

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

API 47-051-02102 County Marshall District Mead
Quad Glen Easton 7.5' Pad Name Keith Stern Field/Pool Name _____
Farm name TH Exploration, LLC Well Number Keith Stern S-9HM
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 4,402,797.78 Easting 526,356.28
Landing Point of Curve Northing 4,402,290.3 Easting 526,354.0
Bottom Hole Northing 4,400,319.4 Easting 527,473.6

Elevation (ft) 737.7' 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 10/22/2018 Date drilling commenced spud:10/11/2020 big rig: 3/8/2022 Date drilling ceased 3/9/2022
Date completion activities began 12/2/2022 Date completion activities ceased 12/28/2022
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 440' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 933' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 341-347', 434-440' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

RECEIVED
APPROVED
MAY 03 2023
WV Department of Environmental Protection
Reviewed by: [Signature]
12/08/2023

API 47-051 - 02102 Farm name TH Exploration, LLC Well number Keith Stern S-9HM

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"	550'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	550'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,252'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	14,214'	NEW	20#	N/A	Y
Tubing		2 7/8"	7,107'	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	730	15.6	1.2	876	0	8
Coal	A	730	15.6	1.2	876	0	8
Intermediate 1	A	695	15	1.378	957.71	0	8
Intermediate 2							
Intermediate 3							
Production	A	3410	14.5	1.16	3955.6	0	8
Tubing							

Drillers TD (ft) 14,250' Loggers TD (ft) n/a
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 6,006'

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 _____

RECEIVED
Office of Oil and Gas

MAY 03 2023

WV Department of
Environmental Protection

12/08/2023

**KEITH STERN S-9HM
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	12/2/2022	14,034	14,080	36	MARCELLUS
2	12/3/2022	13,833	13,979	44	MARCELLUS
3	12/4/2022	13,657	13,804	44	MARCELLUS
4	12/5/2022	13,481	13,628	44	MARCELLUS
5	12/6/2022	13,304	13,451	44	MARCELLUS
6	12/6/2022	13,127	13,274	44	MARCELLUS
7	12/7/2022	12,950	13,097	44	MARCELLUS
8	12/8/2022	12,773	12,920	44	MARCELLUS
9	12/8/2022	12,596	12,743	44	MARCELLUS
10	12/9/2022	12,419	12,566	44	MARCELLUS
11	12/9/2022	12,251	12,397	44	MARCELLUS
12	12/10/2022	12,074	12,220	44	MARCELLUS
13	12/10/2022	11,897	12,043	44	MARCELLUS
14	12/11/2022	11,720	11,866	44	MARCELLUS
15	12/11/2022	11,543	11,689	44	MARCELLUS
16	12/12/2022	11,366	11,512	44	MARCELLUS
17	12/12/2022	11,189	11,335	44	MARCELLUS
18	12/13/2022	11,012	11,158	44	MARCELLUS
19	12/14/2022	10,835	10,981	44	MARCELLUS
20	12/15/2022	10,658	10,804	44	MARCELLUS
21	12/15/2022	10,481	10,627	44	MARCELLUS
22	12/16/2022	10,304	10,450	44	MARCELLUS
23	12/16/2022	10,127	10,273	44	MARCELLUS
24	12/17/2022	9,950	10,096	44	MARCELLUS
25	12/17/2022	9,773	9,919	44	MARCELLUS
26	12/18/2022	9,596	9,742	44	MARCELLUS
27	12/18/2022	9,419	9,565	44	MARCELLUS
28	12/18/2022	9,242	9,388	44	MARCELLUS
29	12/19/2022	9,065	9,211	44	MARCELLUS
30	12/20/2022	8,888	9,034	44	MARCELLUS
31	12/20/2022	8,711	8,857	44	MARCELLUS
32	12/21/2022	8,534	8,680	44	MARCELLUS
33	12/21/2022	8,357	8,503	44	MARCELLUS
34	12/22/2022	8,180	8,326	44	MARCELLUS
35	12/22/2022	8,003	8,149	44	MARCELLUS
36	12/23/2022	7,826	7,972	44	MARCELLUS
37	12/25/2022	7,649	7,795	44	MARCELLUS
38	12/26/2022	7,472	7,618	44	MARCELLUS
39	12/26/2022	7,295	7,441	44	MARCELLUS
40	12/27/2022	7,118	7,264	44	MARCELLUS
41	12/27/2022	6,941	7,087	44	MARCELLUS

RECEIVED
Office of Oil and Gas
MAY 03 2023
WV Department of
Environmental Protection

12/08/2023

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	12/28/2022	6,764	6,910	44	MARCELLUS

RECEIVED
Office of Oil and Gas

MAY 03 2023

WV Department of
Environmental Protection

12/08/2023

KEITH STERN S-9HM
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	80.00	8031		3758	258340	6,400	0
2	88.00	7846	7715	4267	448420	8,598	0
3	87.00	7526	5878	4866	446560	8,082	0
4	89.00	7477	5620	5262	447740	8,197	0
5	89.00	7271	5464	5171	448180	8,187	0
6	89.00	7236	5733	4912	439080	8,327	0
7	88.00	7308	5560	5152	446400	8,169	0
8	87.00	7298	5625	5111	445860	9,798	0
9	87.00	7190	5484	5088	443900	8,137	0
10	89.00	7134	5535	5093	448120	8,716	0
11	89.00	6836	5540	5078	442680	8,317	0
12	87.00	7002	5694	5232	446160	7,881	0
13	89.00	7002	5313	4809	443840	8,544	0
14	89.00	7047	5547	5212	444900	8,071	0
15	89.00	6985	5618	5170	443900	8,048	0
16	90.00	7122	5445	5077	448540	8,378	0
17	89.00	7036	5569	5604	448800	7,754	0
18	90.00	6936	5437	5334	450200	7,868	0
19	88.00	7061	5172	5179	440160	8,143	0
20	89.00	6965	5244	5242	448260	8,272	0
21	89.00	7043	5554	5075	445400	7,910	0
22	89.00	6924	5368	4912	446200	8,143	0
23	88.00	6863	5424	4493	445800	7,659	0
24	89.00	7025	5103	4799	442100	8,244	0
25	88.00	6822	5197	5147	446400	7,505	0
26	90.00	6881	5724	5168	442980	8,241	0
27	89.00	6786	5921	5329	439200	7,681	0
28	90.00	6882	5701	5235	445460	7,961	0
29	90.00	6886	5423	5286	447400	7,658	0
30	89.00	6803	5063	4659	442740	7,553	0
31	89.00	6676	5529	5178	441900	7,746	0
32	89.00	6776	4621	5168	444040	8,939	0

RECEIVED
 Office of Oil and Gas
 MAY 03 2023
 WV Department of
 Environmental Protection

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	88.00	6479	5109	4776	448460	7,977	0
34	90.00	6613	5319	5092	448460	8,168	0
35	90.00	6590	5217	5213	449560	8,031	0
36	90.00	6640	5448	4592	446660	7,936	0
37	85.00	6361	4975	4897	443380	8,407	0
38	86.00	6697	5847	5177	442380	8,710	0
39	86.00	6300	5265	5323	442100	7,993	0
40	88.00	6455	5008	5018	444280	8,078	0
41	89.00	6395	5491	4776	444370	8,637	0
42	87.00	6210	5117	4902	400940	8,620	0

RECEIVED
 Office of Oil and Gas
 MAY 03 2023
 WV Department of
 Environmental Protection

KEITH STERN S-9HM

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 QUANTITY AND TYPE OF FLUID
Maxton	1491	1656	1491	1657	Sandstone
Big Lime	1656	1723	1657	1724	Limestone
Big Injun	1723	1931	1724	1933	Sandstone
Weir	1931	2142	1933	2145	Sandstone
Berea	2142	2404	2145	2408	Sandstone
Gordon	2404	2488	2408	2492	Sandstone
Fifty Foot	2488	3068	2492	3074	Sandstone
Speechley	3068	4546	3074	4633	Sandstone
Benson	4546	4916	4633	5031	Sandstone
Alexander	4916	5589	5031	5752	Siltstone
Rhinstreet	5589	6046	5752	6267	Black Shale
Middlesex	6046	6123	6267	6374	Black Shale
Geneseo/Burkett	6123	6154	6374	6422	Black Shale
Tully	6154	6183	6422	6472	Limestone
Hamilton	6183	6269	6472	6667	Gray Shale
Marcellus	6269	-	6667	-	Black Shale

RECEIVED
Office of Oil and Gas
MAY 03 2023
WV Department of
Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/2/2022
Job End Date:	12/28/2022
State:	West Virginia
County:	Marshall
API Number:	47-051-02102-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Keith Stern S-9HM
Latitude:	39.77471600
Longitude:	-80.69224600
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,473
Total Base Water Volume (gal):	15,123,906
Total Base Non Water Volume:	0



RECEIVED
Office of Oil and Gas

MAY 03 2023

WV Department of
Environmental Protection

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	87.94709	None
Sand (Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	11.69044	None
Hydrochloric Acid (7.5%)	Producers Service Corp.	Acidizing	Water	7732-18-5	85.00000	0.23077	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10045	None
StimStream FR 9800	Chemstream	Friction Reducer	Butene, homopolymer	9003-29-6	25.00000	0.02045	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02045	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00245	None
LD-7750W	Multi-Chem	Scale Inhibitor	Methanol	67-56-1	60.00000	0.00518	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00043	None
4-N-1	Producers Service Corp.	Corrosion Inhibitor	Acetic acid	64-19-7	90.00000	0.00048	None

			Methanol	67-56-1	10.00000	0.00005	None
			2-Ethylhexanol	104-76-7	10.00000	0.00005	None
			Cocamide Diethanolamine	68603-42-9	5.00000	0.00003	None
			Diethanolamine	111-42-2	1.00000	0.00001	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					
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10045	
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02045	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00245	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00043	
			2-Ethylhexanol	104-76-7	10.00000	0.00005	
			Methanol	67-56-1	10.00000	0.00005	
			Cocamide Diethanolamine	68603-42-9	5.00000	0.00003	
			Diethanolamine	111-42-2	1.00000	0.00001	

* 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)

RECEIVED
Office of Oil and Gas

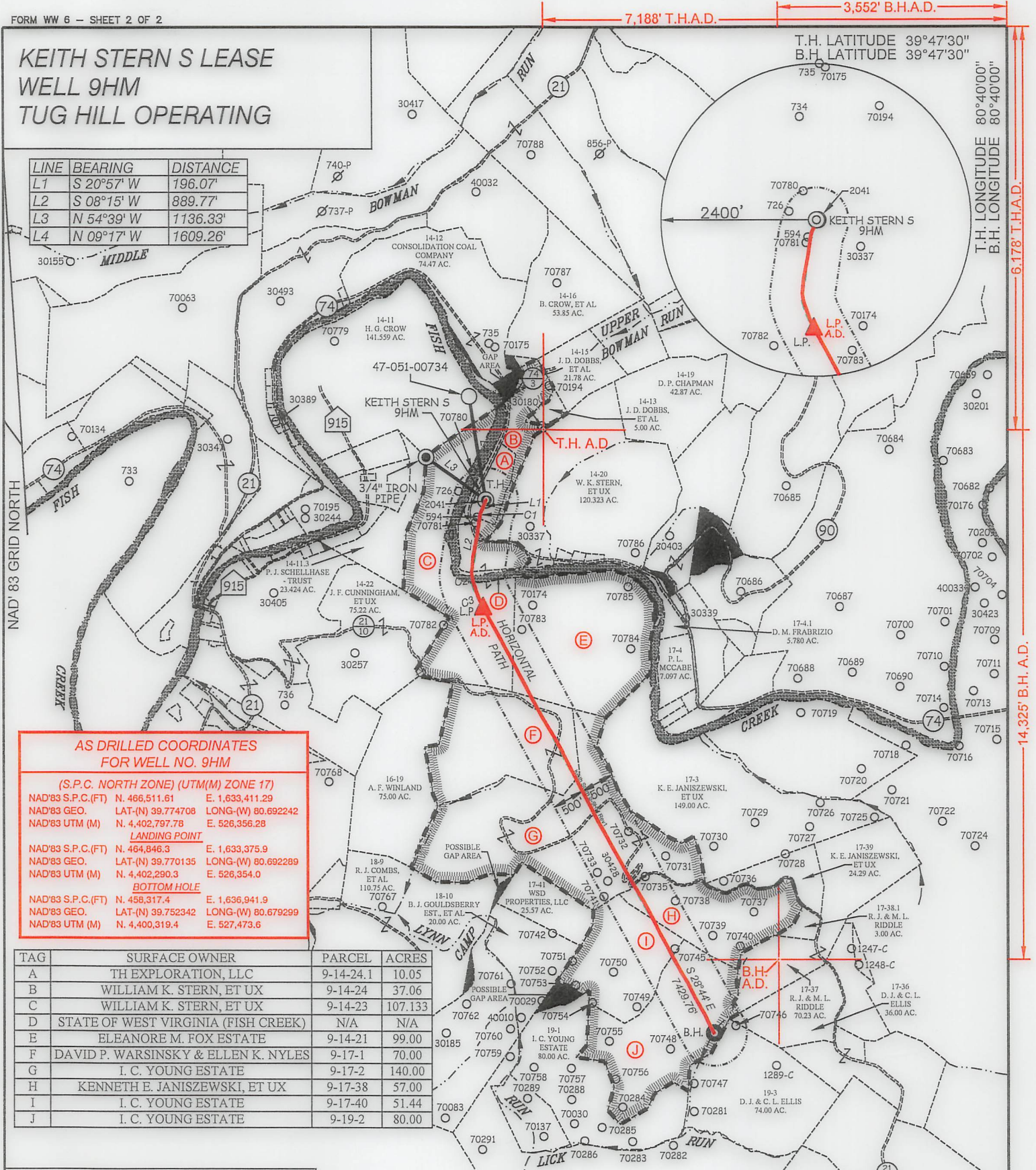
MAY 03 2023

WV Department of
Environmental Protection

KEITH STERN S LEASE WELL 9HM TUG HILL OPERATING

LINE	BEARING	DISTANCE
L1	S 20°57' W	196.07'
L2	S 08°15' W	889.77'
L3	N 54°39' W	1136.33'
L4	N 09°17' W	1609.26'

NAD'83 GRID NORTH



**AS DRILLED COORDINATES
FOR WELL NO. 9HM**

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

NAD'83 S.P.C.(FT)	N. 466,511.61	E. 1,633,411.29
NAD'83 GEO.	LAT-(N) 39.774708	LONG-(W) 80.692242
NAD'83 UTM (M)	N. 4,402,797.78	E. 526,356.28
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 464,846.3	E. 1,633,375.9
NAD'83 GEO.	LAT-(N) 39.770135	LONG-(W) 80.692289
NAD'83 UTM (M)	N. 4,402,290.3	E. 526,354.0
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 458,317.4	E. 1,636,941.9
NAD'83 GEO.	LAT-(N) 39.752342	LONG-(W) 80.679299
NAD'83 UTM (M)	N. 4,400,319.4	E. 527,473.6

TAG	SURFACE OWNER	PARCEL	ACRES
A	TH EXPLORATION, LLC	9-14-24.1	10.05
B	WILLIAM K. STERN, ET UX	9-14-24	37.06
C	WILLIAM K. STERN, ET UX	9-14-23	107.133
D	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	ELEANORE M. FOX ESTATE	9-14-21	99.00
F	DAVID P. WARSINSKY & ELLEN K. NYLES	9-17-1	70.00
G	I. C. YOUNG ESTATE	9-17-2	140.00
H	KENNETH E. JANISZEWSKI, ET UX	9-17-38	57.00
I	I. C. YOUNG ESTATE	9-17-40	51.44
J	I. C. YOUNG ESTATE	9-19-2	80.00



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
slsww.com

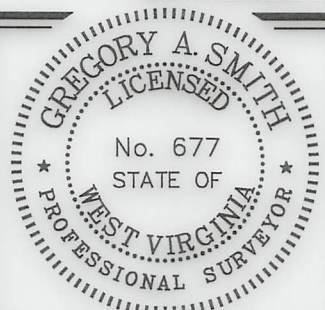
LEGEND

AS DRILLED ——— (Red line)
PROPOSED - - - - - (Green dashed line)

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	87.98'	471.17'	S 13°16' W	87.86'
C2	137.58'	398.93'	S 06°49' E	136.90'
C3	413.67'	1838.31'	S 22°58' E	412.80'

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

NAD'83 S.P.C.(FT)	N. 466,511.61	E. 1,633,411.29
NAD'83 GEO.	LAT-(N) 39.774708	LONG-(W) 80.692242
NAD'83 UTM (M)	N. 4,402,797.78	E. 526,356.28
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 464,846.4	E. 1,633,370.7
NAD'83 GEO.	LAT-(N) 39.770135	LONG-(W) 80.692308
NAD'83 UTM (M)	N. 4,402,290.3	E. 526,352.4
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 458,331.3	E. 1,636,942.1
NAD'83 GEO.	LAT-(N) 39.752380	LONG-(W) 80.679299
NAD'83 UTM (M)	N. 4,400,323.6	E. 527,473.6



(+) 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 00-00
- LEASE # (SEE WW-6A1)
- SURFACE OWNER (SEE TABLE) (A)

SCALE 1" = 2000' FILE NO. 8811P9HMV2-AD.dwg

DATE FEBRUARY 15, 20 23

REVISED _____, 20 _____

OPERATORS WELL NO. KEITH STERN S-9HM

API WELL NO. 47 — 051 — 02102
STATE COUNTY PERMIT

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



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

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

COUNTY NAME
PERMIT

12/08/2023

7,188' T.H.A.D.

3,552' B.H.A.D.

**KEITH STERN S LEASE
WELL 9HM
TUG HILL OPERATING**

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

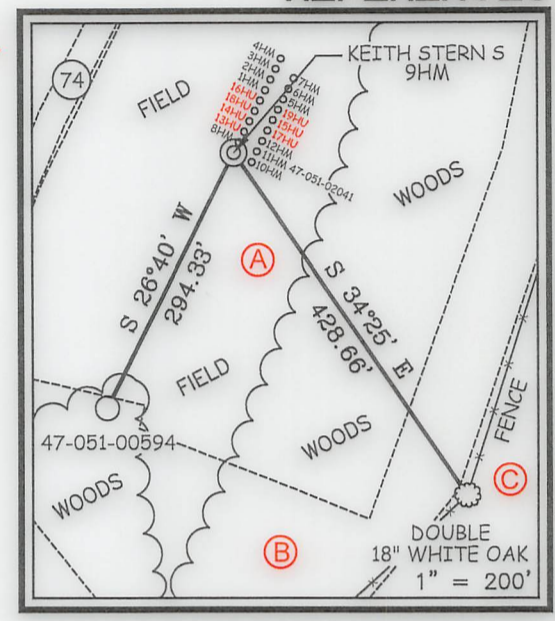
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17)		
NAD'83 S.P.C.(FT)	N. 466,511.61	E. 1,633,411.29
NAD'83 GEO.	LAT-(N) 39.774708	LONG-(W) 80.692242
NAD'83 UTM (M)	N. 4,402,797.78	E. 526,356.28
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 464,846.4	E. 1,633,370.7
NAD'83 GEO.	LAT-(N) 39.770135	LONG-(W) 80.692308
NAD'83 UTM (M)	N. 4,402,290.3	E. 526,352.4
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 458,331.3	E. 1,636,942.1
NAD'83 GEO.	LAT-(N) 39.752380	LONG-(W) 80.679299
NAD'83 UTM (M)	N. 4,400,323.6	E. 527,473.6

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

6,178' T.H.A.D.

14,325' B.H.A.D.

REFERENCES



NOTES ON SURVEY

1. 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.
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.
3. PLAT UPDATED TO SHOW AS-DRILLED PATH.
4. 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
slsvv.com

B.H. A.D.

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 FEBRUARY 15, 20 23
REVISED _____, 20 _____
OPERATORS WELL NO. KEITH STERN S-9HM
API WELL NO. 47 - 051 - 02102
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P9HMV2-AD.dwg
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 X LIQUID INJECTION _____ WASTE DISPOSAL _____ IF "GAS" PRODUCTION X STORAGE _____ DEEP _____ SHALLOW X
LOCATION: GROUND = 737.7' ELEVATION PROPOSED = 744.65' WATERSHED FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'
SURFACE OWNER TH EXPLORATION, LLC ACREAGE 10.05±
ROYALTY OWNER ISAAC CROW, ET AL - SEE WW-6A1 ACREAGE 12.08/2023
PROPOSED WORK: DRILL X CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____ OTHER _____
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS ESTIMATED DEPTH: TVD: 6,402' / TMD: 14,241'

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