

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

API 47-051-02043 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name Old Crow Field/Pool Name _____
Farm name Donna Vivian Yoho (TOD) Gary Lance Yoho Well Number Old Crow S-12HM
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 4,403,178.09 Easting 520,306.33
Landing Point of Curve Northing 4,403,908.5 Easting 520,623.6
Bottom Hole Northing 4,402,091.1 Easting 521,688.8

Elevation (ft) 1,265' 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 6/29/2018 Date drilling commenced 4/14/2019 Date drilling ceased 12/13/2019
Date completion activities began 9/21/2020 Date completion activities ceased 10/5/2020
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 912' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1346' Void(s) encountered (Y/N) depths _____
Coal depth(s) ft 814-820', 906-912' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:
B.S.
8-27-21

API 47-051 - 02043 Farm name Donna Vivian Yoho (TOD) Gary Lance Yoho Well number Old Crow S-12HM

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"	100'	NEW	94.5#	N/A	Y
Surface	17 1/2"	13 3/8"	1,014'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1,014'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,869'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/5"	15,150'	NEW	20#	N/A	Y
Tubing		2 3/8"	7,575'	NEW	4.7#	N/A	
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		15.6	1.19		0	8
Surface	A	1,073	15.6	1.19	1,296	0	8
Coal	A	1,073	15.6	1.19	1,296	0	8
Intermediate 1	A	854	15.6	1.19	1,177	0	8
Intermediate 2							
Intermediate 3							
Production	A	3,783	14.5	1.17	4,408	0	8
Tubing							

Drillers TD (ft) 15,190' _____ Loggers TD (ft) n/a _____
 Deepest formation penetrated Marcellus _____ Plug back to (ft) n/a _____
 Plug back procedure n/a _____

Kick off depth (ft) 6,600' _____

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 SOBM, Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; specific additives per WSSP and Permit.

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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API 47- 051 - 02043

Farm name Donna Vivian Yoho (TOD) Gary Lance Yoho

Well number Old Crow S-12HM

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	*see attached				

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	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)
	attached							

Please insert additional pages as applicable.

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API 47- 051 - 02043

Farm name Donna Vivian Yoho (TOD) Gary Lance Yoho

Well number Old Crow S-12HM

PRODUCING FORMATION(S)

DEPTHS

MARCELLUS 6610'-6653' TVD 8110'-15190' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1132 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 0 mcfpd Oil 0 bpd NGL 0 bpd Water 600 bpd
GAS MEASURED BY Estimated Orifice Pilot

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 (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	<u>0</u>		<u>0</u>		

*see attached					

Please insert additional pages as applicable.

Drilling Contractor Nabors Drilling USA
Address 505 West Greens Road, Suite 1000 City Houston State TX Zip 77067

Logging Company n/a
Address _____ City _____ State _____ Zip _____

Cementing Company Halliburton Energy Services, Inc.
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Stimulating Company PRO-FRAC
Address 333 Shops Boulevard City Willow Park State TX Zip 76087

Please insert additional pages as applicable.

Completed by Amy L. Morris Telephone 304-376-0111
Signature Amy L. Morris Title Permitting Specialist - Appalachia Region Date 4-15-2021

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**OLD CROW S-12HM
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	84	7906	8441	4125	425280	9344	0
2	83	7007	6429	4215	442400	8429	0
3	89	7430	4837	4736	443840	9171	0
4	90	7341	5213	4719	442300	8325	0
5	90	7273	5428	4611	442660	8223	0
6	90	7279	7972	4038	448220	8417	0
7	91	7155	4963	5074	443960	8359	0
8	91	7288	5343	4674	445400	8312	0
9	90	7416	5884	4517	442900	8288	0
10	91	7174	5216	4367	447180	8280	0
11	90	7199	5944	4577	443960	8234	0
12	90	7163	4817	4609	451320	8724	0
13	90	7145	5777	4796	447620	8235	0
14	91	7073	5811	4314	442200	8258	0
15	90	7125	5525	4663	439080	8139	0
16	91	7032	5374	4638	447820	8330	0
17	90	7093	4937	4299	442965	8188	0
18	90	7186	5442	4664	446900	8423	0
19	90	7218	5870	4456	443040	8248	0
20	90	6988	5425	4430	445520	8260	0
21	90	6978	6230	4345	444060	8247	0
22	90	6881	5705	5065	442800	8281	0
23	90	7032	5972	4498	447520	8279	0
24	89	6899	5861	5192	440460	8153	0
25	90	6738	5178	4446	442140	8163	0
26	90	6981	5595	4144	444140	8176	0
27	90	6817	5333	4233	445240	8973	0
28	90	6675	5284	4898	445700	8216	0
29	90	6742	5827	4402	442680	8187	0
30	90	6858	5199	4555	449440	8351	0
31	90	6700	5523	4232	442580	8159	0
32	90	6621	5794	4544	437960	8082	0

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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	90	6447	5947	4299	448400	8235	0
34	90	6686	5375	4318	446060	8192	0
35	89	6534	5649	4823	444660	8095	0
36	89	6377	5293	4441	443520	8125	0
37	90	6523	5307	4208	450320	8142	0
38	89	6593	5136	4655	441500	8653	0
39	89	6322	5795	4414	447340	8114	0

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**OLD CROW S-12HM
PERFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	9/21/2020	14792	14908	48	Marcellus
2	9/21/2020	14587	14589	48	Marcellus
3	9/22/2020	14412	14558	48	Marcellus
4	9/22/2020	14236	14382	48	Marcellus
5	9/23/2020	14061	14207	48	Marcellus
6	9/23/2020	13886	14032	48	Marcellus
7	9/24/2020	13711	13857	48	Marcellus
8	9/24/2020	13535	13681	48	Marcellus
9	9/25/2020	13360	13506	48	Marcellus
10	9/25/2020	13185	13331	48	Marcellus
11	9/26/2020	13009	13155	48	Marcellus
12	9/26/2020	12834	12980	48	Marcellus
13	9/27/2020	12659	12805	48	Marcellus
14	9/27/2020	12483	12629	48	Marcellus
15	9/28/2020	12308	12454	48	Marcellus
16	9/28/2020	12133	12279	48	Marcellus
17	9/29/2020	11958	12104	48	Marcellus
18	9/29/2020	11782	11928	48	Marcellus
19	9/30/2020	11607	11753	48	Marcellus
20	9/30/2020	11432	11578	48	Marcellus
21	9/30/2020	11256	11402	48	Marcellus
22	10/1/2020	11081	11227	48	Marcellus
23	10/1/2020	10906	11052	48	Marcellus
24	10/1/2020	10730	10876	48	Marcellus
25	10/1/2020	10555	10701	48	Marcellus
26	10/2/2020	10380	10526	48	Marcellus
27	10/2/2020	10205	10351	48	Marcellus
28	10/2/2020	10029	10175	48	Marcellus
29	10/2/2020	9854	10000	48	Marcellus
30	10/3/2020	9679	9825	48	Marcellus
31	10/3/2020	9503	9649	48	Marcellus
32	10/3/2020	9328	9474	48	Marcellus
33	10/3/2020	9153	9299	48	Marcellus
34	10/4/2020	8977	9123	48	Marcellus
35	10/4/2020	8802	8948	48	Marcellus
36	10/4/2020	8627	8773	48	Marcellus
37	10/4/2020	8452	8598	48	Marcellus
38	10/5/2020	8276	8422	48	Marcellus
39	10/5/2020	8101	8247	48	Marcellus

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OLD CROW S-12HM

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	2014	2104	2015	2107	Sandstone
Big Lime	2104	2174	2107	2178	Limestone
Big Injun	2174	2458	2178	2476	Sandstone
Weir	2458	2653	2476	2692	Sandstone
Berea	2653	2998	2692	3111	Sandstone
Gordon	2998	3052	3111	3184	Sandstone
Fifty Foot	3052	3600	3184	3908	Sandstone
Speechley	3600	5022	3908	5768	Sandstone
Benson	5022	5377	5768	6249	Sandstone
Alexander	5377	5971	6249	7005	Siltstone
Rhinestreet	5971	6381	7005	7515	Black shale
Middlesex	6381	6458	7515	7641	Black shale
Geneseo/Burkett	6458	6482	7641	7683	Black shale
Tully	6482	6525	7683	7768	Limestone
Hamilton	6525	6576	7768	7912	Grey shale
Marcellus	6576	-	7912	-	Black shale

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/21/2020
Job End Date:	10/5/2020
State:	West Virginia
County:	Marshall
API Number:	47-051-02043-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Old Crow S 12HM
Latitude:	39.77830044
Longitude:	-80.76287388
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,335
Total Base Water Volume (gal):	13,650,420
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	86.25248	None
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	8.84905	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	3.03551	None
Sand (30/50 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	1.23063	None
Hydrochloric Acid (7.5%)	PVS	Acidizing	Water	7732-18-5	85.00000	0.43422	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.18901	None
StimStream FR 5800	ChemStream	Friction Reducer	Butene, homopolymer	9003-29-6	25.00000	0.01792	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01792	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00215	None

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MC MX 9-4743	Multi-Chem	Biocide					
			Sodium Nitrate	7631-99-4	60.00000	0.02260	None
LD-7750W	Multi-Chem	Scale Inhibitor					
			Methanol	67-56-1	60.00000	0.00522	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00043	None
ProFE 105	ProFrac	Iron Control					
			Citric Acid	77-92-9	100.00000	0.00187	None
ProHib 100	ProFrac	Acid Inhibitor					
			2-Propyn-1-ol compound w/ methyloxirane	38172-91-7	15.00000	0.00023	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	0.43422	
			Butene, homopolymer	9003-29-6	25.00000	0.01792	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00215	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00043	

* 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)

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10,803' B.H. A.D.

3,618' T.H. A.D.

**OLD CROW S LEASE
WELL 12HM
TUG HILL OPERATING**

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

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

NAD'83 S.P.C.(FT) N. 468,091.30 E. 1,613,579.36
NAD'83 GEO. LAT-(N) 39.778300 LONG-(W) 80.762874
NAD'83 UTM (M) N. 4,403,178.09 E. 520,306.33

LANDING POINT

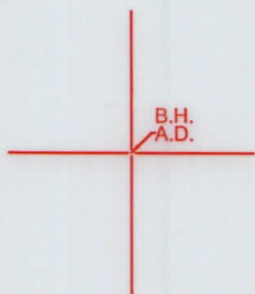
NAD'83 S.P.C.(FT) N. 470,658.1 E. 1,614,545.1
NAD'83 GEO. LAT-(N) 39.785384 LONG-(W) 80.759566
NAD'83 UTM (M) N. 4,403,965.0 E. 520,587.5

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 464,448.5 E. 1,618,042.8
NAD'83 GEO. LAT-(N) 39.768472 LONG-(W) 80.746814
NAD'83 UTM (M) N. 4,402,091.0 E. 521,684.7

T.H. LONGITUDE 80°45'00"
B.H. LONGITUDE 80°42'30"

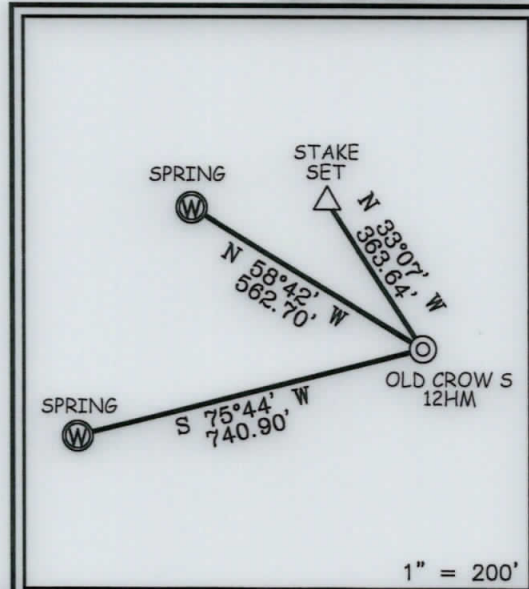
MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
5-10-12.1	JOHN PAUL SMITH, JR., ET AL	8.86
5-10-19	BRADLEY L. & CONNIE L. HUBBARD	3.209
5-10-20	LOUIS AULENBAUCHER	3.554
5-10-21	LOUIS AULENBAUCHER	3.677
5-10-22	LOUIS AULENBAUCHER	6.461
5-16-4	JOHN SWIERKOS	153 SQ. RODS
5-17-1.6	LOLA M. SLAUGHTER	6.347
5-17-3.1	WILBUR L. RIDDLE, ET UX	10.148
5-17-16	GLEN GUNTO	9.702



NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS > 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'
3. AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
4. PLAT UPDATED TO SHOW AS-DRILLED PATH.

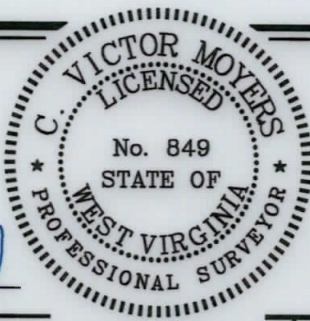
REFERENCES



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
slswv.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. 849 *C. Victor Moyers*



STATES TOPOGRAPHIC MAPS.
DATE JUNE 10, 20 20
REVISED _____, 20 _____
OPERATORS WELL NO. OLD CROW S-12HM
API WELL NO. 47 - 051 - 2043
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8796P12HMAD.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 LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,265' 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: 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: 6,699' / TMD: 15,107'

COUNTY NAME
PERMIT

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

DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM
ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

08/27/2021

10,803' B.H. A.D.

3,618' T.H. A.D.

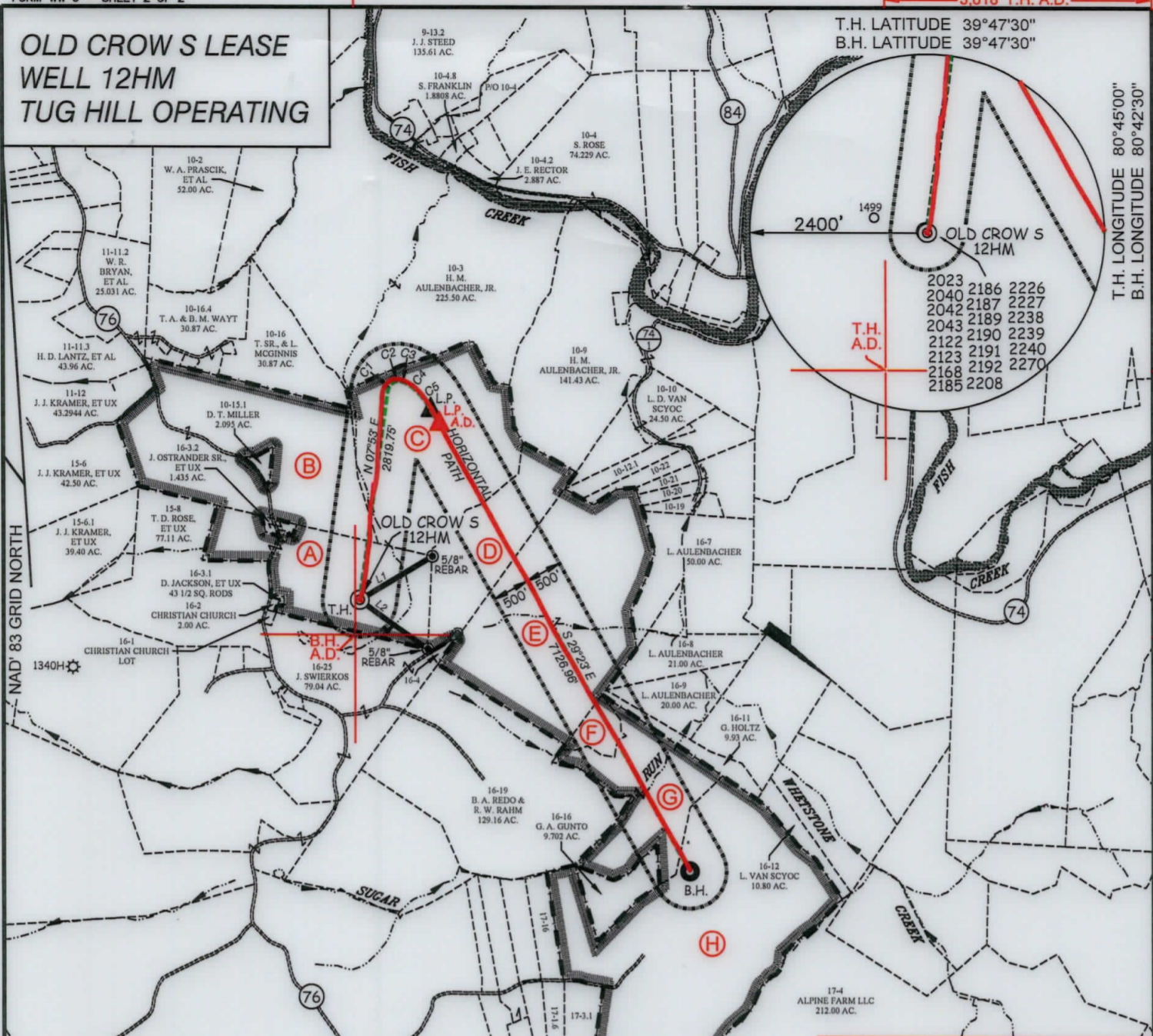
**OLD CROW S LEASE
WELL 12HM
TUG HILL OPERATING**

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

T.H. LONGITUDE 80°45'00"
B.H. LONGITUDE 80°42'30"

8,449' B.H. A.D.

NAD'83 GRID NORTH



AS DRILLED COORDINATES FOR WELL NO. 12HM

2023	2186	2226
2040	2187	2227
2042	2189	2238
2043	2190	2239
2122	2190	2239
2123	2191	2240
2168	2192	2270
2185	2208	

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	157.77'	186.37'	N 28°11' E	153.10'
C2	109.74'	142.20'	N 81°02' E	107.04'
C3	59.91'	257.60'	S 72°15' E	59.78'
C4	189.86'	575.37'	S 54°44' E	189.00'
C5	315.43'	1129.70'	S 37°09' E	314.41'

AS DRILLED COORDINATES FOR WELL NO. 12HM

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

NAD'83 S.P.C.(FT)	N. 468,091.30	E. 1,613,579.36
NAD'83 GEO.	LAT-(N) 39.778300	LONG-(W) 80.762874
NAD'83 UTM (M)	N. 4,403,178.09	E. 520,306.33

LANDING POINT

NAD'83 S.P.C.(FT)	N. 470,470.9	E. 1,614,660.5
NAD'83 GEO.	LAT-(N) 39.784874	LONG-(W) 80.759146
NAD'83 UTM (M)	N. 4,403,908.5	E. 520,623.6

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 464,448.5	E. 1,618,056.2
NAD'83 GEO.	LAT-(N) 39.768472	LONG-(W) 80.746767
NAD'83 UTM (M)	N. 4,402,091.1	E. 521,688.8

LEGEND

AS DRILLED ———

PROPOSED - - - - -

LINE	BEARING	DISTANCE
L1	N 59°06' E	1147.14'
L2	S 54°15' E	1134.36'

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	JOHN SWIERKOS	5-10-14	100.00
D	JOHN SWIERKOS	5-16-5	52.07
E	JOHN SWIERKOS	5-16-6	134.05
F	JOHN SWIERKOS	5-16-18	10.00
G	CARA DAVIS & BRIAN TESLOVICH, ET AL	5-16-17	55.34
H	SOUTHERN COUNTRY FARMS, INC.	5-17-3	190.132



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
 slswv.com

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

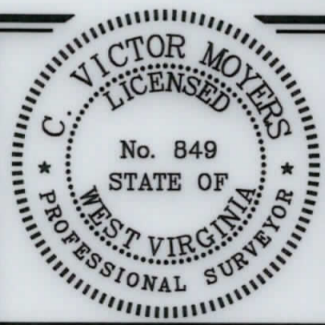
NAD'83 S.P.C.(FT)	N. 468,091.30	E. 1,613,579.36
NAD'83 GEO.	LAT-(N) 39.778300	LONG-(W) 80.762874
NAD'83 UTM (M)	N. 4,403,178.09	E. 520,306.33

LANDING POINT

NAD'83 S.P.C.(FT)	N. 470,658.1	E. 1,614,545.1
NAD'83 GEO.	LAT-(N) 39.785384	LONG-(W) 80.759566
NAD'83 UTM (M)	N. 4,403,965.0	E. 520,587.5

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 464,448.5	E. 1,618,042.8
NAD'83 GEO.	LAT-(N) 39.768472	LONG-(W) 80.746814
NAD'83 UTM (M)	N. 4,402,091.0	E. 521,684.7



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

P.S. 849 *C. Victor Moyers*

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. 8796P12HMAD.dwg

DATE JUNE 10, 20 20

REVISED _____, 20 _____

OPERATORS WELL NO. OLD CROW S-12HM

API WELL NO. 47 — 051 — 2043

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 DIANNA STAMPER
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD
 FORT WORTH, TX 76107 CHARLESTON, WV 25313

COUNTY NAME PERMIT