	7-8-4	10*22751 Q
NA	NA.	NA	NA	NA	NA	NA.	NA	NA	NA	AN	NA	NA	SAS NA	953	ON, LLC 1/8-	TH EXPLORATION, LLC	PEGGY LEE DOBBS	7-8-4	D 10:22197 Q
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	528 NA	1961	ON, LLC 1/8+	TH EXPLORATION, LLC	SARAH M ROUSH GARY DOBBS AND	7-8-4	10*22148 Q
MA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			ON, LLC 1/8+	TH EXPLORATION, LLC	GLADYS E DOBBS ROBERT E ROUSH AN	7-8-4	10*22146 Q
NA	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	MA	NA	520 NA	961	-	d	AND ANGELA J MURPHREE		
NA	NA	NA	NA	NA	NA	NA	NA	MA	NA	NA	NA	NA	483 NA	963	GN, LLC 1/8+	TH EXPLORATION, LLC	INC WAYTONT MITCHING	7-8-4	10*22087 Q
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	56 NA	300	ON, LLC 1/8+	TH EXPLOBATION, LLC	MARRINER PLEASANT UNI NUMBER	7-8-4	10*22063 Q
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	50 NA	006	ON, LLC 1/8+	TH EXPLORATION,	DOROTHY MARIE	7-8-4	0*22062 Q
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	54 NA	960	ON, LLC 1/8+	EN TH EXPLORATION, LLC	AND VICKED WESTEN	7-8-4	10*22061 Q
NN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	115 NA	960	ON, LLC 1/8+	TH EXPLORATION, LLC	WARRICK WILLIAM A WESTEN	7-8-4	10*21877 0
NA	NA	NA	NA	NA.	NN	NA	NA	NA	NA	NA	NN	NA		-	1	TH EXPLORATIO	THOMAS BRIAN	+	1
NA	NA	NA	NA	NA	NN.	NN	NA	NA	NA	NA	NA	NA	113 NA	006	ON, LLC 1/8+	TH EXPLORATION, LLC	MELVIN J FRANCIS	7-8-4	10*21875 Q
20	NA	NA	NA	NA.	NA	NA	Z	NA	NA	24	NA	NA	_	-			CARLTON DOBBS JR AND MIKHAIL PROKOPENKO		
NA	NA	NA	NA	NA	NA	ЧN	NA	NA	NA	NA	NA	NA				-	AND BETH ANN MILLER		
NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA	307 NA	-	-	õ	1		10*18988 Q
	44/620 SWN Production Company LLC to TH Exploration LLC	NA	NA	RA.	NA	NA	NA	NA	NA	NA	NA	NA	401 NA	1072	ON, LLC 1/8+	N THEXPLOBATION, LLC	ALBERT & MOLLWAIN *	9-12-17	t0*28626 P
NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	NA	NA	NA	108 NA	1021	GN, LLC 1/8+	TH EXPLORATION, LLC	-	9-12-17	10*23900 P
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	147 NA	1021	ON, U.C 1/8+	ORT TH EXPLORATION, U.C.	MARGIE M DAVENPORT	9-12-17	10*23908 P
n 44/626 Equinor USA Onshore Properties Inc to TH Exploration LLC	44/620 SWN Production Company LLC to TH Exploration LLC	NA	NA	2	NA	NA	NA	ra	N. A.	NA	NA	RA.	597 NA	957	1/8-	SWN PRODUCTION	ELIZABETH JANE KELLEY	9-12-17	10*28320 P
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	395 NA	1058	ON, U.C 1/8+	TH EXPLORATION, U.C.		9-12-17	10*27387 P
NA	NA	NA	NA	NA	NA	NN	NN	NA	NA	NA	NA	NA	576 NA	1031	ON, LLC 1/8+	TH EXPLORATION, LLC		9-12-17	10*25330 P
NA	NA.	NN	MA	NA	NA	NA	NA	NA.	NA	NN	NA	NA	461 NA	1029	ON, LLC 1/8+	E TH EXPLORATION, I	1.1.	9-12-17	10*25175 P
I. NA	NA NA	NA	222	2 22	80 NH	a Ny	NN NA	100	ANA I	NA NA	2 72	201	_	2000	5 8	ND TH EXPLORATION IIC	NANCY C PEKERA AND	11-21-6	-
							:			:	5			-	5	_			
NA	NA	NA	NA	NA	NN	NA	NA	NA	NA	NA	NA	NA	340 NA 205 NA	1025	ON, LLC 1/8+ ON, LLC 1/8+	TH EXPLORATION, TH EXPLORATION,	AND HARLEY L GATTS IEAN ELISE DAVIS	9-12-17 9-12-17	10*24500 P 10*24581 P
NA	NA	NA	NA	NA	NN	NN	NN	NN	NA	NA	NA	NA	_	-	LIC			9-12-17	10*24480 P
																AN			
NA	NA	NA	NA	NA	NHIN I	NA	NA	NA	NA	NA	NA	NA	422 NA 450 NA	1025	ON, LLC 1/8+	TH EXPLORATION, LLC TH EXPLORATION, LLC	DAVIS SWIGER IANE ELLEN DAVIS	9-12-17 9-12-17	10*24423 P 10*24477 P
				ental	NN Depenal	_	-					-							
itzgerald S-1	Operator's Well No. Fitzgerald S-19+	Operato		-unencece	MAP.												ment	WW-6A1 Supplement	/-6A1
			2	* 01 10	the 17														
				2010	ALCO.														
				20	CEN ano														
				Go	- Can														

Operator's Well No. Fitzgerald S-19HU

WW-6A1 Supplement 10*23104 10*23147 10*23151 10*22838 10*22985 10*22625 10*22626 10*22722 10*22798 10*22799 10*22805 10*22805 10*22807 10*22807 10*22624 10*22623 10°22552 10°22554 10°22555 10*22483 10*22486 10*22529 10*22428 10*22423 10*23354 10*23417 10*23351 10*23352 10*23282 10*23283 10*23177 10*23182 10*23267 10*22622 10*22621 10*22532 10*22476 10*22475 10*23281 10*23153 10"23095 0*22530 •22421 م م م م م מסס ۵ م م م ۵ p ۵ م م م ۵ þ D ۵ ۵ _ Q ۵ þ p P Ŀ م م 7-8-4
 L4
 CUNNINGHAM
 TH EXPLORATION, LLC

 4
 TREDOR HOODS
 THE SPLORATION, LLC

 4
 ELIZABETH HALEF LEEK
 THE SPLORATION, LLC

 1
 DUSTIN HENRY
 THE SPLORATION, LLC

 1
 DUSTIN HENRY
 THE SPLORATION, LLC

 1004TH HENRY
 THE SPLORATION, LLC

 1004TH HENRY
 THE SPLORATION, LLC

 1004TH HENRY
 THE SPLORATION, LLC
 A MARKARET TANDE A MARKARET TANNE ILATATER NANNETTE ULL'Y LAUNG ANNE ILATES DEKUNBEL AND DEBRA WEST DEBRA WEST DEBRA WEST MARKE DEKUNBEL AND MARKEL
 I
 CHARTELENSIST
 THE SPECIAL STREET

 1
 SHREET ANN DOUBS
 THE SPECIAL STREET

 1
 SKIRET ANN DOUBS
 THE SPECIAL STREET

 1
 SKIRET ANN DOUBS
 THE SPECIAL STREET

 1
 SKIRET ANN DOUBS
 THE SPECIAL STREET

 1
 CALLER NE TO ANTS AND
 THE SPECIAL STREET

 1
 CARTER STREET
 THE SPECIAL STREET

 1
 COMEELINSAT
 THE SPECIAL STREET

 1
 COMEELINSATIE
 THE SPECIAL STREET

 1
 EVENING THE EXAMPLE
 THE SPECIAL STREET

 1
 EVENING THE EXAMPLE
 THE SPECIAL STREET

 1
 AND MARILYN L GARRISON CHARLES WARRICK AND LISA WARRICK AND LINDA D BLAKE BRIAN K MASTERS D MELINDA D BLAKE BRIAN K MASTERS D DOROTHY L ERAZMUS AND JEAN R ERAZMUS KURT J WENNEMAN & DEBRA A WENNEMAN T AND KIMBERLY MASTERS STEVEN D MASTERS CUNNINGHAM CUNNINGHAM CORRESTOPHER L AND LCROW AND GLENDA F CROW AND GLENDA F CROW AND GLENDA F CROW AND GLENDA F CROW AND BEVERLY A LEDBETTER RUDOLPH H PARSONS MARY V DOBBS MARK A CUNNINGHAM LAWRENCE W CROW JR AND WANDA F CROW JOHN RUSSELL BECKER AND MONICA M MASTERS FRANCES V CARPENTER T BRADY J MCCORT T BENJAMIN MATHER BENJAMIN MATHER JOSEPH F CHAVIELEWSKI JAND SANDRA ROBERT E WEST RS TH EXPLORATION, LLC ES V CARPENTER TH EXPLORATION, LLC J MCCORT TH EXPLORATION, LLC MIN MATHER TH EXPLORATION, LLC H EXPLORATION, LLC 1/8+ 984 1008 968 970 972 972 972 972 972 984 988 965 964 984 984 983 983 983 983 977 974 965 965 965 396 965 966 966 966 965 38 963 965 963 984 965 ŝ 541 26 266 80 91 91 92 530 534 479 109 539 3 545 501 509 507 181 184 426 532 643 643 564 344 194 512 503 202 179 483 517 515 543 103 NA NANA NA NA NA NA 222 N N 2 2 z NANA z z R z z N z 2 z z 2 2 2 z Īz N, Ň Ň NA NA Z Z 2 2 2 2 2 2 Ň 2 2 2 NNN S N R R R Ň N. N, N. NA NA N N s s NA 2 2 2 3 222 222 2222222 222 222 z N NA NA 8888888 NANA NNN NAN NA S NANA NA s NA NA SS N N NANA ĸ NANA R R R NNNNNNN z N 2 z z NNN ş z NANA N R 2 ş NA N R NA Ň N N N N N N N s R N/ ĸ Ň Ň HANNO OHICE OHIO OHICE OHIO z z 2 2 2 2 2 2 2 2 2 Z NA NANA 2 2 2 2 3 2 2 2 2 2 2222222 ZZZ ZZZ NA NA z z NNA * * * * * * NNN N N N ĸ 2 Z 2 2 222 222 N, z Ż z 1z z 888 2 NANA N NA NA NA S S SSS Ň N **Operator's Well No.** Fitzgerald S-19HU 22 zz 2 3 2 2 2 222 22222222 z z z N NA X X NA NA NA 2 2 2 ş Z z 222

WW-6A1 Supplement

	Operator
	S
	Well
2	No.
	Fitzgerald !
	S-19HU

10*28575			10*28374	10*7850	10*28184		-	10*28116	+	10*27942	-	-	10*27351		10"27139			10*25717		10*25003	10"24915	-	10*24670		10*24662		10*24649		10*24084	10*24038	10*24037	H	10*24015	-		10*23899	10*23893 (10*23758 0	-	H	10*23418 0	-
0 7	-		D T	Q 7	Q 7	-	Q 7	G 7		0 7		-	Q 7.			0 7			+	0 7	D D 7	+	-		Q 7	-		4 2		0 7-	Q 7-	-	0 7	+	0 7		Q 74	Q 74	-	+	Q 74	-
7-8-4 D44			7-8-4 D.V	-8-4 GU	7-8-4 00		-B-4 EU	7-8-4 60		7-3-4 HO	10		7.8.4 FRA		7-8-4 BRE		-	7-8-4 000		8-4 DOI		7-8-4 JUL	0 10	7-8-4 JAN	7-8-4 SPR	7-8-4 LOR		7-8-4 PAT	7-8-4 KIM	7-8-4 WR	7-8-4 & N		7-8-4 MELER 7-8-4 SCOTT I	_	7-8-4 EDD	7-8-4 CUN	7-8-4 CUN		7-8-4 CYN		7-8-4 PAU 7-8-4 IAM	
DIANE LACKEY *	SREGG 5 GOLDMAN *	RONALD D DOBBS SOLE & SEPARATE PROPERTY	DAVID DOBBS	GLENDA COFFIELD AKA GLENDA G DODBS	DORIS DOBES	CHARLES R PETERS AND SHARON DOBBS PETERS	ELLA V DOBBS	GORBY	ANICE L KUHN	HOLDINGS LLC	TONE HILL MINERALS	AL *	RAZIER	3	BRENDA LOU BOYD	SF	DAVID GIBSON AND REBECCA FRAZIER GIBSON	đ		DONALD D POTTS	BRENDA L NEUHART	ULIE A ROSABIO	SUZANNE FROST DAVID ROSARIO JR ANU	AMES C SHEAKS	AND RICHARD D SPRINGER	ORAINE L FROST AND		PATRICIA RUTTER	KIMBERLY 8 MICHEL MAD	WRIGHT	& MICHELLE A WRIGHT	1.1	GOLDMAN	OPHER VAN	EDDA JO DOBBS	CUNNINGHAM	CUNNINGHAM JR	LUCY P SULLIVAN	CYNTHIA S LEEK AND	BARA L ANDERSON	IAMES MATHER	LA BANKS AND
TH EXPLORATION, LLC	TH EXPLORATION, LLC	SWN PRODUCTION	SWN PRODUCTION COMPANY LLC	SWN PRODUCTION COMPANY LLC	TH EXPLORATION, LLC	TH EXPLORATION, U.C.	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC		TH EXPLORATION, LLC.	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LIC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC		TH EXPLORATION, LLC	The second secon						
1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+		1/8+	1/8+			1/8+	-		1/8+	1/8+	1/8+	t		1/8+	1/8+	1/8+	Ħ	1/8+	-	1/8+	1/8+		1/8+		1/8+	1/8+	1/8+	1/8+	1/8+	11	1/8+	-
1071	1071	955	956	956	1057	1057	1057	1067	1067	1053		1058.	1058	1053	1052	1038	1037	1034	1033	1028	1028	1027	1026	1026	1026	1026	1026	1023	1020	1020	1020	1020	1019		1019	1017	1017	1012	1010	1009	1003	0000
580	-		122	126	397	-	408	410		414		529	393			508	· · · · ·		121	621	591			226	220	217	215	- 17		207	205		477	_		-	590	199	-		116	
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA							
NA	NA	22	NA	NA	NA	NA	NA	NN	NA	NA		NA	NA	NN	MA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	NA	ava.						
NA.	NA	NA	NA.	NA	NA.	NA	NA	NA	NA.	NA.	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	MA	NA	NN	NA	NA	NA	
NA	NA	NA	NA	NA	NN	NA	NA	NA	NN	NA	5	NA	NA	NA	NA	NA	NA	NN	NA	NA	NA	NA	NA	NA.	NN	NN	NA	NA	NA	NA	NA.	NA	NA		NA	NA	NA	NA	NN	NA.	NA.	NIA
NA	NA	NA	NA	NA	NA	NA	WA	NA	NA	NA		NA	AN	NA	NA	NA	NA	NN	NA	NA	NA	NA	NN	NA	NA	NA	NN	NA	NA	NA	NA	NA	NA		N NA	4N	NA	NN	NA	NA	NA	NIA.
NN	NA	NA	NA	NA	NA	NA	NA	NA.	NN	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	NN	NA	NA	NA	NN	NA	NA		NA	NA	NA	AN	NA	NA	NA	
NA	VN.	NA	ил	NA	NA	NA	NA	NA	en l	NA		NA	NA	N	NA	N	N	N/	NA	N	10	2	N	N	NA	NA	N	Z N	N	NA	NN	N.	2		2 2	NA	NA	N	N	N	NA NA	2
																															1	-						-				
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA							
NA	NA	NA	NA	NA	MA	NA	NA	NA	NA	NA	:	NA	NA	NN	NN	NA	NN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NN	NA		NA	ç						
NA	NA	NA	МА	NA	NA.	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN.	VN		NA	NA	NA	NA	NA	NN	NA	
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	NN	NA	NA	NA	NA	NA	NA.	NA	NA	: 1	NA	NA	NN	NA	NA	NA	NA	
NN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NN	NA	NA.	NN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	NA	1	NA							
NA	NA	44/620 SWN Production	44/620 SWN Productio Company LLC to TH Exploration LLC	44/620 SWN Production Company LLC to TH Exploration LLC	MA	NA	NA	NA	NA	NA		NA	NA	NA	NN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA		NA	NN	NA	NA	NA	NA	NA	
NA	NA	Production 44/626 Equinor USA to TH Onshore Properties Inc C to TH Exeleration LLC	9	Production 44/626 Equinar USA to TH Onshare Properties Inc C ta TH Exploration LLC	NN	RA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	NA	NA	NA	NN	NA	NN	NA	

Operator's Well No. Fitzgerald S-19HU

	10*25555 T	10*23746 T	10*22837 T	10*22250 T	10*21116 T	10*21114 T	10*21113 T	10*21112 1	10*27387 5	10*25330 5	10*74989 5	10*24477 S 10*24581 S	10*24423 \$	S 20622+DT	10*22763 S	5 D6512,01	10*21589 5	10*21533 5	10*21532 5	:	:	:	10*27387 R	10*26510 R	10*25555 R	10*21116 R	10*21114 R	10*21113 R		10*28584 Q 10*28586 Q		10*28577 Q	WW-6A1 Supplement
		-	-		F 74	-	+	-	-		-	5 7.			5 7.			-1 2	-		-			R 7.	R 7.			-	-	+	+	-	Subb
AN	7-8-8 MA	7-8-8 SIM	7-8-8 MC	7-8-8 & CAT	7-8-8 SHI	7-8-8 MA	7-8-8 LOF	7-8-8 ANI	7-8-7 NA	7-8-7 KEP	1	7-8-7 JAA 7-8-7 JEA	_	7-8-7 MA	7-8-7 (MI	7-8-7 AN			7-8-7 SHI	7-8-7 MC	7-8-7 RO	-		7-8-5 DO	7-8-5 MA	7-8-5 SHI	7-8-5 MA	7-8-5 LOF		7-8-4 UV		7-8-4 COI 7-8-4 BET	lemer
AND LEORA JEAN	ARGIE M DAVENPORT	SIMNACHER		CATHERINE V GARRISON	CHARLES E RICHARDSON AND SHIRLEY S RICHARDSON	MARVIE S ALEXANDER	S	-	NANCY MARIKAR		RONALD J PEKERA AND				CAROLYN I MCILVAIN &	-	LORETTA J STOVER	0		LM DNA NI		15	NANCY MARIKAR		MARGIE M DAVENPORT	CHARLES E RICHARDSON AND SHIRLEY S RICHARDSON	MARVIE S ALEXANDER I	-	AND LOU E STOVER IN		AUGUSTA SPIHER * VIRGINIA LIBAPOZA	CONNER* 1 BETTY BOBBS TRUST * 1	nt
	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLOBATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC.	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	SOUTH PENN OIL COMPANY	NA	NA	TH EXPLORATION LLC	TH EXPLORATION ILC	TH EXPLORATION LLC	TH EXPLORATION LLC	TH EXPLORATION LLC	TH EXPLORATION LLC	TH EXPLORATION LLC	TH EXPLORATION, LLC TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC TH EXPLORATION, LLC	
	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	NA	NA	1/84	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+ 1/8+	1/8+	1/8+	1
	1033	1011	974	951	952	952	952	952	1058	1031	1028	1025	1025	1017	970	1017	1017	1025	1017	8	UNU	UNLI	1058	1037	1033	952	952	952	952	1071	1071	1071	-
	124	547	196	518	378	376	380	382	395	576	580	450	422	603	01 44	617	623	380	620	478	UNIEASED	UNLEASED	395	440	124	378	376	380	382	592 574	556	568	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	209/552 Sauth Penn Oil Company to South Penn Natural Gas Company			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	South Penn Cil Company (1968-1972) aka Pennzoll Campany (1889-1953) or Pennzoll United Inc			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	530/328 Pentizoil Company to Pennizoll Products Company			NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Exploration and Production Company LLC, formerly Pennaolt, and Devon Energy Production Company LP merger	LIN/655 PONNYERORAV		NA	NA.	NA	NA	NA	NN	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	NA	NA	NN	NA	NA	NA	NN	NA	618/I Devon Energy Production Company LP to Fast Resources Inc			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	MA	NA	NA	NA	NA	NA	NA	NA	NA	16/34 East Resources Inc to McEltery Coal Company			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NA.	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA.	NA.	NA	NA	NN	NA	NA	NA	NA	545/493 McElroy Coal Company, Consolidation Coal Company et al to CAX Gas Company LLC	•• FC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	** FORCE POOL	** FORCE POOL	NA	NA	NN	NA	NA	NA	NA	NA			
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA ENVIRO	office of O
	NA	NA	NA	NA	NA	NN	NA	NA	NN.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	NA	NA	МА	NA	NA	NA	NA	NA	NA	MAR 17 1010 MAR 17 1010
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA	MA	•• FORCE POOL			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	stion
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Operat
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NN	NA	NA	NA				NN	NA	NA	NA	NA	NA	AK	NA	NA	NA	Operator's Well No. Fitzgerald S-19H
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	MA	NA	NA	N.P.	NA	NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	. Fitzgeral

4705102326

~
5
-
-
- CD
5
D
1
5
-
_
-
-
_
-
CD
-
~
2
-
LD.
_

:	SMIRN24	In Children	DENUNG	10*22630	10*28329	10*28264		10*27096	10*27092	10*27091	02072*01	10*26971	10*26970	10*26691	10*26636	10*26632	In another	10-16560	10*26567	10*26563	10*26562	10-25572	10*25491	10*25003	10*24916	10*24915	10*24846	10*24750	10*24670	10*24665	10*24654	10*24662	10*24561	10*24660	10*17930	•	10*27387
	0	-	-	c	e				U	e	c	c	U	0	U	e		=	e		e	đ	c	c	e	u	E.	5	c	c	c	e ·	C	c	C	c	-
	7-5-12	1.0.77	7-9-32	7-9-22	7.9.22	79-22		7.9.72	7.9.72	79.22	7-9 22	7-9-22	7-9-22	22:6-1	7.9-22	7:9:22	1.2.44	1.9.33	7-9-72	7-9-22	7-9-22	7-9-22	7-9-22	7-9-22	7-9-22	7-9-22	7-9-22	7-9-22	7-9-22	7.9.22	7.9.22	7:9-22	1-9-22	7-9-22	7.9.22	7.9-22	7-8-8
O E BURGE AND SARAH	Contract Linear	DAIGE FRANCIS *	CHERILYN CAPISTRAN *	REVOCABLE TRUST *	JOSEPH BILLES ET AL.*	KAESE INUSI	THE FIRMAN G BAESE AND CATHERINE D	JOSEPHH SMITH	JAMES H SHOTT III	JONES	BETTY SHOT	GRACE & SHOTT-CLARDY	SHOLL	THE ESTATE OF IOHN C	THOMAS SHOTT	MORGAN GIBSON		BRENDA R PARSON AND	PATRICK J MARTIN	SHOTT	MARTHA SUE FORBES	MATTHEW J OWEN	VICKIE L SMITH	DONALD D POTTS	UNDA L POTTS AND	BETTY & TREMELLING	DOLORES A MUIR	RICHARD A BETTS	SUZANNE FROST	JOHN J GARBER	JAMES C SHEAKS	AND RICHARD D SPRINGER	AND SUSAN B GARBER	LORAINE L FROST	BOUNTY MINERALS LLC	GORDON	NANCY MARIKAR
THE MANUFACTURERS	the first framework to be the			TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, US		TH EXPLORATION, LLC	TH EXPLORATION, LLC	TREACTORNITON, LL,	TH EXPLORATION, LLC	TH EXPLORATION, LLC		TH EXPLORATION. LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	COMPANY LLC	TH EXPLORATION, U.C.																	
	- Ant	1/8+	1/8+	1/8+	+8/1	+2/1	- 10	1/8+	1/8+	1/8+	1/8-	1/8+	1/8+	101	1/8+	1/8+		1/8+	1/8-	1/8+	1/8+	1/8+	1/8+	1/8+	+8/1	1/8+	1/8+	1/8+	1/8+	1/8=	1/8+	1/8+	1/8+	1/8+	1/8+	1/84	1/84
(41.64	1076	1075	1072	1068	/ont	1067	1050	1050	1050	1055	1045	1046	Tear	1039	1039		1038	1038	1038	1038	1033	1033	1028	070T	1078	1028	1027	1026	1026	1025	1026	1026	1026	928	1067	1058
		314	515	408	135	arc	n in	230	201	204	55	194	150	21.7	31b	319		504	506	513	510	121	126	621	100	594	133	307	223	229	226	220	202	217	396	80	395
42.2/204 The Manufacturers Light and Heat Company to Columbia Gas Transmission	-	MA	NA	NA	NA	NA		NA	NA	NA	NA.	NA	NA	14M	NA	NA		NA	NA	NA	MA		NA														
559/232 Columbia Gas Transmission Corporation, successor in interest to The Manufacturers Light an		MA	NA	NA	NA	NA	***	NA	NA	NA	NA	NA	NA	100	NA	NA		NA	NA	NA	NA	MA	NA	NA	NA	NA	NA	NN	NA	NA	MA	NA	NA	NA	NA		NA
642/281 Columbia Gas Transmission Corporation to Corporation to d subjessee Follombia		NA	NA	MA	NA	MAI		NA	NA	NA	NA	NA	NA	1441	NA	NA		NA	NA	NA.	NA	NA	NA	NA	201	NA	NA	NA	NA		NA.						
6 650/322 Colum Transmission Corporation to 650/63 Columbia Matural Resources Ltc Aspatachait (Corporation to Corporation to C		NA	NA	NA	NA	CON CON	NA.	NA	NA	NA	NA	NA	NA	101	NA	NN		NA	105	NA	NA	NA	NA		NA.												
662/322 Columbia Gas Transmission Corporation to subjestee Chesapeate Appalachia LLC; 663/592 Memorandum for same		NA	NA	NA	NA	NN	NA	NA	NA	NA	NA	NA	NA	101	NA	NA		NA	200	NA	NA	NA	NA	NN	NA	NA	NA	NA	NA		NA						
687/422 Chesapeake Appalachia U.C. 2 successors in interest, cratified and amended	141	NA	NA	NA	NA	NN1		NA	NA	NA	NA	NA	NA	1004	NA	NA		MA	NA	NA	NA	NA	NA	NA	NN.	NA	NA	NA	NA	NN	NA	NA	NA	NA	NN		NN
Appalachia LLC to Statolihydro USA Onshore Properties Inc. which changed its name 11/30/2009 to Statoli USA Onshore Properties	aveadesury citricia	NA	NA	NA	NA	(NA)	NA	MA	MA	NA	NA	NA	NA	101	NA	NA		NA	Mi	NA	NA	NA	NA		INA												
 683/459 Columbia Gas e Transmission Corporation changed comport of columbia Gas 	101	NA	NA	NA	NA	PAN		NA	NA	NA	NA	NA	NA	and a	NA	NA		NA	AN1	NA	NA	NA	NN.	** FORCE POOL	1944												
22/14 Columbia Gas. Transmission LLC to NiSource Energy Ventures LLC which Changed Its name 12/16/14 to Columbia		NA	NA	NA	NA	HN1	5	MA	NA	NA	NA	NA	NA	37	NA	NA		NA	NA.	NA	NA	NA	NA		in C. In												
22/33 Columbia Gas Transmission LLC to NiSource Energy		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	100	NA	NA		NA	NA.	NA	NA	NA	NA	NA	NA	NA		1421									
33/110 Chesapeake Appalachia LLC to SWN Production Company	3	NA	NA	NA	NA	NA	:	NA	NA	NA	NA	NA	NA	1/AI	NA	NA		NA	NA	NA	NA	NA.	NA	NA	NA	NA		NN									
33/424 Statol USA NI Orshore Properties Inc to SWN Exchange	100	Z	NA	NA	NA	NA		NA	NA	NA.	AN	NN	ŇA	1944	NA	NA		AN AN	NA	NA	NA	NA	NA	NA	AR	NA	NA	NN	NA	NA	NA	NA	NA	NN	NA		NA
19/674 SWN Exchange Thibholder LLC and SWN Production Company	000	NA	NA	MA	NA	NA		NA	NA	NA	NA	NA.	NA	NA.	AN A	NA		NA	NA	NA	NA	MA	NA A	NA	25	NA	NA	NA		NA							
** FORCE POOL	101	NA	NA	NA	NA	MA		NA	NA	NA	NA	NA	NA	NA.	NA	NA		NA	NA.	NA	NA	NA	NA	NA	NA		NN										

omce at 17 1010 MAR 17 1010 MAR 17 1010

Operator's Well No. Fitzgerald S-19HU

DPS LAND SERVICES CORP 6000 TEWN CENTER BOULEVARD, SUITE 145 CANONSBURG PA 15317-5841

BOOK 0 0 4 3 PADE 0 5 1 5

STATE OF WEST VIRGINIA § COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "<u>Assignment</u>") is made and entered into this 23rd day of April, 2019 (the "<u>Effective Date</u>"), by and between AMERICAN PETROLEUM PARTNERS OPERATING, LLC, (hereinafter "<u>Assignor</u>") and TH EXPLORATION, LLC (hereinafter "<u>Assignee</u>") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated November 15, 2018 (the "<u>Acreage Trade Agreement</u>"). 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-2, 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. <u>Assignment</u>. 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 Leases since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the Assignee, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under this Assignment, unto the Assignee and its respective successors and assigns, against the lawful claims of Assignor, and all persons claiming, or to claim, the same or any part thereof, by, through or under Assignor.

Assignor represents and warrants that Assignor has paid any and all bonuses, rentals, royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period, free and clear of all Encumbrances, except for and subject only to Permitted Encumbrances.

 <u>Successors and Assigns</u>. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors



DPS LAND SERVICES CORP AGOD TOWN CENTER BOULEVARD, SUITE 145 CANONSBURG PA 15317-5841

EDOXOOLI PAGEOLOS

ASSIGNMENT OF OIL AND GAS LEASES

This ASSIGNMENT OF OIL AND GAS LEASES (the "Assignment") is made and entered into this 8th day of March, 2018 (the "Effective Date"), from Blue Roan Resources, LLC, a West Virginia limited liability company, having an address at 3437 University Avenue, Morgantown, WV, 26505 (hereinafter "Assignor"), and TH Exploration, LLC, a Texas limited liability company, having an address at 1320 S. University Drive, Suite 500, Fort Worth, TX 76107 (hereinafter "Assignee").

WITNESSETH:

WHEREAS, Assignor is the owner of the right, title, and interest in those certain Oil and Gas Leases situated in Marshall County, West Virginia, which are described in Exhibit "A" attached hereto and made a part hereof (hereinafter the "Leases"); and

WHEREAS, subject to the exceptions and reservations herein contained, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases.

NOW, THEREFORE, for and in consideration of the sum of Ten Dollars (\$10.00), cash in hand paid, and other 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. <u>Assignment.</u> 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, subject to the terms, reservations, waivers and provisions as hereinafter set forth, an undivided interest of all of Assignor's right, title and interest in and to the Leases and all oil, natural gas, natural gas liquids, condensate, casinghead gas and other liquefied or gaseous hydrocarbons or products ("<u>Hydrocarbons</u>") thereby held, in any and all depths and formations ("<u>Assigned Formations</u>"), together with any and all other rights that are reasonably necessary or convenient to explore for and produce Hydrocarbons from the Assigned Formations, including, but not limited to, the right of surface access, use and occupancy, the right of ingress and egress, the right to conduct geophysical and other exploratory activities, the right to lay pipeline, the right to drill through, but not perforate or stimulate, all other depths and formations necessary for the purpose of reaching the Assigned Formations and to conduct operations therein.

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

2. <u>Representations and Warranties</u>. Assignor represents and warrants that such Assignor has not conveyed or otherwise encumbered its interest in the Leases since the time that Assignor obtained its interests in the Leases.

Assignor represents and warrants that, as to its interests in the Leases, Assignor has paid all royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, including, but not limited to, the interests assigned hereunder, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period.

 <u>Successors and Assigns</u>. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors and assigns, and such terms shall be covenants running with the land, and with each subsequent transfer or assignment thereof.

 Further Assurances. Assignor and Assignee hereby agree to take all actions and execute, acknowledge, and deliver all such instruments as are necessary or advisable to effectuate the purposes of this Assignment.

Office RECEIVED MAR 17 2020 Environmental Protection

DFS LAND SERVICES CORP 6000 TOWN CENTER BOLLEVARD, SUITE 145 CANONSBURG PA 15317-5841

ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "Assignment") is from EQUINOR USA ONSHORE PROPERTIES INC., a Delaware corporation ("Assignor"), to TH Exploration, LLC, a Texas limited liability company ("Assignee"), and is executed on December 9, 2019 (the "Effective Date"). Assignor and Assignee may be referred to herein collectively as the "Parties," or individually as a "Party." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated November 1, 2019 (the "Acreage Trade Agreement").

ARTICLE 1

ASSIGNMENT OF ASSETS

Assignment. For good and valuable consideration, the receipt and Section 1.1 sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor's right, title and interest in and to (i) the oil and gas leases described in more detail on Exhibit A attached hereto (the "Leases") INSOFAR AND ONLY INSOFAR as they cover those lands described on Exhibit A (the "Leasehold Rights") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "Conveyed Assets").

TO HAVE AND TO HOLD the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

Assignment Subject to Acreage Trade Agreement. This Assignment is Section 1.2 made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

ARTICLE 2 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

Special Warranty of Title. Assignor hereby agrees to warrant and defend Section 2.1 Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

Disclaimers of Warranties and Representations. Section 2.2

EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION (a) VI OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR WARRANTY, EXPRESS, IMPLIED OR STATUTORY, INCLUDING AS TO (I) TITLE TO THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY DESCRIPTIVE MEMORANDUM, OR ANY REPORT OF ANY OF ITS PETROLEUM ENGINEERING CONSULTANT, INTERPRETATION, RELATING TO THE LEASEHOLD RIGHTS, (IN OR FROM THE QUALITY OR RECOVERABILITY OF PETROLEUM SUBSTANCES IN OR FROM THE LEASEHOLD RIGHTS, (IV) THE EXISTENCE OF ANY PROSPECT, OR ANY Environmental Property LEASEHOLD RIGHTS, (V) ANY Environmental Protection of TRANSPHOLD RIGHTS, (VI) THE PRODUCTION OF The Protection ENGINEERING CONSULTANTS, OR ANY GEOLOGICAL OR SEISMIC DATA OR OR DECLINE RATES, (VII) THE MAINTENANCE, REPAIR, CONDITION, QUALITY, SUITABILITY, DESIGN OR MARKETABILITY OF THE LEASEHOLD RIGHTS, (VIII) INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT, AND (IX) ANY OTHER MATERIALS OR INFORMATION THAT MAY HAVE BEEN MADE AVAILABLE OR COMMUNICATED TO ASSIGNEE OR ITS AFFILIATES, OR ITS OR THEIR RESPECTIVE

Office PECEIVED of Oil and Gas MAR 17 2020

BUK0036 PAGE0455

ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "Assignment") is from STATOIL USA ONSHORE PROPERTIES INC., a Delaware corporation ("Assignor"), to TH Exploration, LLC, a Texas limited liability company ("Assignee"), and is executed on August 22, 2016 (the "Effective Date"). Assignor and Assignee may be referred to herein collectively as the "Parties," or individually as a "Party." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated June 19, 2016 (the "Acreage Trade Agreement").

ARTICLE 1 ASSIGNMENT OF ASSETS

Section 1.1 <u>Assignment</u>. For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor's right, title and interest in and to (i) the oil and gas leases described in more detail on <u>Exhibit A</u> attached hereto (the "Leases") INSOFAR AND ONLY INSOFAR as they cover the Target Formations and INSOFAR AND ONLY INSOFAR as they cover those lands described on <u>Exhibit A</u> (the "Leasehold Rights") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "Conveyed Assets"). Assignor does hereby reserve unto itself the right and subsurface easement to drill through the Leasehold Rights to access the those depths and formations in the Leases other than the Target Formations and (y) to shoot seismic, sonic, or other energy or waves through the Leasehold Rights and to receive, record and evaluate such energy or waves, including those reflected from or in any way pertaining to the reserved depths, and to utilize any and all other exploration technologies that image the subsurface of the leasehold including the reserved depths and to receive, record and evaluate all images resulting therefrom.

TO HAVE AND TO HOLD the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

Section 1.4 <u>Assignment Subject to Acreage Trade Agreement</u>. This Assignment is made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

ARTICLE 2

SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

Section 2.1 <u>Special Warranty of Title</u>. Assignor hereby agrees to warrant and defend Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

Section 2.2 Disclaimers of Warranties and Representations.

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN <u>SECTION</u> <u>VI</u> OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR WARRANTY, EXPRESS, IMPLIED OR STATUTORY, INCLUDING AS TO (I) TITLE TO THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY

Office of Oil and Gas MAR 1 7 2020 Environmental Protection



March 10, 2020

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

RE: Fitzgerald S-19HU

Subject: Marshall County Route 90 and 90/2 Road Crossing Letter

Dear Laura:

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 90 and 90/2 in the area reflected on the Fitzgerald S-19HU well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-376-0111, or by email at amiller@tug-hillop.com.

Sincerely,

Amy L. Miller Permitting Specialist Appalachia Region

Office of Oil and Gas WV Department of Environmental Protection

380 SOUTHPOINTE BLVD • SUITE 200 • CANONSBURG, PA 15317 • T 724.485-2000 • F 724.338.2030

WW-6AC (1/12)

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

Date of Notice Certification: 05/23/2019

API No. 47- 051	-
Operator's Well No.	Fitzgerald S-19HU
Well Pad Name: Fit	zgerald

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:	West Virginia	UTM NAD 83	Easting:	530,717,69	-
County:	Marshall	UTMINAD 85	Northing:	4,405,751.78	
District:	Liberty	Public Road Acc	ess:	Rines Ridge Road (County Route 76)	_
Quadrangle:	Glen Easton 7.5'	Generally used fa	arm name:	Danny S. Kerns, et al	_
Watershed:	Upper Fish Creek				

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.

Pursuant to West Virginia Code § 22-6A, the Op that the Operator has properly served the require	verator has attached proof to this Notice Certification d parties with the following:	OOG OFFICE USE
*PLEASE CHECK ALL THAT APPLY		ONLY
□ 1. NOTICE OF SEISMIC ACTIVITY or	NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	RECEIVED/
2. NOTICE OF ENTRY FOR PLAT SURV	YEY OF D NO PLAT SURVEY WAS CONDUCTED	RECEIVED
□ 3. NOTICE OF INTENT TO DRILL or	NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or	RECEIVED/ NOT REQUIRED
	U WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	
■ 4. NOTICE OF PLANNED OPERATION		RECEIVED
■ 5. PUBLIC NOTICE		
■ 6. NOTICE OF APPLICATION		RECEIVERAR 17

Required Attachments:

Environment of

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to ention 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 <u>Amy L. Miller</u>, 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: Tug Hill Operating, LLC		Address:	380 Southpointe Boulevard, Plaza II, Suite 200	
By:	Amy L. Miller any Juli		Canonsburg, PA 15317	
Its: Permitting Specialist - Appalachia Region		Facsimile:	724-338-2030	
Telephone:	724-749-8388	Email:	amiller@tug-hillop.com	
Chester	NOTARY SEAL Salth of Pennsylvania - Notary Seal Arthur West IV, Notary Public Washington County	bscribed and swo	orn before me this 13 th day of Marth 2020. Notary Public	

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 <u>depprivacyofficer@wv.gov</u>.

Office of Oil and Gas MAR 1 7 2020 WV Department of Environmental Protection

Office of Oil and Gas

OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

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: 3/12/2020	Date Permit Application Filed:	3/13/2020
---------------------------	--------------------------------	-----------

* *		18.		5.4	ñ.
N	\mathbf{n}	110	φ.	01	r
1.4	v.		1.00	U	

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

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

PERSONAL	REGISTERED	\checkmark	METHOD OF DELIVERY THAT REQUIRES A
SERVICE	MAIL		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: Regine D. Figueroa	COAL OWNER OR LESSEE		
Address: 94 E. 700 N	Address: 1000 Consol Energy Drive		
Valparaiso, IN 46383 /	Canonsburg, PA 15317		
Name: Danny S. Kerns *See attached list	COAL OPERATOR		
Address: 3500 West 80th Place	Name: Murray American Energy, Inc. attn: Mason Smith		
Merrillville, IN 46410	Address: 46226 National Road		
SURFACE OWNER(s) (Road and/or Other Disturbance)	St. Clairsville, OH 43905 SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s) MAD		
Name: Regina D. Figueroa	SURFACE OWNER OF WATER WELL		
Address: 94 E. 700 N	AND/OR WATER PURVEYOR(s) MAR		
Valparaiso, IN 46383	Norther Denny P Kome (Cas attached list		
Name: Danny S. Kerns *See attached list	Address: 3500 West 80th Place Environmental Protection Merrillville, IN 64610		
Address: 3500 West 80th Place /	Merrillville, IN 64610		
Merrillville, IN 46410	OPERATOR OF ANY NATURAL GAS STORAGE FIELD		
□ SURFACE OWNER(s) (Impoundments or Pits)	Name:		
Name:	Address:		
Address:	2 1 M 2 1 M 2		
	*Dianza attach additional former if management		

Please attach additional forms if necessary

023 API NO. 47- 05

OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

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 purvevor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and

and of water parts in accordance with standard acceptable methods. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmetical or O(I = 0)Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil- MAR = 1 T = 2020

Environmental 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 ection 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

API NO. 47-051 7 0 5 1 0 2 3 2 6

OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

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

RECEIVED Office of Oil and Gas MAR 1 7 2020

Charleston, WV 25304 (304) 926-0450 Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

APINO. 47- 051 4 7 0 5 1 0 2 3 2 6

OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

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 <u>http://www.dep.wv.gov/oil-and-gas/Horizontal-</u> <u>Permits/Pages/default.aspx</u> 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.

Office of Oil and Gas MAR 1 7 2020 WV Department of Environmental Protection

4705102326

API NO. 47-051 -OPERATOR WELL NO. Fitzgerald S-19HU Well Pad Name: Fitzgerald

Notice is hereby given by:

Well Operat	tor: Tug Hill Opera	ting, LLC
Telephone:	724-749-8388	11.00
Email: amille	r@tug-hillop.com	anytitle

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 <u>depprivacyofficer@wv.gov</u>.

Con	monwealth of Pennsylvania - Notary Sea hester Arthur West IV, Notary Public
	Washington County
Myd	commission expires February 10, 2024 Commission number 1267179
Men	ber, Pennsylvania Association of Notaries

w.	me this 11th day of March,	Subscribed and sworn before
ary Public	a	
	2-10-2024	My Commission Expires
	2-10-60 64	My Commission Expires

Office of Oil and Gas MAR 1 7 2020 WV Department of Environmental Protection

Supplement Pg. 1A

Exhibit WW-6A

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

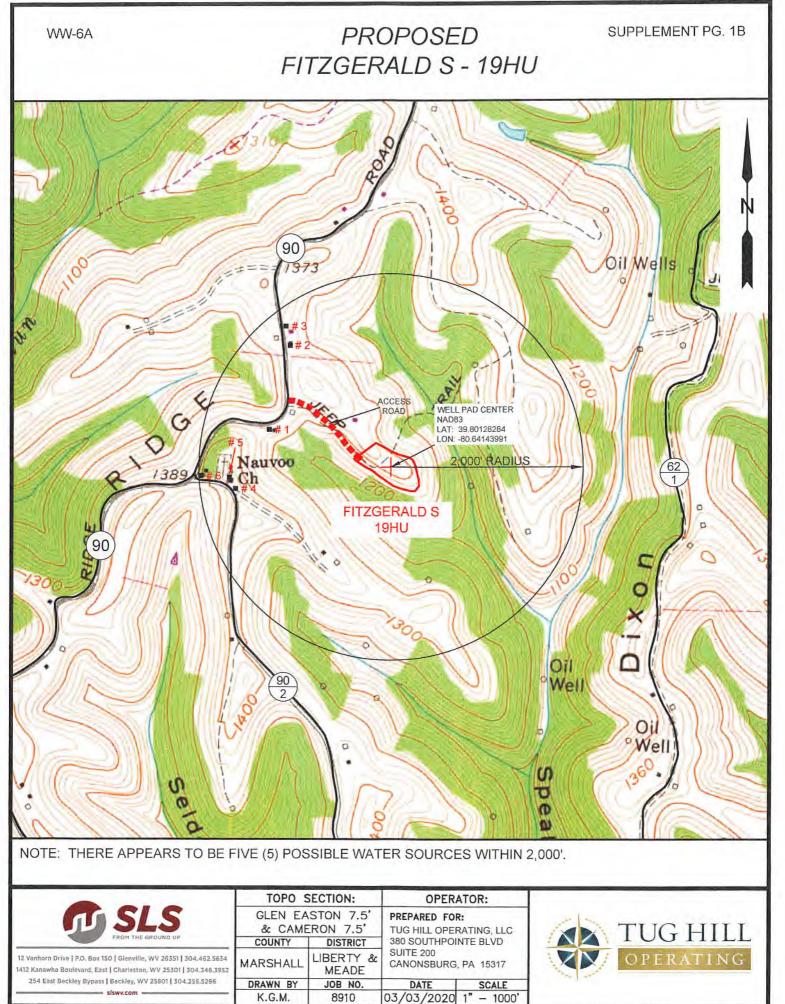
Residences within Two-Thousand Feet (2,000')

Well:Fitzgerald S – 19HUDistrict:LibertyState:WV

There are four (4) residences, one (1) business or commercial site, one (1) church, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

Residence (#1)	Residence (#2)	Residence (#3)
TM 9 Pcl. 14	TM 9 Pcl. 12.1	TM 9 Pcl. 12
Danny R. Kerns, Et Al	Jessica R. & David A. II Dempewolf	Gary W. Morris
Phone: 219-887-6761 (Reverse Address	Phone: 304-810-0500 (Reverse Address	c/o Gary Morris & Cynthia Patrello
– David A. & Regina D. Figueroa)	– Jolene Morris)	Phone: None Found
Physical Address:	Physical Address:	Physical Address:
1352 Nauvoo Ridge Rd.	1180 Nauvoo Ridge Rd.	1156 Nauvoo Ridge Rd.
Cameron, WV 26033	Cameron, WV 26033	Cameron, WV 26033
Tax Address:	Tax Address:	Tax Address:
94 E 700 N	Same	Same
Valparaiso, IN 46383		
	\	
Business/Commercial Site (#4)	Church (#5)	Residence (#6)
TM 12 Pcl. 14	TM 9 Pcl. 15	TM 9 Pcl. 22
Consol Mining Co. LLC	Trustees of the Reorganized Church of	Gary W. Morris
Consolidation Coal Company	Latter Day Saints	Phone: None Found
c/o Murray Energy c/o Land Dept.	Phone: None	Physical Address:
Physical Address:	Physical Address:	1556 Nauvoo Ridge Rd.
90 The Corner Ln.	88 The Corner Ln.	Cameron, WV 26033
Glen Easton, WV 26039	Glen Easton, WV 26039	Tax Address:
(Appears to be an underground mine	Tax Address:	1156 Nauvoo RDG
vent or fan site or other related	Exempt/None	Glen Easton, WV 26039
infrastructure)		
Tax Address:		
46226 National Rd.		
Saint Clairsville, OH 43950		

Office of Oil and Gas MAR 1 7 2020 WV Department of Environmental Protection



FILE: R:\Data\CADD\WORK 8900-8999\8910 Tug Hill Fitzgerald Plats and Mapping\Survey\Well Plat Exhibits\8910-19HU Exhibits.dwg LAYOUT: Layou

Operator Well No. Fitzgerald S-19HU

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: 4/24/2019 Date of Planned Entry: 5/3/2019

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

PERSONAL	□ REGISTERED	METHOD OF DELIVERY THAT REQUIRES A
SERVICE	MAIL	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)	COAL OWNER OR LESSEE
Name: Regina D. Figueroa	Name: ConsolEnergy Attn: Casey Saunders
Address: 94 E 700 N	Address: 1000 Consol Energy Drive
Valparaiso, IN 46383	Canonsburg, PA 15317
Name: Danny S. Kerns	
Address: 3500 West 80th Pl.	MINERAL OWNER(s)
Merrillville, IN 46410	Name: Regina D. Figueroa
Name: Deena J. Palomo	Address: 94 E 700 N
Address: 20 Maxwell, St., Apt. 4	Valparaiso, IN 46383 *See attached list
Hebron, IN 46341	*please attach additional forms if necessary

Notice is hereby given:

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

State:	West Virginia	Approx. Latitude & Longitude:	39.80128284; -80.64143991	
County:	Marshall	Public Road Access:	County Route 90	
District:	Liberty	Watershed:	Upper Fish Creek	
Quadrangle:	Glen Easton 7.5'	Generally used farm name:	Danny & Frances Kerns Estate	

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 here	· · · ·			Office of Oil and Gas
and the second sec	Tug Hill Operating, LLC	Address:	380 Southpointe Boulevard, Plaza II, Suite 200	MARIN
Telephone:	724-749-8388		Canonsburg, PA 15317	1 2020
Email:	amiller@tug-hillop.com	Facsimile:	724-338-2030	Environ Depart
Oil and Gas I	Privacy Notice:			intental 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.

WW-6A3 NOTICE OF ENTRY FOR PLAT SURVEY FITZGERALD PAD

MINERAL OWNERS

Danny S. Kerns 3500 West 80th Pl. Merrillville, IN 46410

Deena J. Palomo 20 Maxwell Street, Apt. 4 Hebron, IN 46341

> Office of Oil and Gas MAR **1** 7 2020 WV Department of Environmental Protection

Operator Well No. Fitzgerald S-19HU

WW-6A5 (1/12)

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

Notice Time Requirement: notice shall be provided no later than the filing date of permit application. Date of Notice: 03/12/2020 Date Permit Application Filed: 03/13/2020

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

CERTIFIED MAIL		🗌 HAND	
	RETURN RECEIPT REQUESTED		DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Regina D. Figueroa	Name: Danny S. Kerns
Address: 94 E 700 N	Address: 3500 West 80th PI
Valparaiso, IN 46383	Merrillville, IN 16410

Notice is hereby given:

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

State:	West Virginia	UTM NAD 83	Easting:	530,717.69	
County:	Marshall	UTMINAD 83	Northing:	4,405,751.78	
District:	Liberty	Public Road Acc	ess:	Rines Ridge Road (County Route 76)	
Quadrangle:	Glen Easton 7.5'	Generally used fa	arm name:	Danny R. Kerns, et al	
Watershed:	Upper Fish Creek (HUC 10)			The second second second second	

This Notice Shall Include:

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

Well Operator:	Tug Hill Operating, LLC	Address:	380 Southpointe Boulevard, Plaza II, Suite 200	Office of Oil and C
Telephone:	724-749-8388		Canonsburg, PA 15317	MARIM
Email:	amiller@tug-hillop.com	Facsimile:	724-338-2030	1 2020
				EnuivDen

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.

Additional Party to Notice WW-6A5 Fitzgerald Pad

Deana J. Palomo 20 Maxwell Street, Apt. 4 Hebron, IN 46341

> Office of Oil and Gas MAR 1 7 2020

WV Department of Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

February 27, 2020

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

> 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 Fitzgerald Pad, Marshall County Fitzgerald S-19HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2019-0351 which has been issued to Tug Hill Operating, LLC for access to the State Road for a well site located off Marshall County Route 90 SLS.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE 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,

Dary K. Clayton

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

Office of Oil and Gas MAR 1 7 2020

WV Department of Environmental Protection

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



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Fitzgerald S-19	эни		
PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quatemary 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

Office of Oil and Gas MAR 1 7 2020

WV Department of Environmental Protection