

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

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JAN 26 2023

API 47-051-02192 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name Old Crow Field/Pool Name _____
Farm name Donna Yoho Well Number Old Crow N-2HM
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 380 Southpointe Boulevard, Plaza II, Suite 200 City Canonsburg State PA Zip 15317

WV Department of
Environmental Protection

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,403,199.59 Easting 520,281.42
Landing Point of Curve Northing 4,403,947.4 Easting 520,097.2
Bottom Hole Northing 4,407,491.5 Easting 518,019.5

Elevation (ft) 1,264.99' 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 4/12/2019 Date drilling commenced spud: 1/27/21 big rig: 9/7/21 Date drilling ceased 1/15/2022
Date completion activities began 10/2/2022 Date completion activities ceased 11/4/2022
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 919' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,353' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 821-827', 913-919' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
[Signature] 03/17/2023
2-1-2023

API 47- 051 - 02192 Farm name Donna Yoho Well number Old Crow N-2HM

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"	1,015'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1,015'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,846'	NEW	36#	N/A	Y
Intermediate 2							Y
Intermediate 3							
Production	8 1/2"	5 1/2"	20,947'	NEW	20#	N/A	Y
Tubing		2 7/8"	10,474'	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	1090	15.6	1.2	908	0	8
Coal	A	1090	15.6	1.2	908	0	8
Intermediate 1	A	820	15	1.4	586	0	8
Intermediate 2							
Intermediate 3							
Production	A	5690	15.3	1.02	5,578	0	8
Tubing							

Drillers TD (ft) 20,797' Loggers TD (ft) n/a
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

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Kick off depth (ft) 6,728'

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 _____

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OLD CROW N-2HM
PERFORATION RECORDWA Department of
Environmental Protection

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	10/2/2022	20,764	20,812	16	Marcellus
2	10/2/2022	20,564	20,710	48	Marcellus
3	10/3/2022	20,389	20,536	48	Marcellus
4	10/3/2022	20,214	20,361	48	Marcellus
5	10/3/2022	20,040	20,186	48	Marcellus
6	10/4/2022	19,865	20,012	48	Marcellus
7	10/4/2022	19,690	19,837	48	Marcellus
8	10/5/2022	19,516	19,662	48	Marcellus
9	10/5/2022	19,341	19,488	48	Marcellus
10	10/5/2022	19,166	19,313	48	Marcellus
11	10/6/2022	18,992	19,138	48	Marcellus
12	10/6/2022	18,817	18,963	48	Marcellus
13	10/7/2022	18,642	18,789	48	Marcellus
14	10/7/2022	18,467	18,614	48	Marcellus
15	10/8/2022	18,293	18,439	48	Marcellus
16	10/8/2022	18,118	18,265	48	Marcellus
17	10/8/2022	17,943	18,090	48	Marcellus
18	10/9/2022	17,769	17,915	48	Marcellus
19	10/9/2022	17,594	17,741	48	Marcellus
20	10/10/2022	17,419	17,566	48	Marcellus
21	10/10/2022	17,245	17,391	48	Marcellus
22	10/11/2022	17,070	17,216	48	Marcellus
23	10/11/2022	16,895	17,042	48	Marcellus
24	10/11/2022	16,720	16,867	48	Marcellus
25	10/12/2022	16,546	16,692	48	Marcellus
26	10/12/2022	16,371	16,518	48	Marcellus
27	10/13/2022	16,196	16,343	48	Marcellus
28	10/13/2022	16,022	16,168	48	Marcellus
29	10/14/2022	15,847	15,994	48	Marcellus
30	10/14/2022	15,672	15,819	48	Marcellus
31	10/14/2022	15,498	15,644	48	Marcellus
32	10/15/2022	15,323	15,469	48	Marcellus
33	10/15/2022	15,148	15,295	48	Marcellus
34	10/16/2022	14,973	15,120	48	Marcellus
35	10/16/2022	14,799	14,945	48	Marcellus
36	10/17/2022	14,624	14,771	48	Marcellus
37	10/17/2022	14,449	14,596	48	Marcellus
38	10/17/2022	14,275	14,421	48	Marcellus
39	10/18/2022	14,100	14,247	48	Marcellus
40	10/18/2022	13,925	14,072	48	Marcellus
41	10/19/2022	13,751	13,897	48	Marcellus

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Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	10/19/2022	13,576	13,722	48	Marcellus
43	10/20/2022	13,401	13,548	48	Marcellus
44	10/20/2022	13,226	13,373	48	Marcellus
45	10/20/2022	13,052	13,198	48	Marcellus
46	10/21/2022	12,877	13,024	48	Marcellus
47	10/21/2022	12,702	12,849	48	Marcellus
48	10/22/2022	12,528	12,674	48	Marcellus
49	10/22/2022	12,353	12,500	48	Marcellus
50	10/23/2022	12,178	12,325	48	Marcellus
51	10/23/2022	12,004	12,150	48	Marcellus
52	10/23/2022	11,829	11,975	48	Marcellus
53	10/24/2022	11,654	11,801	48	Marcellus
54	10/24/2022	11,479	11,626	48	Marcellus
55	10/25/2022	11,305	11,451	48	Marcellus
56	10/25/2022	11,130	11,277	48	Marcellus
57	10/26/2022	10,955	11,102	48	Marcellus
58	10/26/2022	10,781	10,927	48	Marcellus
59	10/26/2022	10,606	10,753	48	Marcellus
60	10/27/2022	10,431	10,578	48	Marcellus
61	10/27/2022	10,257	10,403	48	Marcellus
62	10/28/2022	10,082	10,228	48	Marcellus
63	10/28/2022	9,907	10,054	48	Marcellus
64	10/29/2022	9,732	9,879	48	Marcellus
65	10/29/2022	9,558	9,704	48	Marcellus
66	10/29/2022	9,383	9,530	48	Marcellus
67	10/30/2022	9,208	9,355	48	Marcellus
68	10/30/2022	9,034	9,180	48	Marcellus
69	10/31/2022	8,859	9,006	48	Marcellus
70	10/31/2022	8,684	8,831	48	Marcellus
71	11/1/2022	8,510	8,656	48	Marcellus
72	11/1/2022	8,335	8,481	48	Marcellus
73	11/2/2022	8,160	8,307	48	Marcellus
74	11/2/2022	7,985	8,132	48	Marcellus
75	11/3/2022	7,811	7,957	48	Marcellus
76	11/4/2022	7,636	7,783	48	Marcellus
77	11/4/2022	7,461	7,608	48	Marcellus

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Old Crow N-2HM
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	83.00	7061	5293	3865	248200	7,099	0
2	80.00	6810	3965	4188	441340	8,665	0
3	83.00	7262	3895	4205	436100	8,708	0
4	84.00	7138	4392	4305	445960	8,657	0
5	84.00	7078	4519	4685	436940	8,477	0
6	84.00	7009	4533	4646	448080	8,709	0
7	84.00	7010	4554	5264	435740	8,558	0
8	84.00	6924	4761	4770	445850	8,698	0
9	85.00	7133	4170	5175	438600	8,527	0
10	83.00	6871	4578	4850	437460	8,559	0
11	84.00	6884	4856	5153	443240	8,538	0
12	84.00	6757	4597	4954	451540	8,689	0
13	84.00	6801	4613	5150	452420	8,737	0
14	85.00	6833	4611	4918	442800	8,450	0
15	84.00	6868	4450	5280	443160	8,444	0
16	83.00	6950	5181	4819	444500	8,608	0
17	82.00	6792	5005	4961	446460	8,589	0
18	83.00	6799	4905	4549	441760	8,529	0
19	84.00	6747	4953	4747	446940	8,533	0
20	84.00	6630	4963	4670	451000	8,621	0
21	83.00	6682	4693	4985	439560	8,506	0
22	83.00	6733	4878	4693	442140	8,415	0
23	83.00	6670	4791	5247	443660	8,538	0
24	83.00	6722	4678	5027	435140	8,481	0
25	83.00	6657	4609	4561	448000	8,564	0
26	84.00	6663	4597	4772	436080	8,390	0
27	84.00	6813	4539	4500	440460	8,455	0
28	82.00	6692	4337	4495	438940	8,362	0
29	84.00	6653	4752	4978	444560	9,176	0
30	83.00	6563	4661	4715	447060	8,598	0
31	83.00	6428	4919	5325	437220	8,487	0
32	84.00	6647	4630	4910	444980	8,421	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	83.00	6491	4877	4874	439800	8,487	0
34	84.00	6416	4403	4760	444380	8,460	0
35	84.00	6427	4394	4993	445780	8,449	0
36	85.00	6548	4205	4649	441582	8,391	0
37	83.00	6477	4480	5023	443480	8,353	0
38	84.00	6665	4676	5308	442510	8,266	0
39	84.00	6447	4502	4814	445320	8,328	0
40	84.00	6301	4638	5099	447160	8,520	0
41	84.00	6473	4695	4575	447240	8,367	0
42	84.00	6523	4406	5116	447260	8,358	0
43	85.00	6466	4753	5237	436460	8,149	0
44	84.00	6438	4411	4926	438140	8,254	0
45	85.00	6390	4460	4672	439940	8,414	0
46	82.00	6514	3865	4300	447160	8,719	0
47	85.00	6605	4201	4479	441080	8,307	0
48	81.00	6222	4172	4685	442280	8,339	0
49	84.00	6569	4472	4928	447480	8,386	0
50	85.00	6470	4561	4767	440620	8,265	0
51	82.00	6527	4622	4810	438940	8,268	0
52	84.00	6573	4868	4559	441660	8,577	0
53	84.00	6432	4537	5121	438920	8,212	0
54	84.00	6395	4594	4997	450660	8,216	0
55	84.00	6307	5061	4620	447540	8,312	0
56	84.00	6391	4583	4794	443640	8,237	0
57	84.00	6326	4581	5059	446960	8,300	0
58	85.00	6375	4372	5039	444620	8,167	0
59	84.00	6412	4651	4988	440090	8,061	0
60	82.00	6216	4512	5309	445060	8,188	0
61	83.00	6099	4271	5094	447560	8,176	0
62	85.00	6230	4606	5120	439400	8,229	0
63	84.00	6229	4497	4567	447940	8,380	0
64	84.00	6143	4469	5014	440320	8,111	0
65	84.00	6167	4410	5292	442860	8,141	0
66	85.00	6135	4272	4477	444280	8,169	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)
67	85.00	6174	4438	5067	445040	8,090	0
68	85.00	6160	4556	4653	447340	8,152	0
69	85.00	6068	5862	5021	446960	8,234	0
70	84.00	6063	4037	4988	446960	8,229	0
71	84.00	6032	4440	5716	448580	8,270	0
72	84.00	5954	4619	4872	447740	8,241	0
73	84.00	5798	4469	4943	440800	8,058	0
74	84.00	5997	4499	5024	447580	8,037	0
75	83.00	5951	4585	5185	447120	8,219	0
76	84.00	5923	4628	5714	443340	8,059	0
77	84.00	5998	4931	5133	448400	8,254	0

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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	2002	2092	2005	2096	Sandstone
Big Lime	2092	2162	2096	2166	Limestone
Big Injun	2162	2446	2166	2451	Sandstone
Weir	2446	2641	2451	2647	Sandstone
Berea	2641	2986	2647	2993	Sandstone
Gordon	2986	3040	2993	3047	Sandstone
Fifty Foot	3040	3588	3047	3601	Sandstone
Speechley	3588	5010	3601	5219	Sandstone
Benson	5010	5370	5219	5669	Sandstone
Alexander	5370	5962	5669	6415	Siltstone
Rhinstreet	5962	6387	6415	6952	Black Shale
Middlesex	6387	6460	6952	7060	Black Shale
Geneseo/Burkett	6460	6485	7060	7102	Black Shale
Tully	6485	6523	7102	7174	Limestone
Hamilton	6523	6569	7174	7291	Gray Shale
Marcellus	6569	-	7291	-	Black Shale

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/2/2022
Job End Date:	11/4/2022
State:	West Virginia
County:	Marshall
API Number:	47-051-02192-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Old Crow N 2HM
Latitude:	39.77849473
Longitude:	-80.76316415
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,536
Total Base Water Volume (gal):	27,097,854
Total Base Non Water Volume:	0

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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	86.60839	None
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	8.75260	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	3.07357	None
Sand (30/50 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	1.18200	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.22582	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.09830	None
StimStream FR 9800	Chemstream	Friction Reducer	Butene, homopolymer	9003-29-6	25.00000	0.01779	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01779	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00213	None

MC MX 9-4743	Multi-Chem	Biocide					
			Sodium Nitrate	7631-99-4	60.00000	0.02193	None
LD-7750W	Multi-Chem	Scale Inhibitor					
			Methanol	67-56-1	60.00000	0.00497	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00049	None
			Proprietary material	Proprietary	30.00000	0.00024	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00016	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00008	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00008	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	0.22582	
			Butene, homopolymer	9003-29-6	25.00000	0.01779	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00213	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	
			Proprietary material	Proprietary	30.00000	0.00024	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00016	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00008	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00008	
			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)



**OLD CROW N LEASE
WELL 2HM
TUG HILL OPERATING**

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

TAG	SURFACE OWNER	PARCEL	ACRES
A	DONNA VIVIAN YOHO (TOD) GARY LANCE YOHO	5-16-3	71.205
B	PAUL ANDREW & DEBRA A. RINE	5-10-15	120.805
C	TIMOTHY, SR. & LINDA MCGINNIS	5-10-16	30.87
D	MELVIN E. JR., & ELIZABETH FERGUSON	5-10-16.4	30.87
E	WILLIAM A. PRASCIK, ET AL	5-10-2	52.00
F	ALVIN A. YODER	5-10-17	57.28
G	ALVIN A. YODER	5-11-10	31.91
H	SOUTHERN COUNTRY FARMS, INC.	5-11-9	54.625
I	DALISON LUMBER COMPANY	5-9-31	32.10
J	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
K	JOHN D. ROBERTS, ET UX	5-9-38.4	0.669
L	SHELVA G. SMITH, ET UX	5-9-38.3	0.706
M	SHELVA G. SMITH, ET UX	5-9-38.2	0.735
N	JOHN H. LONG, ET UX	5-9-38.1	0.815
O	ROBERT S. COWGILL	5-9-38.10	0.920
P	FRANK T. & ANNA M. WALKER	5-9-37	10.857
Q	JAMES EDWARD FRANCIS ET UX	5-8-8	28.30
R	EDWIN C. MILLER	5-8-7	180.31
S	RICHARD L. GATTS - LIFE	5-8-5	98.819
T	C. WAYNE BERISFORD	5-8-4	23.355
U	TAMMY L. MITCHELL	5-8-3	35.07

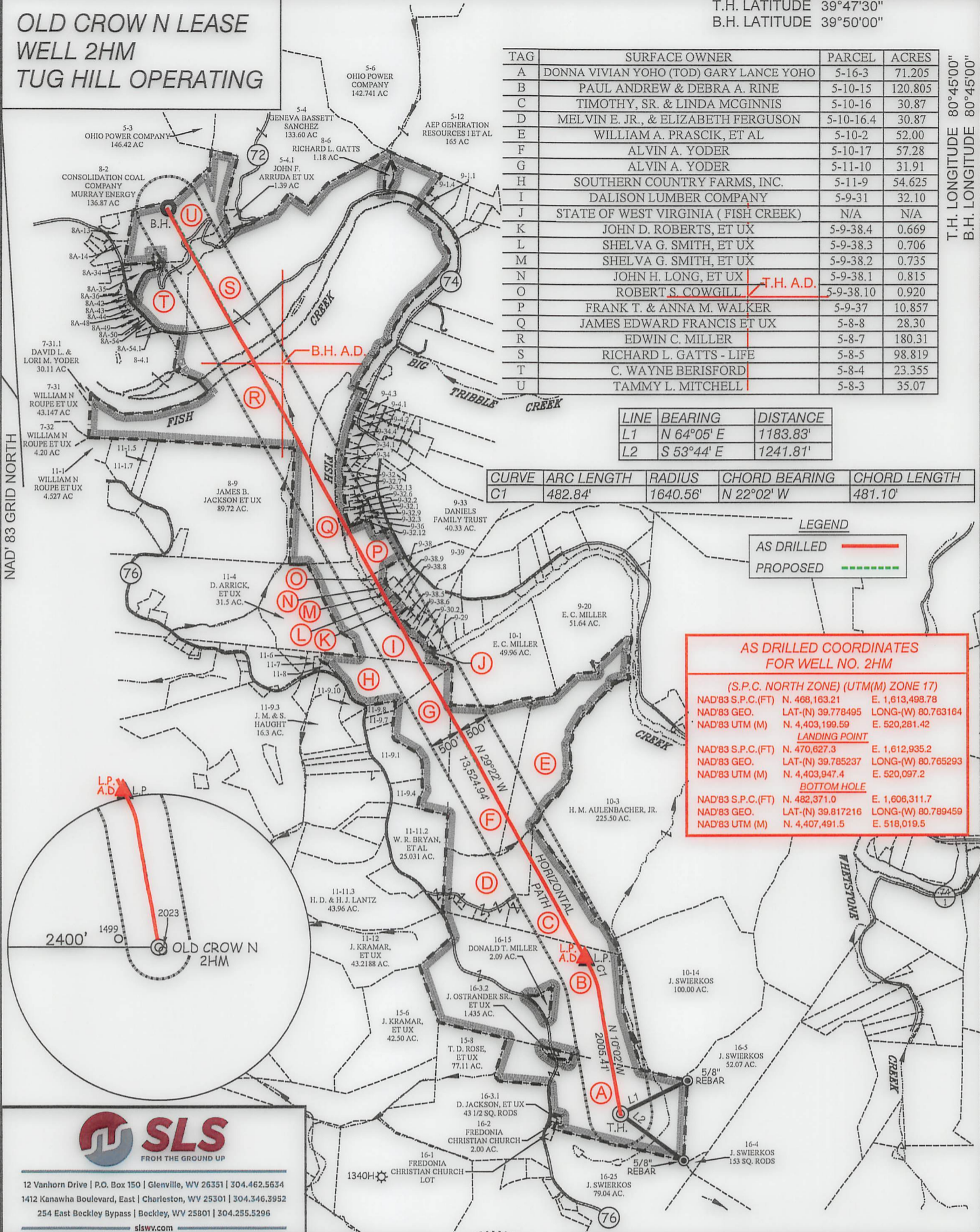
LINE	BEARING	DISTANCE
L1	N 64°05' E	1183.83'
L2	S 53°44' E	1241.81'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	482.84'	1640.56'	N 22°02' W	481.10'

NAD'83 GRID NORTH

T.H. LONGITUDE 80°45'00"
B.H. LONGITUDE 80°45'00"

5,871' B.H. A.D. 4,798' T.H. A.D.



LEGEND

AS DRILLED ——— (Red solid line)

PROPOSED - - - - - (Green dashed line)

AS DRILLED COORDINATES FOR WELL NO. 2HM

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

NAD'83 S.P.C.(FT)	N. 468,163.21	E. 1,613,498.78
NAD'83 GEO.	LAT-(N) 39.778495	LONG-(W) 80.763164
NAD'83 UTM (M)	N. 4,403,199.59	E. 520,281.42

LANDING POINT

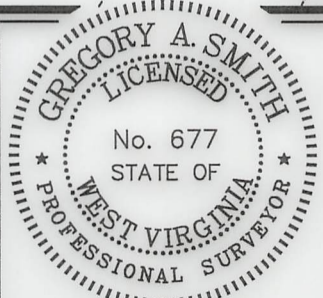
NAD'83 S.P.C.(FT)	N. 470,627.3	E. 1,612,935.2
NAD'83 GEO.	LAT-(N) 39.785237	LONG-(W) 80.765293
NAD'83 UTM (M)	N. 4,403,947.4	E. 520,097.2

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 482,371.0	E. 1,606,311.7
NAD'83 GEO.	LAT-(N) 39.817216	LONG-(W) 80.789459
NAD'83 UTM (M)	N. 4,407,491.5	E. 518,019.5



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)

SCALE 1" = 2000' FILE NO. 8796P2HMAD.dwg
OLD CROW NORTH 2HM REV1
DATE JANUARY 17, 2023
REVISED
OPERATORS WELL NO. OLD CROW N-2HM
API WELL NO. 47-051-02192
NO. STATE COUNTY PERMIT

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



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

03/17/2023

COUNTY NAME PERMIT

**OLD CROW N LEASE
WELL 2HM
TUG HILL OPERATING**

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

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17)
 NAD'83 S.P.C.(FT) N. 468,163.21 E. 1,613,498.78
 NAD'83 GEO. LAT-(N) 39.778495 LONG-(W) 80.763164
 NAD'83 UTM (M) N. 4,403,199.59 E. 520,281.42
LANDING POINT
 NAD'83 S.P.C.(FT) N. 470,583.9 E. 1,612,969.1
 NAD'83 GEO. LAT-(N) 39.785119 LONG-(W) 80.765170
 NAD'83 UTM (M) N. 4,403,934.4 E. 520,107.7
BOTTOM HOLE
 NAD'83 S.P.C.(FT) N. 482,370.7 E. 1,606,336.1
 NAD'83 GEO. LAT-(N) 39.817216 LONG-(W) 80.789372
 NAD'83 UTM (M) N. 4,407,491.5 E. 518,027.0

T.H. LONGITUDE 80°45'00"
B.H. LONGITUDE 80°45'00"

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
5-8A-13	LETHA I. RUCKMAN	2.993
5-8A-14	BOARD OF EDUCATION	137 SQ RODS
5-8A-34	NORMAN G. JOHNSON ET UX - LIFE	11,123 SQ. FT.
5-8A-35	JARED C. SELLS	2.78
5-8A-36	WILLIAM J. GAMBLE ET UX	1.031
5-8A-42	ROBERT M. WHITE	7.23
5-8A-43	CHARLES G. STEIN & EVA A. WADE	75x100'
5-8A-44	CHARLES G. STEIN & EVA A. WADE	32 SQ POLES
5-8A-48	RAYMOND A., JR. & LARIETTE SCOTT	2.12
5-8A-49	RAYMOND A., JR. & LARIETTE SCOTT	0.159
5-8A-50	LUCRETIA M. HARRISON	0.277
5-8A-54	DONALD D. & CHRISTINE S. DANIELS	0.68
5-8A-54.1	DONALD D. & CHRISTINE S. DANIELS	0.69
5-8-4.1	FRANCES E. NIEMAN	33.46
5-9-1.1	FRANK C. CLARK	0.52
5-9-1.4	SHELDON R. RUCKMAN ET AL - LIFE	4.49
5-9-4.1	HARRY E., JR. & MICHELA KARR	0.812
5-9-4.2	LINDA J. SIMMONS	0.80
5-9-4.3	HARRY E. KARR, JR. ET UX	1.471
5-9-29	JAMES M. & ROBERTA L. STERN	3.177
5-9-30.2	LIGHTHOUSE TABERNACLE TRUSTEES	1.954
5-9-32	MILLARD JUNIOR BONNETTE ET UX	2.321
5-9-32.1	JOHN DRAKE ALBAUGH	1.002
5-9-32.2	JOHN DRAKE ALBAUGH	0.231
5-9-32.3	RUBY M. HENRY ESTATE	0.552
5-9-32.6	RUBY M. HENRY ESTATE	0.474
5-9-32.7	JOHN D. ALBAUGH	0.729
5-9-32.9	LIONEL E. HENRY SR. ET UX	1.269
5-9-32.12	JOHN DRAKE ALBAUGH	PARCEL
5-9-32.13	JOHN D. ALBAUGH	0.848
5-9-34	LOUIS D. & PATRICIA L. VAN SCYOC	0.850
5-9-34.1	LOUIS D. & PATRICIA L. VAN SCYOC	0.556
5-9-34.4	LOUIS D. SCYOC ET UX	1.042
5-9-36	FRANK T. & ANNA M. WALKER	1.55
5-9-38	SHIRLEY A. HILL ESTATE	3.331
5-9-38.5	JOHN D. & MARSHA J. ROBERTS	0.619
5-9-38.6	JOHN D. & MARSHA J. ROBERTS	0.719
5-9-38.8	JOHN D. ROBERTS ET UX	0.903
5-9-38.9	JOHN D. ROBERTS ET UX	1.017
5-9-39	DENNIS P/ CADMUS	9.5
5-11-1.5	PAUL & SANDY WHITT	3.507
5-11-1.7	WILLIAM S. & MARY K. ADAMS	8.00
5-11-6	ROBERT & REBECCA ARRICK	1.29
5-11-7	MT. HOBART MISSIONARY BAPTIST CHURCH	0.25
5-11-8	MT. HOBART MISSIONARY BAPTIST CHURCH	0.8
5-11-9.1	WILLIAM N. & VIRGINIA A. ROUPE	4.527
5-11-9.4	JACK S. HUGGINS, ET UX	4.129
5-11-9.7	SEAN F. MOORE	2.026
5-11-9.8	SEAN F. MOORE	2.070
5-11-9.10	JOHN A. & JANET L. BEUCKE	2.348

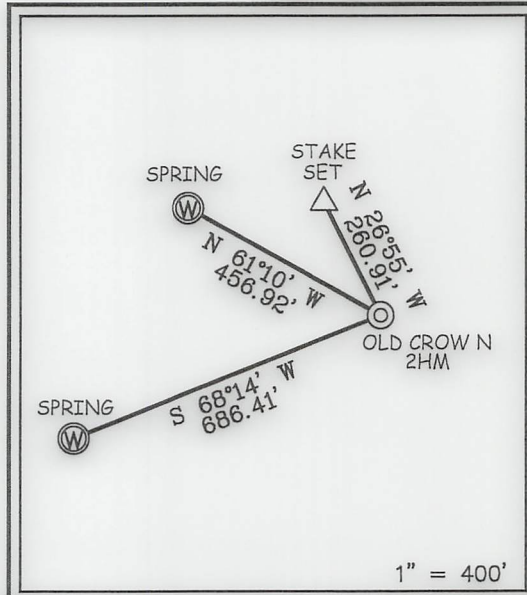
B.H. A.D.

T.H. A.D.

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'.
- PLAT UPDATED TO SHOW AS-DRILLED PATH.
- AS DRILLED DATA PROVIDED BY TUG HILL OPERATING.

REFERENCES



1" = 400'



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

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 JANUARY 17, 20 23
 REVISED _____
 OPERATORS WELL NO. OLD CROW N-2HM
 API WELL NO. 47 - 051 - 02192
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8796P2HMAD.dwg
 OLD CROW NORTH 2HM REV1
 HORIZONTAL & VERTICAL SCALE 1" = 2000'
 CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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 = 1,284.70' ELEVATION PROPOSED = 1,264.99' WATERSHED TRIBUTARY OF FISH CREEK (HUC-10)
 DISTRICT FRANKLIN COUNTY MARSHALL QUADRANGLE POWHATAN POINT 7.5'
 SURFACE OWNER DONNA VIVIAN YOHO (TOD) GARY LANCE YOHO ACREAGE 71.205±
 ROYALTY OWNER DONNA VIVIAN YOHO, ET AL ACREAGE 71.205±
 PROPOSED WORK: LEASE NO. SEE WW-6A1
 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: 6,684' / TMD: 20,993'

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

COUNTY NAME PERMIT

03/17/2023