

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

RECEIVED
Office Of Oil and Gas

JUL 26 2023

WV Department of
Environmental Protection

API 47 - 051 - 02394 County Marshall District Liberty
Quad Glen Easton 7.5' Pad Name Fitzgerald Field/Pool Name _____
Farm name Danny and Frances Kerns Estate Well Number Fitzgerald S-4HM
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 380 Southpointe Boulevard, Plaza II, Suite 200 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,405,758.93 Easting 530,704.93
Landing Point of Curve Northing 4,405,772.3 Easting 529,582.1
Bottom Hole Northing 4,403,603.6 Easting 530,841.6

Elevation (ft) 1,293' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
SOBM; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive, LCM, Shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; specific additives per WSSP and Permit.

Date permit issued 8/26/2021 Date drilling commenced 4/22/2023 spud:10/21/2021 big rig: 12/7/2021 Date drilling ceased 11/30/2022
Date completion activities began 4/22/2023 Date completion activities ceased 5/6/2023
Verbal plugging (Y/N) N Date permission granted n/a Granted by n/a

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 1062' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1501' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 958-964', 1056-1062' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

Reviewed by:
[Signature]
10/27/2023

API 47- 051 - 02394 Farm name Danny and Frances Kerns Estate Well number Fitzgerald S-4HM

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	36"	30"	120'	NEW	94.5#	N/A	Y
Surface	17 1/2"	13 3/8"	1,160'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1,160'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	3,048'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	17,134'	NEW	20#	N/A	Y
Tubing		2 3/8"	8,567'	NEW	4.7#	N/A	Y
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	A	65	15.6	1.21	78	0	8
Surface	A	1191	15.6	1.18	1405	0	8
Coal	A	1191	15.6	1.18	1405	0	8
Intermediate 1	A	1051	15.6	1.18	1240	0	8
Intermediate 2							
Intermediate 3							
Production	A	3550	14.5	1.23	4367	0	8
Tubing							

Drillers TD (ft) 17,171' Loggers TD (ft) n/a
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 7,458'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 3 centralizers on surface casing at equal distance.
Intermediate - 1 centralizer every other joint.
Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

**FITZGERALD S-4HM
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	4/22/2023	16,949	16,997	16	MARCELLUS
2	4/23/2023	16,748	16,895	48	MARCELLUS
3	4/23/2023	16,572	16,719	48	MARCELLUS
4	4/23/2023	16,396	16,543	48	MARCELLUS
5	4/23/2023	16,220	16,367	48	MARCELLUS
6	4/24/2023	16,044	16,191	48	MARCELLUS
7	4/24/2023	15,868	16,015	48	MARCELLUS
8	4/24/2023	15,692	15,839	48	MARCELLUS
9	4/24/2023	15,516	15,663	48	MARCELLUS
10	4/25/2023	15,340	15,487	48	MARCELLUS
11	4/25/2023	15,164	15,311	48	MARCELLUS
12	4/25/2023	14,988	15,135	48	MARCELLUS
13	4/26/2023	14,812	14,959	48	MARCELLUS
14	4/26/2023	14,636	14,783	48	MARCELLUS
15	4/26/2023	14,460	14,607	48	MARCELLUS
16	4/26/2023	14,284	14,431	48	MARCELLUS
17	4/26/2023	14,108	14,255	48	MARCELLUS
18	4/27/2023	13,932	14,079	48	MARCELLUS
19	4/27/2023	13,756	13,903	48	MARCELLUS
20	4/27/2023	13,580	13,727	48	MARCELLUS
21	4/27/2023	13,404	13,551	48	MARCELLUS
22	4/28/2023	13,404	13,551	48	MARCELLUS
23	4/28/2023	13,052	13,199	48	MARCELLUS
24	4/28/2023	12,876	13,023	48	MARCELLUS
25	4/28/2023	12,700	12,847	48	MARCELLUS
26	4/29/2023	12,524	12,671	48	MARCELLUS
27	4/29/2023	12,348	12,495	48	MARCELLUS
28	4/29/2023	12,172	12,319	48	MARCELLUS
29	4/30/2023	11,996	12,143	48	MARCELLUS
30	4/30/2023	11,820	11,967	48	MARCELLUS
31	4/30/2023	11,644	11,791	48	MARCELLUS
32	4/30/2023	11,468	11,615	48	MARCELLUS
33	5/1/2023	11,292	11,439	48	MARCELLUS
34	5/1/2023	11,116	11,263	48	MARCELLUS
35	5/2/2023	10,940	11,087	48	MARCELLUS
36	5/2/2023	10,764	10,911	48	MARCELLUS
37	5/2/2023	10,588	10,735	48	MARCELLUS
38	5/3/2023	10,412	10,559	48	MARCELLUS
39	5/3/2023	10,236	10,383	48	MARCELLUS
40	5/4/2023	10,060	10,207	48	MARCELLUS
41	5/4/2023	9,884	10,031	48	MARCELLUS

10/27/2023

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	5/4/2023	9,708	9,855	48	MARCELLUS
43	5/5/2023	9,532	9,679	48	MARCELLUS
44	5/5/2023	9,356	9,503	48	MARCELLUS
45	5/6/2023	9,180	9,327	48	MARCELLUS
46	5/6/2023	9,004	9,151	48	MARCELLUS
47	5/6/2023	8,828	8,975	48	MARCELLUS

FITZGERALD S-4HM
STIMULATION INFORMATION PER STAGE

Stage No.	Ave. Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	66.00	8292	7681	3454	250000	7,634	0
2	82.00	8095	6382	4466	440900	8,249	0
3	84.00	8089	5993	5024	434220	8,615	0
4	85.00	7617	5480	5004	443890	8,395	0
5	86.00	7519	5294	4885	441700	8,317	0
6	87.00	7491	5417	5144	435860	8,285	0
7	85.00	7559	5686	4776	437120	8,347	0
8	84.00	7305	5592	4826	442820	8,405	0
9	86.00	7223	5352	4988	439720	8,430	0
10	85.00	7203	5938	5165	433260	8,327	0
11	83.00	7183	5320	4971	432840	9,250	0
12	85.00	7089	5392	5178	436760	8,275	0
13	89.00	7624	5163	5050	443500	8,295	0
14	88.00	7584	5319	4805	449880	8,686	0
15	85.00	7281	5273	4798	437400	8,343	0
16	85.00	7373	5407	4733	438140	8,212	0
17	85.00	7038	5444	4623	436740	8,192	0
18	85.00	7049	5263	4896	437940	8,383	0
19	85.00	7034	5284	5256	436180	8,925	0
20	85.00	7063	5082	4425	433180	8,189	0
21	85.00	6937	5156	4843	431060	8,029	0
22	84.00	6796	5139	4883	435480	8,976	0
23	85.00	6839	4842	5011	433660	8,120	0
24	85.00	6774	4994	4788	435940	8,222	0
25	85.00	6736	5190	4837	432340	8,009	0
26	85.00	6966	4962	4943	434340	8,150	0
27	85.00	6765	5032	5073	439960	8,234	0
28	84.00	6905	5171	5096	434240	7,870	0
29	86.00	6706	5105	4641	439200	8,248	0
30	85.00	6859	5288	5088	435660	8,166	0
31	85.00	6926	5030	4389	436940	8,188	0
32	85.00	6790	5139	4763	435780	7,918	0

Stage No.	Ave. Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
33	85.00	6793	5268	4962	435680	8,311	0
34	85.00	6662	5121	4963	438560	8,257	0
35	89.00	6996	5133	4709	434620	8,063	0
36	85.00	6701	5170	4619	444440	8,311	0
37	85.00	6674	4833	5192	435020	8,100	0
38	85.00	7018	5623	4751	435500	8,210	0
39	84.00	6779	5120	5512	437120	7,912	0
40	86.00	6789	5127	5394	433340	8,206	0
41	85.00	6548	5033	5118	441100	8,262	0
42	88.00	6578	5223	5234	433260	8,035	0
43	85.00	6461	4934	4492	432000	8,039	0
44	85.00	6389	4993	5251	435680	8,041	0
45	84.00	6675	5019	5254	433820	8,732	0
46	85.00	6321	4839	4751	440840	8,009	0
47	88.00	6364	5094	4695	433220	7,918	0

FITZGERALD S-4HM

LITHOLOGY/FORMATION	TOP DEPTH IN FT/ Name TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUQUANTITY AND TYPE OF FLUID
Maxton	1855	2069	1859	2079	Sandstone
Big Lime	2069	2206	2079	2225	Limestone
Big Injun	2206	2478	2225	2539	Sandstone
Weir	2478	2698	2539	2817	Sandstone
Berea	2698	2956	2817	3167	Sandstone
Gordon	2956	3111	3167	3381	Sandstone
Fifty Foot	3111	3616	3381	4069	Sandstone
Speechley	3616	5106	4069	6111	Sandstone
Benson	5106	5531	6111	6692	Sandstone
Alexander	5531	6190	6692	7586	Siltstone
Rhinestreet	6190	6700	7586	8219	Black Shale
Middlesex	6700	6770	8219	8321	Black Shale
Geneseo/Burkett	6770	6803	8321	8374	Black Shale
Tully	6803	6829	8374	8423	Limestone
Hamilton	6829	6922	8423	8686	Gray Shale
Marcellus	6922	-	8686	-	Black Shale

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/22/2023
Job End Date:	5/6/2023
State:	West Virginia
County:	Marshall
API Number:	47-051-02394-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Fitzgerald S 4HM
Latitude:	39.80124209
Longitude:	-80.64132590
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,000
Total Base Water Volume (gal):	16,308,180
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Tug Hill Operating	Carrier/Base Fluid	Water	7732-18-5	100.00000	86.63405	None
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	8.53886	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	3.21233	None
Sand (30/50 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	1.20387	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.23482	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10222	None
StimStream FR 9800	Chemstream	Friction Reducer	Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02143	None
			Butene, homopolymer	9003-29-6	25.00000	0.02143	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00257	None

MC MX 5-3886	Multi-Chem	Biocide					
			Calcium nitrate	13477-34-4	60.00000	0.02157	None
LD-7750W	Multi-Chem	Scale Inhibitor					
			Methanol	67-56-1	60.00000	0.00665	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00055	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00051	None
			Proprietary material	Proprietary	30.00000	0.00026	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00017	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00020	None
			Acetic Acid	64-19-7	5.00000	0.00005	None

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	85.00000	0.23482	
			Butene, homopolymer	9003-29-6	25.00000	0.02143	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00257	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00055	
			Proprietary material	Proprietary	30.00000	0.00026	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00017	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	
			Acetic Acid	64-19-7	5.00000	0.00005	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

**FITZGERALD S LEASE
WELL 4HM
TUG HILL OPERATING**

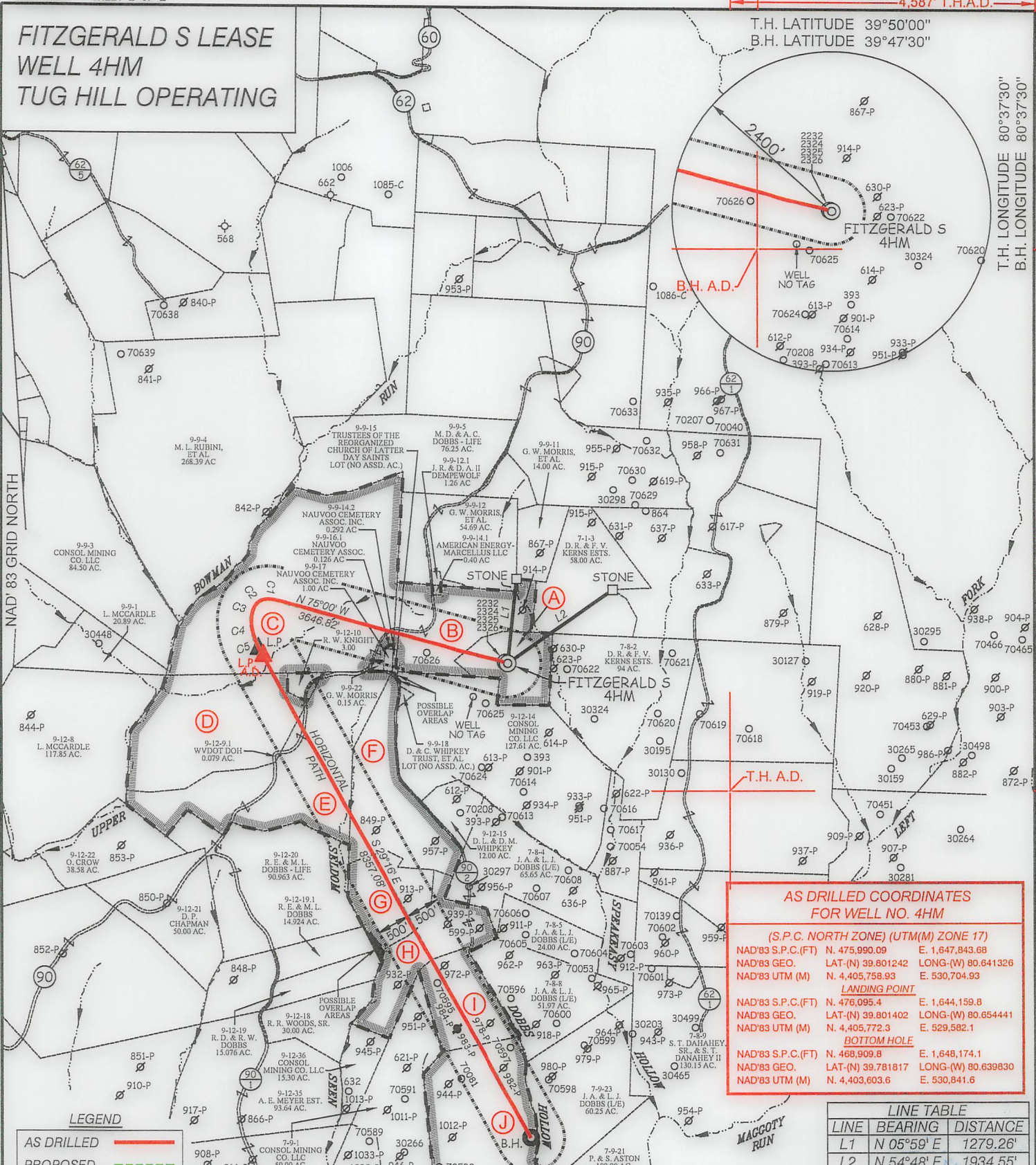
4,168' B.H.A.D. 4,587' T.H.A.D.

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

T.H. LONGITUDE 80°37'30"
B.H. LONGITUDE 80°37'30"

3,588' B.H.A.D.

NAD 83 GRID NORTH



AS DRILLED COORDINATES FOR WELL NO. 4HM

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

NAD'83 S.P.C.(FT)	N. 475,990.09	E. 1,647,843.68
NAD'83 GEO.	LAT-(N) 39.801242	LONG-(W) 80.641326
NAD'83 UTM (M)	N. 4,405,758.93	E. 530,704.93

LANDING POINT

NAD'83 S.P.C.(FT)	N. 476,095.4	E. 1,644,159.8
NAD'83 GEO.	LAT-(N) 39.801402	LONG-(W) 80.654441
NAD'83 UTM (M)	N. 4,405,772.3	E. 529,582.1

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 468,909.8	E. 1,648,174.1
NAD'83 GEO.	LAT-(N) 39.781817	LONG-(W) 80.639830
NAD'83 UTM (M)	N. 4,403,603.6	E. 530,841.6

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 05°59' E	1279.26'
L2	N 54°48' E	1934.55'

CURVE TABLE

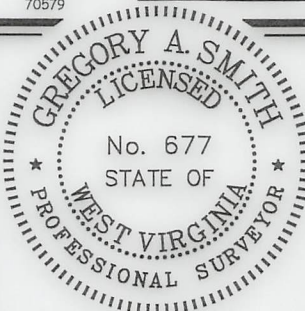
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	163.29'	341.07'	N 89°17' W	161.74'
C2	168.15'	253.60'	S 51°39' W	165.09'
C3	204.33'	462.14'	S 15°16' W	202.67'
C4	260.48'	795.64'	S 08°24' E	259.32'
C5	193.30'	1007.36'	S 23°49' E	193.00'

LEGEND
AS DRILLED ———
PROPOSED - - - - -

SLS
FROM THE GROUND UP

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296

slsvv.com



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

P.S. 677 *Gregory A. Smith*

LEGEND

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE WW-6A1)

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

NAD'83 S.P.C.(FT)	N. 475,990.09	E. 1,647,843.68
NAD'83 GEO.	LAT-(N) 39.801242	LONG-(W) 80.641326
NAD'83 UTM (M)	N. 4,405,758.93	E. 530,704.93

LANDING POINT

NAD'83 S.P.C.(FT)	N. 476,205.1	E. 1,644,092.4
NAD'83 GEO.	LAT-(N) 39.801701	LONG-(W) 80.654686
NAD'83 UTM (M)	N. 4,405,805.3	E. 529,561.0

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 468,914.4	E. 1,648,177.3
NAD'83 GEO.	LAT-(N) 39.781830	LONG-(W) 80.639819
NAD'83 UTM (M)	N. 4,403,605.0	E. 530,842.6

SCALE 1" = 2000' FILE NO. 8910P4HMR2-AD.dwg
FITZGERALD S 4HM REV5

DATE MARCH 10, 2023
REVISED

OPERATORS WELL NO. FITZGERALD S 4HM
API WELL NO. 47 - 051 - 02394
NO. STATE COUNTY PERMIT

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

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

DESIGNATED AGENT DARREN BROWN - CT CORPORATION
ADDRESS 5098 WASHINGTON ST. W, STE 407 CHARLESTON, WV 25313-1561

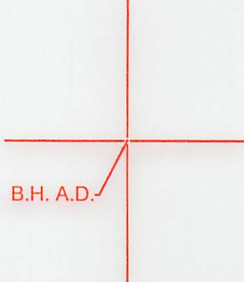
COUNTY NAME
PERMIT

**FITZGERALD S LEASE
WELL 4HM
TUG HILL OPERATING**

4,168' B.H.A.D. 4,587' T.H.A.D.
T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°47'30"

T.H. LONGITUDE 80°37'30"
B.H. LONGITUDE 80°37'30"
3,588' B.H. A.D.

TAG	SURFACE OWNER	PARCEL	ACRES
A	DANNY R. & FRANCES V. KERNS ESTATE	7-8-1	27.00
B	DANNY R. & FRANCES V. KERNS ESTATE	9-9-14	48.308
C	TODD L. SCHERICH, ET AL	9-9-16	168.204
D	CHARLES WILLIAM DOBBS, ET AL	9-12-9	82.18
E	MARK D. & SHERYL CHAMBERS	9-12-11	91.00
F	DAVID L. WHIPKEY & DAVID MATTHEW WHIPKEY	9-12-12	61.00
G	DAVID & CAROL WHIPKEY TRUST, ET AL	9-12-16	30.00
H	DAVID & CAROL WHIPKEY TRUST, ET AL	9-12-17	37.27
I	CONSOL MINING CO., LLC	7-8-7	31.99
J	CONSOL MINING CO., LLC	7-9-22	101.36



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

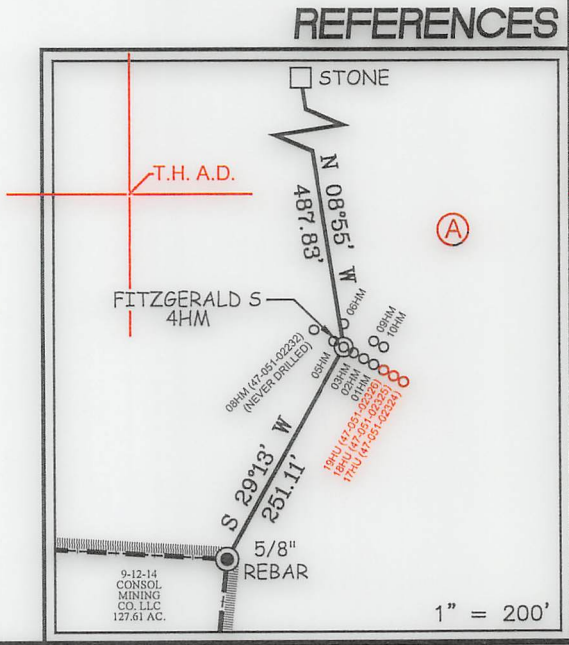
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<u>LANDING POINT</u>		
NAD'83 S.P.C.(FT)	N. 476,205.1	E. 1,644,092.4
NAD'83 GEO.	LAT-(N) 39.801701	LONG-(W) 80.654686
NAD'83 UTM (M)	N. 4,405,805.3	E. 529,561.0
<u>BOTTOM HOLE</u>		
NAD'83 S.P.C.(FT)	N. 468,914.4	E. 1,648,177.3
NAD'83 GEO.	LAT-(N) 39.781830	LONG-(W) 80.639819
NAD'83 UTM (M)	N. 4,403,605.0	E. 530,842.6

NOTES ON SURVEY

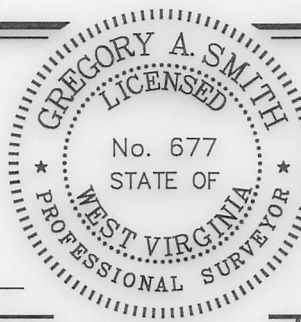
- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS OR DWELLINGS > 2500 SQ. FT. WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.
- PLAT UPDATED TO SHOW AS-DRILLED PATH.
- AS DRILLED DATA PROVIDED BY TUG HILL OPERATING.



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slsvw.com



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



P.S. 677 *Gregory A. Smith*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE MARCH 10, 2023
REVISED _____
OPERATORS WELL NO. FITZGERALD S 4HM
API WELL NO. 47 - 051 - 02394
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8910P4HMR2-AD.dwg
FITZGERALD S 4HM REV5
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

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

LOCATION:
ELEVATION 1,293.00' WATERSHED SPEAKEASY HOLLOW OF MAGGOTY RUN
DISTRICT LIBERTY COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER DANNY AND FRANCES KERNS ESTATE ACREAGE 27.00±
ROYALTY OWNER DANNY S. KERNS, ET AL ACREAGE 27.00±

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

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 7,025' / TMD: 17,152'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN - CT CORPORATION
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5098 WASHINGTON ST. W, STE 407
FORT WORTH, TX 76107 CHARLESTON, WV 25313-1561

COUNTY NAME
PERMIT

10/27/2023