

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

API 47-051-01968 County Marshall District Meade  
Quad Glen Easton 7.5' Pad Name Heaven Hill 3 Field/Pool Name \_\_\_\_\_  
Farm name Ricky L. Whitlatch Well Number Heaven Hill 3-6HU  
Operator (as registered with the OOG) Tug Hill Operating, LLC  
Address 1320 S. University Drive, Suite 215 City Ft. Worth State TX Zip 76107

As Drilled Location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,406,565.23 Easting 526,252.40  
Landing Point of Curve Northing 4,405,707.5 Easting 526,027.7  
Bottom Hole Northing 4,402,751.7 Easting 527,715.5

Elevation (ft) 1326' 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  RECEIVED  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other JUL 10 2020  
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 2/27/2018 Date drilling commenced 5/20/2018 Date drilling ceased 10/30/2018  
Date completion activities began 4/12/2019 Date completion activities ceased 10/28/2019  
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 1064' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1595' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 972-978', 1057-1063' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by: Jim Theohar  
7/27/2020

API 47-051 - 01968 Farm name Ricky L. Whitlatch Well number Heaven Hill 3-6HU

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	36"	30"	120'	NEW	94.5#	N/A	Y
Surface	26"	20"	1,123'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,900'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,935'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	23,830'	NEW	23#	N/A	Y
Tubing		2 7/8"	11,934'	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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	A		15.6	1.2		0	8
Surface	A	2068	15.6	1.2	2481	0	8
Coal							
Intermediate 1	A	2388	15.6	1.19	2841	0	8
Intermediate 2	A	3865	14.5	1.19	4599	0	8
Intermediate 3							
Production	A	5362	16.5	1.17	5898	0	8
Tubing							

Drillers TD (ft) 23,868' Loggers TD (ft) n/a  
 Deepest formation penetrated Trenton  
 Plug back procedure n/a Plug back to (ft) n/a  
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Kick off depth (ft) 10,987' **WV Department of Environmental Protection**

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





**Heaven Hill 3-6HU  
PERFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	7/20/2019	23411	23586	48	Utica
2	7/20/2019	23210	23386	48	Utica
3	7/21/2019	23010	23185	48	Utica
4	7/21/2019	22809	22984	48	Utica
5	7/22/2019	22608	22784	48	Utica
6	7/22/2019	22408	22583	48	Utica
7	7/23/2019	22207	22383	48	Utica
8	7/24/2019	22007	22182	48	Utica
9	7/24/2019	21806	21982	48	Utica
10	7/25/2019	21606	21781	48	Utica
11	7/26/2019	21405	21581	48	Utica
12	7/27/2019	21205	21380	48	Utica
13	7/27/2019	21004	21180	48	Utica
14	7/28/2019	20804	20979	48	Utica
15	7/29/2019	20603	20779	48	Utica
16	7/29/2019	20403	20578	48	Utica
17	7/30/2019	20202	20378	48	Utica
18	8/1/2019	20002	20177	48	Utica
19	8/1/2019	19801	19977	48	Utica
20	8/2/2019	19601	19776	48	Utica
21	8/2/2019	19400	19576	48	Utica
22	8/3/2019	19200	19375	48	Utica
23	8/3/2019	18999	19175	48	Utica
24	8/17/2019	18799	18974	48	Utica
25	8/17/2019	18598	18774	48	Utica
26	8/17/2019	18398	18573	48	Utica
27	8/18/2019	18197	18373	48	Utica
28	8/18/2019	17997	18172	48	Utica
29	8/19/2019	17796	17972	48	Utica
30	8/19/2019	17596	17771	48	Utica
31	8/20/2019	17395	17571	48	Utica
32	8/20/2019	17195	17370	48	Utica
33	8/21/2019	16994	17170	48	Utica
34	8/21/2019	16794	16969	48	Utica
35	8/21/2019	16593	16769	48	Utica
36	8/21/2019	16393	16568	48	Utica
37	8/22/2019	16192	16368	48	Utica
38	8/22/2019	15992	16167	48	Utica
39	8/22/2019	15791	15967	48	Utica
40	8/22/2019	15591	15766	48	Utica
41	8/23/2019	15390	15566	48	Utica
42	8/23/2019	15190	15365	48	Utica
43	8/23/2019	14989	15165	48	Utica
44	8/23/2019	14789	14964	48	Utica
45	8/23/2019	14588	14764	48	Utica
46	8/24/2019	14388	14563	48	Utica

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47	8/24/2019	14187	14363	48	Utica
48	8/24/2019	13987	14162	48	Utica
49	8/24/2019	13786	13962	48	Utica
50	8/24/2019	13586	13761	48	Utica
51	8/25/2019	13385	13561	48	Utica
52	8/25/2019	13185	13360	48	Utica
53	8/25/2019	12984	13160	48	Utica
54	8/25/2019	12784	12959	48	Utica
55	164934	12583	12759	48	Utica

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**Heaven Hill 3-6HU  
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 (bbbls)	Amount of Nitrogen/other (units)
1	77.2	11802	9461	6998	498008	10755	0
2	78.1	12031	9305	7518	498488	10359	0
3	81.7	12003	9853	7746	501073	10505	0
4	80	12130	10794	7782	500580	10419	0
5	81.3	12217	9863	7990	492990	10241	0
6	81.1	12160	10300	8003	499675	10343	0
7	81.4	11993	10252	7902	503490	10401	0
8	82.4	12111	9859	7971	502840	10499	0
9	76.9	11954	9606	8782	503520	11049	0
10	82.6	11967	9515	7804	501930	10375	0
11	77.5	12010	10296	7860	462490	9650	0
12	82.1	11833	10339	8037	500300	10490	0
13	82.4	11837	10123	7621	505680	10501	0
14	82.3	11671	9980	7668	482984	10094	0
15	84.6	11961	9757	7797	458190	9506	0
16	82.5	11654	10392	7896	479060	10255	0
17	88.2	11771	9170	7916	504175	10330	0
18	86.5	11843	9877	7833	463785	9908	0
19	86	11435	8991	7693	510970	10508	0
20	86.2	11582	8935	7752	437620	10578	0
21	89.1	11343	8894	7741	503460	10280	0
22	88.9	11388	8735	7858	501390	10286	0
23	84.1	11420	9328	7246	509305	11590	0
24	89.8	11137	9170	7893	511405	10414	0
25	89.3	11384	9480	7605	504985	10479	0
26	89.5	11086	9070	8041	500640	10176	0
27	89.2	11030	8746	7847	505445	10411	0
28	89.6	10934	8780	7766	500015	10292	0
29	89.6	10968	8783	7975	499725	10260	0
30	89.6	1085	9120	7640	502465	10231	0
31	89.3	1112	8776	7882	499195	11499	0
32	89.3	1047	8424	7871	452070	9747	0
33	89.4	10669	8472	7633	505845	10007	0

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34	89.5	10947	8570	7683	502095	9917	0
35	89	10727	8505	7987	452555	10574	0
36	89.6	10815	8686	7980	451255	9564	0
37	89.4	10882	10273	8073	501610	10168	0
38	89.6	10911	9415	7642	501900	10506	0
39	89.6	10829	8267	7785	502575	10317	0
40	89.1	10627	9075	7747	501715	10325	0
41	89.7	10370	7668	7689	501960	10147	0
42	89.6	10770	8971	7703	500680	10091	0
43	89.4	10662	7587	7809	499680	10062	0
44	88.5	10698	8042	7588	501620	10117	0
45	89.3	10594	8795	7681	504635	10015	0
46	89.3	10544	7819	7942	503745	10059	0
47	88.1	10756	7822	7394	501970	9897	0
48	89.2	10476	7956	7758	500040	9988	0
49	89.4	10412	8448	7917	501400	10023	0
50	89.3	10263	7562	7643	500705	10019	0
51	89.6	10075	7684	7810	500260	9788	0
52	89.6	10231	8114	7738	503255	10007	0
53	89.5	10386	8262	7862	505460	10017	0
54	89.3	10182	7945	7778	501840	10059	0
55	89.5	10177	8760	7940	504895	10012	0

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HEAVEN HILL 3-6HU

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	1914	2086	1915	2087	Sandstone
Big Lime	2086	2217	2087	2218	Limestone
Big Injun	2217	2512	2218	2513	Sandstone
Weir	2512	2710	2513	2711	Sandstone
Berea	2710	2972	2711	2974	Sandstone
Gordon	2972	3057	2974	3059	Sandstone
Fifty Foot	3057	3639	3059	3641	Sandstone
Spechley	3639	5100	3641	5102	Sandstone
Benson	5100	5461	5102	5463	Sandstone
Alexander	5461	6111	5463	6140	Siltstone
Rhinestreet	6111	6645	6140	6729	Black shale
Middlesex	6645	6718	6729	6809	Black shale
Genesee/Burkett	6718	6747	6809	6841	Black shale
Tully	6747	6791	6841	6890	Limestone
Hamilton	6791	6865	6890	6971	Grey shale
Marcellus	6865	6923	6971	7034	Black shale
Onondaga	6923	7163	7034	7299	Limestone
Oriskany	7163	7261	7299	7409	Sandstone
Heiderberg	7261	7662	7409	7849	Limestone
Salina	7662	8652	7849	8927	Salt/Anhydrite/LS
Lockport	8652	9031	8927	9345	Dolomite
Rose Hill	9031	9307	9345	9650	Shale
Packer Shell	9307	9475	9650	9834	Limestone
Clinton/Tuscarora	9475	9635	9834	10012	Sandstone
Junata/Queenston	9635	10500	10012	10942	Red Shale
Reedsville	10500	11411	10942	11983	Grey Shale
Utica	11411	11655	11983	12394	Black Shale
Point Pleasant	11655	-	12394	-	Shale/Limestone

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**Well:** Heaven Hill 3-6 HU (E)  
**Site:** Heaven Hill 3  
**Project:** Marshall County, West Virginia.  
**Wellbore:** Original Hole  
**Design:** rev10  
**Rig:** Nabors B 28

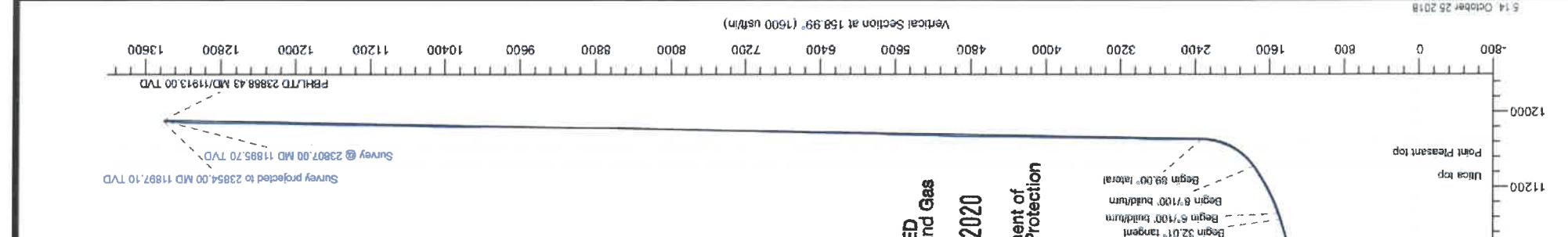
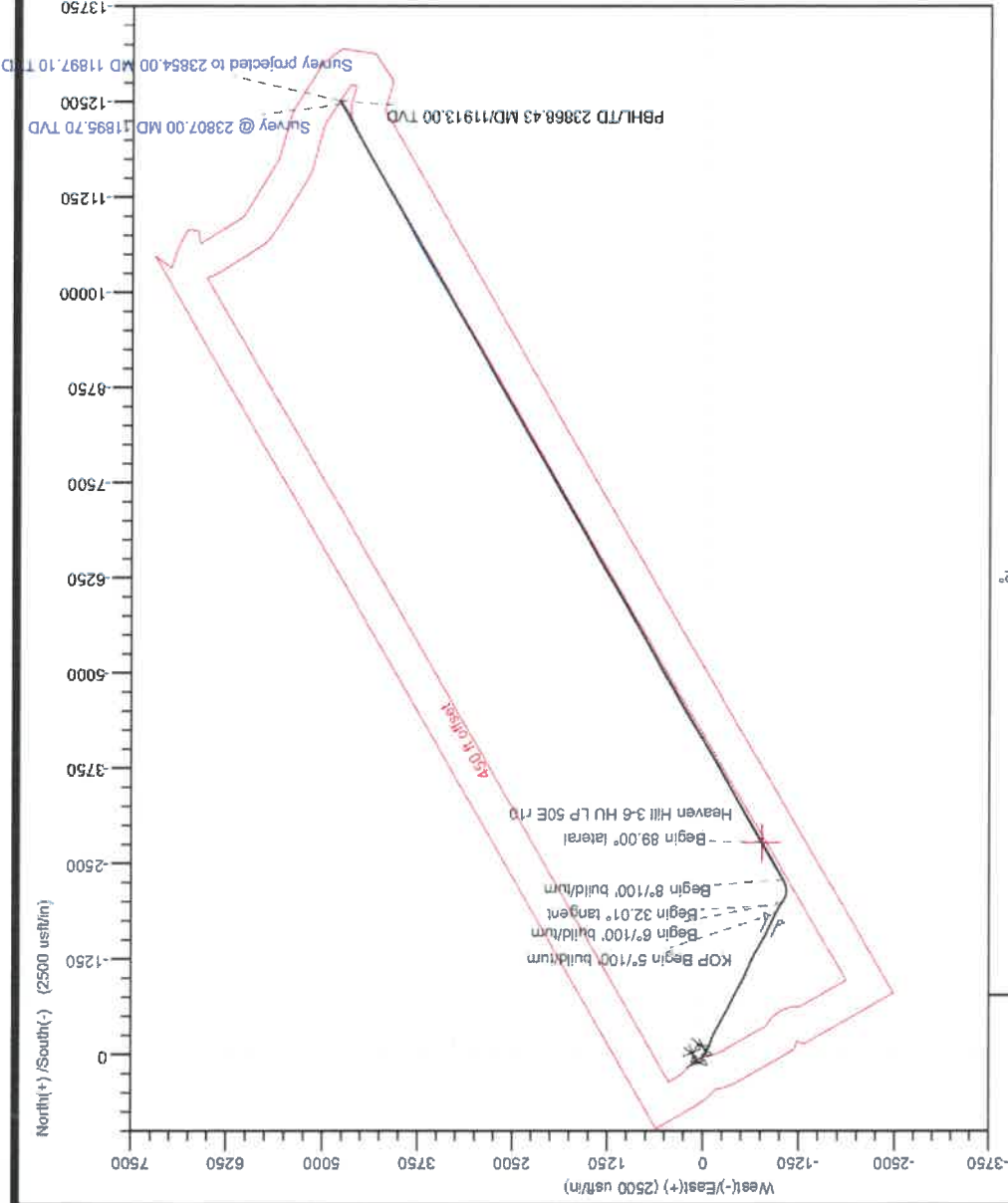
**SECTION DETAILS**

Sec	MD	Inc	Azi	+N/S	+E/W	+Vsect	Annotation
1	10916.00	17.06	204.17	10475.22	-1831.14	-935.90	Survey @ 10916.00 MD 10475.22 TVD
2	11016.00	17.06	204.17	10570.82	-1857.91	-947.92	KOP Begin 5'100' buildum
3	11328.56	32.01	215.65	10854.50	-1967.74	-1015.39	Begin 32.01' tangent
4	11404.69	32.01	215.65	10919.05	-2000.53	-1038.91	Begin 6'100' buildum
5	11996.83	36.31	150.22	11425.00	-2289.55	-1043.46	Begin 8'100' buildum
6	12655.45	89.00	150.22	11717.00	-2779.61	-763.04	Begin 89.00' lateral
7	23868.43	89.00	150.22	11913.00	-12510.45	4805.03	PBHLTD 23868.43 MD/11913.00 TVD

MD 156.00  
 Inc 0.29  
 Azi 309.70  
 TVD 156.00  
 +N/S 0.25  
 +E/W -0.30  
 +Vsect -0.34  
 Annotation MWD surveys  
 Survey projected to 23807.00 MD 11895.70 TVD  
 Survey @ 23807.00 MD 11895.70 TVD  
 4776.41 13354.34  
 149.70 11895.70-12470.84  
 4800.11 13400.70  
 Survey projected to 23854.00 MD 11897.10 TVD  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD83 West Virginia - HARN  
 Ellipsoid: GRS 1980  
 Zone: Zone 17N (84 W to 78 W)  
 System Datum: Mean Sea Level @ 1352.00ust (Nabors B 28)  
 Depth Reference: RKB=1326+26 @ 1352.00ust (Nabors B 28)  
 Magnetic Field  
 True North: -0.20°  
 Magnetic North: -0.92°  
 Azimuths to Grid North  
 23854.00  
 23807.00  
 88.30  
 88.30  
 149.70 11895.70-12470.84  
 149.70 11897.10-12511.51  
 4800.11 13400.70  
 Survey projected to 23854.00 MD 11897.10 TVD  
 Survey @ 23807.00 MD 11895.70 TVD  
 14457206.09  
 Easting 1726546.42  
 Latitude 39.80865589  
 Longitude -80.69330431  
 Total Corr (M-G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.92°



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## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/20/2019
Job End Date:	8/25/2019
State:	West Virginia
County:	Marshall
API Number:	47-051-01968-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Heaven Hill 3 6HU
Latitude:	39.80860000
Longitude:	-80.69330000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,882
Total Base Water Volume (gal):	24,276,824
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
Fresh Water	Halliburton	Base Fluid					
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	87.57482	Density = 8.34
			Water	7732-18-5	100.00000	0.48583	

						Solvent	Halliburton	HYDROCHLORI C ACID, 22 BAUME
			Listed Below					
			Listed Below			Proppant	Halliburton	Sand-CRC-40/70
			Listed Below					
			Listed Below			Breaker	Halliburton	SP BREAKER
			Listed Below					
			Listed Below			Additive	Multichem	MC MX 8-4743
			Listed Below			Friction Reducer	Multichem	LD-2950
			Listed Below					
			Listed Below			Proppant	Halliburton	Sand-Premium White-40/70
			Listed Below					
			Listed Below			Non-ionic Surfactant	Halliburton	OilPerm A
			Listed Below					
			Listed Below			Scale Inhibitor	Multichem	LEGEND(TM) LD-7750
			Listed Below			Proppant	Halliburton	Sand-Common White-100 Mesh, SSA-2

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			Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent				
FDP-S1296-17	Halliburton	Acid Corrosion Inhibitor	Listed Below			
			Listed Below			
			Listed Below			

Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.

			Crystalline silica, quartz	14808-60-7	100.00000	11.78643
			Phenol / formaldehyde resin	9003-35-4	5.00000	0.05165
			Hydrochloric acid	7647-01-0	15.00000	0.03581
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.03050
			Sodium nitrate	7631-99-4	60.00000	0.02253
			Hexamethylenetetramine	100-97-0	2.00000	0.02066
			Guar gum	9000-30-0	100.00000	0.01270
			Methanol	67-56-1	100.00000	0.00110
			Poly(oxy-1,2-ethanediyl), alpha-tridecyl-omega-hydroxy-, branched	69011-36-5	1.00000	0.00102
			Ethoxylated alcohols	Proprietary	1.00000	0.00102
			Sodium persulfate	7775-27-1	100.00000	0.00063
			Sodium chloride	7647-14-5	5.00000	0.00046
			Phosphoric Acid Salt	Proprietary	5.00000	0.00046
			Ethanol	64-17-5	60.00000	0.00011
			Oxalkylated nonyl phenolic resin	Proprietary	30.00000	0.00006
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00006
			Modified thiourea polymer	Proprietary	30.00000	0.00005

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				Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00005	
				Oxalkylated phenolic resin	Proprietary	10.00000	0.00002	
				Naphthalene	91-20-3	5.00000	0.00001	
				Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00001	
				Formaldehyde	50-00-0	0.10000	0.00001	
				Hexadecene	629-73-2	5.00000	0.00001	
				Propargyl alcohol	107-19-7	5.00000	0.00001	
				Ethoxylated alcohols	Proprietary	5.00000	0.00001	
				1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00000	
				Sodium sulfate	7757-82-6	0.10000	0.00000	

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water  
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%  
\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)

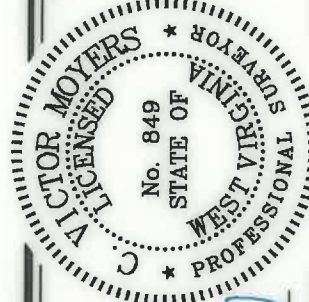
HEAVEN HILL 3 LEASE  
UTICA UNIT - 402.83 AC ±  
WELL 6HU  
TUG HILL OPERATING

Table with columns: NO., Lease Name or No., Fee, Parcel, Oil and Gas Reg. #, Owner, Deed Book, Page. Lists various leaseholders and their associated well information.

NOTES ON SURVEY

- 1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL...
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'
3. PROPOSED LATERAL OR TOP HOLE OF HEAVEN HILL 3-6HU IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF API'S 47-051-1910, 47-051-1911 AND PROPOSED WELLS HEAVEN HILL 3-7HU HEAVEN HILL 3-8HU HEAVEN HILL 3-10HU, TEN HIGH 1S-14HU, TEN HIGH 1N-11HU, AND TEN HIGH 1N-12HU.
4. AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
5. PLAT UPDATED TO SHOW AS-DRILLED PATH.

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
NAD'83 S.P.C.(FT) N. 478,980.11 E. 1,633,277.01
NAD'83 GEO. LAT.-(N) 39.808656 LONG.-(W) 80.689304
NAD'83 UTM (M) N. 4,406,565.23 E. 526,252.40
LANDING POINT
NAD'83 S.P.C.(FT) N. 476,112.7 E. 1,632,467.4
NAD'83 GEO. LAT.-(N) 39.801030 LONG.-(W) 80.696055
NAD'83 UTM (M) N. 4,405,718.0 E. 526,019.8
BOTTOM HOLE
NAD'83 S.P.C.(FT) N. 466,286.9 E. 1,637,873.9
NAD'83 GEO. LAT.-(N) 39.774253 LONG.-(W) 80.678956
NAD'83 UTM (M) N. 4,402,752.0 E. 527,717.0



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. C. Victor Moyers
849

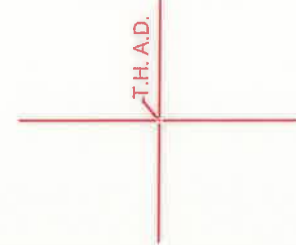
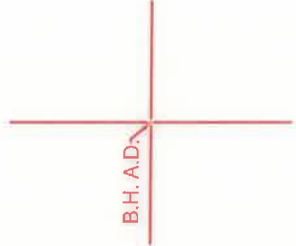
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE JANUARY 17, 20 19
REVISED JUNE 12, 20 20
OPERATORS WELL NO. HEAVEN HILL 3-6HU
API WELL NO. 47-051-01968
STATE COUNTY PERMIT

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

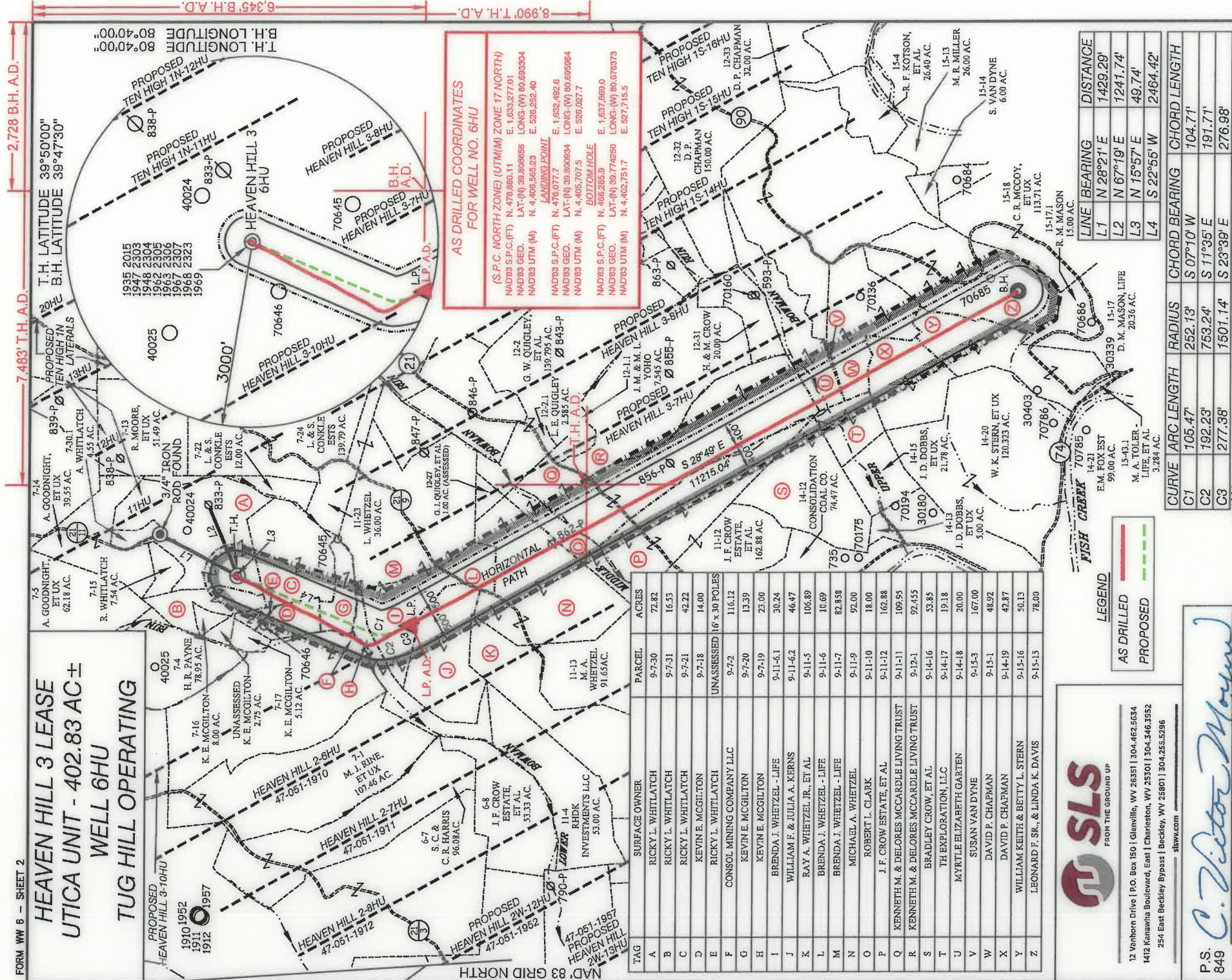
MINIMUM DEGREE OF ACCURACY 1 / 2500
FILE NO. 8654P6HUADR.dwg
SCALE 1" = 2000'
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

WELL TYPE: OIL GAS X INJECTION WASTE LIQUID WASTE IF
LOCATION: ELEVATION PROPOSED = 1,326.35' WATERSHED LOWER BOWMAN RUN OF FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL
SURFACE OWNER RICKY L. WHITLATCH
ROYALTY OWNER RICKY L. WHITLATCH, ET AL - SEE SHEETS 1, 3, & 4
PROPOSED WORK:
DRILL X CONVERT DRILL DEEPER REDRILL
FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,789' / TMD: 23,868'

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
DESIGNATED AGENT DIANNA STAMPER
ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313



**HEAVEN HILL 3 LEASE  
UTICA UNIT - 402.83 AC ±  
WELL 6HU  
TUG HILL OPERATING**



**AS DRILLED COORDINATES FOR WELL NO. 6HU**

(S.P.C. NORTH ZONE) (UTM) ZONE 17 (NORTH)  
 NAD83 S.P.C. (FT) N. 478,880.11 E. 1,633,277.01  
 NAD83 GEO. LAT-(N) 39.808656 LONG-(W) 80.686304  
 NAD83 UTM (M) N. 4,406,565.23 E. 526,252.40

LANDING POINT  
 NAD83 S.P.C. (FT) N. 476,077.7 E. 1,632,482.6  
 NAD83 GEO. LAT-(N) 39.800624 LONG-(W) 80.695964  
 NAD83 UTM (M) N. 4,405,707.5 E. 526,027.7

BOTTOM HOLE  
 NAD83 S.P.C. (FT) N. 466,285.9 E. 1,637,869.0  
 NAD83 GEO. LAT-(N) 39.774250 LONG-(W) 80.676373  
 NAD83 UTM (M) N. 4,402,751.7 E. 527,715.5

TAG	SURFACE OWNER	PARCEL	ACRES
A	RICKY L. WHITLATCH	9-7-30	72.82
B	RICKY L. WHITLATCH	9-7-31	16.53
C	RICKY L. WHITLATCH	9-7-21	42.22
D	KEVIN E. MCGILTON	9-7-18	14.00
E	RICKY L. WHITLATCH	UNASSESSED 16 x 30 POLES	
F	CONSOL MINING COMPANY LLC	9-7-2	116.12
G	KEVIN E. MCGILTON	9-7-20	13.39
H	KEVIN E. MCGILTON	9-7-19	23.00
I	BRENDA J. WHEITZEL - LIFE	9-11-6.1	30.24
J	WILLIAM F. & JULIA A. KERNS	9-11-6.2	46.47
K	RAY A. WHEITZEL JR., ET AL	9-11-5	106.89
L	BRENDA J. WHEITZEL - LIFE	9-11-6	10.69
M	BRENDA J. WHEITZEL - LIFE	9-11-7	82.858
N	MICHAEL A. WHEITZEL	9-11-9	92.00
O	ROBERT L. CLARK	9-11-10	18.00
P	J. F. CROW ESTATE, ET AL	9-11-12	162.88
Q	KENNETH M. & DELORES MCCARDLE LIVING TRUST	9-11-11	109.95
R	KENNETH M. & DELORES MCCARDLE LIVING TRUST	9-12-1	92.455
S	BRADLEY CROW, ET AL	9-14-16	33.85
T	TH EXPLORATION, LLC	9-14-17	19.18
U	MYRTLE ELIZABETH GARTEN	9-14-18	20.00
V	SUSAN VAN DYNE	9-15-3	167.00
W	DAVID P. CHAPMAN	9-15-1	48.92
X	DAVID P. CHAPMAN	9-14-19	42.87
Y	WILLIAM KEITH & BETTY L. STERN	9-15-16	50.13
Z	LEONARD F. SR., & LINDA K. DAVIS	9-15-15	78.00



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3552  
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
 sls.com

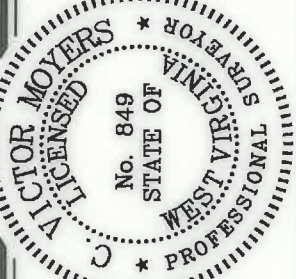
P.S. 849  
*C. Victor Moyers*

**LEGEND**  
 AS DRILLED (Red solid line)  
 PROPOSED (Dashed line)

LINE	BEARING	DISTANCE
L1	N 28°21' E	1429.29'
L2	N 67°19' E	1241.74'
L3	N 15°57' E	49.74'
L4	S 22°55' W	2464.42'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	105.47'	252.13'	S 07°10' W	104.71'
C2	192.23'	753.24'	S 11°35' E	191.71'
C3	277.38'	1501.14'	S 23°39' E	276.98'



SCALE 1" = 2000' FILE NO. 8654P6HUADR.dwg

DATE JANUARY 17, 2019  
 REVISED JUNE 12, 2020  
 OPERATORS WELL NO. HEAVEN HILL 3-6HU  
 API WELL NO. 47-051-01968  
 NO. STATE COUNTY PERMIT

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



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

**LEGEND**

- UNIT BOUNDARY
- LEASED TRACTS INSIDE UNIT BOUNDARY
- SURFACE LINE
- PROPOSED UTICA
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE SHEETS 1, 3, & 4)

COUNTY NAME PERMIT

DESIGNATED AGENT DIANNA STAMPER  
 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313  
 WELL OPERATOR TUG HILL OPERATING, LLC  
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107



HEAVEN HILL 3 LEASE
UTICA UNIT - 402.83 AC ±
WELL 6HU
TUG HILL OPERATING

12 Vanhook Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.6534
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296



Table with columns: NO., Lease Name or No., Well, Permit, Oil and Gas Property Owner/Contributed, Dead Book#, Page, Title, Lease Name or No., Title, Permit, Oil and Gas Property Owner/Contributed, Dead Book#, Page.

Table with columns: NO., Lease Name or No., Well, Permit, Oil and Gas Property Owner/Contributed, Dead Book#, Page, Title, Lease Name or No., Title, Permit, Oil and Gas Property Owner/Contributed, Dead Book#, Page.

FILE NO. 8654P6HUADR.dwg
DATE JANUARY 17, 20 19
REVISED JUNE 12, 20 20
OPERATORS WELL NO. HEAVEN HILL 3-6HU
API WELL NO. 47 - 051 - 01968
STATE COUNTY PERMIT
WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107

Professional seal for Victor Moyers, State of West Virginia, No. 849. Includes text: STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS, DESIGNATED AGENT, DIANNA STAMPER, CT CORPORATION SYSTEM, ADDRESS 5400 D BIG TYLER ROAD, CHARLESTON, WV 25313.

COUNTY NAME PERMIT

HEAVEN HILL 3 LEASE  
UTICA UNIT - 402.83 AC ±  
WELL 6HU  
TUG HILL OPERATING



12 Vaihorn 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

eNVR.com

Table with columns: No., Lessee Name or No., Tug, Parcel, Off and Gas Rights Owner/Continued, Dead Book#, Page. Contains a list of lease records for various owners and tracts.

Table with columns: No., Lessee Name or No., Tug, Parcel, Off and Gas Rights Owner/Continued, Dead Book#, Page. Continuation of lease records from the previous table.

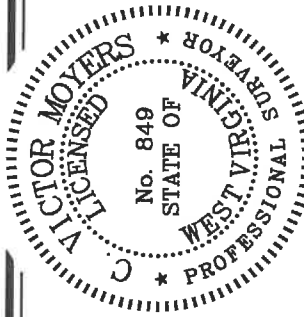
FILE NO. 8654P6HUADR.dwg

DATE JANUARY 17, 2019  
REVISED JUNE 12, 2020

OPERATORS WELL NO. HEAVEN HILL 3-6HU  
API WELL NO. 47-051-01968  
STATE COUNTY PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC  
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FORT WORTH, TX 76107

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



COUNTY NAME PERMIT  
STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS  
RECEIVED Office of Oil and Gas  
JUL 10 2020  
WV Department of Environmental Protection