

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-17HU 47-051-02324-00-00

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.

API Number: 47-051-02324

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. <u>Failure to adhere to the specified permit</u> conditions may result in enforcement action.

CONDITIONS

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

API Number: <u>47-051-02324</u>

PERMIT CONDITIONS

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

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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 #47-051-02324

COMPANY: Tug Hill Operating, LLC

FARM: Danny and Frances Kerns Estate

Fitzgerald S-17HU

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 IN-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-18HU 47-051-02325; Fitzgerald S-19HU 47-051-02326

WW-6B (04/15) API NO. 47-051

OPERATOR WELL NO. Fitzgerald S-17HU Well Pad Name: Fitzgerald

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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-17H | U Well I | Pad Name: Fitzg | gerald | |
| 3) Farm Name/Sur | face Owner: | Danny R. Kerr | ns Public R | load Access: Co | ounty Route | 90 |
| 4) Elevation, curren | nt ground: | 1316.5' | Elevation, propose | ed post-construc | tion: <u>1293</u> | .30' |
| 5) Well Type (a) | Gas <u>x</u> | Oil _ | Ui | nderground Stor | age | |
| Oth | her | | ······ | | | |
| (b) | If Gas Sha | llow | Deep | x | | |
| | Hoi | rizontal <u>×</u> | | | Ju - | 2020 |
| 6) Existing Pad: Ye | es or No <u>No</u> | | | | 0 3 4 | 10 |
| 7) Proposed Target Point Pleasant is the target forma | | | icipated Thicknes anticipated pressure of approx. 9500 | | Pressure(s): | |
| 8) Proposed Total | Vertical Dept | h: 12,064' | | | | |
| 9) Formation at To | tal Vertical D | epth: Trenton | , plug back to Re | edsville | | |
| 10) Proposed Total | Measured D | epth: 23,833' | | | | |
| 11) Proposed Horiz | zontal Leg Le | ngth: 8861.46 | 6' | | | |
| 12) Approximate F | resh Water S | trata Depths: | 70' ; 927' | | | |
| 13) Method to Dete | ermine Fresh | Water Depths: | Offset well reports or | r noticeable flow at th | he flowline or w | hen need to start soaping |
| 14) Approximate S | altwater Dep | ths: <u>2,167'</u> | | | | |
| 15) Approximate C | Coal Seam De | pths: Sewickle | y Coal - 835' ; P | ittsburgh Coal - | 921' | |
| 16) Approximate D | Pepth to Possi | ble Void (coal 1 | nine, karst, other) | : none | | |
| 17) Does Proposed directly overlying c | | | | N | 0 | |
| (a) If Yes, provide | e Mine Info: | Name: Ma | rshall County Co | oal Co./Marshal | I County Mi | Office of Oil and Gas |
| · · · · · | | Depth: 105 | 9' TVD and 291' | subsea level | <u> </u> | MAR 1 7 2020 |
| | | Seam: Pitt | sburgh #8 | | | WV Department of Environmental Protection |
| | | Owner: Mu | rray Energy / Co | nsolidated Coal | Co. | i Protection |

APINO. 47-051 - 02324

OPERATOR WELL NO. Fitzgerald S-17HU 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) | FOOTAGE: For Drilling (ft) | INTERVALS: Left in Well (ft) | CEMENT: <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# | 11,400' | 11,400' | 3,714FT^3(CTS) |
| Production | 5 1/2" | NEW | P110 | 23# | 23,833' | 23,833' | 5,653FT^3(CTS) |
| Tubing | 2 7/8" | NEW | P110 | 6.5# | | 13,954' | 11 |
| Liners | | | | | | | |

| TYPE | Size (in) | <u>Wellbore</u> Diameter (in) | <u>Wall</u> <u>Thickness</u> <u>(in)</u> | Burst Pressure (psi) | Anticipated Max. Internal Pressure (psi) | Cement Type | <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" | | 1 | 11,385 | 9,108 | | |
| Liners | | | | | | | |

PACKERS

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

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APR 30 REC'D

W1/ Department of Environmental Protection

WW-6B (10/14) API NO. 47-051

OPERATOR WELL NO. <u>Fitzgerald S-17HU</u> Well Pad Name: Fitzgerald

\$14/2000

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 (13,454'). 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 22,150,000 lb proppant and 342,455 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.

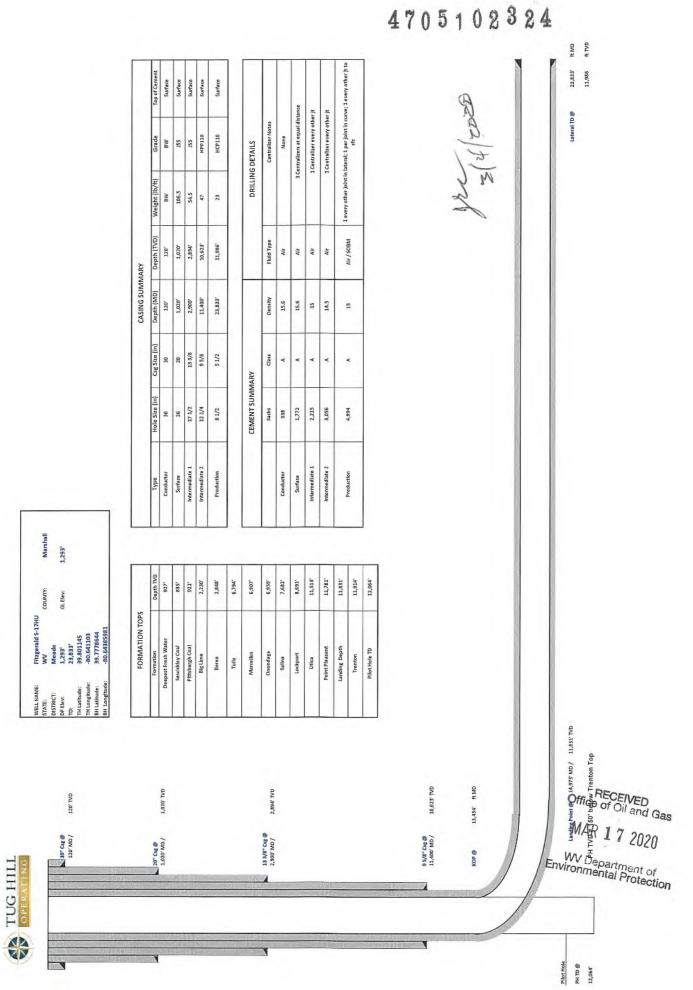
24) Describe all cement additives associated with each cement type:

*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,^{" and} Gas POOH Environmental Protection

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4705-02324



Tug Hill Operating, LLC Casing and Cement Program

Fitzgerald S-17HU

| | | C | asing | | |
|----------------------------------|-------------------|---------------|--------------------|-------------------|----------------|
| | 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" | 11,400' | CTS |
| Production | 5 1/2" | HCP110 | 8 1/2" | 23,833' | CTS |
| Intermediate 1 Intermediate 2 | 13 3/8" 9 5/8" | J55 HPP110 | 17 1/2" 12 1/4" | 2,900' 11,400' | |

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 |

Office of Oil and Gas MAR 1 7 2020

WV Department of Environmental Protection



Well Site Safety Plan Tug Hill Operating, LLC

Ph (2020)

Well Name: Fitzgerald S-17HU

Location: Fitzgerald Pad

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,405,748.20 Easting: 530,724.07

February 2020

Office of Oil and Gas

MAR 1 7 2020

WV Department of Environmental Protection

Operator's Well No. Fitzgerald S-17HU

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, <u>dducoeur@dpslandservices.com</u> DPS GIS (02/27/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

1. Wellbore with IHS All Wells Layer

2. Map with Farm lines overlain and any well spots identified on Farm Maps

3. More recent (1970s vintage) topos and older topos

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

- WVGES has plotted every well spot they have access to and are aware of with that contains a coordinate. 30000, 70000, and 90000 series wells are available via the WVGES online map. Some locations aren't great due to vintage and manipulation of maps through time
- 30000 series any well drilled prior to 1929 APIs were not assigned to original wells
- 70000 series Well spots pulled from old Farm line maps that the WVGES has access to
- 90000 series Any sources that the WVGES has access that shows a well spot but has no additional supporting information. DEP does not have 90000 series on their maps.
- There can be duplication between wells in the 3 series
- Phil indicated that other Operators are providing a screenshot of the WVGES map with the MAR 17 2020 planned well and using that for permits

YN Department of Environmental Protection

Page 1 of 4

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Permit well - Fitzgerald S-17HU Wells within 500' 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

| Plat locations | represent actual field | surveyed loce | cions. Trease | | | |
|----------------|-----------------------------|---------------|-------------------|-----------------------------------|--|--|
| 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 |
| 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 |
| 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 |
| 4705100632 | CNX Gas Co. LLC (North) | 2727' TVD | Gordon | Unknown | No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. | Well is not reported to be plugged Production data either not reported or 0 as of 2017 |
| 4705100945 | 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 was plugged in 2004. | Well plugged in 2004 |
| 4705101013 | Consolidation Coal Co. | Unknown | Vaknown | 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 was plugged in 2006. | Well plugged in 2006 |
| 4705170593 | Hope Natural Gas 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 |
| 4705101011 | 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 was plugged in 2006. | Well plugged in 2006 |
| 4705170589 | 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 |
| 4705170591 | 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 |
| 4705130266 | Randall-Zogg Supply Co. | 2998' TVD | Gardon | Unknown | No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well was plugged in 1947. | Well plugged in 1947 |
| 4705170590 | 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 |
| 4705170580 | 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 |

Office of Oil and Gas

MAR 1 7 2020

Environmental Protection

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| Constructed (16/2000 | |
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| Lastan Markan Markan Markan Lastan Carlos II. Gales V. 107 (5) 104 (5) France (104) (21 Hand Lastan And Lastan Carlos J. 2010. Alfant Lattill 2010) | |
| There is a data from London and to be and <u>Anna marketing</u> there there is a marketing that that the second second to the second second second second second <u>Anna marketing</u> there is a second second <u>Anna marketing</u> the second second <u>Anna marketing</u> the second sec | |
| ומתווים אותה השיר השובים שיות השובים את השובים את השובים השובים השובים בשיות השובים השובים השובים השובים היותר היותר שיורי הביר השובים השובים השובים השובים השובים היותר השובים השובים השובים השובים הערכים הביר הביר השובים הי השובים היותר השובים היותר ה | र स |
| There is no Pey data for the well | |
| There is an Production Cas case for this well There is an Production C2 data for this well — some sportscho stay have reported MCL under C2 | |
| There is no Perduction (KC), data for this woll — some operators may have reported (KC), under CB There is no Perduction Veter data for this woll | |
| There is a Stratygy data for the set | |
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| Landard affects | |
| TV Outputs & Lanner Sunay West: County = 61 Permit = 70333 | Report Time - Thursday, Petry 27, 2020 1 21 05 PM |
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| ראיז אין | |
| There is no Pay case for this west | J |
| There is no Production Gale Sale for this well There is no Production Cit Sale for this well ** sume operations may have reported NOL under Cit | |
| There is an Production NCC, data for this well — some operation may here reported INCL under CB There is an Production Water data well | |
| There's and Endinguing data for this west There's an of Wester (2, Large data for this west | |
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WV Department of Environmental Protection

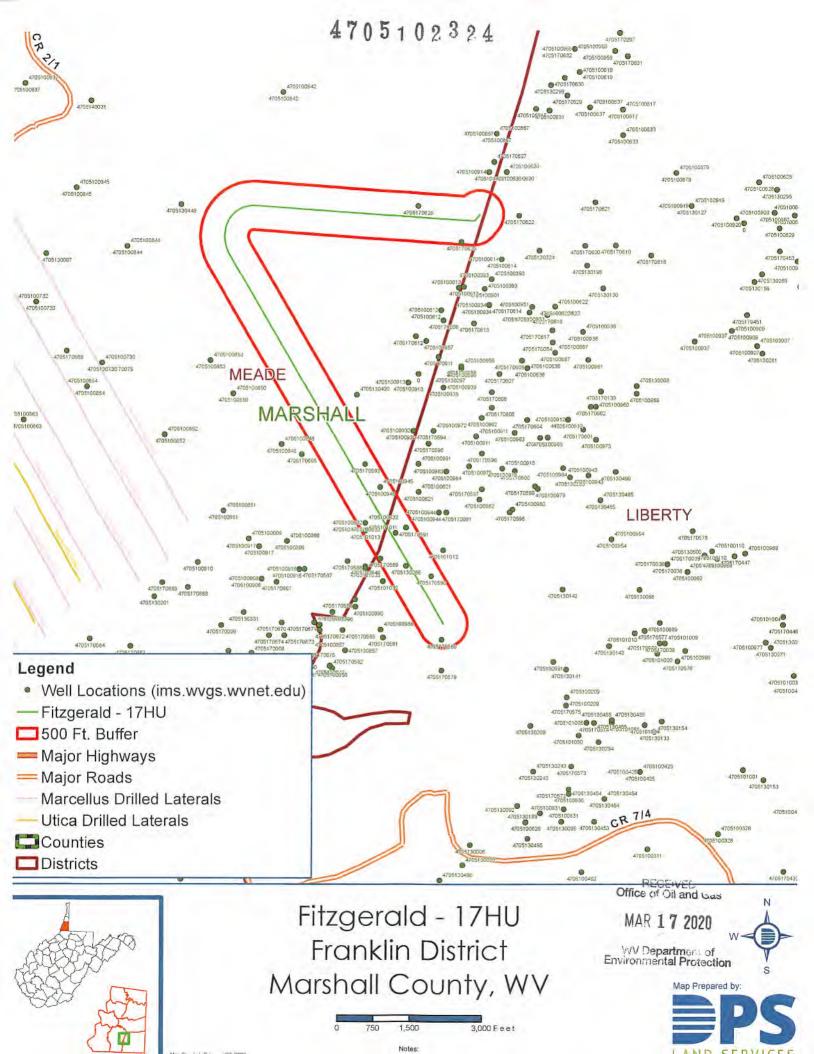
| W Campele & Lamme Jonny Well: County = 61 Perrol = 01011 | Report Take Thursday February 27 2220 1 21 13 Mar |
|--|--|
| Located Hermatics Yes Unc LAR COURT FRAIL TO CONTROL ONLY COULS LOT DO VINE UNIX MINIMUM YES IN LOCAT CONTROL CARES AND AND YES HITS LATTICE | |
| There is no Bobom Hole Location data for this web | |
| Онни научијал Дата своју при таки калистонан на јел се на тики сил сил сил се области се на селиоти се нау на наути на тики п Дата своју при селиот сили сели сила се на 1830. Селиот селиот селиот сили сели сели сели сели ва 1830. | |
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| Trace is no Pay data for bits work | |
| There is no Production Case calls for the well There is no Production Cit data for this well — some operations care new reported HCL under Cit | |
| There is an Preduction KOL data for time and " wave open zons may have reported KID, which Ol | |
| There is no Production Water data for the well There is no Estationary data for the well | |
| There is no Weekse (B-Lag) data for the well | |
| Program Monitoria Data Control Control Control Constitution Control Control | |
| There is no Sample data for this well | |
| w Caunaya & Caunaya & Medi: Counaty = 61 Permit = 70159 | Report Taxon Thursday, February 27, 3830 1 21 25 PM |
| Lecter Information View Date And County Paral View Bart County autors (1993) County United United United Contracts Present Total Work, Contract County And Bart (1997) Features | |
| There is an Solom Web Lession data for Bits web | |
| <u>0.4499 (1997) 1977) 19770) 19770) 1977) 1977) 1977) 1977) 1977) 1977) 1977) 1977) 1</u> | |
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| There is no Fey data for this well There is no Francisco Cara cata for this well | |
| There is no Production 02 data for this well — some separation when have regioned NCL where 02 | |
| Taura in a hadacian Kil, da ia far bandi " lama qoratan day tare ngontel Kil, anda Cil Taura in a hadacian Kil, da ia far bandi " lama ngontel Kil, anda Cil | |
| There is no Soutpeppy data for this woll | |
| There a na Mondon (C.L.cg) data for the well There is na Phygleg data for the well | |
| There is no Example data for this well | |
| m duringes & Learning Samp Well: County = \$1 Permit = 702\$1 | August Same Thumany Patrony 27 2222 1 21 12 Ma |
| A CONTRACTOR DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNE | |
| Anton Manuster You Min. Day 2004 Table U.C. MINET CALL N. CALL II DI DI LAND THE UTION CHILDRE DAY TOL Lond. Confident Land. II DI LA ANDRE LINKS | |
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| There is an Production Cas data for this work There is an Production Cas data for this work — Soone appared mail, under CB | |
| There is no Anadoxicon HOL data for Ella wall 🔎 access operators may later reported HOL ander OB | |
| Pere is no Production Visco data for the well There is no Strategraphy data for the well | |
| There is no Meyeline (E-Log) data far this well | |
| Tear is an Paging data for an exist Tear is an Security data for the and | |
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| An and a second se | |
| CHORN OF BUT DO DOT CONT. A THE PLOT CHIEFT | |
| There is no Baban Maio Lacaden data her INA well | |
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| Онин научного Дата и при правити приматрания на селото са состранати составана, състо селото состо на суста на стато на сост Са правита состава на состава на состава со составана составана на составана на | 241 (CULIES) (67) |
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| | <i>भा द</i> सम्रहण) |
| | 97 (CHR297) |
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| | 97 (38839) Spanlar Kung (dan 1° 39 12814 |
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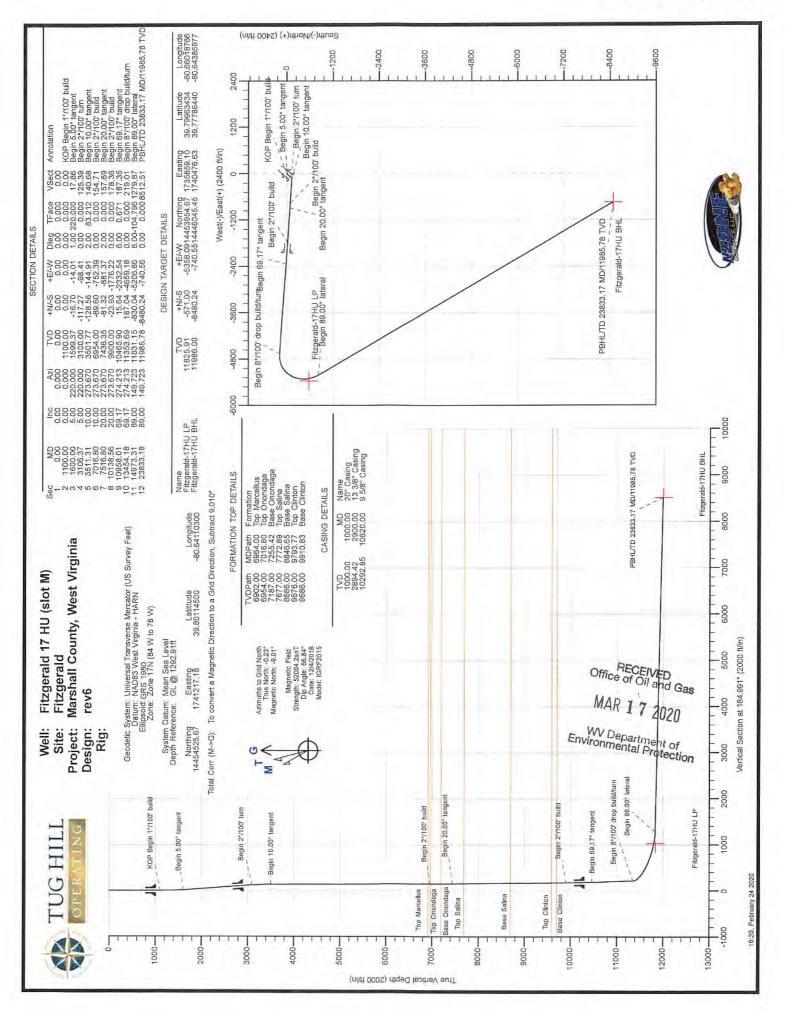
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Page 4 of 4

WV Department of Environmental Protection







Planning Report - Geographic

| Database: Company: Project: Site: Well: Wellbore: Design: | DB_Aug1919_v14 Tug Hill Operating Marshall County, Fitzgerald Fitzgerald 17 HU Original Hole rev6 | g LLC West Virgir | nia | Local Co-ordina TVD Reference MD Reference: North Referenc Survey Calcula | e: | Well Fitzge GL @ 1292 GL @ 1292 Grid Minimum C | .91ft | (slot M) | |
|---|---|---------------------------|---------------------------------------|---|--------------------------------|--|--|----------------------------|---------------------------------------|
| Project | Marshall County, V | West Virgini | а | | | | | And a second second second | |
| oco butann | Universal Transvers NAD83 West Virgini Zone 17N (84 W to | a - HARN | (US Survey Feet) | System Datum: | - | Mean Sea Le | vel | | |
| Site | Fitzgerald | | annon-an-long groups | | | | | | |
| Site Position: From: Position Uncertainty: | Lat/Long | 0.00 ft | Northing: Easting: Slot Radius: | 14,454,567.7 1,741,096.2 13- | 6 usft Long | ude: itude: Convergence: | | | 39.80126184 80.64153292 0.229 ° |
| Well | Fitzgerald 17 HU (s | slot M) | | | | | | | |
| Well Position | +N/-S +E/-W | 0.00 ft 0.00 ft | Northing: Easting: | | 4,525.67 usft 1,217.18 usft | Latitude: Longitude: | | | 39.80114500 80.64110300 |
| Position Uncertainty | | 0.00 ft | Wellhead Ele | vation: | | Ground Level: | | | 1,292.91 ft |
| Wellbore | Original Hole | andha nasimiya — a | | | | | | | |
| Magnetics | Model Name | | Sample Date | Declination (°) | | Dip Angle (°) | | Field Strength (nT) | |
| 1864. | IGRF20 | 015 | 12/4/2018 | - | 8.780 | 66.83 | 36 | 52,004.22522 | 2526 |
| Design | rev6 | | | | | | 1997 - 19 | | |
| Audit Notes: | | | | | | | | | |
| Version: | | | Phase: | PLAN | Tie On D | epth: | 0.00 | | |
| Vertical Section: | | (| rom (TVD) ft) | +N/-S (ft) | +E/-W (ft) | | Direction (°) | | |
| | | 0. | .00 | 0.00 | 0.00 | an a | 184.991 | | |
| Plan Survey Tool Pro Depth From (ft) | Depth To | ite 2/24/2 vey (Wellbo | | Tool Name | Rer | narks | | | |
| 1 0.00 | 23,833.18 rev6 | (Original H | lole) | MWD MWD - Standard | | | | | |

Office of Oil and Gas

MAR 1 7 2020

WV Department of Environmental Protection



Planning Report - Geographic

Well Fitzgerald 17 HU (slot M) Database: DB_Aug1919_v14 Local Co-ordinate Reference: Tug Hill Operating LLC GL @ 1292.91ft Company: **TVD Reference:** Project: Marshall County, West Virginia MD Reference: GL @ 1292.91ft North Reference: Site: Fitzgerald Grid Well: Fitzgerald 17 HU (slot M) Survey Calculation Method: Minimum Curvature Original Hole Wellbore: Design: rev6

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 | |
| 1,600.00 | 5.00 | 220.000 | 1,599.37 | -16.70 | -14.01 | 1.00 | 1.00 | 0.00 | 220.000 | |
| 3,106.37 | 5.00 | 220.000 | 3,100.00 | -117.27 | -98.41 | 0.00 | 0.00 | 0.00 | 0.000 | |
| 3,511.31 | 10.00 | 273.670 | 3,501.77 | -128.56 | -144.91 | 2.00 | 1.23 | 13.25 | 83.212 | |
| 7,016.80 | 10.00 | 273.670 | 6,954.00 | -89.60 | -752.39 | 0.00 | 0.00 | 0.00 | 0.000 | |
| 7,516.80 | 20.00 | 273.670 | 7,436.35 | -81.32 | -881.37 | 2.00 | 2.00 | 0.00 | 0.000 | |
| 10,138.56 | 20.00 | 273.670 | 9,900.00 | -23.93 | -1,776.22 | 0.00 | 0.00 | 0.00 | 0.000 | |
| 10,958.01 | 69.17 | 274.213 | 10,465.90 | 15.64 | -2,332.54 | 6.00 | 6.00 | 0.07 | 0.671 | |
| 13,454.18 | 69.17 | 274.213 | 11,353.69 | 187.04 | -4,659.18 | 0.00 | 0.00 | 0.00 | 0.000 | |
| 14,973.31 | 89.00 | 149.723 | 11,831.15 | -830.04 | -5,206.86 | 8.00 | 1.31 | -8.19 | -104.796 | |
| 23,833.18 | 89.00 | 149.723 | 11,985.78 | -8,480.24 | -740.56 | 0.00 | 0.00 | 0.00 | 0.000 | Fitzgerald-17HU BH |

Office of Oil and Gas MAR 1 7 2020

WV Department of Environmental Protection



DB_Aug1919_v14

Fitzgerald

Tug Hill Operating LLC

Fitzgerald 17 HU (slot M)

Marshall County, West Virginia

Planning Report - Geographic

Local Co-ordinate Reference: **TVD Reference:** MD Reference: North Reference: Survey Calculation Method:

Well Fitzgerald 17 HU (slot M) GL @ 1292.91ft GL @ 1292.91ft Grid Minimum Curvature

Office of Cill and Gas MAR 1 7 2020

Database:

Company:

Project:

Site:

Well:

| llbore: lign: | Origir rev6 | nal Hole | | | | | | | En | MAR 1 7 20, WV Department of Vironmental Protect |
|-------------------|---------------------|--------------------|----------------------|------------------|--------------------|--------------------------------|---------|--------|----------------------------|--|
| nned Survey | | | | | | | | | | rironmental Prote |
| Measured | | | Vertical | | | Мар | Мар | | | |
| Depth | Inclination | Azimuth | Depth | +N/-S | +E/-W | Northing | Eastin | | | |
| (ft) | (°) | (°) | (ft) | (ft) | (ft) | (usft) | (usft | - | Latitude | Longitude |
| 0.00 | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 100.00 | 0.00 | 0.000 | 100.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 200.00 | 0.00 | 0.000 | 200.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 300.00 | 0.00 | 0.000 | 300.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 400.00 | 0.00 | 0.000 | 400.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,3 | | 39.80114500 | -80,64110300 |
| 500.00 | 0.00 | 0.000 | 500.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 600.00 | 0.00 | 0.000 | 600.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 700.00 | 0.00 | 0.000 | 700.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 800.00 | 0.00 | 0.000 | 800.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 900.00 | 0.00 | 0.000 | 900.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 1,000.00 | 0.00 | 0.000 | 1,000.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| 20" Casi | | | | | | | | | | 00.01110000 |
| 1,100.00 | 0.00 | 0.000 | 1,100.00 | 0.00 | 0.00 | 14,454,525.67 | 1,741,2 | 217.18 | 39.80114500 | -80.64110300 |
| | jin 1°/100' bui | | 1 200 00 | 0.07 | | 14 464 505 04 | 1 744 4 | 10 60 | 20 9011 4217 | -80.64110501 |
| 1,200.00 | 1.00 | 220.000 | 1,200.00 | -0.67 | -0.56 | 14,454,525.01 | 1,741,2 | | 39.80114317 39.80113768 | -80.64110501 |
| 1,300.00 | 2.00 3.00 | 220,000 | 1,299.96 | -2,67 | -2.24 -5.05 | 14,454,523.00 14,454,519.66 | 1,741,2 | | 39.80112854 | -80,64112106 |
| 1,400.00 | 4.00 | 220.000 220.000 | 1,399.87 | -6.02 | -8.97 | | 1,741,2 | | 39.80111574 | -80,64113509 |
| 1,600.00 | 5.00 | 220.000 | 1,499.68 1,599.37 | -10.69 -16.70 | -14.01 | 14,454,514.98 14,454,508.97 | 1,741,2 | | 39.80109929 | -80.64115314 |
| | | 220.000 | 1,099.07 | -10.70 | -14.01 | 14,454,506.97 | 1,741,2 | 203.10 | 39.00109929 | -00.04110314 |
| 1,700.00 | 00° tangent 5.00 | 220.000 | 1,698.99 | -23.38 | -19.62 | 14,454,502.30 | 1,741,1 | 07 56 | 39,80108101 | -80.64117318 |
| 1,800.00 | 5.00 | 220.000 | 1,798.61 | -23.36 | -25.22 | 14,454,495.62 | 1,741,1 | | 39.80106274 | -80.64119322 |
| 1,900.00 | 5.00 | 220.000 | 1,898.23 | -36,73 | -30.82 | 14,454,488.94 | 1,741,1 | | 39.80104447 | -80.64121326 |
| 2,000.00 | 5.00 | 220.000 | 1,997.85 | -43.41 | -36.42 | 14,454,482.27 | 1,741,1 | | 39.80102619 | -80.64123330 |
| 2,100.00 | 5.00 | 220.000 | 2,097.47 | -50.08 | -42.03 | 14,454,475.59 | 1,741,1 | | 39.80100792 | -80.64125334 |
| 2,200.00 | 5.00 | 220.000 | 2,197.09 | -56.76 | -47.63 | 14,454,468.91 | 1,741,1 | | 39.80098965 | -80.64127339 |
| 2,300.00 | 5.00 | 220.000 | 2,296.71 | -63.44 | -53.23 | 14,454,462.24 | 1,741,1 | | 39.80097137 | -80.64129343 |
| 2,400.00 | 5.00 | 220.000 | 2,396.33 | -70.11 | -58.83 | 14,454,455.56 | 1,741,1 | | 39.80095310 | -80.64131347 |
| 2,500.01 | 5.00 | 220.000 | 2,495.95 | -76.79 | -64.44 | 14,454,448.88 | 1,741,1 | | 39.80093483 | -80.64133351 |
| 2,600.01 | 5.00 | 220.000 | 2,595.57 | -83.47 | -70.04 | 14,454,442.21 | 1,741,1 | | 39.80091655 | -80.64135355 |
| 2,700.01 | 5.00 | 220.000 | 2,695.19 | -90.14 | -75.64 | 14,454,435.53 | 1,741,1 | | 39.80089828 | -80.64137359 |
| 2,800.01 | 5.00 | 220.000 | 2,794.80 | -96,82 | -81.24 | 14,454,428.85 | 1,741,1 | | 39.80088000 | -80.64139363 |
| 2,900.00 | 5.00 | 220.000 | 2,894.42 | -103,50 | -86.84 | 14,454,422.18 | 1,741,1 | 30.33 | 39.80086173 | -80.64141368 |
| 13 3/8" C | asing | | | | | | | | | |
| 2,900.01 | 5.00 | 220.000 | 2,894.42 | -103.50 | -86.84 | 14,454,422.18 | 1,741,1 | 30.33 | 39.80086173 | -80.64141368 |
| 3,000.01 | 5.00 | 220.000 | 2,994.04 | -110.17 | -92.45 | 14,454,415.50 | 1,741,1 | 24.73 | 39.80084346 | -80.64143372 |
| 3,100.01 | 5.00 | 220.000 | 3,093.66 | -116.85 | -98.05 | 14,454,408.82 | 1,741,* | 119.13 | 39.80082518 | -80.64145376 |
| 3,106.37 | 5.00 | 220.000 | 3,100.00 | -117.27 | -98.41 | 14,454,408.40 | 1,741,1 | 118.77 | 39.80082402 | -80.64145503 |
| Begin 2° | 100' turn | | | | | | | | | |
| 3,200.01 | 5.54 | 239.634 | 3,193.25 | -122,69 | -104.93 | 14,454,402.99 | 1,741,1 | 112.25 | 39.80080923 | -80.64147834 |
| 3,300.01 | 6.67 | 255.246 | 3,292.69 | -126.61 | -114.72 | 14,454,399.07 | 1,741,1 | 02.46 | 39.80079857 | -80.64151324 |
| 3,400.01 | 8.15 | 265.816 | 3,391.86 | -128.60 | -127.40 | 14,454,397.07 | 1,741,0 | | 39.80079323 | -80.64155844 |
| 3,500.01 | 9.80 | 273.008 | 3,490.63 | -128.67 | -142.97 | 14,454,397.00 | 1,741,0 | | 39.80079321 | -80.64161387 |
| 3,511.31 | 10.00 | 273.670 | 3,501.77 | -128.56 | -144.91 | 14,454,397.11 | 1,741,0 | 072.26 | 39.80079354 | -80.64162078 |
| | .00° tangent | 070 074 | 0.000.10 | 107 | 100.00 | | | | | |
| 3,600.01 | 10.00 | 273.670 | 3,589.12 | -127.58 | -160.28 | 14,454,398.10 | 1,741,0 | | 39.80079641 | -80.64167549 |
| 3,700.01 | 10.00 | 273.670 | 3,687.60 | -126.46 | -177.61 | 14,454,399.21 | 1,741,0 | | 39.80079966 | -80.64173717 |
| 3,800.01 | 10.00 | 273.670 | 3,786.08 | -125.35 | -194.94 | 14,454,400.32 | 1,741,0 | | 39.80080290 | -80.64179885 |
| 3,900.01 | 10.00 | 273.670 | 3,884.56 | -124.24 | -212.27 | 14,454,401.43 | 1,741,0 | | 39.80080614 | -80.64186054 |
| 4,000.01 4,100.01 | 10.00 | 273.670 273.670 | 3,983.04 4,081.52 | -123.13 | -229.60 -246.93 | 14,454,402.54 | 1,740,9 | | 39.80080939 | -80.64192222 -80.64198390 |
| 4,100.01 | 10.00 | 273.670 | 4,081.52 | -122.02 | -246.93 | 14,454,403.66 14,454,404.77 | 1,740,9 | | 39.80081263 39.80081587 | -80.64204559 |
| 4,300.01 | 10.00 | 273.670 | 4,278.48 | -119.79 | -284.28 | 14,454,405.88 | 1,740,9 | | 39.80081912 | -80.64210727 |
| 4,400.01 | 10.00 | 273.670 | 4,276.96 | -118.68 | -298.92 | 14,454,406.99 | 1,740,9 | | 39.80082236 | -80.64210727 |
| ., | 10.00 | 270.070 | 1010.00 | 110.00 | 200.02 | 14,404,400.00 | 1,740,8 | 10.20 | 33.00002230 | -00.04210093 |

COMPASS 5000.14 Build 85



DB_Aug1919_v14

Fitzgerald

Original Hole

Tug Hill Operating LLC

Fitzgerald 17 HU (slot M)

Marshall County, West Virginia

Planning Report - Geographic

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:

Well Fitzgerald 17 HU (slot M) GL @ 1292.91ft GL @ 1292.91ft Grid Minimum Curvature

Office of Oil and Gas MAR 1 7 2020

Database:

Company:

Project:

Wellbore:

Design:

Site:

Well:

| Design: | rev6 | _ | | | | | | | WD- WD- |
|---|----------------|---------------------------------------|----------|---------|-----------|------------------|----------------------------------|-------------|------------------------------------|
| Planned Survey | | | | | | | | En | WV Department vironmental Prote |
| Measured | | | Vertical | | | Map | Мар | | |
| Depth | Inclination | Azimuth | Depth | +N/-S | +E/-W | Northing | Easting | | |
| (ft) | (°) | (°) | (ft) | (ft) | (ft) | (usft) | (usft) | Latitude | Longitude |
| 4,500.01 | 10.00 | 273.670 | 4,475.44 | -117.57 | -316.25 | 14,454,408.10 | 1,740,900.93 | 39,80082560 | -80.6422306 |
| 4,600.01 | 10.00 | 273.670 | 4,573.93 | -116.46 | -333.58 | 14,454,409.21 | 1,740,883.60 | 39.80082884 | -80,6422923 |
| 4,700.01 | 10.00 | 273.670 | 4,672.41 | -115.35 | -350.90 | 14,454,410.33 | 1,740,866.27 | 39,80083209 | -80.6423540 |
| 4,800.01 | 10.00 | 273.670 | 4,770.89 | -114.24 | -368.23 | 14,454,411.44 | 1,740,848.94 | 39,80083533 | -80.6424156 |
| 4,900.01 | 10.00 | 273.670 | 4,869.37 | -113.13 | -385.56 | 14,454,412.55 | 1,740,831.61 | 39,80083857 | -80.6424773 |
| | 10.00 | 273.670 | 4,967.85 | -112.01 | -402.89 | 14,454,413.66 | 1,740,814.29 | 39.80084181 | -80.6425390 |
| 5,000.01 | | | | | -402.85 | 14,454,414.77 | 1,740,796.96 | 39.80084506 | -80.6426007 |
| 5,100.01 | 10.00 | 273.670 | 5,066.33 | -110.90 | | | Contraction of the second second | | -80.6426624 |
| 5,200.01 | 10.00 | 273.670 | 5,164.81 | -109.79 | -437.55 | 14,454,415.88 | 1,740,779.63 | 39.80084830 | |
| 5,300.01 | 10.00 | 273.670 | 5,263.29 | -108.68 | -454.88 | 14,454,416.99 | 1,740,762.30 | 39.80085154 | -80.6427241 |
| 5,400.01 | 10.00 | 273.670 | 5,361.77 | -107.57 | -472.21 | 14,454,418.11 | 1,740,744.97 | 39.80085478 | -80.6427857 |
| 5,500.01 | 10.00 | 273.670 | 5,460.25 | -106.46 | -489.54 | 14,454,419.22 | 1,740,727.64 | 39.80085803 | -80.6428474 |
| 5,600.01 | 10.00 | 273.670 | 5,558.74 | -105.34 | -506.87 | 14,454,420.33 | 1,740,710.31 | 39.80086127 | -80.6429091 |
| 5,700.01 | 10.00 | 273.670 | 5,657.22 | -104.23 | -524.20 | 14,454,421.44 | 1,740,692.98 | 39.80086451 | -80.6429708 |
| 5,800.01 | 10.00 | 273.670 | 5,755.70 | -103.12 | -541.53 | 14,454,422.55 | 1,740,675.65 | 39.80086775 | -80.6430325 |
| 5,900.01 | 10.00 | 273.670 | 5,854.18 | -102.01 | -558.86 | 14,454,423.66 | 1,740,658.32 | 39.80087100 | -80.6430941 |
| 6,000.01 | 10.00 | 273.670 | 5,952.66 | -100.90 | -576.18 | 14,454,424.78 | 1,740,640.99 | 39.80087424 | -80.6431558 |
| 6,100.01 | 10.00 | 273.670 | 6,051.14 | -99.79 | -593.51 | 14,454,425.89 | 1,740,623,66 | 39.80087748 | -80.6432175 |
| 6,200.01 | 10.00 | 273.670 | 6,149.62 | -98.68 | -610.84 | 14,454,427.00 | 1,740,606.34 | 39.80088072 | -80.6432792 |
| 6,300.01 | 10.00 | 273.670 | 6,248,10 | -97.56 | -628.17 | 14,454,428.11 | 1,740,589.01 | 39.80088396 | -80,6433409 |
| 6,400.01 | 10.00 | 273.670 | 6,346.58 | -96.45 | -645.50 | 14,454,429.22 | 1,740,571.68 | 39.80088721 | -80.6434026 |
| 6,500.01 | 10.00 | 273.670 | 6,445.06 | -95.34 | -662.83 | 14,454,430.33 | 1,740,554.35 | 39.80089045 | -80.6434642 |
| 6,600.01 | 10.00 | 273.670 | 6,543.55 | -94.23 | -680.16 | 14,454,431.44 | 1,740,537,02 | 39.80089369 | -80.6435259 |
| 6,700.01 | 10.00 | 273.670 | 6,642.03 | -93.12 | -697.49 | 14,454,432.56 | 1,740,519.69 | 39.80089693 | -80.6435876 |
| 6,800.01 | 10.00 | 273,670 | 6,740.51 | -92.01 | -714.82 | 14,454,433.67 | 1,740,502.36 | 39.80090017 | -80.6436493 |
| 6,900.01 | 10.00 | 273.670 | 6,838.99 | -90.90 | -732.15 | 14,454,434.78 | 1,740,485.03 | 39.80090342 | -80.6437110 |
| 6,964.00 | 10.00 | 273.670 | 6,902.00 | -90.18 | -743.24 | 14,454,435.49 | 1,740,473.94 | 39.80090549 | -80.6437504 |
| Top Marc | | | -1 | | | | 1.3.1.1.1.1.1.1.1 | | |
| 7,000.01 | 10.00 | 273,670 | 6,937.47 | -89.78 | -749.48 | 14,454,435.89 | 1,740,467.70 | 39.80090666 | -80.6437727 |
| | 10.00 | 273.670 | 6,954.00 | -89.60 | -752.39 | 14,454,436.08 | 1,740,464.79 | 39.80090720 | -80.6437830 |
| 7,016.80 | | | | -09.00 | -1 52.55 | 14,434,430.00 | 1,740,404.75 | 39.00090720 | -00.04070000 |
| The second se | 100' build - T | · · · · · · · · · · · · · · · · · · · | | | | the same starter | | | |
| 7,100.01 | 11.66 | 273.670 | 7,035.73 | -88.60 | -767.99 | 14,454,437.08 | 1,740,449.19 | 39.80091012 | -80.6438386 |
| 7,200.01 | 13.66 | 273,670 | 7,133.29 | -87.19 | -789.87 | 14,454,438.48 | 1,740,427.31 | 39.80091421 | -80.6439164 |
| 7,255.42 | 14.77 | 273.670 | 7,187.00 | -86.32 | -803.45 | 14,454,439.35 | 1,740,413.73 | 39.80091676 | -80.6439648 |
| Base One | ondaga | | | | | | | | |
| 7,300.01 | 15.66 | 273.670 | 7,230.03 | -85.57 | -815.13 | 14,454,440.10 | 1,740,402.05 | 39.80091894 | -80.6440064 |
| 7,400.01 | 17.66 | 273,670 | 7,325.82 | -83.74 | -843.75 | 14,454,441.94 | 1,740,373.43 | 39.80092429 | -80.64410826 |
| 7,500.02 | 19.66 | 273.670 | 7,420.56 | -81.69 | -875.68 | 14,454,443.99 | 1,740,341.50 | 39,80093027 | -80.6442219 |
| 7,516.80 | 20.00 | 273.670 | 7,436.35 | -81.32 | -881.37 | 14,454,444.35 | 1,740,335.81 | 39.80093133 | -80.64424210 |
| Begin 20 | .00° tangent | | | | | | | | |
| 7,600.02 | 20,00 | 273.670 | 7,514.55 | -79,50 | -909.77 | 14,454,446.17 | 1,740,307.41 | 39.80093664 | -80.64434326 |
| 7,700.02 | 20.00 | 273.670 | 7,608.52 | -77.31 | -943.90 | 14,454,448.36 | 1,740,273.28 | 39.80094303 | -80.6444647 |
| 7,772.89 | 20.00 | 273.670 | 7,677.00 | -75.72 | -968.78 | 14,454,449.96 | 1,740,248.40 | 39.80094768 | -80.6445533 |
| Top Salin | | | | | | | and the states | | |
| 7,800.02 | 20.00 | 273.670 | 7,702.49 | -75.12 | -978.03 | 14,454,450.55 | 1,740,239.15 | 39.80094941 | -80.6445862 |
| 7,900.02 | 20.00 | 273.670 | 7,796.46 | -72.93 | -1,012,17 | 14,454,452.74 | 1,740,205.01 | 39.80095580 | -80.6447077 |
| 8,000.02 | 20.00 | 273,670 | 7,890.42 | -70.75 | -1,046.30 | 14,454,454.93 | 1,740,170.88 | 39.80096218 | -80.6448292 |
| 8,100.02 | 20.00 | 273,670 | 7,984,39 | -68.56 | -1,080.43 | 14,454,457.12 | 1,740,136.75 | 39.80096857 | -80,6449507 |
| 8,200.02 | 20.00 | 273.670 | 8,078.36 | -66.37 | -1,114.56 | 14,454,459.31 | 1,740,102.62 | 39.80097495 | -80.6450722 |
| 8,300.02 | 20.00 | 273.670 | 8,172.33 | -64.18 | -1,114,58 | 14,454,461.50 | 1,740,068.49 | 39.80097495 | -80.6451937 |
| 8,400.02 | 20.00 | 273.670 | 8,266.30 | | | | | 39.80098772 | -80.6453152 |
| | | | | -61.99 | -1,182.82 | 14,454,463.69 | 1,740,034.35 | | |
| 8,500.02 | 20.00 | 273.670 | 8,360.27 | -59.80 | -1,216.96 | 14,454,465.88 | 1,740,000.22 | 39.80099410 | -80.6454366 |
| 8,600.02 | 20.00 | 273.670 | 8,454.24 | -57.61 | -1,251.09 | 14,454,468.06 | 1,739,966.09 | 39.80100048 | -80.6455581 |
| 8,700.02 | 20.00 | 273.670 | 8,548.21 | -55.42 | -1,285.22 | 14,454,470.25 | 1,739,931.96 | 39.80100687 | -80.6456796 |
| 8,800.02 | 20.00 | 273,670 | 8,642.18 | -53.23 | -1,319.35 | 14,454,472.44 | 1,739,897.83 | 39.80101325 | -80.6458011 |

COMPASS 5000.14 Build 85



DB_Aug1919_v14

Fitzgerald

rev6

Original Hole

Tug Hill Operating LLC

Fitzgerald 17 HU (slot M)

Marshall County, West Virginia

Planning Report - Geographic

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:

Well Fitzgerald 17 HU (slot M) GL @ 1292.91ft GL @ 1292.91ft Grid Minimum Curvature

Office of Oil and Gas MAR 1 7 2020

Planned Survey

Database:

Company:

Project:

Wellbore: Design:

Site:

Well:

| | origin. | | | | | | | | | 4 202 |
|----|----------------------|--------------|---------|-----------|--------|-----------|---------------|--------------|-------------|---|
| PI | anned Survey | | | | | | | | Env | WV Department of vironmental Protect |
| | Measured | | | Vertical | | | Мар | Мар | | Protein |
| | Depth | Inclination | Azimuth | Depth | +N/-S | +E/-W | Northing | Easting | | |
| | (ft) | (°) | (°) | (ft) | (ft) | (ft) | (usft) | (usft) | Latitude | Longitude |
| | 8,846.65 | 20.00 | 273.670 | 8,686.00 | -52.21 | -1,335.27 | 14,454,473.46 | 1,739,881.91 | 39.80101623 | -80.64585782 |
| | Base Sa | | | | | | | Children and | | |
| | 8,900.02 | 20.00 | 273.670 | 8,736.15 | -51.04 | -1,353.48 | 14,454,474.63 | 1,739,863.70 | 39.80101963 | -80.64592266 |
| | 9,000.02 | | 273.670 | 8,830.12 | -48.85 | -1.387.62 | 14,454,476.82 | 1,739,829.56 | 39.80102602 | -80.64604415 |
| | 9,100.02 | | 273.670 | 8,924.09 | -46.66 | -1,421.75 | 14,454,479.01 | 1,739,795,43 | 39,80103240 | -80,64616564 |
| | 9,200.02 | | 273.670 | 9,018.06 | -44.47 | -1,455.88 | 14,454,481.20 | 1,739,761.30 | 39,80103878 | -80.64628714 |
| | 9,300.02 | | 273.670 | 9,112.03 | -42.28 | -1,490.01 | 14,454,483.39 | 1,739,727.17 | 39,80104517 | -80.64640863 |
| | 9,400.02 | | 273.670 | 9,206.00 | -40.10 | -1,524.14 | 14,454,485.58 | 1,739,693.04 | 39.80105155 | -80.64653012 |
| | 9,500.02 | | 273.670 | 9,299.97 | -37.91 | -1,558.28 | 14,454,487.77 | 1,739,658.90 | 39.80105793 | -80,6466516 |
| | 9,600.02 | | 273.670 | 9,393,94 | -35.72 | -1,592.41 | 14,454,489.96 | 1,739,624,77 | 39.80106431 | -80.6467731 |
| | 9,700.02 | | 273,670 | 9,487.91 | -33.53 | -1,626.54 | 14,454,492.15 | 1,739,590.64 | 39,80107069 | -80,64689460 |
| | 9,793.77 | 20.00 | 273.670 | 9,576.00 | -31.48 | -1,658.54 | 14,454,494.20 | 1,739,558.64 | 39.80107668 | -80.64700850 |
| | | | 210.010 | | | | | | | |
| | Top Clin | | 273.670 | 9,581.87 | -31.34 | -1,660.67 | 14,454,494.34 | 1,739,556.51 | 39.80107708 | -80.6470160 |
| | 9,800.02 9,900.02 | | 273.670 | 9,5675.84 | -29.15 | -1,600.67 | 14,454,494.54 | 1,739,522.38 | 39.80108346 | -80.64713758 |
| | 0.44000.000. | | 273.670 | 9,686.00 | -28.91 | -1,698.49 | 14,454,496.76 | 1,739,518.69 | 39.80108415 | -80.6471507 |
| | 9,910.83 | 20.00 | 2/3.6/0 | 9,000.00 | -20.91 | -1,090.49 | 14,434,490.70 | 1,739,510,09 | 53.00100413 | -50.04715071 |
| | Base Cli | | 070 070 | 0 700 04 | | 4 700.04 | 11 151 100 74 | 4 700 400 04 | 20 00100004 | -80.64725908 |
| | 10,000.02 | 20,00 | 273.670 | 9,769.81 | -26.96 | -1,728.94 | 14,454,498,71 | 1,739,488.24 | 39.80108984 | -80.64738057 |
| | 10,100.02 | 20.00 | 273.670 | 9,863.78 | -24.77 | -1,763.07 | 14,454,500.90 | 1,739,454.11 | 39.80109622 | |
| | 10,138.56 | 20.00 | 273.670 | 9,900.00 | -23.93 | -1,776.22 | 14,454,501.75 | 1,739,440.96 | 39.80109868 | -80.64742739 |
| | | /100' build | | | | | | | | |
| | 10,200.02 | 23.69 | 273.777 | 9,957.04 | -22.44 | -1,799.04 | 14,454,503.23 | 1,739,418.14 | 39.80110301 | -80.6475086 |
| | 10,300.02 | 29.69 | 273.898 | 10,046.34 | -19,43 | -1,843.83 | 14,454,506.24 | 1,739,373.35 | 39.80111176 | -80.6476680 |
| | 10,400.02 | 35.69 | 273,981 | 10,130.47 | -15.72 | -1,897.68 | 14,454,509,96 | 1,739,319.50 | 39.80112253 | -80.6478597 |
| | 10,500.02 | | 274.043 | 10,208.49 | -11.35 | -1,960.01 | 14,454,514.33 | 1,739,257.18 | 39.80113522 | -80.64808150 |
| | 10,600.02 | | 274.092 | 10,279.55 | -6.36 | -2,030.12 | 14,454,519.32 | 1,739,187.06 | 39.80114967 | -80.6483311 |
| | 10,620.00 | 48.89 | 274.100 | 10,292.85 | -5.29 | -2,044.99 | 14,454,520.38 | 1,739,172.19 | 39,80115276 | -80.64838407 |
| | 9 5/8" Ca | | | | | | | | | |
| | 10,700.02 | 53.69 | 274.132 | 10,342.88 | -0.81 | -2,107.25 | 14,454,524.86 | 1,739,109.93 | 39.80116573 | -80.64860567 |
| | 10,800.02 | | 274.166 | 10,397.78 | 5.23 | -2,190.57 | 14,454,530.91 | 1,739,026.62 | 39.80118323 | -80.6489022 |
| | 10,900.02 | 65.69 | 274.197 | 10,443.64 | 11.71 | -2,279.14 | 14,454,537.38 | 1,738,938.04 | 39.80120197 | -80.64921748 |
| | 10,958.01 | 69.17 | 274.213 | 10,465.90 | 15.64 | -2,332.53 | 14,454,541.31 | 1,738,884.65 | 39.80121333 | -80.64940752 |
| | Begin 69 | .17° tangent | | | | | | | | |
| | 11,000.02 | 69.17 | 274.213 | 10,480.84 | 18.52 | -2,371.69 | 14,454,544.19 | 1,738,845.49 | 39.80122167 | -80.6495469 |
| | 11,100.02 | 69.17 | 274.213 | 10,516.41 | 25.39 | -2,464.90 | 14,454,551.06 | 1,738,752.28 | 39.80124153 | -80.64987867 |
| | 11,200.02 | | 274.213 | 10,551.97 | 32.25 | -2,558.11 | 14,454,557.93 | 1,738,659.07 | 39.80126139 | -80.65021044 |
| | 11,300.02 | 69.17 | 274.213 | 10,587.54 | 39.12 | -2,651.32 | 14,454,564.79 | 1,738,565.86 | 39.80128125 | -80.65054221 |
| | 11,400.02 | 69.17 | 274.213 | 10,623.11 | 45.99 | -2,744.53 | 14,454,571.66 | 1,738,472.65 | 39.80130110 | -80.65087397 |
| | 11,500.02 | 69.17 | 274.213 | 10,658.67 | 52,85 | -2,837.74 | 14,454,578.53 | 1,738,379.45 | 39.80132096 | -80.65120574 |
| | 11,600.02 | 69.17 | 274.213 | 10,694.24 | 59.72 | -2,930.95 | 14,454,585.39 | 1,738,286.24 | 39.80134081 | -80.65153751 |
| | 11,700.02 | 69.17 | 274.213 | 10,729.81 | 66.59 | -3,024.16 | 14,454,592.26 | 1,738,193.03 | 39.80136066 | -80.65186927 |
| | 11,800.02 | 69,17 | 274.213 | 10,765.37 | 73.45 | -3,117.36 | 14,454,599.13 | 1,738,099.82 | 39,80138052 | -80.65220104 |
| | 11,900.02 | | 274.213 | 10,800.94 | 80.32 | -3,210.57 | 14,454,605.99 | 1,738,006.61 | 39.80140037 | -80.6525328 |
| | 12,000.02 | 69.17 | 274.213 | 10,836.50 | 87.19 | -3,303.78 | 14,454,612.86 | 1,737,913.40 | 39.80142022 | -80.65286458 |
| | 12,100.02 | 69.17 | 274.213 | 10,872.07 | 94.05 | -3,396.99 | 14,454,619.73 | 1,737,820.19 | 39.80144007 | -80.6531963 |
| | 12,200.02 | 69.17 | 274.213 | 10,907.64 | 100.92 | -3,490.20 | 14,454,626.59 | 1,737,726.98 | 39.80145992 | -80.6535281 |
| | 12,300.02 | 69.17 | 274.213 | 10,943.20 | 107.79 | -3,583.41 | 14,454,633.46 | 1,737,633.77 | 39.80147977 | -80.65385988 |
| | 12,400.03 | 69.17 | 274.213 | 10,978.77 | 114.65 | -3,676.62 | 14,454,640.33 | 1,737,540.57 | 39.80149961 | -80.6541916 |
| | 12,500.03 | 69.17 | 274.213 | 11,014.33 | 121.52 | -3,769.83 | 14,454,647.19 | 1,737,447.36 | 39.80151946 | -80.65452342 |
| | 12,600.03 | 69.17 | 274.213 | 11,049.90 | 128.39 | -3,863.04 | 14,454,654.06 | 1,737,354.15 | 39.80153930 | -80.65485519 |
| | 12,700.03 | 69.17 | 274.213 | 11,085.47 | 135.25 | -3,956.25 | 14,454,660.93 | 1,737,260.94 | 39.80155915 | -80.65518696 |
| | 12,800.03 | 69.17 | 274.213 | 11,121.03 | 142.12 | -4,049.46 | 14,454,667.79 | 1,737,167.73 | 39,80157899 | -80.65551873 |
| | 12,900.03 | 69.17 | 274.213 | 11,156.60 | 148.99 | -4,142.66 | 14,454,674.66 | 1,737,074.52 | 39,80159883 | -80.65585050 |
| | 13,000.03 | 69.17 | 274.213 | 11,192,17 | 155.85 | -4,235.87 | 14,454,681.53 | 1,736,981.31 | 39.80161867 | -80.65618227 |



Planning Report - Geographic

DB_Aug1919_v14 Tug Hill Operating LLC Marshall County, West Virginia Fitzgerald Fitzgerald 17 HU (slot M) Original Hole rev6

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:

Well Fitzgerald 17 HU (slot M) GL @ 1292.91ft GL @ 1292.91ft Grid Minimum Curvature

Office of Oil and Gas MAR 1 7 2020

Planned Survey

Database:

Company:

Project:

Wellbore: Design:

Site:

Well:

| esign: | | | | | | | | | - 2020 |
|----------------|---------------|---------|--|-----------------------|--|--|------------------------------|-------------|--------------------------------------|
| Planned Survey | • | | | | | | - | Envir | W Department of onmental Protecti |
| Measured | | | Vertical | | | Мар | Мар | | rotecti |
| Depth | Inclination | Azimuth | Depth | +N/-S | +E/-W | Northing | Easting | | |
| (ft) | (°) | (°) | (ft) | (ft) | (ft) | (usft) | (usft) | Latitude | Longitude |
| 13,100.03 | 69.17 | 274.213 | 11,227.73 | 162.72 | -4,329.08 | 14,454,688.39 | 1,736,888.10 | 39.80163851 | -80.65651404 |
| 13,200.03 | 69.17 | 274.213 | 11,263.30 | 169.59 | -4,422.29 | 14,454,695.26 | 1,736,794.89 | 39.80165835 | -80.65684581 |
| 13,300.03 | 69.17 | 274.213 | 11,298.86 | 176.45 | -4,515.50 | 14,454,702.13 | 1,736,701.69 | 39,80167819 | -80.65717758 |
| 13,400.03 | 69.17 | 274.213 | 11,334.43 | 183.32 | -4,608.71 | 14,454,708,99 | 1,736,608.48 | 39.80169803 | -80.65750935 |
| 13,454.18 | 69.17 | 274.213 | 11,353.69 | 187.04 | -4,659.19 | 14,454,712.71 | 1,736,558.00 | 39.80170877 | -80.65768901 |
| | /100' drop bu | | 11,000.00 | 101104 | 1,000.10 | 11,101,112,11 | 11.00,000.00 | | |
| 13,500.03 | 68.27 | 270,398 | 11,370.34 | 188.76 | -4,701.86 | 14,454,714.43 | 1,736,515.33 | 39,80171395 | -80.65784094 |
| 13,600.03 | 66.64 | 261.917 | 11,408.74 | 182.61 | -4,793.90 | 14,454,708.29 | 1,736,423.29 | 39,80169804 | -80.65816872 |
| 13,700.03 | 65.47 | 253,256 | 11,449.40 | 163.02 | -4,883.05 | 14,454,688,69 | 1,736,334.14 | 39.80164516 | -80.65848638 |
| 13,800.03 | 64.80 | 244.468 | 11,491.52 | 130.36 | -4,967.56 | 14,454,656.03 | 1,736,249.63 | 39.80155636 | -80.65878774 |
| | | | 11,534.28 | 85.27 | -5,045.80 | 14,454,610.94 | 1,736,171.38 | 39.80143335 | -80.65906692 |
| 13,900.03 | 64.65 | 235,621 | and the second | | and the second | A CARLEY AND A CAR | and the second second second | 39.80127852 | -80.65931849 |
| 14,000.03 | 65.03 | 226.791 | 11,576.86 | 28.63 | -5,116.25 | 14,454,554.30 | 1,736,100.94 | | -80.65953756 |
| 14,100.03 | 65.93 | 218.052 | 11,618.43 | -38.47 | -5,177.52 | 14,454,487.20 | 1,736,039.67 | 39.80109490 | |
| 14,200.03 | 67.32 | 209.467 | 11,658.16 | -114.71 | -5,228.43 | 14,454,410.96 | 1,735,988.76 | 39.80088606 | -80.65971986 |
| 14,300.03 | 69.15 | 201.080 | 11,695.30 | -198.61 | -5,267.99 | 14,454,327.06 | 1,735,949.19 | 39.80065606 | -80.65986185 |
| 14,400.03 | 71.38 | 192.916 | 11,729.12 | -288.54 | -5,295.43 | 14,454,237.13 | 1,735,921.76 | 39.80040938 | -80.65996076 |
| 14,500.03 | 73.95 | 184.979 | 11,758.95 | -382.75 | -5,310.21 | 14,454,142.92 | 1,735,906.98 | 39.80015081 | -80.66001466 |
| 14,600.03 | 76.81 | 177.254 | 11,784.23 | -479.40 | -5,312.05 | 14,454,046.27 | 1,735,905.14 | 39.79988540 | -80.66002251 |
| 14,700.03 | 79.89 | 169.715 | 11,804.45 | -576.62 | -5,300.91 | 14,453,949.06 | 1,735,916.28 | 39.79961831 | -80.65998415 |
| 14,800.03 | 83.14 | 162.322 | 11,819.23 | -672.50 | -5,277.00 | 14,453,853,17 | 1,735,940.19 | 39.79935474 | -80.65990034 |
| 14,900.03 | 86,50 | 155.032 | 11,828.27 | -765.19 | -5,240.80 | 14,453,760.48 | 1,735,976.39 | 39.79909981 | -80.65977270 |
| 14,973.31 | 89.00 | 149.723 | 11,831.15 | -830.04 | -5,206.86 | 14,453,695.64 | 1,736,010.33 | 39.79892137 | -80.65965274 |
| Begin 89 | 0.00° lateral | | | | | | | | |
| 15,000.03 | 89.00 | 149.723 | 11,831.62 | -853.11 | -5,193.39 | 14,453,672.56 | 1,736,023,80 | 39.79885787 | -80.65960510 |
| 15,100.03 | 89.00 | 149.723 | 11,833.36 | -939.46 | -5,142.98 | 14,453,586.22 | 1,736,074.21 | 39.79862022 | -80.65942679 |
| 15,200.03 | 89.00 | 149.723 | 11,835.11 | -1,025.81 | -5,092.57 | 14,453,499.87 | 1,736,124.62 | 39.79838256 | -80.65924849 |
| 15,300.03 | 89.00 | 149.723 | 11,836.85 | -1,112.15 | -5,042.16 | 14,453,413,52 | 1,736,175.03 | 39,79814491 | -80,65907019 |
| 15,400.03 | 89.00 | 149.723 | 11,838.60 | -1,198.50 | -4,991.75 | 14,453,327.18 | 1,736,225.44 | 39.79790725 | -80.65889188 |
| 15,500.03 | 89.00 | 149.723 | 11,840.34 | -1,284.85 | -4,941.34 | 14,453,240.83 | 1,736,275.85 | 39,79766959 | -80.65871358 |
| 15,600.03 | 89.00 | 149.723 | 11,842.09 | -1,371.19 | -4,890,93 | 14,453,154.48 | 1,736,326.26 | 39.79743194 | -80.65853528 |
| 15,700.03 | 89.00 | 149.723 | 11,843.83 | -1,457.54 | -4,840.52 | 14,453,068.14 | 1,736,376.67 | 39,79719428 | -80.65835698 |
| 15,800.03 | 89.00 | 149.723 | 11,845.58 | -1,543.89 | -4,790.11 | 14,452,981.79 | 1,736,427.08 | 39.79695662 | -80.65817869 |
| | 89.00 | 149.723 | 11,847.32 | and the second second | -4,739.70 | | 1,736,477.49 | 39.79671897 | -80.65800039 |
| 15,900.03 | | | | -1,630.23 | | 14,452,895.44 | | 39.79648131 | -80.65782209 |
| 16,000.03 | 89.00 | 149.723 | 11,849.07 | -1,716.58 | -4,689.29 | 14,452,809.10 | 1,736,527.90 | 39.79624365 | |
| 16,100.03 | 89.00 | 149.723 | 11,850.81 | -1,802.93 | -4,638.87 | 14,452,722.75 | 1,736,578.31 | | -80.65764380 |
| 16,200.03 | 89.00 | 149.723 | 11,852.56 | -1,889.27 | -4,588.46 | 14,452,636.40 | 1,736,628.72 | 39.79600599 | -80.65746551 |
| 16,300.03 | 89.00 | 149.723 | 11,854.30 | -1,975.62 | -4,538.05 | 14,452,550.06 | 1,736,679.13 | 39.79576833 | -80.65728722 |
| 16,400.03 | 89.00 | 149.723 | 11,856.05 | -2,061.97 | -4,487.64 | 14,452,463.71 | 1,736,729.54 | 39.79553067 | -80.65710893 |
| 16,500.03 | 89.00 | 149.723 | 11,857.80 | -2,148.31 | -4,437.23 | 14,452,377.36 | 1,736,779.95 | 39,79529301 | -80.65693064 |
| 16,600.03 | 89.00 | 149.723 | 11,859.54 | -2,234.66 | -4,386.82 | 14,452,291.02 | 1,736,830.36 | 39.79505536 | -80.65675235 |
| 16,700.03 | 89.00 | 149.723 | 11,861.29 | -2,321.01 | -4,336.41 | 14,452,204.67 | 1,736,880.77 | 39.79481770 | -80.65657406 |
| 16,800.03 | 89.00 | 149.723 | 11,863.03 | -2,407.35 | -4,286.00 | 14,452,118.32 | 1,736,931.18 | 39.79458004 | -80.65639578 |
| 16,900.03 | 89.00 | 149.723 | 11,864.78 | -2,493.70 | -4,235.59 | 14,452,031.98 | 1,736,981.59 | 39.79434238 | -80.65621749 |
| 17,000.03 | 89.00 | 149.723 | 11,866.52 | -2,580.05 | -4,185.18 | 14,451,945.63 | 1,737,032.01 | 39.79410471 | -80.65603921 |
| 17,100.03 | 89.00 | 149.723 | 11,868.27 | -2,666.39 | -4,134.77 | 14,451,859.28 | 1,737,082.42 | 39.79386705 | -80,65586093 |
| 17,200.03 | 89.00 | 149.723 | 11,870.01 | -2,752.74 | -4,084,36 | 14,451,772.94 | 1,737,132.83 | 39,79362939 | -80.65568265 |
| 17,300.03 | 89.00 | 149.723 | 11,871.76 | -2,839.09 | -4,033.95 | 14,451,686.59 | 1,737,183.24 | 39.79339173 | -80.65550437 |
| 17,400.04 | 89.00 | 149.723 | 11,873.50 | -2,925.44 | -3,983.54 | 14,451,600.24 | 1,737,233.65 | 39.79315407 | -80.65532609 |
| 17,500.04 | 89.00 | 149.723 | 11,875.25 | -3,011.78 | -3,933.13 | 14,451,513.90 | 1,737,284.06 | 39.79291641 | -80.65514781 |
| 17,600.04 | 89.00 | 149.723 | 11,876.99 | -3,098.13 | -3,882.72 | 14,451,427.55 | 1,737,334.47 | 39,79267875 | -80.65496954 |
| 17,700.04 | 89.00 | 149.723 | 11,878.74 | -3,184.48 | -3,832.31 | 14,451,341.20 | 1,737,384.88 | 39.79244108 | -80.65479126 |
| 17,800.04 | 89.00 | 149.723 | 11,880.48 | -3,270.82 | -3,781.90 | 14,451,254.86 | 1,737,435.29 | 39.79220342 | -80.65461299 |
| 17,900.04 | 89.00 | 149.723 | 11,882.23 | -3,357.17 | -3,731.49 | 14,451,168.51 | 1,737,485.70 | 39.79196576 | -80.65443472 |
| 18,000.04 | 89.00 | 149,723 | 11,883.97 | -3,443.52 | -3,681.08 | 14,451,082.16 | 1,737,536.11 | 39.79172809 | -80.65425645 |



Planning Report - Geographic

Database: DB_Aug1919_v14 Tug Hill Operating LLC Company: Project: Marshall County, West Virginia Fitzgerald Fitzgerald 17 HU (slot M) Original Hole Wellbore: rev6 Design:

Planned Survey

Site:

Well:

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:

Well Fitzgerald 17 HU (slot M) GL @ 1292.91ft GL @ 1292.91ft Grid Minimum Curvature

Office of Oil and Gas MAR 1 7 2020

En WV Dena

| | | | Vertical | | | 1100 | Mag | Enviror | mental ment of |
|-------------------|-------------|---------|-------------------|-----------|-----------|-----------------|----------------|-------------|---------------------------------|
| Measured Depth | Inclination | Azimuth | Vertical Depth | +N/-S | +E/-W | Map Northing | Map Easting | | Department of mental Protect |
| (ft) | (°) | (°) | (ft) | (ft) | (ft) | (usft) | (usft) | Latitude | Longitude |
| 18,100.04 | 89.00 | 149.723 | 11,885.72 | -3,529.86 | -3,630.66 | 14,450,995.82 | 1,737,586.52 | 39,79149043 | -80.654078 |
| 18,200.04 | 89.00 | 149,723 | 11,887.46 | -3,616.21 | -3,580,25 | 14,450,909.47 | 1,737,636.93 | 39,79125277 | -80.653899 |
| 18,300.04 | 89.00 | 149.723 | 11,889,21 | -3,702.56 | -3,529.84 | 14,450,823.12 | 1,737,687,34 | 39,79101510 | -80.653721 |
| 18,400.04 | 89.00 | 149.723 | 11,890.95 | -3,788.90 | -3,479.43 | 14,450,736.78 | 1,737,737.75 | 39.79077744 | -80.653543 |
| 18,500.04 | 89.00 | 149.723 | 11,892.70 | -3,875.25 | -3,429.02 | 14,450,650.43 | 1,737,788.16 | 39.79053977 | -80.65336 |
| 18,600.04 | 89.00 | 149.723 | 11,894.45 | -3,961.60 | -3,378.61 | 14,450,564.08 | 1,737,838.57 | 39.79030211 | -80.65318 |
| 18,700.04 | 89.00 | 149.723 | 11,896.19 | -4,047.94 | -3,328.20 | 14,450,477.74 | 1,737,888.98 | 39.79006444 | -80.65300 |
| 18,800.04 | 89.00 | 149.723 | 11,897.94 | -4,134.29 | -3,277.79 | 14,450,391.39 | 1,737,939.39 | 39.78982678 | -80.65283 |
| 18,900.04 | 89.00 | 149.723 | 11,899.68 | -4,220.64 | -3,227.38 | 14,450,305.04 | 1,737,989.80 | 39.78958911 | -80.65265 |
| 19,000.04 | 89.00 | 149.723 | 11,901.43 | -4,306.98 | -3,176.97 | 14,450,218.70 | 1,738,040.21 | 39.78935145 | -80.65247 |
| 19,100.04 | 89.00 | 149.723 | 11,903.17 | -4,393.33 | -3,126.56 | 14,450,132.35 | 1,738,090.62 | 39.78911378 | -80.65229 |
| 19,200.04 | 89.00 | 149.723 | 11,904.92 | -4,479.68 | -3,076.15 | 14,450,046.00 | 1,738,141.03 | 39.78887611 | -80.65211 |
| 19,300.04 | 89.00 | 149.723 | 11,906.66 | -4,566.02 | -3,025.74 | 14,449,959.66 | 1,738,191.44 | 39.78863845 | -80.65193 |
| 19,400.04 | 89.00 | 149,723 | 11,908.41 | -4,652.37 | -2,975.33 | 14,449,873.31 | 1,738,241.86 | 39,78840078 | -80.65176 |
| 19,500.04 | 89.00 | 149,723 | 11,910,15 | -4,738.72 | -2,924.92 | 14,449,786.96 | 1,738,292.27 | 39.78816311 | -80.65158 |
| 19,600.04 | 89.00 | 149.723 | 11,911.90 | -4,825.07 | -2,874.51 | 14,449,700.62 | 1,738,342.68 | 39.78792544 | -80.65140 |
| 19,700.04 | 89.00 | 149.723 | 11,913.64 | -4,911.41 | -2,824.10 | 14,449,614.27 | 1,738,393.09 | 39.78768777 | -80.65122 |
| 19,800.04 | 89.00 | 149.723 | 11,915.39 | -4,997.76 | -2,773.69 | 14,449,527.92 | 1,738,443.50 | 39,78745011 | -80.65104 |
| 19,900.04 | 89.00 | 149,723 | 11,917.13 | -5,084.11 | -2,723.28 | 14,449,441.58 | 1,738,493.91 | 39.78721244 | -80.65086 |
| 20,000.04 | 89.00 | 149,723 | 11,918.88 | -5,170,45 | -2,672.86 | 14,449,355.23 | 1,738,544.32 | 39.78697477 | -80.65069 |
| 20,100.04 | 89.00 | 149.723 | 11,920.62 | -5,256.80 | -2,622.45 | 14,449,268.88 | 1,738,594.73 | 39.78673710 | -80,65051 |
| 20,200.04 | 89.00 | 149.723 | 11,922.37 | -5,343.15 | -2,572.04 | 14,449,182.54 | 1,738,645.14 | 39.78649943 | -80.65033 |
| 20,300.04 | 89.00 | 149.723 | 11,924.11 | -5,429.49 | -2,521.63 | 14,449,096.19 | 1,738,695.55 | 39.78626176 | -80.65015 |
| 20,400.04 | 89.00 | 149,723 | 11,925.86 | -5,515.84 | -2,471.22 | 14,449,009.84 | 1,738,745.96 | 39.78602409 | -80.64997 |
| 20,500.04 | 89.00 | 149.723 | 11,927.61 | -5,602.19 | -2,420.81 | 14,448,923.50 | 1,738,796.37 | 39.78578642 | -80.64980 |
| 20,600.04 | 89.00 | 149.723 | 11,929.35 | -5,688.53 | -2,370.40 | 14,448,837.15 | 1,738,846.78 | 39.78554875 | -80.64962 |
| 20,700.04 | 89.00 | 149.723 | 11,931.10 | -5,774.88 | -2,319.99 | 14,448,750.80 | 1,738,897.19 | 39.78531108 | -80.64944 |
| 20,800.04 | 89.00 | 149.723 | 11,932.84 | -5,861.23 | -2,269.58 | 14,448,664.46 | 1,738,947.60 | 39.78507341 | -80.64926 |
| 20,900.04 | 89.00 | 149.723 | 11,934.59 | -5,947.57 | -2,219.17 | 14,448,578.11 | 1,738,998.01 | 39.78483574 | -80.64908 |
| 21,000.04 | 89.00 | 149.723 | 11,936.33 | -6,033.92 | -2,168.76 | 14,448,491.77 | 1,739,048.42 | 39.78459806 | -80.64890 |
| 21,100.04 | 89.00 | 149.723 | 11,938.08 | -6,120.27 | -2,118.35 | 14,448,405.42 | 1,739,098.83 | 39.78436039 | -80,64873 |
| 21,200.04 | 89.00 | 149.723 | 11,939.82 | -6,206.61 | -2,067.94 | 14,448,319.07 | 1,739,149.24 | 39.78412272 | -80.64855 |
| 21,300.04 | 89.00 | 149.723 | 11,941.57 | -6,292.96 | -2,017.53 | 14,448,232.73 | 1,739,199.65 | 39,78388505 | -80.64837 |
| 21,400.04 | 89.00 | 149.723 | 11,943.31 | -6,379,31 | -1,967.12 | 14,448,146.38 | 1,739,250.06 | 39.78364738 | -80.64819 |
| 21,500.04 | 89.00 | 149.723 | 11,945.06 | -6,465.65 | -1,916.71 | 14,448,060.03 | 1,739,300.47 | 39,78340970 | -80.64801 |
| 21,600.04 | 89.00 | 149.723 | 11,946.80 | -6,552.00 | -1,866.30 | 14,447,973.69 | 1,739,350.88 | 39.78317203 | -80.64783 |
| 21,700.04 | 89.00 | 149.723 | 11,948.55 | -6,638.35 | -1,815.89 | 14,447,887.34 | 1,739,401.29 | 39,78293436 | -80.64766 |
| 21,800.04 | 89.00 | 149.723 | 11,950.29 | -6,724.70 | -1,765.48 | 14,447,800.99 | 1,739,451.71 | 39.78269668 | -80.64748 |
| 21,900.04 | 89.00 | 149.723 | 11,952.04 | -6,811.04 | -1,715.06 | 14,447,714.65 | 1,739,502.12 | 39.78245901 | -80.64730 |
| 22,000.04 | 89.00 | 149.723 | 11,953.78 | -6,897.39 | -1,664.65 | 14,447,628.30 | 1,739,552.53 | 39.78222133 | -80.64712 |
| 22,100.04 | 89.00 | 149.723 | 11,955.53 | -6,983.74 | -1,614.24 | 14,447,541.95 | 1,739,602.94 | 39.78198366 | -80.64694 |
| 22,200.04 | 89.00 | 149.723 | 11,957,27 | -7,070.08 | -1,563.83 | 14,447,455.61 | 1,739,653.35 | 39.78174598 | -80.64677 |
| 22,300.05 | 89.00 | 149.723 | 11,959.02 | -7,156.43 | -1,513.42 | 14,447,369.26 | 1,739,703.76 | 39.78150831 | -80.64659 |
| 22,400.05 | 89.00 | 149.723 | 11,960.76 | -7,242.78 | -1,463.01 | 14,447,282.91 | 1,739,754.17 | 39.78127063 | -80,64641 |
| 22,500.05 | 89.00 | 149.723 | 11,962.51 | -7,329.12 | -1,412.60 | 14,447,196.57 | 1,739,804.58 | 39.78103296 | -80.64623 |
| 22,600.05 | 89.00 | 149.723 | 11,964,26 | -7,415.47 | -1,362.19 | 14,447,110.22 | 1,739,854.99 | 39,78079528 | -80.64605 |
| 22,700.05 | 89.00 | 149.723 | 11,966.00 | -7,501.82 | -1,311.78 | 14,447,023.87 | 1,739,905.40 | 39.78055760 | -80.64587 |
| 22,800.05 | 89.00 | 149.723 | 11,967.75 | -7,588.16 | -1,261.37 | 14,446,937.53 | 1,739,955.81 | 39.78031993 | -80,64570 |
| 22,900.05 | 89.00 | 149.723 | 11,969.49 | -7,674.51 | -1,210.96 | 14,446,851.18 | 1,740,006.22 | 39,78008225 | -80.64552 |
| 23,000.05 | 89.00 | 149.723 | 11,971,24 | -7,760.86 | -1,160.55 | 14,446,764.83 | 1,740,056.63 | 39.77984457 | -80.64534 |
| 23,100.05 | 89.00 | 149.723 | 11,972.98 | -7,847.20 | -1,110.14 | 14,446,678.49 | 1,740,107.04 | 39.77960690 | -80.64516 |
| 23,200.05 | 89.00 | 149.723 | 11,974.73 | -7,933.55 | -1,059,73 | 14,446,592.14 | 1,740,157.45 | 39.77936922 | -80,64498 |
| 23,300.05 | 89.00 | 149.723 | 11,976.47 | -8,019.90 | -1,009.32 | 14,446,505,79 | 1,740,207.86 | 39.77913154 | -80.64480 |
| 23,400.05 | 89.00 | 149.723 | 11,978.22 | -8,106.24 | -958.91 | 14,446,419.45 | 1,740,258.27 | 39.77889386 | -80.64463 |
| 23,500.05 | 89.00 | 149.723 | 11,979.96 | -8,192.59 | -908.50 | 14,446,333.10 | 1,740,308.68 | 39.77865618 | -80.644453 |



Planning Report - Geographic

| Database: | DB_Aug1919_v14 | Local Co-ordinate Reference: | Well Fitzgerald 17 HU (slot M) |
|-----------|--------------------------------|------------------------------|--------------------------------|
| 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 17 HU (slot M) | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Original Hole | | |
| Design: | rev6 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|---------------------------|--------------------------|-------------|--------------|
| 23,600.05 | 89.00 | 149.723 | 11,981.71 | -8,278.94 | -858.09 | 14,446,246.75 | 1,740,359.09 | 39.77841850 | -80.64427525 |
| 23,700.05 | 89.00 | 149.723 | 11,983.45 | -8,365.28 | -807.68 | 14,446,160.41 | 1,740,409.50 | 39.77818082 | -80.64409704 |
| 23,800.05 | 89.00 | 149.723 | 11,985.20 | -8,451.63 | -757.26 | 14,446,074.06 | 1,740,459.91 | 39.77794314 | -80.64391884 |
| 23,833.17 | 89.00 | 149.723 | 11,985.78 | -8,480.23 | -740.57 | 14,446,045.46 | 1,740,476.61 | 39.77786442 | -80.64385982 |
| PBHL/TC | 23833.17 MD | /11985.78 TV | D | | | | | | |
| 23,833,18 | 89.00 | 149.723 | 11,985.78 | -8,480.24 | -740.56 | 14,446,045.45 | 1,740,476.61 | 39.77786440 | -80.64385981 |

| 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-17HU LP - plan misses targe - Point | 0.00 at center by 60.3 | | 11,825.91 2.52ft MD (11 | -571.00 803.12 TVD, - | -5,358.09 -569.34 N, -53 | 14,453,954.68 802.19 E) | 1,735,859.10 | 39.79963434 | -80.66018766 |
| Fitzgerald-17HU BHL - plan misses targe - Point | 0.00 et center by 0.22 | 0.000 2ft at 23833. | 11,986.00 18ft MD (119 | -8,480.24 85.78 TVD, -8 | -740.55 3480.24 N, -74 | 14,446,045.45 0.56 E) | 1,740,476.63 | 39.77786440 | -80.64385977 |

Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | | Name | Casing Diameter ('') | Hole Diameter (") |
|---------------------------|---------------------------|----------------|------|----------------------------|-------------------------|
| 1,000.00 | 1,000.00 | 20" Casing | | 20 | 26 |
| 2,900.00 | 2,894.42 | 13 3/8" Casing | | 13-3/8 | 17-1/2 |
| 10,620.00 | 10,292.85 | 9 5/8" Casing | | 9-5/8 | 12-1/4 |

| Formations | Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
|------------|---------------------------|---------------------------|---------------|-----------|------------|-------------------------|-------------------|
| | 6,964.00 | 6,902.00 | Top Marcellus | | 0.000 | | |
| | 7,016.80 | 6,954.00 | Top Onondaga | | 0.000 | | |
| | 7,255.42 | 7,187.00 | Base Onondaga | | 0.000 | | |
| | 7,772.89 | 7,677.00 | Top Salina | | 0.000 | | DR |
| | 8,846.65 | 8,686.00 | Base Salina | | 0.000 | | Office of CEIVED |
| | 9,793.77 | 9,576.00 | Top Clinton | | 0.000 | | Office of Oil and |
| | 9,910.83 | 9,686.00 | Base Clinton | | 0.000 | | MAR 17 202 |



Planning Report - Geographic

Well Fitzgerald 17 HU (slot M) DB_Aug1919_v14 Local Co-ordinate Reference: Database: Tug Hill Operating LLC GL @ 1292.91ft Company: TVD Reference: Project: Marshall County, West Virginia MD Reference: GL @ 1292.91ft Fitzgerald Grid Site: North Reference: Minimum Curvature Fitzgerald 17 HU (slot M) Well: Survey Calculation Method: Original Hole Wellbore: rev6 Design:

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 |
| 1,600.00 | 1,599.37 | -16.70 | -14.01 | Begin 5.00° tangent |
| 3,106.37 | 3,100.00 | -117.27 | -98.41 | Begin 2°/100' turn |
| 3,511.31 | 3,501.77 | -128.56 | -144.91 | Begin 10.00° tangent |
| 7,016.80 | 6,954.00 | -89.60 | -752.39 | Begin 2°/100' build |
| 7,516.80 | 7,436.35 | -81.32 | -881.37 | Begin 20.00° tangent |
| 10,138.56 | 9,900.00 | -23.93 | -1,776.22 | Begin 2°/100' build |
| 10,958.01 | 10,465.90 | 15.64 | -2,332.53 | Begin 69.17° tangent |
| 13,454.18 | 11,353.69 | 187.04 | -4,659.19 | Begin 8°/100' drop build/turn |
| 14,973.31 | 11,831.15 | -830.04 | -5,206.86 | Begin 89.00° lateral |
| 23,833,17 | 11.985.78 | -8,480.23 | -740.57 | PBHL/TD 23833.17 MD/11985.78 TVD |

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

WW-9 (4/16)

API Number 47 - 051 - _

Operator's Well No. Fitzgerald S-17HU

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 comp Will a pit be used? Yes <u>No</u> No | lete the proposed well work? Yes No |
| If so, please describe anticipated pit waste: AST Tanks Will a synthetic liner be used in the pit? Yes Proposed Disposal Method For Treated Pit Wastes: | with proper containment will be used for staging fresh water for frac and flow back water No If so, what ml.?AST Tenks will be used with proper contain |
| Land Application Underground Injection (UIC Permit Reuse (at API Number | NumberUIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523) |
| Off Site Disposal (Supply form WW Other (Explain | 7-9 for disposal location) |
| Will closed loop system be used? If so, describe: Yes - For Ve | rtical 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 | Office of Oil and Gas |
|---|--|
| Company Official (Typed Name) Jim Pancake | MAR 1 7 2020 |
| Company Official Title Vice President - Geosciences | WV Department of Environmental Protection |
| 1 da | 20 2 Commonwealth of Pennsylvania - Notary Seal Chester Arthur West IV, Notary Public ary Public Washington County |
| My commission expires 2-10-2024 | My commission expires February 10, 2024 Commission number 1267179 Member, Pennsylvania Association of Notaries |

Operator's Well No. Fitzgerald S-17HU

Tug Hill Operating, LLC

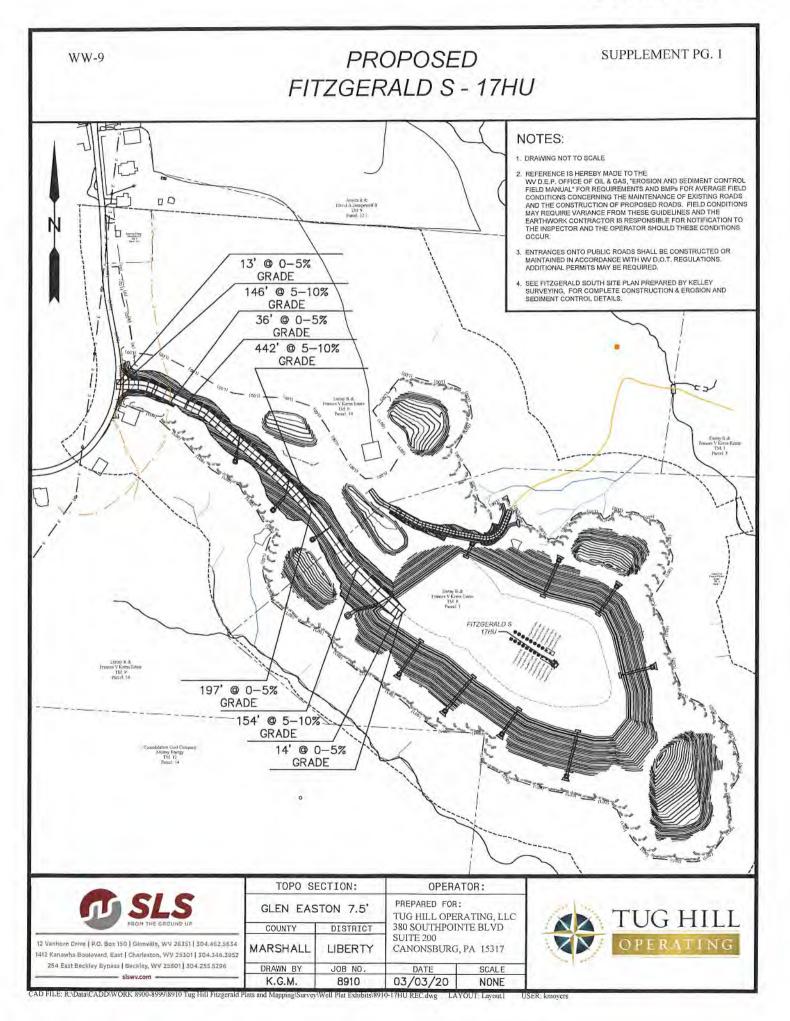
| ns/acre or to correct to pH | 6.5 | |
|-----------------------------|-------------------------------------|---|
| ····· · · · · · · · · · | | |
| | | |
| lbs/a | acre | |
| Tons/acr | e | |
| | | ent |
| bs/acre | Seed Type | lbs/acre |
| 40 | Orchard Grass | 12 |
| 96 | Ladino | 3 |
| | White Clover | 2 |
| | Tons/acr seed f bs/acre 40 | bs/acreSeed Type40Orchard Grass96Ladino |

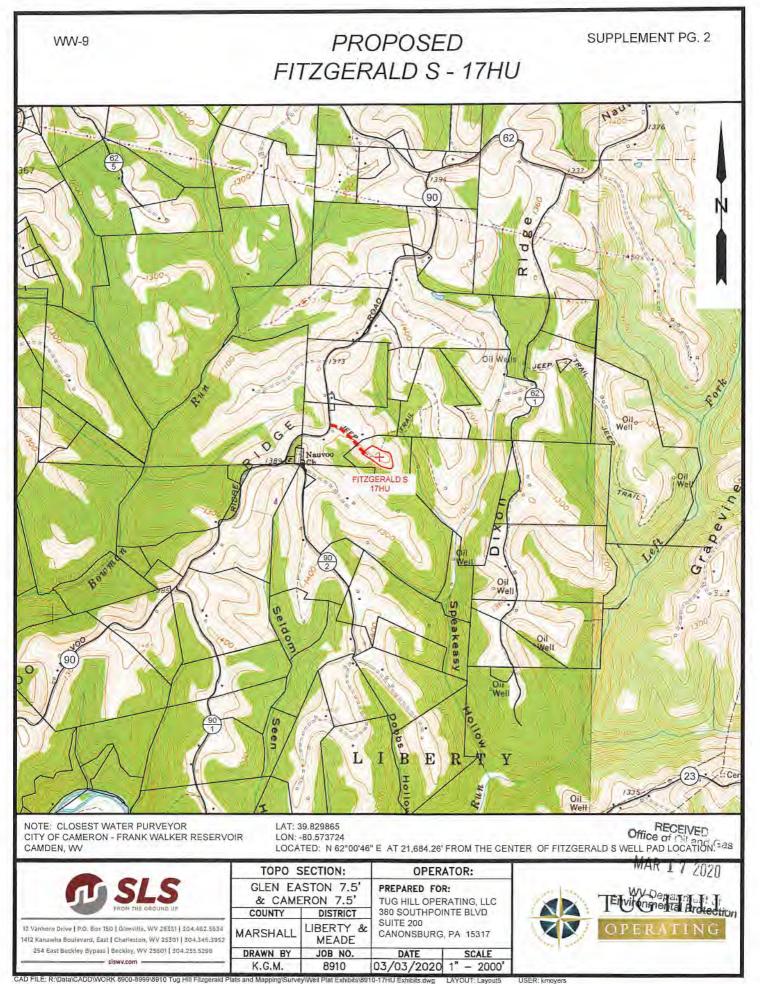
Attach:

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

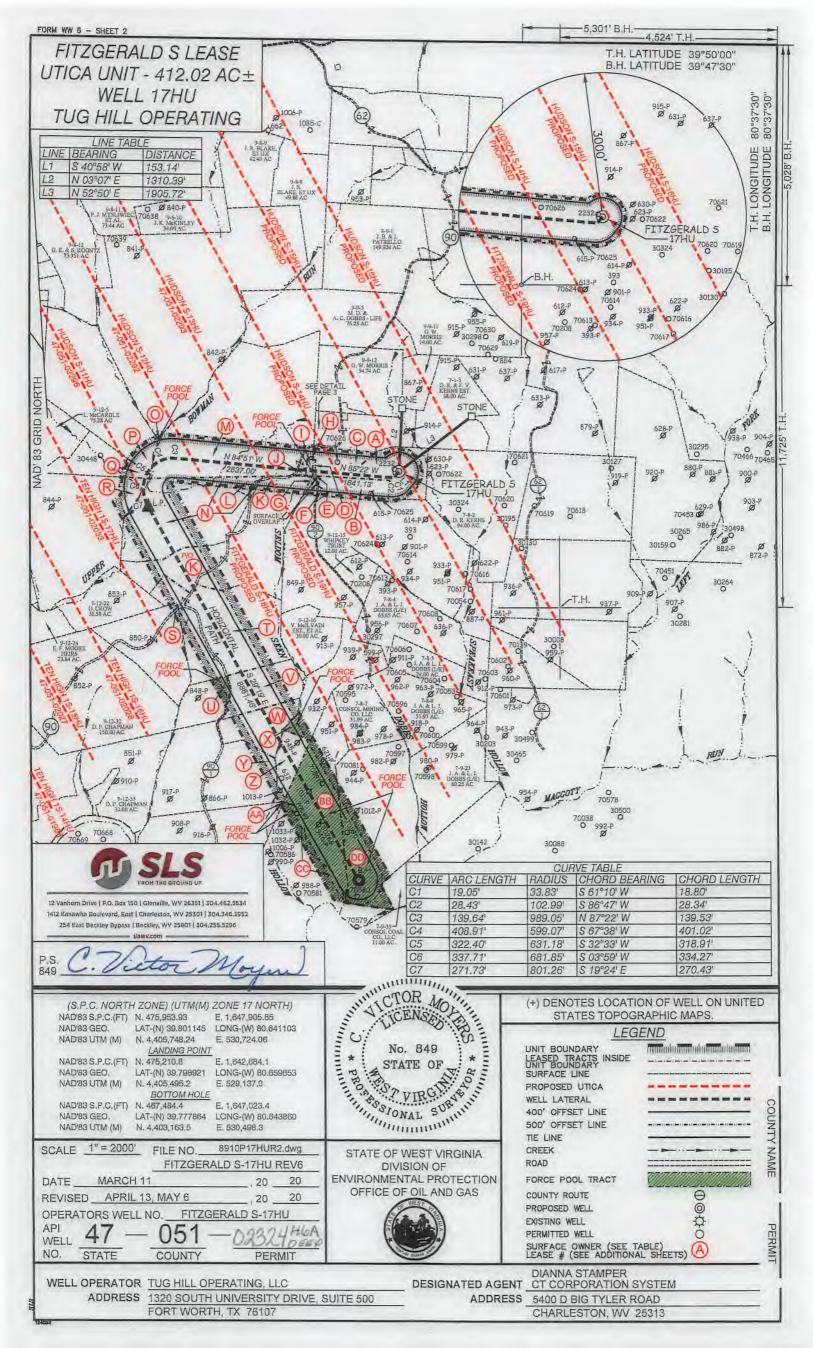
Photocopied section of involved 7.5' topographic sheet.

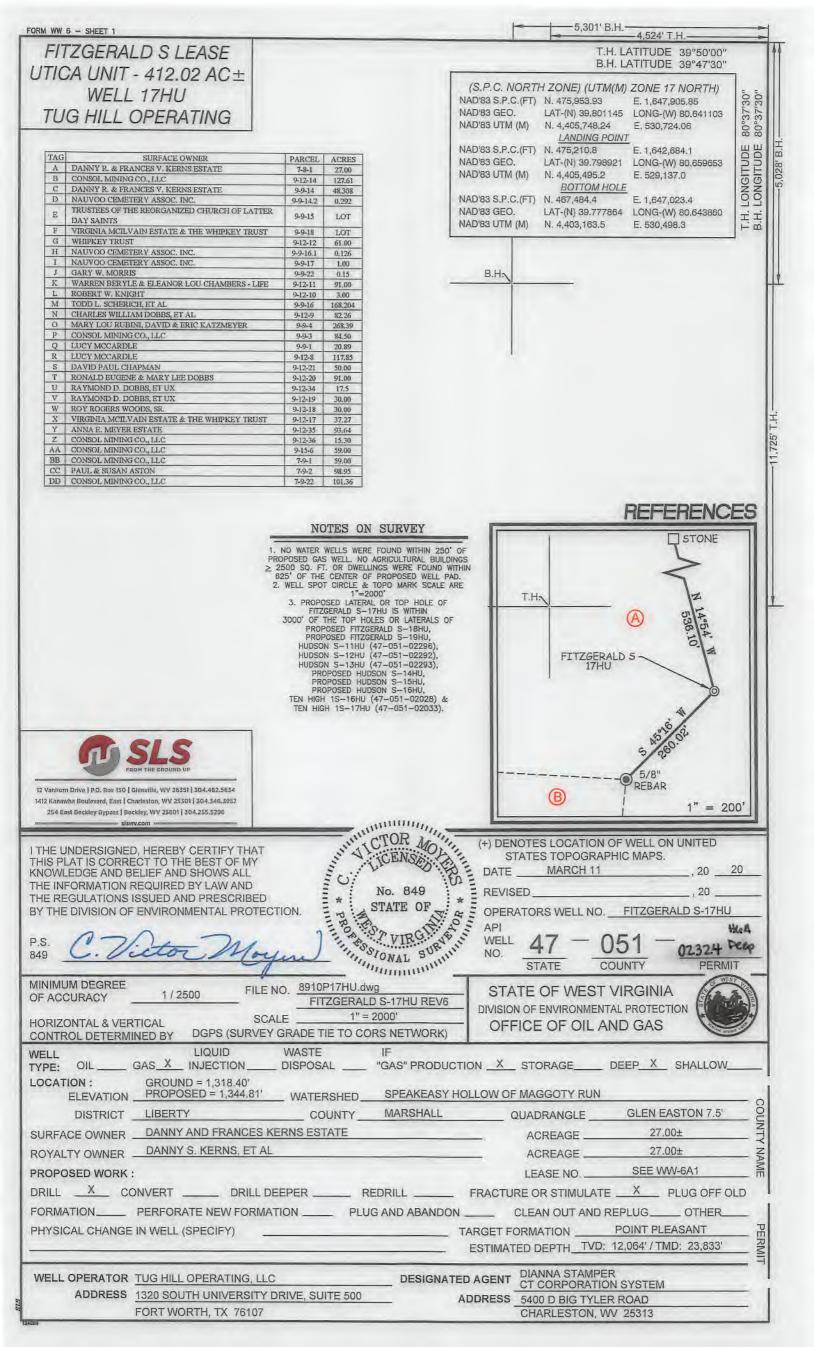
| Plan Approved by: Juic Unilola | ~ | |
|--------------------------------|----------------|--|
| Comments: | | |
| | | |
| | | |
| | | |
| | | b _ |
| | | Office of Oil and Gas |
| | | MAR 1 7 2020 |
| Title: Oil and Gas Inspector | Date: 2/4/2020 | WV Department of Environmental Protection |
| Field Reviewed? (Yes | () No | |





FILE: R:\Data\CADD\WORK 8900-8999\8910 Tug Hill Fitzgerald and Mapping/Survey/Well Plat Exhibits/8910-17HU Exhibits dwo LAYOUT: Layout5





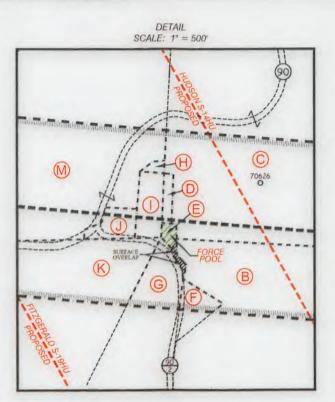
FORM WW 6 - SHEET 3

FITZGERALD S LEASE UTICA UNIT - 412.02 AC± WELL 17HU TUG HILL OPERATING

| 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 et al | 1010 | 532 |
| 2 | 10*18339 | В | 9-12-14 | RESOURCE MINERALS HEADWATER I LP et al | 940 | 448 |
| 3 | PENDING | C | 9-9-14 | REGINA DANETTE FIGUEROA et al | 1075 | 137 |
| 4 | 10*27299 | D | 9-9-14.2 | NAUVOO CEMETERY ASSOCIATION | 1057 | 357 |
| 5 | ** | Е | 9-9-15 | REORGANIZED CHURCH OF LATER DAY SAINTS | UNLE | ASED |
| б | 10*22524 | F | 9-9-18 | ALYCE LYNN MCGUFFIE et al | 1027 | 233 |
| 7 | 10*19557 | G | 9-12-12 | TERRY L BLAKE et al | 944 | 649 |
| 8 | 10*19987 | н | 9-9-16.1 | LESLEY D BALLA et al | 955 | 103 |
| 9 | 10*27299 | 1 | 9-9-17 | NAUVOO CEMETERY ASSOCIATION | 1057 | 357 |
| 10 | 10*24535 | 1 | 9-9-22 | BOARD OF EDUCATION OF MARSHALL COUNTY | 1026 | 64 |
| 11 | 10*15494 | K | 9-12-11 | CHRISTOPHER SINGER AND SHEREA SINGER et al | 898 | 433 |
| 12 | 10*23656 | L | 9-12-10 | ROBERT W KNIGHT AND BARBARA J KNIGHT | 1011 | 504 |
| 13 | 10*19987 | M | 9.9.16 | LESLEY D BALLA et al | 955 | 103 |
| 14 | 10*15999 | N | 9-12-9 | CHARLES W DOBBS AND JUDITH M DOBBS et al | 702 | 171 |
| 15 | ** | 0 | 9.9.4 | MARY LOU RUSINI AKA MARY LOU MILLER et al | 793 | 287 |
| 10 | 10*47051.304.0 | P | 9.9.3 | UNITED BANK INC | 905 | 5 |
| 17 | 10*23386 | Q | 9-9-1 | EDITH CARMICHAEL HEIRS BY HERMAN LANTZ, ESQ AS SPEC COMMISSIONER et al | 1008 | 68 |
| 18 | 10*47051.289.1 | R | 9-12-8 | JANICE M HIXSON AND HARRY C HIXSON et al | 898 | 461 |
| 19 | 10*47051.140.1 | 5 | 9-12-21 | DAVID P CHAPMAN & DEBORAH BORCK CHAPMAN et al | 866 | 318 |
| 20 | 10*24579 | T. | 9-12-20 | PIKEWOOD ENERGY CORPORATION AN OHIO CORPORATION et al | 1026 | 149 |
| 21 | 10*21449 | U | 9-12-34 | GARY WAYNE MORRIS et al | 957 | 262 |
| 22 | 10*19748 | V | 9-12-19 | ELIZABETH JANE KELLEY et al | 957 | 335 |
| 23 | 10*18073 | W | 9-12-18 | ROY R WOODS | 927 | 22 |
| 24 | 10*21532 | X | 9 12-17 | CHARLES E RICHARDSON AND SHIRLEY'S RICHARDSON et al | 957 | 327 |
| 25 | 10*19706 | Y | 9 12 35 | BARBARA JO BEVERIDGE et al | 944 | 627 |
| 26 | PENDING | Z | 9-12-36 | OCTO OIL COMPANY LLC | 1076 | 17 |
| 27 | PENDING | AA | 9-15-6 | OCTO OIL COMPANY LLC et al | 1076 | 17 |
| 28 | 10*22631 | 88 | 7-9-1 | FREDA EUZABETH BLAKE et al | 966 | 632 |
| 29 | ** | CC | 7-9-2 | AUSTIE CARNEY ET AL | 363 | 15 |
| 30 | 10*17930 | DD | 7-9-22 | BOUNTY MINERALS LLC et al | 928 | 395 |

In WV 26351 | \$08.462.5634

(4)2 Kanawim Boulevard, Ext [Continues, WV 25401 (204 546 1952 254 Kast Biochiny Bypnin [Biochiny, WY 25601] 204 255 5295



No. 849 * STATE OF * VIRCING COUNTY NAME FILE NO. _____8910P17HUR.dwg FITZGERALD S-17HU REV6 STATE OF WEST VIRGINIA **DIVISION OF** DATE MARCH 11 , 20 ____ 20 ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS . 20 _ REVISED MARCH 25 20 OPERATORS WELL NO. FITZGERALD S-17HU HGA 051 API 02324 Deep 47 P.S. 849 WELL STATE NO. COUNTY PERMIT DESIGNATED AGENT ADDRESS 5400 D BIG TYLER ROAD WELL OPERATOR TUG HILL OPERATING, LLC ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 CHARLESTON, WV 25313

WW-6A1 (5/13) Operator's Well No. Fitzgerald S-17HU

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

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

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

| Lease Name or Number | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page |
|-------------------------|-----------------------|-----------------------|---------|-----------|
| | *S | 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 UNUS Ulle |
| Its: | Permitting Specialist - Appalachia Region |

WW-6A1 Supplement

v

Operator's Well No. <u>Fitzgerald S-17HU</u>

| 10*24398 | 10*24397 | 10°24047 | 10*23315 | 50/77_0T | 10*22553 | 10*22528 | 10*22526 | 1000000 | 10*22202 | | 10*22201 | 66T77 -0T | | 10*21322 | /1172-01 | 10*19994 | 10*19993 | 10*27710 | 10*24396 | 10*23227 | 10*21896 | | 10*21882 10*21890 | | 10*21781 | 10°19696 | 10*19633 | 7CORT . OT | 10+10620 | 10°19631 | 10*19571 | 10°19570 | 10*19567 | TOCELOT | 10*19558 | 10*19557 | 10*27774 | 10°22524 | : | 10*27299 | | PENDING | PENDING | 10°22524 | 0EE81+UL | 10*25522 | | 10°25520 | | 10*25518 | | Lease No. |
|---------------------|---------------------|---------------------|---------------------|------------|---------------------|---------------------|---------------------|--------------------------|-------------------------|---------------------|----------------------------|--|--|---------------------|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|------------------------|-----|---------------------|---------------------|--------------------------|------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------------------------|---------------------|------------------------|---------------------|---------------------|----------|-----------------------|-----------------|--|-------------------------|----------------------|-------------------------------------|-------------------|--------------------|----------------|--|---------------------------------------|--|---------------------------------------|
| н 9-9-16.1 | н 9-9-16.1 | н 9-9-16.1 | н 9-9-16.1 | 1 272-20.4 | н 9-9-16.1 | - | H 9-9-16.1 | | н 9-9-16.1 | | н 9-9-16.1 | T.01-6-6 U | | н 9-9-16.1 | T.01-6-6 | ╋ | H | G 9-12-1 | - | G 9-12-1 | | _ | G 9-12-12 G 9-12-12 | -+ | G 9-12-12 | G 9-12-12 | G 9-12-12 | -+ | | G 9-12-12 | + | G 9-12-12 | | - | G 9-12-12 | + | F 9-9-18 | | E 9-9-15 | D 9-9-14.2 | - | C 9-9-14 | - | B 9-12-14 | B 9-12-14 | A 7-8-1 | | A 7-8-1 | | A 7-8-1 | | Tago Farcer |
| | | | _ | | 1 GIJZANNE SWIET | .1 RONALD DAKAN | 1 BARBARA FURFARI | 1 MELISSA ELAINE SCHROTH | 1 MARK DAVID HUNT | | 1 FREDERICK MAXWELL YEATER | | _ | 1 WAYT | PHILLIP H WAYT AND BILLIE A | ELAINE A FONTES | DIANA D COSLICK | I FSI FY D BALLA | ELEANOR CHAMBERS | ROGER F CROSS | NANCY ID FENN | REBECCA LYNN RITZ AND | 2 DARLA J KLUKAS | | _ | _ | GARY F BLAKE AND DORIS E | - | CHARLES W DOBBS AND | | MARLENE GARIN | ALICE BUZZARD | PURDY | JOHN PURDY AND BRENDA S | | ROBERT C BLAKE AND LYN | | RESOURCE MINERALS | 1 | REORGANIZED CHURCH OF | NAUVOO CEMETERY | DEENA JANINE PALOMO DANNY SHAWN KERNS | REGINA DANETTE FIGUEROA | ALYCE LYNNE MCGUFFIE | RESOURCE MINERALS HEADWATER I LP | REGINA D FIGUEROA | | DEENA J PALOMO | | AND SEPAKATE PROPERT | MAN DEALING WITH HIS SOLE | |
| TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | BLUE ROAN RESOURCES LLC | BLUE ROAN RESOURCES LLC | | BLUE ROAN RESOURCES LLC | | BILLE BOAN BESOUBCES 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 | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | In Exclusion in the | TH EXPLORATION, LLC | TH EXPLORATION, LLC | NA | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | PARTNERS LLC | AMERICAN PETROLEUM | PARTNERS LLC | AMERICAN PETROLEUM | PAR I NERS LEC | AMERICAN PETROLEUM | |
| 1/8+ | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | L | 11 | | 1/8+ | | 1/8+ | | 1/8+ | 1/8+ | | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 4/01 | 1/8+ | 4/0 | 1/8+ | 1/8+ | 1/8+ | - | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | 1.01 | 1/8+ | 1/8+ | NA | 7/8+ | 1/01 | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | | 1/01 | 1/8+ | |
| 1023 | 1023 | 1021 | 888 | | 972 972 | 964 | 964 | 934 | 935 | | 926 | | 976 1 | 953 | } | 952 | 955 | 556 950 | 1023 | 984 | 963 | 800 | 960 960 | 20 | 958 | 946 | 945 | | 944 | 946 | 94S | 947 | 944 | _ | 944 | 3 | 1063 | /201 | | | 1057 | 1075 | 1075 | 964 | 940 | 1010 | | 1009 | | OTOT | | |
| 160 | 163 1 | 117 | 138 1 | | 85 130 | | | | N 601 | | 422 N | | 474 N | 293 N | | | 105 NA | | | 1 | | | 111 NA | | 426 NA | 395 NA | 1 NA | | 644 NA | 302 NA | | | 642 NA | | 646 NA | | 258 NA | | 5 | 20 (T | | 134 NA | | Ц | | 535 NA | | 357 NA | | 766 | 532 NA | |
| NA | NA | NA | NA | | NA NA | | | | NA | | NA | | NA | NA | | | IA NA | | | | | | A | | A | A | A | | A | A | | | A | | A | | A | | | 4 | | A NA | | | | A NA | | NA | | | NA | |
| NA | NA | NA | IA NA | | IA NA | | | | A | | A | | A | A | | | A | | | | | | A NA | | A | A NA | A | | A | A | | | A | | NA | | NA | | | | NA | NA | | | | NA | | NA | | | NA | |
| - | | | | | | | | | | | | | NA | NA | | | NA | | | | | | NA | | NA | NA | VAI | 2 | NA | NA | | | NA | | NA | | NA | | NA | | NA | NA | Z | N | N | NA | | NA | 2 | | 2 | |
| A | NA | NA | NA | | NA | | | | NA | | NA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NA | NA | NA | 11 | | NA | NA | NA | NA | Ŧ | 5 | NA | | NA | NA | | A | VA | VA | VA A | VA | YA | A | VA | A | A | Ā | 5 | NA | Ā | 4A | VA | μA | IA | | NA | | NA | | NA | | | NA | | | | NA | | NA | | | NA | |
| NA | NA | NA | 3 | NA | NA | NA | NA | NA | | 2 | NA | | NA | AM. | | NA | NA | NA | NA | NA | 3 | NA | NA | NA | NA | NA | NA | NA | NA | | NA | | | ** FORCE | | NA | NA | NA | NA | NA | | 2 | | | NA | |
| NA | NA | NA | 37 | NA | NA | NA | NA | NA | 3 | S | NA | | NA | NA | 20 | NA | NA | NA | NA | NA | NA | | | | | NA | | | | NA | NA | NA | NA | AN | NA | | NA | | NA | 900 | NA | NA | NA | NA | NA | NA | | NA NA | NA | | NA | |
| NA | NA | | | | NA | | | | | | NA | | NA | TAN . | | | NA | | | | | | | | | | | A | | NA | | | NA | | NA | | NA | | NA | | - | NA | | | | NA | | 3 | | | NA | |
| NA | NA | | | | NA | | | | | 20 | NA | | NA | 1 | | | NA | | | | | | | | NA | NA | 1 | | NA | NA | | | NA A | | NA 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 | | | | | 2 | NA | | NA | 4 | | | NA NA | | | | | | | | | | | NA | / | NA | - | | NA P | | NA P | | NA | | NA | | | | | | NA | | | | NA C | | NA | T |
| NA | NA | NA | 5 | | NA | | A | vploration LLC to TH | 1/405 Blue Roan | Resources LLC to TH | xploration LLC | 11/405 Blue Roan esources LLC to TH | Resources LLC to TH reploration LLC | 1/405 Blue Roan | • | Ā | NA | Ā | | Ä | Ā | > | NA | ₽ | NA | NA | 5 | NA | NA | NA | A | A | NA | Ā | NA | | NA | | NA | | NA | NA | Ā | Ā | Ā | Exploration LLC | Derating LLC to TH | 3/515 American | Operating LLC to TH Exploration LLC | 43/515 American Petroleum Partners | Operating LLC to TH Exploration LLC | 43/515 American Petroleum Partners |

| 10*27947 | 10*23386 | 10*47051.304.0 | : | : | : | PENDING | 10*28510 | 10*28509 | 10*16001 | | 10*16000 | 10*15999 | | 10*24413 | 10°24398 | 10*24397 | 10°24047 | 10°23315 | 10°22553 10°22783 | 10*22528 | 10*22203 | 10-22202 | | 10*33301 | 10*22199 | | 10*19994 10*21117 | | | 14517.01 | | 10*16485 | 10°16484 | 10415404 | 10*74535 | 10*24413 | |
|---------------------|--|---------------------------|-------------------|-----------------|--|---------------------|-------------------------------|------------------------|---------------------------|--|--|---------------------------|---|--|----------------------|--|---|---------------------|----------------------|---------------------|---------------------|--|--|--|--|---------------------|--|---------------------|---------------------|---------------------|--------------------|------------------------|---------------------|--------------------|---------------------|---------------------|----------------------|
| o y | م بو | | 0 994 | 0 9 | | N 9-1 | N 9-1 | N 9-12-9 | - | | | N 9-12-9 | | | - | | M 9-9-16 | | | TT | M 9-9-16 | | - | | | _ | M 9-9-16 M 9-9-16 | | L 9-12-10 | TT-2T-6 V | | K 9-12-11 K 9-12-11 | _ | _ | | 1 9.9.17 | _ |
| 9-9-1 HOLDI | 9-9-1 COMM | _ | | 9-9-4 ERICK | | 9-12-9 THOM/ | 1 | | _ | | | | | | | | | | 16 DAVID H | 16 RONALC | 16 MELISSA | | | | | | _ | | _ | | STONE H | 11 HICHELLI | 1 PEGGY MARIE S | | | | _ |
| HOLDINGS LLC | HERMAN LANTZ, ESQ AS SPEC COMMISSIONER STONE HILL MINEBALS | EDITH CARMICHAEL HEIRS BY | SHIRLEY KATZMEYER | ERIC KATZMEYER | MARY LOU RUBINI AKA MARY LOU MILLER | A LYNN RITZ AND | LINDA S & THOMAS L BENNETT | PEGGY & ROBERT GARDNER | NE D GARIN | | DAVID J KLUKAS ET UX | JUDITH M DOBBS | CHARLES W DOBBS AND | BRADLEY S SCHERICH AND LEIGH SCHERICH | D SCHERICH AND WANDA | MARK D CHAMBERS AND SHERYL CHAMBERS | BESSIE CARMICHAEL ET AL SHANE M MALLETT, SPECIAL COMMISSIONER | | | | BARBARA FURFARI | | | FREDERICK MAXWELL YEATER | DONALD BROOKS WESLEY | WAYT AND BILLIE A | ELAINE A FONTES | COSLICK | | ROBERT W KNIGHT AND | | HICHELLE ANN KNAUFF | | INGER AND | | | AND |
| TH EXPLORATION, LLC | TH EXPLORATION, LLC | _ | CHEVRON USA LLC | CHEVRON USA LLC | CHEVRON USA LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TRIENERGY HOLDINGS, I | | TRIENERGY HOLDINGS, LLC | TRIENERGY HOLDINGS, 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 | BLUE NUMM RESUUNCES LLC | | BLUE ROAN RESOURCES LLC | BLUE ROAN RESOURCES LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION 11C | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EVELORATION LLC | TH EXPLORATION, LLC | TH EXPLORATION. LLC | THI TYPI OBATION IID |
| 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | | | LC 1/8+ | LC 1/8+ | | 1/8+ | 1/8+ | 1/8+ | 1/8+ | | | 11 | 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- |
| 1063 | 1008 | | 792 | 791 | 793 | 1076 | 1073 | 1073 | 702 | | 702 | 702 | | 1023 | 1023 | 1023 | 1021 | 988 | 972 | 964 | 964 | | 000 | 926 | 926 | 953 | 960 952 | 955 | 1011 955 | | 1063 | 942 1023 | 942 | 868 | 1026 | 1057 | 1023 |
| 568 | 68 | | 226 | 226 | 287 | 15 | 350 | 348 | | | 175 | 171 | | 157 | 160 | 163 | 117 | 138 | 85 | 530 | 528 | 1 | 8 | 422 | 424 | 293 | 36 392 | 105 | 103 | | 568 | 447 | 445 | 433 | £ | 357 | IS I |
| NA | NA | NA | | | | NA | NA | NA | LLC to NPAR LLC | 74/180 TriEnergy Holdings | 24/180 TriEnergy Holdings LLC to NPAR LLC | LLC to NPAR LLC | 24/180 TriEnergy Holdings | NA | NA | NA | NA | NA | NA | NA | NA | : 3 | | NA | NA | NA | NA | NA | NA | | AN | NA | NA | NA | NA | NA | NA |
| NA | NA | NA | NA | | | NA | NA | NA | | | | Partnership | 24/466 AE and NPAR Exploratio | NA | NA | NA | NA | NA | NA | NA | NA | | 20 | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | Ă | Å |
| | | | - | | | - | - | | | 22/466 AB Resources LLC D and NPAR LLC to Chief G Exploration & Development P LLC and Badler 2000 Limited B | tesources LLC LC to Chief & Development Iler 2000 Limited | | 24/466 AB Resources LLC D and NPAR LLC to Chief G Exploration & Development P LLC and Radier 2000 Limited R | z | Z | Z | z | NA | Z | 2 2 | NA | 2 | 2 | NA | NA | NA | 2 2 | Z | NA | | NA | NA | Z | Z | NA | NA | NA |
| NA | NA | NA | | | | NA | NA | NA | Chevron USA Inc | 25/1 Chief Exploration & Development LLC, Chief Oil & Gas LLC, Radler 2000 Limited Partnership and Enerplus Recourses USA Corp to | 25/1 Chief Exploration & Development LLC, Chief Oil & Gas LLC, Radier 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc | Chevron USA Inc | 25/1 Chief Exploration & Development LLC, Chief Oil & Gas LLC, Radier 2000 Limited Partnership and Enerplus Resources USA Corp to | NA | NA | NA | NA | A | > 1 | × | > 3 | | • | > | Þ | A | | • • | ÞÞ | | A | | P | | | | |
| NA | NA | NH. | NA | | | NA | NA | NA | | 25/105 Chief Exploration & 1 Development LLC, Chief Oil & 1 Gas LLC, Radler 2000 Limited Partnership and Enerplus Resources USA Com to | 25/105 Chief Exploration & Development LLC, Chief Oil & I Gas LLC, Radier 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc | Chevron USA Inc | 25/105 Chief Exploration & & Development LLC, Chief Oil & 4 Gas LLC, Radier 2000 Limited Partnership and Enerplus Resources USA Corp to | NA | NA | NA | NA | NA | NA | NA | NA | 5 | A | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA |
| NA | NA | INA | AN | | | NA | NA | NA | Chevron USA Inc | 4 28/356 TriEnergy Holdings 11C and TriEnergy inc to | & d 28/356 TriEnergy Holdings LLC and TriEnergy Inc to Chevron USA Inc | Chevron USA Inc | & d 28/356 TriEnergy Holdings LLC and TriEnergy Inc to | NA | NA | NA | NA | NA | NA | NA | NA | 2 | NA | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | A |
| NA | NA | 1 | | | | NA | NA | NA | Properties Inc | ; 30/494 Chevron USA Inc to Statoli USA Onshore | 30/494 Chevron USA Inc to Statoll USA Onshore Properties Inc | Properties Inc | | NA | NA | NA | NA | NA | NA | NA | NA | | 2 A | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA |
| z | NA | 1 | FURCE FUUL | FORCE POOL | • FORCE POOL | NA | NA | z | | linc to | | | | NA | NA | NA | NA | NA | N | ZZ | NA | 2 | Z | NA | NA | NA | N | N. | NA | | NA | NA | N | N, | NA | NA | NA |
| | | | | | 4 | | - | | Chesapeake Appalachia LLC | /532 Chevron USA Inc to | 30/532 Chevron USA Inc to Chesapeake Appalachia LLC | Chesapeake Appalachia LLC | /532 Chevron USA Inc to | | | | | | | | | | - | | | | | | | | - | | | | | | |
| NA | NA | 2 | NA | | | NA | NA | NA | C Productio | 33/110 Ct | | | | NA | NA | NA | NA | NA | NA | NA NA | NA | 2 | NA | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | Production Company LLC | 33/110 Chesapeake Appalachia LLC to SWN | 33/110 Chesapeake Appalachia LLC to SWN Production Company LLC | Production Company LLC | 33/110 Chesapeake Appalachia LLC to SWN | | | | | | | | | | | | | | | | | | | | | | | | |
| NA | NA | 5 | NA | | | NA | NA | | Exchange Titleholder LLC | | 33/424 Statoll USA Onshore 1 Properties Inc to SWN 1 Exchange Titleholder LLC 1 | | | NA | NA | NA | NA | NA | NA | NA | NA | 2 | ZA | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA |
| NA | NA | 3 | NA | | | NA | NA | NA | _ | a . | 19/624 Dnshore Titlehol /N Product rr LLC merger | er LLC merger | 19/62 Inshore Titleh N Produ | NA | NA | NA | NA | NA | NA | NA | NA | ž | Z | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC | SWN Exchange der LLC and SWN Jon Company LLC | | 19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC | | | | | | | | | | | | | | | | | | | | | | | | |
| NA | NA | 15 | NA | | | NA | NA | NA | Exploration LLC | 36/431 SWN Production | 36/431 SWN Production Company LLC to TH Exploration LLC | Exploration LLC | 36/431 SWN Production Company LLC to TH | NA | NA | NA | NA | NA | NA | NA | NA | 26 | NA | NA | NA | NA | NA | NA | NA | : | NA | NA | NA | NA | NA | NA | NA |
| NA | NA | IVA | NA | | | NA | NA | NA | | 36/455 Statoil USA Onshore Properties Inc to TH | 36/455 Stateil USA Onshore Properties Inc to TH Exploration LLC | Exploration LLC | 36/455 Statoil USA Onshore Properties Inc to TH | NA | NA | NA | NA | NA | NA | NA | NA | 41/405 Blue Roan Resources LLC to TH Exploration LLC | NA | NA | NA | NA | : | NA | NA | NA | NA | NA | NA | NA |

Operator's Well No. Fitzgerald S-17HU

WW-6A1 Supplement

Operator's Well No. <u>Fitzgerald S-17HU</u>

WW-6A1 Supplement

| 10*23750 | 10°23677 | 10*23676 | 10*23675 | 10*23674 | 10*23673 | 10*23499 | | 10*23431 | 10*73430 | 10*23414 | 10*23105 | 30150 01 | 1000000 | 10*22/95 | 10*22794 | | 10°22793 | 10*22792 | | 10*22791 | 10 111 00 | 10*775R | 10°22746 | 10*22741 | | 10*22635 | 10*22634 | CC077.0T | 10*22481 | | 10°22480 | 10°22419 | 20 55007 | 1042291 | 10411501 | 10*22261 | 27 - CANADA | 10*22260 | 10*22060 | | 10*22059 | 9CU77.0T | 10°21856 | | 10°21855 | 10*21854 | 10*21852 | | 10*21851 | AC017 OF | 10*71850 | 101011007 | 10*21596 | 10*71449 | : | : | PENDING | 10*27097 | 100724001 | 1000 | 10°24679 | | 10*47051.140.2 | | 10*47051.140.1 | 10*47051.289.2 | 10*47051.289.1 | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------|---------------------|---------------------|---------------------|--------------------------|-----------------------|-----------|----------------------------|-------------------|-----------|---------------------|---------------------|----------------------|---------------------|------------------|---------------------|-------------------|---------------------|-------------|---------------------|--------------|------------------------|--------------------|--------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|-----------------|---------------------|---------------------|----------------------|---------------------|----------|---------------------|-----|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|----------|--------------------|---------------------|---------------------|----------------------|--------------------|---------------------|-------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------------------------|
| U 9-12-34 ROSE | U 9-12-34 USA I | U 9-12-34 ANDR | 9-12-34 | 9-12-34 | 9-12-34 | _ | | 9-12-34 | _ | 9-12-34 | U 3+12-34 JANIC | 0 17 24 | 0 17-24 | | 9-12-34 | | 9-12-34 | U 9-12-34 SHAR | | U 9-12-34 WALK | THE | U 9-12-34 KELLEY | 9-12-34 | U 9-12-34 GHYSI | | U 9-12-34 ISAAC | 9-12-34 | | 9-12-34 | | U 9-12-34 SHARC | 9-12-34 | | U 9-12-34 DAVID | 0.17-24 | U 9-12-34 SANDR | | U 9-12-34 DONN | U 9-12-34 KAIHY | | U 9-12-34 BLAKE | JAMES | 9-12-34 | | 9-12-34 | 9-12-34 | U 9-12-34 SHARO | 2 2 2 | U 9-12-34 PATRIC | 10.24 | U 9-12-34 TINAL | 0 43 34 | U 9-12-34 HUBER | 9-12-34 | 9-12-34 | HELEN | 뒫 | T 9-12-20 BOUNT | | | T 9-12-20 CORPO | CORPO | S 9-12-21 JAMES | | S 9-12-21 DEBOR | R 9-12-8 KENNE | 9-12-8 | I I I I I I I I I I I I I I I I I I I |
| ROSEMARY L GILBERT | A GOMEZ | | | SHARON L CUNNINGHAM | | BIDDLE | ATHY | TER | HARRIET L TUSTIN | | RORERT W STOUT AND BETTY | IANICE I DEANNI INTIS | V MEDINAD | TACON MA MEDINAD AND DITTU | | CTINETICU | VICKI JORDAN | ON MARIE DILTS | IOHNNY LEE DILTS AND | ER BLAKE | ESTATE OF HERMAN | | ANDREW J CRISWELL | AINE M DOBBS | W DOBBS AND | J KELLEY | NORENA BLAKE | STEVEN R BLAKE AND | DAVID BLAVE | D LEMLEY AND | SHARON M DOBBS | Y SUE BLAKE | WILLIAM S BLAKE AND | RANDALL MORRIS | ADET E DOBBS AND | SANDRA D MARTIN | ES B MARTIN AND | DONNA LEE STEWART | CATHY M DOBBS | WARREN JAY DOBBS AND | | <u>۶</u> | KATHY J MORRIS | AND | | | SHARON KAY WADE | 0 | | LONNIE VODENICHAR & | | | HUBERT EARL MORRIS | | | MARIE HARTZELL AKA | | | BOLINTY MINERALS LLC | IBS AND | | ō | MES REID SULLIVAN | DOROTHY SULLIVAN POA | | KENNETH D MCMECHEN | | ANICE M HIXSON AND HARRY |
| TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | IN EARLONATION, LLC | TH EXPLORATION 11C | | | TH EXPLORATION IC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION. LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | III DAT LOIDTINON, SEC | TH EXPLORATION 11C | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION. LLC | TH EXPLORATION 11C | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | IN EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLOSATION LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | NA | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION. LLC | TH EXPLORATION 11C | 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+ | 10/1 | 4/01 | 1/81 | +8/T | 1/8+ | ł | 1/8+ | | 1/8+ | +8/T | 1/8+ | | 1/8+ | 1/8+ | | 1/81 | 4 /0. | 1/8+ | 1/8+ | - | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | 10/1 | | 1/8+ | 20 | 1/8+ | | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | - | 1/8+ | 1/8+ | 1/8+ | 1/8+ | NA | : | 1/8+ | 1/8+ | 1/8+ | 1/84 | 1/8+ | | 1/8+ | | 1/8+ | 1/8+ | 1/8+ | |
| 1012 | 1011 | 1009 | 1009 | 1009 | 1009 | 1009 | | 1008 | 1008 | 1008 | 202 | 983 | 97 | 710 | 216 | 9 | 7/6 | 276 | | 972 | - | 984 | yoo | 968 | 3 | 967 | 967 | | 957 | 0.00 | 965 | 963 | | 963 | 95 5 | 961 | | 961 | 300 | } | 960 | | 95 95 | } | 960 | 960 | 960 | | 960 | | 960 | 959 | 959 | 957 | | | 1076 | 1046 | 1046 | 1026 | 1026 | | 873 | | 866 | 898 | 898 | |
| 195 | 513 | 299 | 297 | 293 | 295 | 144 | ; | 349 | 351 | S | 5 | 630 | 8 | ì | 8 2 | 7 | 14 | | I | 8 | | 474 | 202 | 2/0 | ł | 216 | 212 | | 214 | 540 | 550 | 105 | | 8 | 217 | 487 | | 536 | 470 | 2 | 8 | - | ç, 42 | } | 81 | 48 | 109 | 131 | 133 | | 135 | 285 | 959 287 | 262 | EASED | | | 101 | 1 | | 149 | | tos | | 318 | 463 | | |
| NA | | NA | NA | NA | 3 | NA | NA | | | NA | NA | NA | | NA | | NA | AN | NA | | NA | NA | | NA | | NA | NA | | NA | NA | NA | | NA | AN1 | | NA | | NA | | NA | NA | NA | NA | NA | | NA | NA | NA | NA | | | NA | NA | NA | NA | NA | | NA | | NA | NA | NA | |
| NA | 5 | NA | NA | NA | 111 | NA | NA | | NA | NA | NA | NA | | NA | | NA | 111 | NA | | NA | NA | | NA | 20 | 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 | MAI | NA | | NA | | NA | 3 | AN | NA | NA | NA | | NA | NA | NA | NA | | NA | NA | NA | | NA | 3 | N | NA | | NA | ~ | NA | NA | NA | NA | NA | | NA | NA | NA | NA | | | NA | NA | NA | NA | NA | : | NA | | NA | NA | NA | _ |
| NA | AN I | NA | NA | NA | NA | NA | NA | NA | NA | NA | | NA | NA | | NA | NA | 10 | NA | | NA | | NA | 3 | AN | 2 | NA | NA | _ | NA | Z | NA | NA | _ | NA | NA | NA | | NA | - | NA | NA | | NA | N | NA | NA | NA | NA | NA | | NA | NA | NA | NA | | | NA | NA | NA | Å | NA | | MM | | NA | NA | NA | - |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NA | C. | NA | NA | NA | NA | NA | NA | NA | NA | NA | | NA | NA | | NA | NA | 10 | 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 | | MAI | | NA | NA | NA | |
| INA | 5 | NA | NA | NA | NA | A | NA | NA | NA | NA | | NA | NA | | NA | NA | 3 | AN | MA | NA | [| NA | | NA | NA | NA | NA | | NA | NA | INA | NA | | NA | NA | NA | | NA | | NA | NA | | NA | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | •• FOF | ** FORCE | | NA | NA | NA | NA | | 3 | MA | NA | NA | NA | |
| NA | | NA | NA | NA | NA | NA | MA | NA | NA | NA | | NA | NA | | NA | NA | | NA | NA | NA | | NA | - | A | NA | NA | NA | | NA | NA | NA | NA | | NA | NA | NA | | NA | | NA | NA | | A | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | ICE POOL | ICE POOL | INA | NA | NA | NA | NA | | 3 | ~ | NA | NA | NA | |
| NA | 3 | NA | NA | NA | NA | NA | AN | NA | NA | NA | | NA | NA | | NA | NA | | NA | NA | INA | | 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 | | | INA | NA | NA | NA | NA | | 5 | No | NA | NA | NA | |
| NA | 3 | NA | NA | NA | NA | NA | NA | NA | NA | NA | | NA | NA | | NA | NA | | NA | NA | NA | | NA | | NA | NA | NA | NA | | NA | NA | INA | NA | | NA | NA | NA | | NA | | NA | NA | | NA | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | | | NA | NA | NA | NA | MA | | 1 | N | 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 | NA | | NA | NA | NA | NA | | | NA | NA | NA | NA | NA | | 5 | | NA | NA | NA | |
| NA | 3 | 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 | | | INA | NA | NA | NA | ANI | | 1 | NA | NA | NA | NA | |
| INA | 3 | 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 | | | INA | NA | NA | NA | NA | | 3 | NA | NA | NA | NA | |

Operator's Well No. Fitzgerald S-17HU

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| 10*19748 | PENDING | PENDING | PENDING | PENDING | | 10*78578 | 10*28624 | | 10*28529 | 10028440 | 10*28369 | 10*2836/ | 10*28356 | 10*28355 | 10°27947 | 10-71977 | 10*27259 | | 10*27105 | | 10°26985 | 01607.0T | 10*26977 | 10*26976 | 10*26975 | 10*26974 | 10*26873 | 10*26883 | | 10*26718 | 10*75743 | 10*25490 | 10*25181 | 10*25180 | 617C7.0T | | 10*25171 | 10°24885 | TO. 74994 | 10404004 | 10*24882 | TO TOTA | 10°24847 | 10*24691 | 10*24573 | 10°24509 | 10*24489 | 4 | 10°24346 10°24467 | 10°24267 | 10°24200 | 10*24199 | 10°24198 | | 10*24197 | 10+24196 | 10*24195 | 10*24194 | 10*24123 | 10*23918 | 10*23916 | 10°23858 | 10*23813 | 10833013 | |
|-----------------------|---------------------|--------------------|---------------------|---------------------|--------------------------|----------------------|-------------------------|---|---------------------|-------------------------|------------------------|-----------------------|---------------------|--------------------------|---------------------|---------------------|-------------------------|----|---------------------|------------------------|---------------------|-----------------------|--------------|---------------|---------------------|--------------|-----------------|--------------------|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------------|--------------------|---------------------|---------------------|---------------------------|---------------------|---------------------|------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----|----------------------|---------------------|---------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|-------------------------|----------------------|-----------------------|---------------------|---|
| V 9-12-19 E | 9-12-34 | 9-12-34 | U 9-12-34 C | 9-12-34 | | 9-12-34 | U 9-12-34 N | _ | 9-12-34 | q.17-34 | U 9-12-34 L | 10 +c-21-6 | 9-12-34 | U 9-12-34 JA | 9-12-34 | +c-7T-6 | U 9-12-34 D | | U 9-12-34 D | | U 9-12-34 A | | U 9-12-34 D | 9-12-34 | 9-12-34 | U 9-12-34 EV | φ.1.2-34 | 9-12-34 | | 9-12-34 | _ | 9-12-34 | 9-12-34 | 9-12-34 | SA SA | | U 9-12-34 JA | 9-12-34 | W 46-77-6 0 | 0.17-2/ | U 9-12-34 MI | | U 9-12-34 SO | 9-12-34 | 9-12-34 | 9-12-34 | U 9-12-34 GE | | U 9-12-34 GR | 9-12-34 | U 9-12-34 RIC | 9-12-34 | U 9-12-34 AG | | U 9-12-34 DO | 9-12-34 | U 9-12-34 JOF | 9-12-34 | 9-12-34 | | 9-12-34 | U 9-12-34 CYN | _ | Q 17.34 | |
| ELIZABETH JANE KELLEY | VEDEVUM A FIJITEN | PAINUA MATNARU | AROLYN GODWIN | RUST * | ANNA MAE SWIERKOS FAMILY | COURTNEY N WELLS AND | MICHAEL & BRENDA SNYDER | | RAYMOND L TREDWAY | IONNA D & WILFRED BEEVE | AMARA & HAROLD SCHULTZ | EAIN E JUNNING | AMES W JUNKINS | JACKIE D & STEVE M MEADE | OLDINGS LLC | STONE HILL MINERALS | EANNA J SMITZEL HERNDOR | | ELDON W BAKER | IARVIN D DOBBS AND ADA | AND EVAN A HEWITT | CHELSEA WALTON HEWITT | EVRON L WEST | AREN M WALTON | ATRICIA A WELLS | ITHAN M WEST | RETTY LOU KAMPE | WEST A BIOLIDDE | TRACIE J WEST AND DEVRON | ARJORIE WALTON | GAIL WORKMAN | ROGER L MORRIS | JESSIE L BOHR | GAINES | SARAH L GAINES AND RANDY | ICHAELS WIDDUP AND | JANICE L MCSORELY | PERRY | MARLISA M PERRY AND DAVID | IELBY J PASTORA AND | MELISSA B WALTON | SHANE MICHAEL WALTON & | NOTHT A KTAN AND | EVA C WEAVER | CATHY L HENRY | IVID A WILLIAMS | GEORGE C ANDERSON | | GREGORY W FRITZMAN | | 11 | | A GILBERT | ROLD D GILBERT AND LORI | DONNA M MCELROY | LPH R GILBERT | OHN T GILBERT | TAMMY L SPENCER | JIMMY W SPENCER AND | | EROY AND MARY S MCGLONE | CYNTHIA A CUNNINGHAM | HUGH E CUNNINGHAM AND | OSHUA C MOORE AND | |
| TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | LY | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | Z TH EXPLORATION, LLC | In car core i on, cce | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | - | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | | | TH EXPLORATION, LLC | | | TH EXPLORATION (IC | | TH EXPLORATION, LLC | | TH EVELOPATION IIC | 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 | IN EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | In Exclusion, Ltc | TH EXPLORATION. LLC | |
| 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | 1/8+ | | 1/8+ | 1/8+ | 1/8+ | 40. | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | | 1/8+ | 4 /01 | 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+ | 1/8+ | 1/8+ | 1/8+ | 1/0 | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 101 | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | |
| 957 | 1075 | 1075 | 1075 | 1076 | | 1075 | 1076 | | 1073 | 1072 | 1070 | 2012 | 1071 | 1071 | 1063 | 2020 | 1058 | | 1052 | 1050 | 1046 | | 1046 | 1046 | 1046 | 1046 | 1046 | 1045 | 2 | 1041 | 1023 | 1055 | 1029 | 1029 | | 1079 | 1029 | 1028 | | 1028 | 1028 | | 1028 | 1027 | 1025 | 1025 | 1025 | | 1025 | 1023 | 1023 | 1023 | c70T | 3 | 1023 | 1023 | 1023 | 1023 | 7201 | 1019 | 1019 | 1016 | | 1015 | |
| | | | | 321 | | 28 | 452 1 | | 354 1 | | 437 1 | | 408 P | | | | 5, 4 | _ | 496 N | | 159 N | | | | 151 N | | | | _ | 151 N | | | 501 N | | | 497 N | | 130 N | | 127 N | 124 NA | | 122 NA | | 376 NA | | 325 NA | | 132 NA | | | _ | AN CUC | | 501 NA | | _ | 495 NA | | 418 NA | | 607 NA | | 165 NA | |
| NA | NA | | NA | NA | | NA | NA | | NA | Å | NA | | NA | VA | VA | | NA | | NA | | NA | | | IA I | NA | A | Ā | | | NA | A | A | NA | IA | | NA | IA | NA | | NA | IA | | A | A | A | A | A | | > 1 | | | A | 1 | > | A | A | A | Þ | | >> | A | | | | |
| INA | NA | NA | AN | NA | | NA | NA | | NA | NA | NA | | NA | NA | NA | | NA | | NA | NA | NA | | AN | 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 | MM | 20 | NA | NA | NA | NA | 3 | 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 | (V) | NA | NA | | NA | NA | NA | _ | NA | NA | | NA | NA | NA | NA | NA | | NA | NA | NA | NA | 3 | NA | NA | NA | NA | NA | , international data | NA | NA | NA | : | NA | |
| INA | NA | NA | NA | NA | | NA | NA | 1 | NA | NA | NA | | NA | NA | NA | | NA | 2 | 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 | INA | NA | | NA | NA | | NA | MA | NA | NA | INA | | NA | NA | NA | NA | | NA | NA | NA | NA | NA | | NA | NA | NA | : | NA | |
| INA | NA | NA | NA | NA | | NA | NA | | NA | NA | NA | | NA | NA | NA | | NA | NA | NA | NA | NA | | NA | N ZZ | NA | NA | NA | NA | NA | NA | NA | | NA | NA | | NA | NT. | NA | | NA | NA | | NA | AN | NA | NA | Č. | | NA | NA | NA | NA | | NA | NA | NA | MM | NA | | NA | NA | NA | | NA | - |
| INA | 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 | 141 | NA | NA | | NA | NA. | NA | | NA | NA | | NA | AN | NA | NA | | 2 | NA | NA | NA | NA | | NA | NA | NA | AM | NA | | NA | NA | NA | *** | NA | |
| NA | NA | NA | A | 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 | TAN. | NA | | NA | NA | | NA | 3 | NA | NA | 5 | | NA | NA | NA | NA | | NA | NA | NA | MA | NA | | NA | NA | NA | ~ | NA | _ |
| INA | 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 | THE PARTY OF | NA | | NA | NA | | NA | 5 | NA | NA | 3 | | NA | A | NA | NA | | NA | NA | NA | HM | NA | | NA | NA | NA | NIA | NA | |
| INA | 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 | 3 | NA | | NA | NA | - | NA | | NA | NA | 3 | ~ | NA | NA | NA | NA | | NA | NA | NA | | NA | | NA | NA | NA | ļ | NA | |
| INA | NA | NA | 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 | 3 | NA | | NA | NA | | NA | 3 | NA | NA | 3 | MA | NA | NA | NA | NA | | NA | NA | NA | ALC: N | NA | | NA | NA | NA | | NA | |
| | | | 1 | NA | | NA | | | | NA | | | | | | | | | 11 | | | | | | NA | | | | | | NA | | | | | NA | | NA | | | NA | | NA | | | NA | | | NA | | | | | | | NA | AL I | NA | | NA | NA | NA | : | NA | |

Operator's Well No. <u>Fitzgerald S-17HU</u>

| 10*24117 | 10*24039 | 10*23922 | 10°23921 | 10*23908 | 10*23901 | 10°23894 | 10*23854 | 10423852 | 10°23842 | 10*23841 | 10*23825 | 10*23764 | 10*23763 | 10*22839 | 10*22343 | 10*21726 | 10*21590 | 10*21589 | | 10,001633 | 10°21532 | | : | : | | | : | | 10*18073 | | 10*28092 | 10*2//13 | 10*27405 | 10*27105 | 10°24677 | 10°24422 | 10*24111 10*24113 | 10*23834 | 10°23815 | 10*23814 | 10°23660 | 6COC7 . DT | 10932660 | 10*23658 | 10*23643 | 10*23493 | 10*23100 10*23441 | | 10°21411 | 10*21333 | |
|-----------------------|---------------------|----------------------|----------|---------------------|---------------------|---------------------|---------------------|----------|---------------------|---------------------|---------------------|----------|---------------------|---------------------|----------------------|---------------------|---------------------|--------------------------|------|---------------------|---------------------|---|---------------|-----------|----------------------|--|------------------------|----------------------------|---------------------|---|------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|------------|------------------------|---------------------|---------------------|---------------------|------------------------|-----------------------|---------------------|---------------------|----------------------|
| X 9-12-17 | | X 9-12-17 | _ | X 9-12-17 | | X 9-12-17 | X 9-12-17 | | X 9-12-17 | X 9-12-17 | X 9-12-17 | | X 9-12-17 | X 9-12-17 | X 9-12-17 | X 9-12-J | X 9-12-17 | X 9-12-17 | | - | X 9-12-17 | - | x 9-12-17 | X 9-12-17 | X 9-12-1 | | | | W 9-12-18 | | V 9-12-19 | 6T-7T-6 A | V 9-12-19 | - | V 9-12-19 | ++ | V 9-12-19 | +- | | V 9-12-19 | V 9-12-19 | 67.27.6 A | - | V 9-12-19 | V 9-12-19 | V 9-12-19 | V 9-12-19 V 9-12-19 | | V 9-12-19 | V 9-12-19 | _ |
| 17 JAN MICHELE DUNLAP | | 17 WILLIAM N LOGSDON | _ | | | 17 JOSEPH CHINCHECK | tet. | _ | 2 2 | _ | 17 JEAN A PYLE | | | | VIRGINIA E HAGIN AND | - | _ | CLARENCE C STOVER JR AND | _ | _ | | _ | _ | +-+ | | | | | 8 ROY R WOODS | WILLIAM DEAL, ACTING TRUSTEE FOR GEORGIA | 9 DIVISION OF HIGHWAYS | ANN MULERAIN ET AL | ALMA L SAMPSON | DOBBS | GLADYS V LARSEN | LEONA B RICHMOND | JUDY M KICHARDSON | KEITH A RICHMOND | ROBIN K RICHMOND AND | | GARY L RICHMOND AND | _ | JOHN R HOBBS AND HOLLY | | CAROLYN J MCILVAIN | SARA LOU KINNEY | BOBBI LOGSDON | JACK C MCILVAIN TRUST | DAVID L WHIPKEY | RANDOLPH HAGIN | VIRGINIA E HAGIN AND |
| TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | ŧ | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | IN EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | NA | NA | SOUTH PENN OIL COMPA | _ | | | TH EXPLORATION, LLC | TH EXPLORATION LLC | TH EXPLORATION, LLC | IN EAR WAATION, LES | 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 | |
| 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+ | 7/94 | 1/01 | 1/8+ | 1/8+ | | N | NA | | | | | 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+ | | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/0, | 1/8+ | 1/8+ | |
| 1021 | 1020 | 1019 | 1019 | 1017 | 1017 | 1017 | 1016 | 1016 | 1016 | 1016 | 1014 | 1014 | 1014 | 960 | 965 | 965 | 957 | 197 | ß | 957 | 957 | | UNLE | UNLE | 49 | | | | 927 | 1071 | 1073 | 0.01 | 1057 | 1050 | 1023 | 1024 | 1021 | 1016 | 1015 | 1015 | 1012 | | 1011 | 1011 | 1009 | 1008 | 1008 | 8 | 957 | 963 | |
| 140 | 209 | 481 | 407 | 603 | 611 | 605 | 597 | 599 | 601 | 604 | 548 | 545 | 542 | 516 | | 566 | 331 | 222 | | 329 | 327 | | UNLEASED | | 478 | | | | 22 | | 370 | | 573 | | | | 138 1 | | | 160 | 197 1 | | | 509 1 | 139 | | 345 | | 338 N | 87 N | _ |
| NA | NA | NA | NA | NA | NA | NA | AN | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | MM | | NA | NA | | | | Natural Gas Company | 209/552 South Penn Oil Company to South Penn | | | NA | NA | NA | | NA | NA | NA | NA | NA | VA | VA | NA | NA | | NA | NA | NA | ł | NA | 14 | NA | NA | |
| INA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3 | NA | NA | NA | | | | Pennzoil United Inc | (1968-1972) aka Pennzoti Company (1889-1963) or | South Penn Oll Company | | NA | × | NA | | NA | NA | INA | 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 | | | | Company | to Pennzoil Products | | | NA | N | NA | | NA | NA | MM | 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 | | | | | Production Company LP | Company LLC, formerly | Exploration and Production | NA | NA | NA | | NA | NA | 15 | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA | NA | |
| INA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1 | NA | NA | | NA | NA | NA | | | | East Resources Inc | Production Company LP to | | _ | NA | NA | NA | | NA | NA | | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA | NA | : |
| INA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3 | NA | NA | | NA | NA | NA | | •• FORCE POOL | ** FORC | McElroy Coal Company | 16/34 East Resources Inc to | | | NA | NA | NA | | NA | NA | 3 | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA | NA | : |
| INA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3 | NA | NA | | NA | NA | NA | | EPOOL | EPOOL | Company LLC | Company et al to CNX Gas | 646/493 McElroy Coal | | NA | NA | NA | | NA | NA | | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA | NA | : |
| INA | 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 | 1000 | NA | NA | NA | NA | NA | AN | | NA | NA | NA | NA | NA | NA | NA | NA | 1 |
| INA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3 | NA | NA | | NA | NA | NA | | | | | | | | NA | NA | NA | | NA | NA | | NA | NA | NA | NA | NA | 2 | | NA | NA | NA | NA | AN | NA | NA | NA | |
| NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3 | NA | NA | | NA | NA | NA | | | | | | •• FORCE POOL | | NA | NA | NA | | NA | NA | 1411 | NA | NA | NA | NA | NA | MM | | NA | NA | NA | NA | NA | N | NA | NA | : |
| INA | NA | NA | NA | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3 | NA | NA | | NA | NA | NA | | | | | | | | NA | NA | NA | | NA | NA | | | NA | | | NA | NA 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 | 2 | NA | NA | : |

Operator's Well No. Fitzgerald S-17HU

| 10*27660 | 10*25513 | 40 A-1600 | 10*24239 | 100000 | 10°23803 | 10*23490 | 10*23143 | 10*23126 | 10*23125 | 10*22884 | 10*22883 | 10*22882 | 10°22876 | 10*22797 | 06/77.0T | | 10*22540 | 10*22539 | 10*22374 | 10*22373 | 10*22372 | 10°22086 | 10*21605 | 10*21601 | 10°21594 | 10°77540 | 10*19708 | INVET OF | 10019707 | 10*19706 | 10*28320 | | 10*23900 | 01000 | 10°23908 | 10°27387 | 10*25330 | 20 20212 | 10°24989 | 10-24001 | 1010 | 10°24581 | 10*24500 | 10*24480 | 10°24477 | 10°24423 | 10*24353 | 10*24268 | 10*24121 | |
|---------------------|--|--|---------------------|---------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------|----------------|---------------------|---------------------|---------------------|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------|---------------------|--------------------------------------|-------------|--|---------------------|--------|---------------------|---------------------------------------|---------------------|----------|---------------------|----------|---------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|---------------------|-------------------------|
| Y 9-12-35 ROBEI | Y 9-12-35 DATED | | Y 9-12-35 DANIE | P-13-25 | Y 9-12-35 KATHL | 9-12-35 | | | _ | 9-12-35 | 9-12-35 | Y 9-12-35 EDWA | Y 9-12-35 TRACY | Y 9-12-35 MARIE | V CC-71-6 | | 9-12-35 | Y 9-12-35 SAUDE | Y 9-12-35 TEMPLE | | Y 9-12-35 VICTOR | 9-12-35 | φ.13-35 | Y 9-12-35 DALE R | 9-12-35 | φ.12-35 | 9-12-35 | | 9-12-35 | X 9-12-1/ ALBERI Y 9-12-35 BARBAI | 9-12-17 | | X 9-12-17 GALLAGHER | | 9-12-17 | X 9-12-17 NANCY | X 9-12-17 KENNET | | X 9-12-17 RONALD | 11.77.4 | 9-12-17 | | 9-12-17 | X 9-12-17 DENNIS | 9-12-17 | | X 9-12-17 SHAREE 1 | 9-12-17 | X 9-12-17 RICHARD | CASSAN |
| | KAREN L WALKER TRUST DATED NOV. 7, 1996 | | DANIEL M WILLIAMSON | Ð | KATHLEEN G WILLIAMSON | | STACY L BARNHART | | | DEBORAH L TURLEY | ON JR | RD RALPH WILLIAMSON | TRACY BLACKBURN | MARIE HONE | - | ARMER AND LORI | JDERS | | TEMPLE | JUDITH F TEMPLE AND LOUIS I | RE ALLEY JR | NUT HOLDINGS INC | | | | | GARY E STRAIT | TRAIT AND | | BARBARA JO BEVERIDGE | | | | UZANNE | | JULIA ANN WALTON AIF NANCY MARIKAR | | | | | AND | JEAN ELISE DAVIS | | DENNIS M BOWMAN | _ | _ | SAMS | A DAVIS | _ | CASSANDRA J SHERMAN AND |
| TH EXPLORATION, LLC | AMERICAN PETROLEUM PARTNERS 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 | COMPANY LLC | SWN PRODUCTION | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | H EXPLORATION, LLC | TH EXPLORATION, LLC | H EXPLORATION, LLC | TH EXPLORATION, LLC | H 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+ | 101 | 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+ | 4 | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/0+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | |
| 1061 | 987 | _ | 1022 | 1017 | 1015 | 1011 | 984 | 983 | COF | 977 | 977 | 977 | 977 | 972 | | 977 | 996 996 | 966 | 962 | | 95 95 | 963 | 966 | 957 | 957 | 957 | 944 | 2 | 944 | 944 | 107 | | TZOL | | 1021 | 1058 | 1031 | | 1028 | | 1017 | 1026 | 1025 | 1025 | C701 | 1025 | 10Z4 | 1023 | 1021 | |
| 252 | 322 | | 368 | 8 | 167 | 51 52 | 15 | 614 | +/C | 2 22 | 93 | 26 | 97 | 8 | | 8 | 134 | 174 | 211 | 1 | 215 | 485 | 132 | 342 | 344 | 340 | 631 | } | 629 | 627 | 190 | | SOT | | 147 | | 576 | | 580 461 | | | 206 | | 439 | | 422 | | 531 | 119 | |
| 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 | 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 | 5 | NA | NA | NA | NA | NA | : | NA | NA | NA | NA | | NA | | NA | NA | NA | I | 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 | NA | NA | : | NA | NA | NA | NA | NA | 5 | NA. | NA | NA | Ă | NA. | | NA | | NA | NA | NA | NA | 10 | NA | NA | NA | NA | |
| NA | NA | | NA | NA | NA | A | NA | NA | | NA | NA | NA | NA | NA | NA. | NA | NA | NA | NA | | NA | NA | NA | NA | NA | 5 | 3 | NA | NA | NA | NA. | | NA | | NA | NA | NA | NA | | NA | 3 | 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 | Z. | 5 | NA | NA | NA | | 20 | NA | | NA | NA | NA | NA | | NA | 3 | NA | NA | |
| NA | NA | | NA | NA | NA | NA | NA | NA | | NA | NA | NA | NA | 104 | NA | NA | NA | NA | | | | | | | | | | | NA | NA | NA | 8 | | 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 T | | |
| NA | | | NA | | | | | NA | | | | NA | | | | | | NA A | | | | | | | | | | | NA | NA | | | | | | A | | | NA | | NA | | NA | | | NA NA | | NA NA | | |
| NA | | | NA | | | | | ZA | | | | NA | | | | | | NA NA | | | | | | | | | | | | | | 44/620 SWN Production 4 Company LLC to TH C | | | | NA | | | | | NA | | | | | | | NA A | | |
| VA | | 43/503 American Petroleum Partners Oberating IIC to TH | | Ā | VA | Ā | Ā | NA | | Ā | A | NA | NA | | ۵. ا | NA | Þ | NA | | | 1A | A | 1A | A | A | YA | Ā | Þ | NA | VA | Ä | 44/626 Equinor USA Onshore Properties Inc to TH Exploration 11 C | | NA | A | NA | | NA | A | • | NA | VA | NA I | NA | | NA | 5 | NA | NA | ; |

Operator's Well No. <u>Fitzgerald S-17HU</u>

WW-6A1 Supplement

| : | | | : | | | | : | | | | : | | | | : | | | | : | | | : | | | | : | T | | : | | | | : | | T | | : | | | | : | | | PENDING | : | | : | | : | | | : | | | : | | | : | | | | : | 1.10110 | PENDING | 10028573 | 40410574 | 10°27947 | 6407 JUL | 10*27707 | |
|---|---------------------|------------------------|-------------------------------|----------------------------|----------------------|-------------------------------|-----------------------|-------------------------|-------------------------|-------------------------------|------------------------|----------------------------|-------------------------------|--------------------------------|------------------------|----------------------------|---|--|--------------------------------|---------------------|--------------------------|-------------------------------|----------------------------|---------------------------|-------------------------------|----------------------------|---------------------|------------------------|-------------------------------|-------------------------|---------------------|-------------------------------|-------------------------------|----------------------------|------------------------|------------------------|-------------------------------|----------------------------|-------------------------------|--------------------------|-----------------------------|------------------------|----------------------------|--------------------------|---------------|------------------------|-----------------------------|------------------------|-----------------------|------------------|------------------------|---|---------------------|-------------------------|-----------------------|---------------------|----------|-------------------------|-------------------------|---|------------------------|--|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----|
| 88 | 8 | 8 | | | 88 | | | | 88 | | | | 88 | | | | 88 | | | 1 | P P | _ | | 88 | | | + | 88 | | | | | | | 88 | _ | _ | _ | 88 | | | | _ | | A . | | | AA 9 | | + | ΑΑ 9 | | 1 | Α φ | | + | Β φ | | | ╈ | В Р | | | 9 | + | < | Y 9-1 | - | < - e 4 | |
| 7- 9- 1 | 1-6-1 | _ | | | 7-9-1 | | | _ | 7-9-1 | | | | 7-9-1 | | | | 7-9-1 | | | | 2 | | | 7-9-1 S | | | | 7-9-1 | _ | | 1.00 | | | | 7-9-1 | | | | 7-9-1 E | | | | | 9-15-6 0 | 9-15-6 C | 9-15-6 N | 0 | 9-15-6 BI | | _ | 9-15-6 BI | 25 | _ | 9-15-6 Pt | 2 6 | - | 9-15-6 H | D A | 3 | _ | 415-6 CH | | _ | 9-12-36 00 | | | 9-12-35 HO | | 9-12-35 JU: | |
| NANCY F PATTERSON | | I ONNIE I VODENICHAR | PATRICIA I VODENICHAR AND | | KATHLEEN M BUAKE | ROBERT E BLAKE AND | | | ROBERT N HINDS JR | | | | PATRICIA M LEWIS | ROBERT W LEWIS AND | | | HARLES R MARTIN | SANDRA D MARTIN AND | | | MARIE DILTS | HADONI DII TE AVA SHADON | | STEVEN R BLAKE | | | | BRADLEY A HOLSTEIN | AMMY M HOLSTEIN AND | | | TINA I OLJISE NICGORSKI | | | WILLIAM BLAKE | | | | E A CRISWELL | | | | | CTO OIL COMPANY LLC | CHK-MAC LLC | | CHARLES A BLOYD III AND KIM | BLOYD AND RANDY L DULA | _ | | BLOYD | _ | | PHILLIP JOSEPH LONGO SR | | | | AND THROUGH ITS GENERAL | MMM-MARCELLUS III LP BY | | CHK-MAC LLC | | | | NE M JOLLY-SMART . | | | STONE HILL MINERALS | - 8 | 1 |
| CHESAPEAKE APPALACHIA | | | CHESAPEAKE APPALACHIA | | | CHESAPEAKE APPALACHIA | | | шс | CHESAPEAKE APPALACHIA | | | Inc | CHESAPEAKE APPALACHIA | | | luc | CHESAPEAKE APPALACHIA | | | | CHECADEAKE APPAI ACHIA | | uc | CHESAPEAKE APPALACHIA | | | μc | CHESAPEAKE APPALACHIA | | | HC | CHESAPEAKE APPALACHIA | | uc | CHESAPEAKE APPALAUNIA | | | SOUTH PENN OIL COMPANY | | | | | TH EXPLORATION, LLC | NA | E | CHESAPEAKE APPALACHIA | uc | CHESAPEAKE APPALACHIA | | | CHESADEAKE APPALACHIA | | UTER DATE AT ADADIM | | | | CHESAPEAKE APPALACHIA | | | | CHESAPEAKE APPALACHIA | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION. LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | |
| 1/8+ | | 1/8+ | | | 404 | | | | 1/8+ | | | | 1/8+ | | | | 1/8+ | í | | | 1/8+ | | | +8/T | | | | 1/8+ | | | | 1/8+ | | | 40/1 | 1/8.4 | | | 1/8+ | | | | | 1/8+ | NA | 1/8+ | | 1/8+ | 4/01 | | 1/8+ | | | 1/8+ | | | NA | | | | 1/8+ | | | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 2 | 1/8+ | |
| 761 | | 742 | | | 144 | ; | | | 761 | | | | Ta/ | | | | 745 | : | | | 742 | | | /4/ | ; | | | 763 | | | | 742 | | | | 765 | | | 49 | | | | | 1076 | UNLE | 840 | | æ | 240 | | 840 | | | 840 | | | UNL | | | | 798 | | | 1076 | 1071 | 1071 | 1063 | | 1063 | |
| 7 | | 43 43 | | | - | 5 | | _ | 584 | | | | 290 | | | | 224 | | | | 615 | | _ | OTC | ; | | - | 336 | | | | 597 | | | - | 152 | | | 491 | | | | | 5 | NS. | 283 | | 787 | 30 | | 286 | | | 274 | | | UNLEASED | | | | 150 | | | 17 | 463 | 457 | 568 | | 263 | |
| 31/246 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc | | Onshore Properties Inc | Appalachia LLC to Statoil USA | 27/50 Chesapeake | Cision From the tree | Appaientia LLC to statuti Use | 2//SO Chesapeake | | Unshore Properties Inc | Appaiacnia LLC to station USA | Transference | at 1346 Charanaska | Unsitore Fropel des life | Appaiacnia LLC to station Usin | 31/249 Cilesopeane | 21/245 Charanaska | Onshore Properties Inc | Appalachia LLC to Statoli USA | 27/50 Chesapeake | | Onshore Properties Inc | Appalachia LLC to Statoil USA | 27/50 Chesapeake | Unsilote Floperities ille | Appalachia LLC to statoli USA | 27/50 Chesapeake | | Onshore Properties Inc | Appalachia LLC to Statoil USA | 31/246 Chesapeake | | Onshore Properties Inc | Appalachia LLC to Statoil USA | 27/50 Chesapeake | Citation 1 reperious n | Onshore Properties Inc | Annalachia IIC to Statoli USA | 31/175 Checaneake | Natural Gas Company | Company to South Penn | 209/552 South Penn Oil | | | NA | | Production Company LLC | Appalachia LLC to SWN | 35/32 Chesapeake | Appalachia LLC to SWN | 35/32 Chesapeake | Onshore Properties Inc | 33/4/ Chesapeake Appalachia LLC to Statoil USA | | | 33/47 Chesapeake | | | | | | Onshore Properties Inc | 29/325 Unesapeake Appalachia LLC to Statoil USA | 1275 (Theconooko | | NA | | NA | | NA | |
| 33/110 Chesapeake SA Appalachia LLC to SWN Production Company LLC | | | | 33/110 Chesapeake | | | 33/ LLO Chesapeake | 33/110 Characaka | Production Company LLC | - | | 33/110 Chosaneake | Floudcuoil coimpant are | | | 33/110 Choseneake | Production Company LLC | | | | | - | 33/110 Chesapeake | Flodaction company arc | - | | trans at a scala | | A Appalachia LLC to SWN | | | | | 33/110 Chesapeake | | | | 33/110 Chesapeake | Pennzoil United Inc | Company (1889-1963) or | (1968-1972) aka Pennzoil | South Penn Oil Company | | NA | | | ** FORCE POOL | | ** FORCE POOL | | Production Company LLC | Appalachia LLC to SWN | | Production Company LLC | 35/110 Cnesapeake | | | | | | Production Company LLC | Appalachia LLC to SWN | oc/on rhacanaska | | | NA | NA | | NA | |
| 33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC | | 5 | Properties Inc to SWN | 33/424 Statoil USA Onshore | | Exchange Titleholder IIC | Shore | | Exchange Theiloider CCC | | Bronotias inc to SWN | 33/474 Statoil USA Onshore | Contraction (Contraction) and | | Properties Inc to SWN | 33/474 Statoll USA Onshore | Exchange (thenolder LLC | Properties inc to SWN Exchange Titlebolder II C | 33/424 Statoli USA Onshore | | Exchange Titleholder LLC | Properties Inc to SWN | 33/424 Statoil USA Onshore | | Exchange Titleholder IIC | 33/424 Statoli USA Unshore | | - | | _ | _ | LC. | | 33/424 Statoil USA Onshore | | LC | | 33/424 Statoil USA Onshore | Company | il Products | mpany | | | NA | | | | | | | ٦ ר | Properties Inc to SWN | | | Properties Inc to SWN | _ | | | | | | ** FORCE POOL | | | NA | | NA | | NA | |
| Titleholder LLC and SWN Production Company LLC merger | 19/624 SWN Exchange | merger . | Production Company LLC | Titleholder LLC and SWN | 19/624 SWN Exchange | merger | Induction Company IIC | Titleholder IIC and SWN | 19/674 SWN Exchange | | Production Company IIC | Titleholder LLC and SWN | 19/624 SWN Exchange | nonor | Production Company IIC | Titleholder LLC and SWN | There and a start and a start and a start and a start | Production Company LLC | Littenoider LLC and SWN | 19/624 SWN Exchange | merger | Production Company LLC | Titleholder LLC and SWN | 19/624 SWN Exchange | riodacaon company Lee | Ittienotoer LLC and Swiv | 19/624 SWN Exchange | merger | Production Company LLC | Titleholder LLC and SWN | 19/624 SWN Exchange | merger | Production Company LLC | Titleholder LLC and SWN | 19/624 SWN Exchange | merger | Production Company LLC | Titleholder LLC and SWN | merger 19/624 SWN Exchange | Production Company LP | Pennzoil, and Devon Energy | Company LLC, formerly | Exploration and Production | NA 18/635 PennzEnerøv | | | | | | | merger | Production Company LLC | 19/624 SWN Exchange | merger | | 19/624 SWN Exchange | | | | | | | | | NA | | NA | | NA | |
| £ | | | | | | | | | | | | | | | | | T | | | | | | | | | | | | | | | | | | | | | | East Resources Inc | Production Company LP to | 618/1 Devon Energy | | | NA | | | | | | | | ** FORCE POOL | | | ** FORCE POOL | | | | | | | | | | NA | | NA | | NA | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | MCEIROY LOBI COMPANY | 6.19 | | | | 1 | •• FORCE POOL | | _ | | | | | | | | | | | | ** FORCE POOL | | | | | NA | NA | NA | NA | | NA | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Lombany LTC | Company et al to UNA Gas | Company, Consolidation Coal | 646/493 McElroy Coal | | 22 | POOL | | | | | | | | | | | | | | 00t | | | | | | NA | | NA | | NA | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | NA NA | ſ | | | | | Γ | | | ſ | | | | | | | | | | NA | NA | NA | NA | | NA | NA |
| ** FORCE POOL | | | | | | | ** FORCE POOL | | | | •• FORCE POOL | | | | ** FORCE POOL | | | | FORCE POOL | | | I ONCE FOOL | ** FORCE DODI | | | ** FORCE POOL | | | | ** FORCE POOL | | | I OWNE I OOF | ** FORCE POOL | | | ** FORCE POOL | | | | | | | 1 | NA | | | | | | | | | | | | | | | | | | | NA | NA | NA | NA | | NA | INA |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ** FORCE PODI | | Ĩ | NA | - | | | | | | | | | | | | | | | | | | NA | NA | NA | NA | NA | NA | INA |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 101 | | 111 | NA NA | | | | | | | | | | | | | | | | | | | NA | NA | NA | NA | | NA | INA |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 | 20 | | | | | | | | | | | | | | | | | | | NA | NA | NA | NA | | NA | INA |

Operator's Well No. <u>Fitzgerald S-17HU</u>

WW-6A1 Supplement

| 10°22987 E | | | | 10*22827 B | | | | | | | : | 88 | : | : | : | | | : | : | | : | 8 | : | 88 | : | 88 | : | | 88 | | : | | 98 | : | | 88 | | : | | 88 | : | | 88 | : | : | 88 | | : | | | : | | 88 | : | | 88 | : | | 88 | : | | Ap | : | 88 | | : | |
|----------------------|----------------------|--------------------------|---------------------|---------------------|---------------------|---------------|----------------|--------------------|-------------------------|------------------|---------------|----------|-----------------------|----------------|---------------|-----------------------|------------------------|-----------------|---------------------------|---------------|--------------------|-----------------|------------|-------------------------|---------------------------|---------------------------|------------------------|----------------------------|----------------------------|--------------------------|----------------------------|---|--------------------------|-------------------------------|----------------------------|-------------------------|--------------------------|-----------------------|-----------------------------|--------------------------|------------------------|----------------------------|---------------------------|------------------------|----------------------------|---------------------|--------------------------|--|---------------------|--------------------------|--|-------------------------------|--------------------------|---|------------------------------|------------------------|-------------------------------|--|--------------------------|------------------------|-----------------------------|--------------------------|----------------------------|--------------------------|--------------------------|----------------------------|----------------------|
| 88 7-9-1 88 7-9-1 | П | | 88 7-9-1 | BB 7-9-1 | | Γ | ┫ | 1 | 88 7.9-1 | T | | B 7-9-1 | | Γ | B 7-9-1 | | | 8 7-9-1 | | | | 1.2.7 | | 3 7-9-1 | | 3 7-9-1 | | | 3 7-9-1 | | _ | 1 | 7-9-1 | _ | | 7-9-1 | | | | 7-9-1 | | | 7-9-1 | | | 1-4-1 | | | | 7-9-1 | | | 7-9-1 | | | 7-9-1 | | | 7-9-1 | | | 7-9-1 | | 7-9-1 | - | | |
| KAREN L KRELL | SHARON BOWERS NUTTER | JERRY L PORTER AND DOTTY | | | AR | DOCKENDORFF | SUELLA LUCILLE | BERNICE WISE HEIRS | CI ALIDINE STEELE HEIBS | THACTUY E BOWERS | | SNYDER | THE ESTATE OF MARIE L | MARIE E BOWERS | LISA BRAYTON | ELLA M STEPHENS HEIRS | HOWARD PATTERSON HEIRS | GARY A HINDS JR | APPALACHIAN ROYALTIES INC | | ARENCE TODD TAYLOR | GEORGE N INIGON | | GEORGE R TAYLOR TRUSTEE | NINA TAYLOR FAMILY TRUST, | DARYL GORDON MORRIS | | | DAVID BLAKE | | | | DAVID RANDALL MORRIS | | | DELORES L BLAKE | | | | STEWART | ESTATE AND DONNA LEE | SAMUEL NELSON RICHMOND | WAYNE MORRIS | GARY W MORRIS AKA GARY | | EVELTN BLAKE | KEK BLAKE AND | | | HUBERT EARL MORRIS | | | JAMES RICHARD BLAKE | | _ | MARY L HINDS | _ | | | JOHNNY RAY MORRIS AND | | IOHN A BAKER | | HARLAND LEE SNYDER | | | |
| TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION. LLC | NA | | NA | NA | | | NA | | NA | NA | NA | NA | NA | NA | | COMPANY LLC | SWN PRODUCTION | | COMPANY LLC | SWN PRODUCTION | uc | CHESAPEAKE APPALACHIA | | | CHESAPEAKE APPALACHIA | | | | CHESADEAKE APPAI ACHIA | | uc | CHESAPEAKE APPALACHIA | | | μc | CHESAPEAKE APPALACHIA | | uc | CHESAPEAKE APPALACHIA | | | CHESAPEARE APPALAUNIA | | | CHESAPEARE APPALACHIA | | | UNESAFEANE AFFALACHIA | | | | CHESAPEAKE APPALACHIA | | uc | CHESAPEAKE APPALACHIA | | CHESAPEARE APPALACHIA | | | CHESAPEAKE APPALACHIA | | |
| 1/8+ 1/8+ | 1/8+ | 4/01 | 1/8+ | 1/8+ | 1/8+ | NA | | Ă | A | Z Z | 2 | NA | : | NA | NA | NA | NA | NA | NA | | 1/8+ | 4 | 1/84 | 1/8+ | | 1/8+ | ; | | 1/8+ | | | | 1/8+ | | | 1/8+ | | | | 1/8+ | | | 1/8+ | | | 10/1 | 1/8+ | | | 1/8+ | | | 1/8+ | | _ | 1/8+ | | | 1/8+ | | | 1/8+ | | 101 | 1/8+ | | |
| 886 | 974 | 274 | 974 | 974 | 966 6 | UNLEASED | | UNLEA | UNLEASED | UNLEA | I INI FA | UNLEASED | | UNLEA | UNLEASED | UNLEA | UNLEA | UNLEASED | UNLEAS | | 932 | - | 8 | 933 | | 142 | ; | | /4/ | { | | _ | 742 | | | /46 | | | | 754 | | | 745 | | | | 747 | | _ | 742 | | | 759 | | _ | 761 | | | 742 | | | 761 | | 14 | 747 | | |
| 508 N | | | 190 NA | 188 NA | 2 2 | | | SE | | 50 | 9 | Ĕ | ; | Ë | ë | ğ | ĕ | Ö | ð | _ | 8 | | 644 | Ľ | | # | | 27 | ats Ot | | 23 | | 69 07 | A ! | 27 | 10 687 | | | | 564 Or | Ą | 31 | 230 01 | _ | 27 | _ | 322 | 27 | | 0n 102 | 27, | 1 | 7 On | 31/ | | 37 On | Ap | | 419 On: | Ap | | 31 On: | 31/ | | App | 127/ | |
| NA | . > | | A | A | × | | | | | | | | | | | | | | | | | | | | | Onshore Properties Inc | il USA | 27/50 Chesapeake | Unshore Properties inc | II USA | 27/50 Chesapeake | | _ | Appalachia LLC to Statoil USA | | Unshore Properties inc | II USA | | | - | tatoil USA | 31/125 Chesapeake | Onshore Properties Inc | oil USA | | | Onshore Properties Inc | | | Onshore Properties Inc | | | _ | 31/125 Chesapeake | | - | Appalachia LLC to Statoil USA | | Onshore Properties Inc P | | | Onshore Properties Inc | | Citatione Fropernes inc. | (I USA | 27/50 Chesapeake | |
| NA | NA | MA | NA | NA | NA | | | | | | | | | | | | | | | | | | | | | Production company Ltc | Appalachia LLC to SWN | 33/110 Chesapeake | Production Company LLC | Appalactica Company IIC | 33/110 Chesapeake | | Production Company LLC | Appalachia LLC to SWN | 33/110 Chesapeake | Production Company LLC | Appalachia LLC to SWN | 33/110 Chesapeake | and the character | Production Company LLC | Appalachia LLC to SWN | 33/110 Chesapeake | Production Company LLC | Appalachia LLC to SWN | 33/110 Chesapeake | | Production Company LLC | 33/110 Chesapeake Appalachia LLC to SWN | | Production Company LLC | 33/110 Chesapeake Annalachia H C to SWN | | Production Company LLC | 33/110 Chesapeake Appalachia LLC to SWN | いっ とうろ つちんりつかったっ | Production Company LLC | Appalachia LLC to SWN | 33/110 Chesapeake | Production Company LLC | Appalachia LLC to SWN | | Production Company LLC | 33/110 Chesapeake | Longeright company con | Production Company LLC | 33/110 Chesapeake | |
| NA | NA | NA | NA | NA | NA | | | | | | | | | | | | | | | | | | | | | Evenantike innenningi ere | Properties Inc to SWN | 33/424 Statoil USA Onshore | christige interioriusi chr | Exchance Titleholder IIC | 33/424 Statoil USA Onshore | | Exchange Titleholder LLC | Properties Inc to SWN | 33/424 Statoil USA Onshore | cyclige interiorder ctv | Exchange Titleholder IIC | Departies las to SMIN | 22/ADA Statoil IISA Onchore | Exchange Titleholder LLC | Properties Inc to SWN | 33/424 Statoil USA Onshore | EXCORINGE INTERIOIDER LLC | Properties Inc to SWN | 33/424 Statoil USA Onshore | | Exchange Titleholder LLC | Properties inc to SWN | | Exchange Titleholder LLC | Properties Inc to SWN | an land State II IISA Ouchoon | Exchange Titleholder LLC | 33/424 Statoil USA Unshore Properties Inc to SWN | an /And Chatall LICA Onchore | ñ | | ä | 5 | Properties Inc to SWN | 33/474 Statel ISA Onshore | Exchange Titleholder LLC | 33/424 Statoil USA Onshore | | Exchange Titleholder LLC | 33/424 Statoil USA Onshore | |
| NA | NA | NA | NA | NA | NA | | | | | | | | | | | | | | | | | | | | | hielder | Production Company LLC | Titlehol | 19/624 SWN Exchange | FIGURENCIAL COMPANY CEC | Titleholder LLC and SWN | | menger | Production Company LLC | Titleholder LLC and SWN | 19/624 SWN Exchange | menter | Interior Company IIC | 19/524 SWN Exchange | merger | Production Company LLC | Titleholder LLC and SWN | 19/624 SWN Exchange | Production Company LLC | Titleholder LLC and SWN | 19/624 SWN Exchange | merger | Production Company LLC | 19/624 SWN Exchange | merger | Production Company LLC | 19/624 SWN Exchange | merger | Production Company LLC | 19/624 SWN Exchange | merger | Production Company LLC | 19/624 SWN Exchange Titleholder LLC and SWN | merger | Production Company LLC | 19/624 SWN Exchange | merger | Titleholder LLC and SWN | 19/624 SWN Exchange | merger | Titleholder LLC and SWN | 119/624 SWN Exchange |
| NA | NA | NA | NA | NA | NA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NA | NA | NA | NA | NA | | R | •• F | •• FC | •• F | FC | | | | | | | | | | | | 24 •• E | H | | •• FC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NA | NA | NA | NA | NA | NA | ** FORCE POOL | ** FORCE POOL | DRCE POOL | ** FORCE POOL | DRCE POOL | ** FORCE POOL | | •• FORCE POOL | Since OOF | ** EOBCE BOOL | SPOTE BOOL | SACE FOOL | DRUE POOL | | •• FORCE POOL | SHOL I DOL | ** FORCE POOL | FORCE POOL | | ** FORCE POOL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NA | NA | NA | NA | NA | NA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | _ | | | _ | | | | | | | | | | | | | | | | | | _ | | | | |
| NA | NA | NA | NA | NA | NA | | | | | | | | | | | | | | | | | | | | | | | •• FORCE POOL | | | ** FORCE POOL | | | FUNCE FOOL | | | | ** FORCE POOL | | | | ** Force Pool | | | ** FORCE POOL | | | ** FORCE POOL | | | ** FORCE POOL | | | ** FORCE POOL | | | ** FORCE POOL | | | •• FORCE POOL | | | ** FORCE POOL | | | •• FORCE POOL | |
| NA | NA | NA | NA | NA | NA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | NA | NA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Operator's Well No. Fitzgerald S-17HU

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| 10*28476 | 10*28246 | 10*28061 | 10*28025 | 10*28001 | 40 ET 010 | 10*27942 | TCOLT OF | 10477801 | 10*27890 | 10*27848 | 10°27834 | 00012 00 | 10*27598 | 10*27596 | 10*27033 | 10~26981 | | 10*76980 | 10°26979 | 10*26972 | 10-20813 | 10*26810 | 10°26809 | | 10*26805 | 10*26721 | 10, 70, 11 | 10020117 | 10*26716 | 10*26432 | 9695Z_0I | | 10*25330 10*25658 | 10*25302 | | 10°24989 10°25216 | | 10*24966 10*24967 | 10°24952 | 10*24582 | 10 2 1002 | 10*24469 10*24502 | 0+/C2_01 | 10*23698 | 10*23653 | 10*23644 | 10*23642 | 10*23639 | 10*23429 | 10*23424 | |
|-----------------------|---------------------|---------------------|-----------------------------|---------------------|-----------|-----------------------|----------|-------------------------|---------------------|---------------------|-------------------------|-------------------------|---------------------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|---------------------|---------------------|----------------------|-----------------------|---------------------|----------------------|------------------------------------|------------------------------|----------------------|-----------------------|----------------------|---------------------|--------------------------|--------------------------|----------------------|---------------------|-----------------------|----------------------|--------------------|----------------------|---------------------|-----------------------|--------------|---------------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|---|--|
| 86 7- 9- 1 | ╈ | 88 7-9-1 | | BB 7-9-1 | - | BB 7-9-1 | | | BB 7-9-1 | BB 7-9-1 | BB 7-9-1 | | BB 7-9-1 | BB 7-9-1 | | T-6-/ 98 | | BB 7-9-1 | 88 7-9-1 | 88 7-9-1 | + | 88 7-9-1 | | | BB 7-9-1 | 88 7-9-1 | | | 88 7-9-1 | 88 7-9-1 | T- 6 -/ 88 | - | .88 7-9-1 | 88 /-9-1 | _ | BB 7-9-1 | | BB 7-9-1 BB 7-9-1 | 88 7-9-1 | BB 7-9-1 | | BB 7-9-1 BB 7-9-1 | | | 7-9-1 | 7-9-1 | 7-9-1 | 88 7-9-1 88 7-9-1 | 7-9-1 | 88 7-9-1 | |
| BOWERS | GEORGE C & MARGARET | | BARBARA GALLAHER SCHANCK | | | BRUCE EDWARD WILLIAMS | | STANLEY W SNIDER JR AND | DELORES C SMITH | SWIGER | ELIZABETH CORLEEN DAVIS | SKYLAR LOWERY C/O SCOTT | JOSEPH KIRBY SMITH AND HOLLY SMITH | JANE ELLEN DAVIS | RODNEY REED | DEBORA WARNER REED AND | JANET LEE ELLISON AND | SANDRA PREUIT AND LARRY | DARLEEN GALLAHER | HUTTER MCCREARY | KAREN ANN POSTLEWAIT | CAROLYN RUTH GALLAHER | NANCY E WARNER | GARRY L LOVELESS AND | BRAUCHLER AND CHARLES BRAUCHLER | SCOTT RUTH DARLENE WARNER | NELDA SCOTT AND GARY | GARY A POSTLEWAIT AND | AND NANCY POSTLEWAIT | C JONES | SANDRA M JONES AND TIMMY | MICHAEL C JUDD AND KAREN | KENNETH L DIXON | MELINDA E DIXON AND | ABBY LOWERY C/O SCOTT | HEIDI L WARNER | | | | MELINDA MANKOWSKI AND | TAPPE ANGELA | A BLAIR ALISON LUCAS STANLEY | BLAIR AND ROBERTA | SYDNEY LOWERY | BRIDGETT SMITH | BRANDY FILLIEZ | | | | NANCY J KEENON JOHN DAVID LEWIS & SANDRA | |
| 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 | THI PURCHARACTION HIS | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | ITI CAF LORATINGI, LEC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EYBI OBATION IIC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION. LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLOSATION LLC | TH EXPLORATION, LLC | IN EAFLORATION, SEC | TH EXPLOSATION 11C | TH EXPLORATION, LLC | TH EXPLORATION IIC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EAPLURATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | |
| 1/8+ | +8/T | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | 1/0- | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/01 | 1/8+ | 1/8+ | 1/8+ | 40 | 1/84 | 1/8+ | 1/8+ | 1/8+ | 2 | 1/8+ | 1/8+ | 1/84 | 1/8+ | 1/8+ | | 1/8+ | 1/8+ | 1/8+ | 40 | 1/8+ | 1/8+ 1/8+ | 191 | 1/8+ | 1/8+ | 1/84 | 1/8+ | 1/8+ | 10+ | 1/01 | 1/8+ 1/8+ | 4 Ja. | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | 1/8+ | |
| 1073 | BOUT | 1067 | 1065 | 1067 | | 1064 | 1063 | 1064 | 1064 | 1063 | TCOT | 1021 | 1060 | 1060 | 1060 | - | 1046 | 1046 | 1046 | 1046 | | 1045 | 1045 | 1045 | 1045 | 1041 | | 1041 | 1041 | 1034 | | 1034 | 1031 1033 | | 1033 | 1030 | 1028 | 1028 | 1028 | 0701 | 2001 | 1025 | ; | 1011 | 1009 | 1009 | 1009 | 1009 | 1008 | 988 | |
| 345 NA | AN COC | | 587 NA | 399 NA | | 603 NA | | 157 NA | 159 NA | 265 NA | 5/4 NA | | 560 NA | | 556 NA | | | 164 NA | 161 NA | 188 NA | | 444 NA | | | 437 NA | Z15 NA | | 212 NA | 209 NA | 576 NA | | | 576 NA 313 NA | | | 139 NA | | 584 NA | | 404 77 | | 427 NA | | 547 NA | Ц | | | 124 NA 126 NA | | 510 NA | |
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Operator's Well No. <u>Fitzgerald S-17HU</u>

| 10438630 | CTCOT OF | 10*28329 | 10.707et | 100101CA | | 10*27096 | 10*27092 | TCOT OT | 10+77091 | 10*27090 | | 10-209/1 | 01007 01 | 10402070 | | 10*26691 | 10*26636 | 10°26632 | 10"26568 | | 10*2656/ | COCO7. OT | | 70007-01 | 71CC7 OT | 10005577 | | 10*25491 | | 10*25003 | | 10*24916 | 10*24915 | 10*24846 | 10*24/50 | | TO- 74010 | 10+34CH0 | 10+74665 | 10*24664 | TONAZ OF | 10*74667 | TOOL & OT | 10*74561 | TO- 74000 | | 10*17930 | PENDING | PENDING | | : | : | _ | _ | _ | | | | |
|---------------------|------------------|----------------------|----------|-------------------------|------------------------|---------------------|---------------------|-------------------|-----------------------|---------------------|---------------------------|--------------------------|-----------------------|--------------------------|---|---------------------|---------------------|---------------------|--------------------|---------------------|-----------------------|--------------------|----------------------|-----------------------|--------------------|---------------------|------------------|---------------------|---------------------------|---------------------|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|---------------------|---------------------|---------------------|---------------------------|---------------------|-----------------------|---------------------|-------------------|---------------------------|---------------------|---------------------|----------------------|--------------------|----------------|------------------------|---------------------|---------------------------------|---------------------------|---------------------------|---------------------------|-----------------------|-------------------|
| 3 | T | 8 | 5 | | 1 | | F | t | 3 | | | t | 38 | | t | 00 7 | | t | t | | t | 36 | | t | 38 | | 1 | DD 7 | | DD 7 | | | 00 7 | Г | Г | | t | 38 | 1 | | ╈ | 7 | 1 | 2 | 100 / | | t. | Г | Γ | DD 7- | | CC 7- | _ | | | | | | |
| 7-9-37 R | _ | 7-9-22 | 1-742 0 | _ | _ | 7-9-22 10 | | 1 | | 7-9-22 St | | ╇ | 1011 | _ | | | 7-9-22 TH | ⊢ | + | | + | 10 11 10 | | 1-72E | | _ | _ | 7-9-22 SN | | 7-9-22 DI | | 7-9-22 BR | | 7-9-22 00 | L | | + | 7.0.33 | - 1 | 7-9-22 SH | us us | | | 7-9-22 SU | 1-2-22 | _ | 7-9-22 BO | | ⊢ | 7-9-22 BET | | 7-9-2 AU | | | | | | | |
| REVOCABLE TRUST | NANCY & HEREFORD | DSEPH BILLES ET AL.• | | CATHERINE D RAFSE TRUST | THE FIRMAN G RAESE AND | OSEPH H SMITH | JAMES H SHUTT III | | RIDGITTE BLAYKE JONES | SHOTT | NUGN I SHOTT II AIF BETTT | ICH I SUCTT II AIS BETTY | GBACE B SHOTT-CI ABOV | HE ESTATE OF JOHN C SHOT | | DANIEL C SHOTT | THOMAS SHOTT | MORGAN GIBSON | ARRT A PARSON | BRENUA R FARSON AND | PAIRICA J MARIJIN | ATDICK I MADTIN | | SCOTT SHOTT AIF IDY A | MARTHA SIE EORRES | MATTHEW J OWEN | ERICA S OWEN AND | SMITH | GARY M SMITH AND VICKIE L | POTTS | LINDA L POTTS AND DONALD | | | | | - | NODA E BETTE AND | SIZANNE FROST | HN J GARBER | SHEAKS | LISA L SHEAKS AND JAMES C | RICHARD D SPRINGER | RAMONA K SPRINGER AND | SUSAN B GARBER | BOID M CADBED AND | LARRY D FROST AND LOKAINE | BOUNTY MINERALS LLC | PAIGE FRANCIS * | CHERILYN CAPISTRAN * | BETTY BROWN GORDON | | AUSTIE CARNEY ET AL | | | | | | | |
| TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION. LLC | | TH EXPLORATION, LLC | IN EAFLUMMINUM, LLC | TU EVELOPATION UC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | III DA COMPLICIT, SEC | TH EXPLOBATION IIC | T TH EXPLORATION. LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION IIC | TH EVELOPATION IIC | TH EAT LONGINGIA, CLC | TH EXPLOBATION 11C | TH FXPI ORATION. LLC | | TH EXPLOBATION LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | TH EXPLORATION, LLC | IN EXPLORATION, LLC | TH EATLOND TON, LLC | TH EXPLORATION. LLC | | TH EXPLORATION. LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH EXPLORATION, LLC | | TH FXPLORATION. LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | TH EXPLORATION, LLC | COMPANY LLC | SWN PRODUCTION | LIGHT AND HEAT COMPANY | THE MANUFACTURES | | | | | | |
| 1/8+ | | 1/8+ | - | 1/8+ | | 1/8+ | * | 1/8- | 1/8+ | 1/8+ | | 40 | 1/8+ | 1/8+ | | 1/8+ | 1/8+ | 1/97 | 1/01 | 1/84 | 20. | 1/8+ | 1/8+ | - | 1/8+ | 1/8+ | | 1/8+ | | 1/8+ | | +8/T | 1/8+ | 191 | | 1/8+ | | 1/8+ | 1/8+ | 1/8+ | | 1/8+ | | 1/8+ | | 1/8+ | +0/1 | +8/1 | +8/T | 1/01 | 4/01 | 7/8+ | 4 /0. | | | | | | |
| 1072 | | 1068 | | 1067 | | 1050 | | 1055 | 1050 | LUDO | | | 1046 | 1046 | | 1041 | GCOT | 5010 | 1020 | 1038 | | 1038 | 1038 | | 1038 | 1033 | | 1033 | | 1028 | | 8701 | 07NT | 1010 | 1010 | 1027 | | 1026 | 1026 | 1026 | | 1026 | | 1026 | | 1026 | 976 | 9/01 | 5/0T | 1075 | ŝ | 000 | 20 | | | | | | |
| 408 | | 135 | | 516 | | 230 | | 201 | 204 | ď | 0 | | 194 | 190 | | 218 | arc | 210 | 310 | 2 | | 56 | 513 | | 510 | 121 | | 126 | | 6/1 | 1 | Tec | 1 | 5 | 192 | 302 | | 223 | 229 | 226 | | 220 | | 202 | | 217 | 960 | 214 | 710 | 3 | 3 | 10 | ż | | | | | | |
| NA | | NA | | NA | | NA | | NA | NA | AM | * | | NA | NA | | NA | HN | | NA | NA | | NA | NA | | NA | NA | | NA | | NA | | MA | NA | | No | NA | | NA | NA | NA | | NA | | NA | | NA | HAI | N/A | NA NA | 20 | | colpolation | Compation | Columbia Gas Transmission | Light and Heat Company to | 422/204 The Manufacturers | | | - |
| NA | | NA | | NA | | NA | | NA | NA | 111 | NA | | NA | NA | | NA | | NA | NA | NA | _ | NA | NA | | NA | NA | | NA | | MA | | | | NA | NA | NA | | NA | NA | NA | | NA | | NA | | NA | | | 202 | NA | | iitaoni eea eea | Resources LLC | and Columbia Natural | Transmission Corporation | Columbia Gas | agreentent between | hattan | 642/281 Sublease |
| NA | | NA | | NA | | AN I | NA | NA | NA | 3 | NA | | NA | NA | | NA | | NA | NA | NA | | NA | NA | | NA | NA | | NA | • | ž | 20 | 3 | N III | NA | NA | NA | | NA | NA | NA | | NA | | NA | | NA | | NA | NA | NA | | | | Chesapeake Appalachia | Resources LLC and | Vatural | | | - |
| NA | | NA | | NA | | | NA | NA | NA | | NA | | NA | NA | | MM | NA | NA | NA | NA | | NA | NA | | NA | NA | | NA | | 3 | NA | | NA | NA | NA | NA | | NA | NA | NA | | NA | | NA | | NA | | NA | AN | NA | | | Appalachia LLC | and Chesapeake | Transmission Corporation | Columbia Gas | | agreement between | Devaning 77C /700 |
| NA | | NA | | NA | | | AN | INA | INA | | NA | | NA | NA | | 3 | NA | NA | NA | NA | | NA | NA | | NA | NA | | | | | NA | | NA | NA | NA | NA | | NA | NA | NA | | NA | | NA | | NA | | NA | NA | NA | | | Properties Inc | Statoilhydro USA Onshore | Appalachia LLC to | 0/2/2/ Clesspeake | CTE/JTO Characte | | |
| NA | | NA | | NA | | | NA | NA | MA | 2 | NA | | NA | NA | | 5 | NA | NA | NA | NA | | NA | NA | | NA | | 20 | 3 | 20 | | NA | | NA | NA | NA | NA | | NA | NA | NA | | NA | | NA | | NA | | NA | NA | NA | ** FORCE POOL | | | name to Statoil USA | | | Statelihudze IISA Onshore | On 11/30/2009, | |
| INA | | NA | | NA | | | NA | NA | | N | NA | | NA | NA | | | NA | NA | NA | NA | _ | NA | NA | | NA | | NA | 5 | 20 | | NA | | NA | NA | NA | NA | | NA | NA | NA | | NA | | NA | | NA | | NA | NA | NA | POOL | | FC | NiSource Energy Ventures | Transmission LLC to | | | | |
| NA | | NA | | NA | | | | | HNI | | | | | NA | | | | | | NA | | | NA | | NA | | | | | | NA | | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | Energy Ventures LLC | name to Columbia | Ventures LLC changed | | NiCource Energy | Effective 12/16/2014, | - |
| INA | | NA | | NA | | | | | | | | | | NA | | | | | | NA | | | NA | | NA | | | | NA | | NA | | | | | NA | _ | | | NA | | NA | | NA | _ | NA | | | NA | | | | n | Appalachia LLC to SWN | | | | | |
| INA | | NA | | NA | | | | | | | | - | | NA | | | | | | NA | | | NA | | NA | | | | NA | | NA | | | | | NA | | | | NA | | NA | | NA | - | NA | | | NA | | | | Titleholder LLC | to SWN Exchange | is mc | and the second second | 33/474 Statnil IISA | | |
| NA IA | | NA | | NA | | | | | | | | | | NA | | | | | | NA | | | NA | | NA | | | | NA | | NA | | | | | NA | | | | NA I | | NA | | NA | | NA | | | NA | | | | merger | Production Company LLC | Intenoider LLC and SWN | | 19/624 SW/N Exchange | _ | |
| NA | | NA | | NA | | | A | A | | 14 | VA | | NA | NA | 5 | | Ä | YA | YA | NA | | VA | NA | | NA | | | | NA | | NA | | VA | VA | VA | NA | | NA | AND IN COLUMN | NA | 5 | NA | | NA | | NA | | Ā | NA | VA | | | | | | LONCE FOOL | | | |

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

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ASSIGNMENT OF OIL AND GAS LEASES

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

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 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.

3. <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.

4. <u>Further Assurances</u>. 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.

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

STATE OF WEST VIRGINIA § COUNTY OF MARSHALL §

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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. <u>Special Warranty</u>. 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.

3. <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

Office of Oil and Gas MAK 1 7 2020 WV Department of Environmental Protection DPS LAND SERVICES CORP 6000 TOWN CENTER BOULEVARD, 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

Office of Oil and Gas (a) EXCEPT AS EXPRESSLY REPRESENTED OTHER WISE IN SECTION (1) CONTRACT EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY DESCRIPTIVE MEMORANDUM, OR ANY REPORT OF ANY OF ITS PETROLEUM ENGINEERING CONSULTANTS, OR ANY GEOLOGICAL OR SEISMIC DATA OR INTERPRETATION, RELATING TO THE LEASEHOLD RIGHTS, (III) THE QUANTITY, QUALITY OR RECOVERABILITY OF PETROLEUM SUBSTANCES IN OR FROM THE LEASEHOLD RIGHTS, (IV) THE EXISTENCE OF ANY PROSPECT, OR ANY RECOMPLETION, INFILL OR STEP-OUT DRILLING OPPORTUNITIES, (V) ANY ESTIMATES OF THE VALUE OF THE LEASEHOLD RIGHTS, (VI) THE PRODUCTION OF PETROLEUM SUBSTANCES FROM THE LEASEHOLD RIGHTS, OR ANY PRODUCTION 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

BOOK 0036 BAGE 0455

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.

and a second
(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 WV Department of Environmental Protection

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COPY

STATE OF WEST VIRGINIA § COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

Marshall County Jan Pest, Clerk Instrument 1453305 04/24/2019 @ 11:51:22 AM ASSIGNMENTS Book 43 @ Page 503 Pages Recorded 10 Recording Cost \$ 17.00

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") 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:

 <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.

 Successors and Assigns. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors Office of Oil and Gas

WV Department of 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-17HU

Subject: Marshall County Route 90 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 in the area reflected on the Fitzgerald S-17HU 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 MAR 1 7 2020

WV Department of Environmental Protection 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-17HU Well Pad Name: Fitzgerald

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: | 530,724.06 |
|-------------|------------------|---------------------------|------------------------------------|
| County: | Marshall | Northing | 4,405,748.24 |
| District: | Liberty | Public Road Access: | Rines Ridge Road (County Route 76) |
| Quadrangle: | Glen Easton 7.5' | Generally used farm 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 decmed 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 by the applicant.

| Pursuant to West Virginia Code § 22-6A, the 0 that the Operator has properly served the requi *PLEASE CHECK ALL THAT APPLY | Operator has attached proof to this Notice Certification red parties with the following: | OOG OFFICE USE ONLY |
|--|--|---------------------------|
| □ 1. NOTICE OF SEISMIC ACTIVITY O | T INOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED | RECEIVED/ NOT REQUIRED |
| 2. NOTICE OF ENTRY FOR PLAT SUP | EVEY oF 🔲 NO PLAT SURVEY WAS CONDUCTED | RECEIVED |
| □ 3. NOTICE OF INTENT TO DRILL o | NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or | RECEIVED/ NOT REQUIRED |
| | WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) | |
| 4. NOTICE OF PLANNED OPERATION | 4 | E RECEIVED AN 17 200 |
| 5. PUBLIC NOTICE | | RECEIVED |
| ■ 6. NOTICE OF APPLICATION | | RECEIVED |

Required Attachments:

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

WW-6AC (1/12)

Certification of Notice is hereby given:

THEREFORE, I <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 Why Sull | | Canonsburg, PA 15317 |
| Its: | Permitting Specialist - Appalachia Region | Facsimile: | 724-338-2030 |
| Telephone: | 724-749-8388 | Email: | amiller@tug-hillop.com |
| Chester My commis Com | Arthur West IV, Notary Public Washington County ssion expires February 10, 2024 | cribed and swo | orn before methis 13 th day of <u>7020</u> . Notary Public xpires <u>2.10-2024</u> |

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

OPERATOR WELL NO. Fitzgerald S-17HU 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: 3/10/2020 Date Permit Application Filed: 3/12/2020

| No | tice | of: |
|-----|------|-----|
| 1,0 | | O |

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

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

| PERSONAL | 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:

| Name: Regina D. Figuer | |
|---------------------------------------|---------------------------------------|
| Address: 94 E. 700 N | |
| Valparaiso, IN 46383 | |
| Name: Danny S. Kerns | See attached list |
| Address: 3500 West 80 | Oth Place |
| Merrillville, IN 46410 | 1 |
| SURFACE OWN Name: Regina D. Figuer | ER(s) (Road and/or Other Disturbance) |
| Address: 94 E. 700 N | |
| Valparaiso, IN 46383 | |
| Name: Danny S. Kerns | *See attached list |
| Address: 3500 West 80 | th Rlace |
| Merrillville, IN 46410 | |
| | |
| | ER(s) (Impoundments or Pits) |

| Address: | 1000 Consol Energy Drive |
|------------------|---|
| Canonsburg | , PA 15317 |
| COAL | OPERATOR |
| Name: M | urray American Energy, Inc. attn: Mason Smith |
| Address: | 46226 National Road |
| St. Clairsville | e, OH 43905 |
| SURFA | CE OWNER OF WATER WELL |
| AND/OR | WATER PURVEYOR(s) |
| Name: Da | anny R. Kerns *See attached list |
| Address: | 3500 West 80th Place |
| Merrillville, II | N 64610 |
| OPERA | TOR OF ANY NATURAL GAS STORAGE FIELD |
| Name: | |
| Address: | |

*Please attach additional forms if necessary

API NO. 47-41705102324 OPERATOR WELL NO. Fitzgerald S-17HU 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 purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental CEIVED Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/dip// and Gas MAR 1 7 2020 and-gas/pages/default.aspx.

Well Location Restrictions Environment of WV Department of Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing feet of well and s may not be located within six 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

OPERATOR WELL NO. Fitzgerald S-17HU 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 Charleston, WV 25304 (304) 926-0450 MAR 1 7 2020 WV Department of Protection

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

API NO. 47- 051 4 7 0 5 1 0 2 3 2 4

OPERATOR WELL NO. Fitzgerald S-17HU 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 six of this chapter, as applicable and as incorporated into this article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

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

Disclaimer: All comments received will be placed on our web site http://www.dep.wv.gov/oil-and-gas/Horizontal-

<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.

MAR 17 2020

API NO. 47-051 **4.705102324** OPERATOR WELL NO. Fitzgerald S-17HU Well Pad Name: Fitzgerald

Notice is hereby given by:

| Well Operato | r: Tug Hill Opera | rating, LLC | |
|-----------------|-------------------|-------------|--|
| Telephone: 7 | 24-749-8388 | | |
| Email: amiller@ | tug-hillop.com | any Stulle | |

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>.

Commonwealth of Pennsylvania - Notary Seal MAUREEN A STEAD - Notary Public Washington County My Commission Expires Jan 28, 2023 Commission Number 1259926

| Subscribed and sworn before methis day of | MARCH 2020. |
|---|---------------|
| Carrent Stend | Notary Public |
| My Commission Expires 1/20 21 | |

RECEIVED Office of Cil and Gas

MAR 1 7 2020

WV Department of Environmental Protection

WW-6A NOTICE OF APPLICATION

FITZGERALD S-17HU

ADDITIONAL PARTIES TO NOTICE

Surface Owner (Pad and Access Road)

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

> RECEIVED Office of Oil and Gas

MAR 1 7 2020

WV Department of Environmental Protection

Exhibit WW-6A

Supplement Pg. 1A

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

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

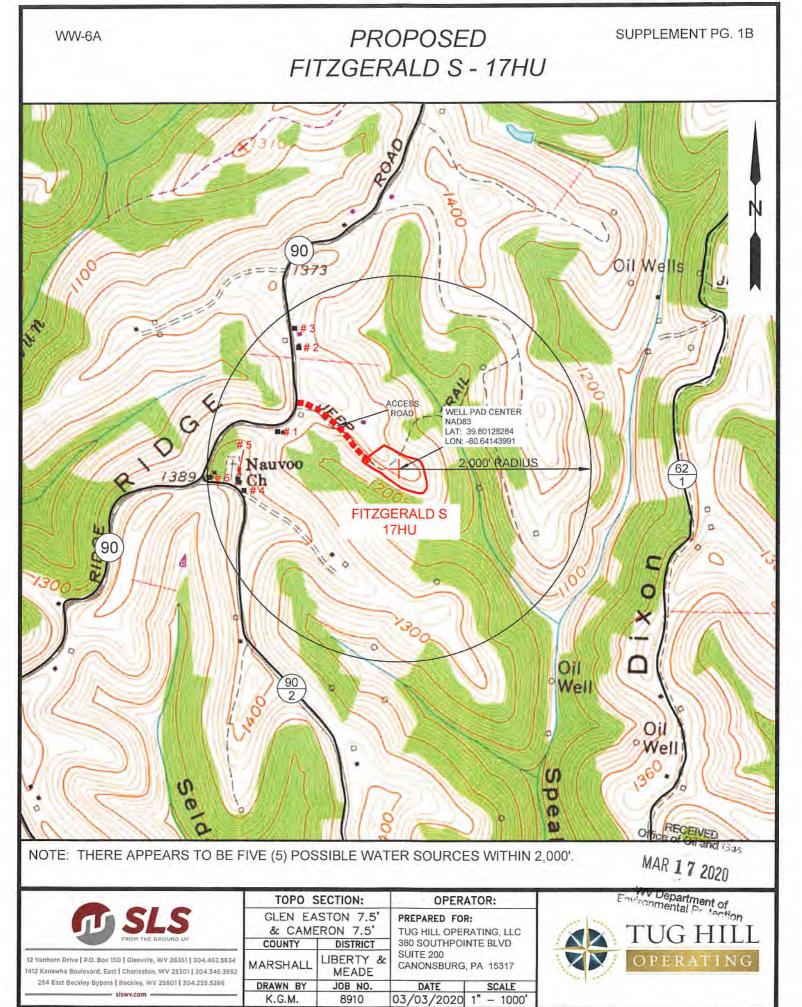
| Well: | Fitzgerald S – 17HU |
|-----------|---------------------|
| District: | Liberty |
| State: | WV |

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 | VM 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: | | Dra |
| 46226 National Rd. | | Office of Oil and Ga |
| Saint Clairsville, OH 43950 | | AAA Ga |
| | | MAR 1 7 2020 |

WV Department of Environmental Protection

4705102324



USER: kmoyers

CAD FILE: R:\Data\CADD\WORK 8900-8999\8910 Tug Hill Fitzgerald Plats and Mapping\Survey\Well Plat Exhibits\8910-17HU Exhibits.dwg LAYOUT: Layout4

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) | CQAL OWNER OR LESSEE |
|---------------------------------|--|
| Name: Regina D. Figueroa | Name: Consol Energy 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 PI. | 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:

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

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 Well Operator: | | Address: | 380 Southpointe Boulevard, Plaza II, Suite 200 | Office of Oil and Gas |
|----------------------------------|------------------------|------------|--|--------------------------|
| Telephone: | 724-749-8388 | | Canonsburg, PA 15317 | MAR 1 7 2020 |
| Email: | amiller@tug-hillop.com | Facsimile: | 724-338-2030 | |
| Oil and Gas F | Privacy Notice: | | | Environmental Protection |

Oil and Gas Privacy Notice:

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

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 WW-6A5 (1/12) Operator Well No. Fitzgerald S-17HU

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 RETURN RECEIPT REOUESTED HAND DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

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

| Name: Danny S. Kerns | | |
|----------------------------|--|--|
| Address: 3500 West 80th PI | | |
| Merrillville, IN 46410 | | |
| | | |

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: | 530,724.06 | |
|-------------|---------------------------|------------------|-----------|------------------------------------|--|
| County: | Marshall | UTM NAD 83 | Northing: | 4,405,748.24 | |
| District: | Liberty | Public Road Acc | ess: | Rines Ridge Road (County Route 76) | |
| Quadrangle: | Glen Easton 7.5' | Generally used f | arm name: | Danny R. Kerns, et al | |
| Watershed: | Upper Fish Creek (HUC 10) | | | | |

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 <u>www.dep.wv.gov/oil-and-gas/pages/default.aspx</u>.

| Well Operator: | Tug Hill Operating, LLC | Address: | 380 Southpointe Boulevard, Plaza II, Suite 200 | Office of Oil and Gas | |
|----------------|-------------------------|------------|--|-----------------------|--|
| Telephone: | 724-749-8388 | | Canonsburg, PA 15317 | 1110 | |
| Email: | amiller@tug-hillop.com | Facsimile: | 724-338-2030 | MAR 1 7 2020 | |

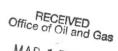
Oil and Gas Privacy Notice:

WV Department of Environmental Protection

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>.

Additional Party to Notice WW-6A5 Fitzgerald Pad

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



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-17HU 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,

Jary K. Clayton

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

Office of Ci and Gas

MAR 1 7 2020

W 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-17HU

| Wen No. Thegerata 5 1 | 1110 | | |
|-----------------------|-------------------------------------|------------------|---|
| 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 Gas MAK 17 2020

WV Department or Environmental Protection