



Company:	Tug Hill Operating LLC	Local Co-ordinate Reference:	Well Evad 01HM (G)
Project:	Marshall County, West Virginia	TVD Reference:	RKB=1291+18 @ 1309.00ft (PD 528)
Site:	Accetolo/Evad Pad	MD Reference:	RKB=1291+18 @ 1309.00ft (PD 528)
Well:	Evad 01HM (G)	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	DB_Jul2216dt_v14

Project	Marshall County, West Virginia		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 West Virginia - HARN		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Accetolo/Evad Pad				
Site Position:		Northing:	14,433,724.12 usft	Latitude:	39.74438861
From:	Lat/Long	Easting:	1,698,524.31 usft	Longitude:	-80.79327927
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.13 °

Well	Evad 01HM (G)					
Well Position	+N/-S	0.00 ft	Northing:	14,433,724.12 usft	Latitude:	39.74438861
	+E/-W	0.00 ft	Easting:	1,698,524.31 usft	Longitude:	-80.79327927
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,291.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/11/2018	-8.65	66.86	52,057.82643862

Design	Surveys Original Hole				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	155.15	

Survey Program	Date	3/15/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	<p style="text-align: center;">RECEIVED Office of Oil and Gas</p> <p style="font-size: 2em; text-align: center;">JUL 20 2020</p> <p style="text-align: center;">WV Department of Environmental Protection</p>
158.00	999.00	MWD surf (Original Hole)	MWD	MWD - Standard	
1,079.00	15,749.00	MWD (Original Hole)	MWD	MWD - Standard	
15,800.00	15,800.00	Projection (Original Hole)	MWD	MWD - Standard	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,433,724.12	1,698,524.31	39.74438861	-80.79327927
158.00	0.23	98.76	158.00	-0.05	0.31	14,433,724.07	1,698,524.62	39.74438848	-80.79327816
MWD surveys									
189.00	0.29	120.31	189.00	-0.10	0.44	14,433,724.02	1,698,524.75	39.74438834	-80.79327770
220.00	0.42	139.09	220.00	-0.22	0.58	14,433,723.90	1,698,524.89	39.74438800	-80.79327719
250.00	0.26	39.71	250.00	-0.25	0.70	14,433,723.87	1,698,525.01	39.74438791	-80.79327678
278.00	0.44	82.31	278.00	-0.19	0.85	14,433,723.93	1,698,525.16	39.74438808	-80.79327626
308.00	0.57	191.85	308.00	-0.32	0.93	14,433,723.80	1,698,525.24	39.74438772	-80.79327596
339.00	0.37	123.29	339.00	-0.53	0.98	14,433,723.59	1,698,525.29	39.74438716	-80.79327578
430.00	0.36	121.12	429.99	-0.84	1.47	14,433,723.28	1,698,525.78	39.74438631	-80.79327404



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Well:	Evad 01HM (G)	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	DB_Jul2216dt_v14

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Survey										WV Department of Environmental Protection
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
520.00	0.25	163.90	519.99	-1.17	1.77	14,433,722.95	1,698,526.08	39.74438539	-80.79327298	
612.00	0.22	160.45	611.99	-1.53	1.88	14,433,722.59	1,698,526.19	39.74438440	-80.79327258	
703.00	0.11	306.75	702.99	-1.64	1.87	14,433,722.48	1,698,526.18	39.74438409	-80.79327262	
824.00	0.35	252.50	823.99	-1.68	1.43	14,433,722.44	1,698,525.74	39.74438398	-80.79327421	
888.00	0.07	238.38	887.99	-1.76	1.21	14,433,722.36	1,698,525.52	39.74438376	-80.79327499	
999.00	0.09	104.56	998.99	-1.82	1.23	14,433,722.30	1,698,525.54	39.74438360	-80.79327489	
1,079.00	0.29	74.68	1,078.99	-1.78	1.49	14,433,722.34	1,698,525.80	39.74438371	-80.79327398	
1,174.00	0.10	74.68	1,173.99	-1.70	1.80	14,433,722.42	1,698,526.11	39.74438394	-80.79327287	
1,269.00	1.82	246.79	1,268.97	-2.27	0.50	14,433,721.85	1,698,524.80	39.74438237	-80.79327753	
1,362.00	4.52	248.22	1,361.82	-4.21	-4.27	14,433,719.91	1,698,520.04	39.74437707	-80.79329448	
1,457.00	6.34	253.10	1,456.39	-7.13	-12.76	14,433,716.99	1,698,511.55	39.74436912	-80.79332473	
1,553.00	6.49	247.02	1,551.79	-10.79	-22.83	14,433,713.34	1,698,501.48	39.74435914	-80.79336057	
1,647.00	5.76	243.27	1,645.26	-14.98	-31.93	14,433,709.14	1,698,492.38	39.74434767	-80.79339299	
1,742.00	4.18	242.10	1,739.90	-18.75	-39.25	14,433,705.37	1,698,485.06	39.74433738	-80.79341906	
1,837.00	2.95	261.60	1,834.71	-20.72	-44.73	14,433,703.40	1,698,479.58	39.74433198	-80.79343856	
1,932.00	2.96	272.69	1,929.59	-20.97	-49.60	14,433,703.16	1,698,474.71	39.74433135	-80.79345588	
2,026.00	3.02	271.80	2,023.46	-20.77	-54.50	14,433,703.35	1,698,469.81	39.74433191	-80.79347331	
2,120.00	3.73	268.54	2,117.30	-20.77	-60.03	14,433,703.35	1,698,464.28	39.74433194	-80.79349299	
2,215.00	4.39	267.30	2,212.06	-21.02	-66.75	14,433,703.10	1,698,457.56	39.74433130	-80.79351690	
2,311.00	4.99	257.08	2,307.74	-22.13	-74.49	14,433,701.99	1,698,449.82	39.74432831	-80.79354445	
2,406.00	5.59	250.36	2,402.33	-24.61	-82.87	14,433,699.51	1,698,441.43	39.74432155	-80.79357430	
2,500.00	6.27	247.71	2,495.83	-28.09	-91.93	14,433,696.03	1,698,432.37	39.74431204	-80.79360656	
2,595.00	5.81	246.78	2,590.30	-31.96	-101.15	14,433,692.16	1,698,423.15	39.74430148	-80.79363939	
2,690.00	5.09	247.06	2,684.87	-35.50	-109.45	14,433,688.62	1,698,414.85	39.74429182	-80.79366895	
2,799.00	5.24	246.67	2,793.43	-39.35	-118.48	14,433,684.77	1,698,405.83	39.74428129	-80.79370108	
2,880.00	5.33	244.36	2,874.09	-42.45	-125.27	14,433,681.68	1,698,399.04	39.74427284	-80.79372525	
2,976.00	5.42	242.47	2,969.66	-46.47	-133.31	14,433,677.65	1,698,391.00	39.74426183	-80.79375389	
3,071.00	5.10	240.99	3,064.26	-50.59	-140.98	14,433,673.53	1,698,383.33	39.74425056	-80.79378121	
3,166.00	5.94	246.02	3,158.82	-54.64	-149.16	14,433,669.48	1,698,375.15	39.74423950	-80.79381036	
3,259.00	8.96	251.55	3,251.03	-58.89	-160.43	14,433,665.23	1,698,363.88	39.74422791	-80.79385049	
3,354.00	10.76	252.56	3,344.62	-63.89	-175.91	14,433,660.23	1,698,348.40	39.74421428	-80.79390560	
3,449.00	11.22	245.54	3,437.88	-70.37	-192.78	14,433,653.75	1,698,331.52	39.74419657	-80.79396568	
3,544.00	11.77	240.05	3,530.98	-79.04	-209.59	14,433,645.09	1,698,314.72	39.74417288	-80.79402555	
3,638.00	10.99	238.78	3,623.13	-88.47	-225.56	14,433,635.65	1,698,298.75	39.74414708	-80.79408244	
3,733.00	11.30	239.87	3,716.34	-97.83	-241.36	14,433,626.29	1,698,282.95	39.74412146	-80.79413870	
3,828.00	13.20	242.86	3,809.17	-107.45	-259.06	14,433,616.67	1,698,265.25	39.74409515	-80.79420176	
3,923.00	12.04	241.79	3,901.88	-117.08	-277.44	14,433,607.04	1,698,246.86	39.74406882	-80.79426724	
4,017.00	10.73	239.58	3,994.03	-126.15	-293.63	14,433,597.97	1,698,230.68	39.74404402	-80.79432490	
4,112.00	11.86	239.24	4,087.18	-135.62	-309.65	14,433,588.50	1,698,214.66	39.74401811	-80.79438195	
4,209.00	13.27	234.61	4,181.86	-147.17	-327.29	14,433,576.95	1,698,197.02	39.74398652	-80.79444481	
4,304.00	11.78	228.41	4,274.60	-159.92	-343.43	14,433,564.20	1,698,180.88	39.74395159	-80.79450234	
4,399.00	11.38	237.48	4,367.68	-171.40	-358.59	14,433,552.72	1,698,165.72	39.74392017	-80.79455636	
4,493.00	12.86	240.73	4,459.58	-181.50	-375.54	14,433,542.62	1,698,148.77	39.74389254	-80.79461672	
4,588.00	12.43	241.53	4,552.28	-191.54	-393.75	14,433,532.58	1,698,130.56	39.74386507	-80.79468159	
4,683.00	11.46	234.01	4,645.22	-201.96	-410.37	14,433,522.16	1,698,113.94	39.74383656	-80.79474082	
4,777.00	12.28	239.69	4,737.22	-212.49	-426.56	14,433,511.63	1,698,097.75	39.74380773	-80.79479849	
4,873.00	13.51	246.67	4,830.80	-222.09	-445.67	14,433,502.03	1,698,078.64	39.74378151	-80.79486656	
4,968.00	12.60	243.98	4,923.34	-231.03	-465.17	14,433,493.09	1,698,059.14	39.74375708	-80.79493601	
5,063.00	11.81	240.74	5,016.20	-240.33	-482.96	14,433,483.80	1,698,041.34	39.74373165	-80.79499938	
5,158.00	12.53	244.27	5,109.06	-249.55	-500.73	14,433,474.57	1,698,023.58	39.74370643	-80.79506266	
5,252.00	13.66	248.85	5,200.62	-257.98	-520.27	14,433,466.14	1,698,004.04	39.74368339	-80.79513223	
5,347.00	12.87	246.35	5,293.08	-266.28	-540.42	14,433,457.85	1,697,983.89	39.74366075	-80.79520400	
5,442.00	12.19	244.19	5,385.82	-274.89	-559.14	14,433,449.23	1,697,965.17	39.74363722	-80.79527067	
5,536.00	11.28	242.86	5,477.86	-283.40	-576.26	14,433,440.72	1,697,948.05	39.74361394	-80.79533163	
5,631.00	10.34	240.47	5,571.17	-291.84	-591.95	14,433,432.28	1,697,932.36	39.74359086	-80.79538750	



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Survey								WV Department of Environmental Protection	
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ustf)	Map Easting (ustf)	Latitude	Longitude
5,726.00	11.43	244.22	5,664.46	-300.14	-607.84	14,433,423.98	1,697,916.47	39.74356817	-80.79544411
5,792.00	12.30	245.05	5,729.05	-305.95	-620.10	14,433,418.17	1,697,904.21	39.74355230	-80.79548779
5,846.00	12.62	243.64	5,781.78	-310.99	-630.60	14,433,413.13	1,697,893.70	39.74353851	-80.79552518
5,869.00	13.41	243.47	5,804.19	-313.30	-635.24	14,433,410.82	1,697,889.07	39.74353220	-80.79554170
5,941.00	14.81	230.02	5,874.03	-322.95	-649.77	14,433,401.18	1,697,874.54	39.74350580	-80.79559345
5,988.00	17.45	212.09	5,919.20	-332.78	-658.12	14,433,391.34	1,697,866.19	39.74347884	-80.79562325
6,036.00	19.38	203.56	5,964.75	-346.18	-665.13	14,433,377.94	1,697,859.18	39.74344208	-80.79564829
6,083.00	20.57	195.65	6,008.93	-361.29	-670.48	14,433,362.83	1,697,853.83	39.74340064	-80.79566743
6,131.00	21.23	183.00	6,053.80	-378.09	-673.21	14,433,346.03	1,697,851.10	39.74335450	-80.79567728
6,178.00	24.04	176.14	6,097.18	-396.15	-673.01	14,433,327.97	1,697,851.30	39.74330491	-80.79567672
6,227.00	26.46	172.19	6,141.50	-416.93	-670.85	14,433,307.19	1,697,853.46	39.74324783	-80.79566922
6,274.00	27.12	170.34	6,183.45	-437.86	-667.63	14,433,286.26	1,697,856.68	39.74319032	-80.79565793
6,322.00	30.59	165.86	6,225.49	-460.50	-662.81	14,433,263.62	1,697,861.50	39.74312811	-80.79564096
6,369.00	35.52	163.66	6,264.88	-485.22	-656.04	14,433,238.91	1,697,868.27	39.74306020	-80.79561709
6,416.00	37.05	159.27	6,302.77	-511.57	-647.19	14,433,212.55	1,697,877.12	39.74298778	-80.79558580
6,463.00	40.84	156.72	6,339.32	-538.94	-636.10	14,433,185.18	1,697,888.21	39.74291254	-80.79554657
6,511.00	44.13	156.10	6,374.71	-568.64	-623.12	14,433,155.48	1,697,901.19	39.74283089	-80.79550065
6,558.00	49.05	156.37	6,407.00	-599.88	-609.37	14,433,124.24	1,697,914.94	39.74274500	-80.79545198
6,605.00	53.19	157.07	6,436.49	-633.48	-594.92	14,433,090.64	1,697,929.39	39.74265263	-80.79540084
6,652.00	56.40	159.62	6,463.59	-669.17	-580.76	14,433,054.95	1,697,943.54	39.74255453	-80.79535079
6,699.00	60.66	159.88	6,488.12	-706.78	-566.90	14,433,017.35	1,697,957.41	39.74245117	-80.79530176
6,746.00	67.34	157.51	6,508.71	-746.10	-551.53	14,432,978.03	1,697,972.77	39.74234309	-80.79524743
6,794.00	72.62	156.45	6,525.14	-787.59	-533.90	14,432,936.54	1,697,990.41	39.74222904	-80.79518503
6,841.00	76.57	155.05	6,537.63	-828.89	-515.29	14,432,895.23	1,698,009.02	39.74211549	-80.79511916
6,890.00	82.73	152.68	6,546.43	-872.13	-494.06	14,432,851.99	1,698,030.25	39.74199659	-80.79504399
6,937.00	83.78	151.88	6,551.95	-913.45	-472.35	14,432,810.67	1,698,051.96	39.74188299	-80.79496709
6,985.00	83.60	148.19	6,557.22	-954.78	-448.52	14,432,769.35	1,698,075.79	39.74176935	-80.79488262
7,058.00	89.23	147.31	6,561.79	-1,016.37	-409.66	14,432,707.76	1,698,114.65	39.74159996	-80.79474492
7,080.00	89.89	147.67	6,561.96	-1,034.92	-397.84	14,432,689.20	1,698,126.47	39.74154893	-80.79470301
7,175.00	90.77	146.96	6,561.41	-1,114.87	-346.54	14,432,609.25	1,698,177.77	39.74132903	-80.79452117
7,270.00	90.33	146.87	6,560.50	-1,194.47	-294.68	14,432,529.66	1,698,229.63	39.74111012	-80.79433735
7,365.00	89.67	148.81	6,560.50	-1,274.89	-244.11	14,432,449.24	1,698,280.19	39.74088895	-80.79415813
7,460.00	89.05	151.18	6,561.56	-1,357.14	-196.61	14,432,366.98	1,698,327.69	39.74066275	-80.79398983
7,555.00	88.00	151.09	6,564.00	-1,440.31	-150.77	14,432,283.81	1,698,373.54	39.74043405	-80.79382742
7,649.00	88.70	150.48	6,566.71	-1,522.32	-104.91	14,432,201.81	1,698,419.40	39.74020854	-80.79366495
7,743.00	89.05	150.21	6,568.55	-1,603.99	-58.41	14,432,120.13	1,698,465.90	39.73998396	-80.79350021
7,838.00	89.80	150.57	6,569.51	-1,686.58	-11.47	14,432,037.54	1,698,512.84	39.73975684	-80.79333392
7,933.00	90.55	151.44	6,569.22	-1,769.67	34.58	14,431,954.45	1,698,558.88	39.73952836	-80.79317079
8,028.00	89.67	149.60	6,569.04	-1,852.37	81.33	14,431,871.76	1,698,605.63	39.73930096	-80.79300517
8,123.00	89.89	149.69	6,569.40	-1,934.34	129.33	14,431,789.78	1,698,653.64	39.73907552	-80.79283507
8,217.00	90.64	149.60	6,568.97	-2,015.45	176.84	14,431,708.67	1,698,701.14	39.73885246	-80.79266676
8,312.00	89.23	149.16	6,569.07	-2,097.21	225.22	14,431,626.92	1,698,749.53	39.73862764	-80.79249531
8,407.00	89.85	148.19	6,569.84	-2,178.35	274.61	14,431,545.77	1,698,798.92	39.73840447	-80.79232030
8,502.00	90.11	148.37	6,569.87	-2,259.16	324.56	14,431,464.96	1,698,848.87	39.73818223	-80.79214329
8,598.00	90.90	149.95	6,569.02	-2,341.58	373.77	14,431,382.54	1,698,898.08	39.73795557	-80.79196892
8,693.00	89.63	150.21	6,568.58	-2,423.92	421.15	14,431,300.21	1,698,945.46	39.73772915	-80.79180105
8,788.00	88.92	150.04	6,569.79	-2,506.29	468.47	14,431,217.84	1,698,992.77	39.73750264	-80.79163342
8,883.00	89.36	150.13	6,571.21	-2,588.62	515.84	14,431,135.51	1,699,040.15	39.73727622	-80.79146559
8,978.00	90.46	148.90	6,571.36	-2,670.48	564.03	14,431,053.64	1,699,088.34	39.73705109	-80.79129484
9,073.00	90.42	151.09	6,570.63	-2,752.75	611.54	14,430,971.38	1,699,135.84	39.73682487	-80.79112654
9,168.00	88.92	151.18	6,571.18	-2,835.94	657.40	14,430,888.19	1,699,181.70	39.73659611	-80.79096411
9,263.00	89.80	150.39	6,572.24	-2,918.85	703.76	14,430,805.28	1,699,228.07	39.73636812	-80.79079987
9,355.00	88.62	150.39	6,573.51	-2,998.82	749.21	14,430,725.30	1,699,273.52	39.73614819	-80.79063886
9,452.00	89.49	150.48	6,575.11	-3,083.18	797.07	14,430,640.94	1,699,321.37	39.73591621	-80.79046934
9,546.00	89.76	151.18	6,575.72	-3,165.26	842.88	14,430,558.87	1,699,367.19	39.73569051	-80.79030706

Company:	Tug Hill Operating LLC	Local Co-ordinate Reference:	Well Evad 01HM (G)
Project:	Marshall County, West Virginia	TVD Reference:	RKB=1291+18 @ 1309.00ft (PD 528)
Site:	Accetolo/Evad Pad	MD Reference:	RKB=1291+18 @ 1309.00ft (PD 528)
Well:	Evad 01HM (G)	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	DB_Jul2216dt_v14

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Survey									JUL 20 2020	
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	WV Department of Environmental Protection		
								Latitude	Longitude	
9,640.00	90.33	150.92	6,575.65	-3,247.51	888.38	14,430,476.62	1,699,412.69	39.73546432	-80.79014590	
9,735.00	88.84	150.13	6,576.34	-3,330.21	935.12	14,430,393.92	1,699,459.43	39.73523690	-80.78998032	
9,831.00	89.14	149.42	6,578.03	-3,413.15	983.44	14,430,310.98	1,699,507.75	39.73500883	-80.78980914	
9,926.00	90.37	148.54	6,578.44	-3,494.56	1,032.39	14,430,229.57	1,699,556.70	39.73478493	-80.78963569	
10,021.00	90.68	148.54	6,577.57	-3,575.59	1,081.97	14,430,148.54	1,699,606.28	39.73456208	-80.78946001	
10,116.00	89.41	148.63	6,577.49	-3,656.66	1,131.49	14,430,067.47	1,699,655.79	39.73433911	-80.78928456	
10,211.00	89.63	149.34	6,578.29	-3,738.08	1,180.44	14,429,986.05	1,699,704.74	39.73411520	-80.78911114	
10,307.00	89.98	149.95	6,578.61	-3,820.92	1,228.95	14,429,903.21	1,699,753.26	39.73388739	-80.78893927	
10,402.00	88.70	151.88	6,579.71	-3,903.92	1,275.12	14,429,820.20	1,699,799.43	39.73365912	-80.78877572	
10,497.00	89.14	151.71	6,581.50	-3,987.63	1,320.02	14,429,736.50	1,699,844.32	39.73342896	-80.78861675	
10,592.00	90.11	151.88	6,582.12	-4,071.35	1,364.91	14,429,652.78	1,699,889.22	39.73319875	-80.78845775	
10,687.00	89.36	151.44	6,582.56	-4,154.96	1,410.01	14,429,569.17	1,699,934.32	39.73296884	-80.78829805	
10,781.00	89.10	149.51	6,583.82	-4,236.74	1,456.33	14,429,487.39	1,699,980.63	39.73274394	-80.78813399	
10,875.00	89.58	148.98	6,584.91	-4,317.51	1,504.39	14,429,406.61	1,700,028.70	39.73252180	-80.78796371	
10,971.00	90.77	149.07	6,584.61	-4,399.82	1,553.80	14,429,324.31	1,700,078.10	39.73229543	-80.78778866	
11,066.00	90.99	149.34	6,583.15	-4,481.42	1,602.43	14,429,242.71	1,700,126.73	39.73207103	-80.78761638	
11,161.00	89.85	150.13	6,582.46	-4,563.47	1,650.31	14,429,160.66	1,700,174.61	39.73184539	-80.78744677	
11,256.00	88.44	150.74	6,583.87	-4,646.08	1,697.18	14,429,078.05	1,700,221.48	39.73161819	-80.78728077	
11,350.00	88.92	150.74	6,586.04	-4,728.07	1,743.11	14,428,996.06	1,700,267.41	39.73139274	-80.78711809	
11,445.00	89.63	150.74	6,587.24	-4,810.94	1,789.54	14,428,913.19	1,700,313.84	39.73116484	-80.78695364	
11,540.00	90.42	150.48	6,587.20	-4,893.71	1,836.16	14,428,830.42	1,700,360.46	39.73093722	-80.78678852	
11,635.00	88.62	149.42	6,588.00	-4,975.94	1,883.73	14,428,748.19	1,700,408.03	39.73071110	-80.78662003	
11,730.00	89.14	149.34	6,589.85	-5,057.67	1,932.10	14,428,666.46	1,700,456.41	39.73048631	-80.78644865	
11,825.00	89.85	149.69	6,590.69	-5,139.54	1,980.30	14,428,584.59	1,700,504.60	39.73026117	-80.78627793	
11,920.00	90.86	150.04	6,590.10	-5,221.70	2,027.99	14,428,502.43	1,700,552.29	39.73003523	-80.78610900	
12,015.00	89.36	149.07	6,589.92	-5,303.59	2,076.12	14,428,420.54	1,700,600.43	39.72981000	-80.78593849	
12,109.00	89.71	149.42	6,590.68	-5,384.37	2,124.19	14,428,339.76	1,700,648.49	39.72958785	-80.78576821	
12,204.00	88.18	150.13	6,592.43	-5,466.44	2,172.00	14,428,257.69	1,700,696.31	39.72936215	-80.78559885	
12,299.00	88.70	149.95	6,595.02	-5,548.71	2,219.43	14,428,175.42	1,700,743.73	39.72913589	-80.78543087	
12,393.00	89.23	150.04	6,596.72	-5,630.10	2,266.43	14,428,094.03	1,700,790.73	39.72891206	-80.78526440	
12,489.00	89.80	149.51	6,597.53	-5,713.05	2,314.75	14,428,011.08	1,700,839.05	39.72868395	-80.78509323	
12,583.00	90.68	149.42	6,597.13	-5,794.01	2,362.51	14,427,930.12	1,700,886.81	39.72846129	-80.78492407	
12,678.00	89.80	149.42	6,596.74	-5,875.80	2,410.84	14,427,848.34	1,700,935.14	39.72823636	-80.78475287	
12,773.00	90.55	148.81	6,596.45	-5,957.32	2,459.60	14,427,766.81	1,700,983.91	39.72801214	-80.78458013	
12,868.00	89.05	148.37	6,596.78	-6,038.40	2,509.11	14,427,685.73	1,701,033.41	39.72778915	-80.78440474	
12,963.00	89.41	148.28	6,598.05	-6,119.24	2,558.99	14,427,604.89	1,701,083.29	39.72756681	-80.78422802	
13,058.00	90.55	148.81	6,598.09	-6,200.28	2,608.56	14,427,523.85	1,701,132.87	39.72734393	-80.78405240	
13,152.00	89.89	150.74	6,597.73	-6,281.50	2,655.88	14,427,442.64	1,701,180.18	39.72712057	-80.78388481	
13,247.00	89.01	151.18	6,598.64	-6,364.55	2,701.99	14,427,359.59	1,701,226.29	39.72689218	-80.78372152	
13,342.00	90.07	150.74	6,599.40	-6,447.60	2,748.10	14,427,276.53	1,701,272.41	39.72666379	-80.78355823	
13,437.00	89.63	151.36	6,599.65	-6,530.73	2,794.09	14,427,193.41	1,701,318.39	39.72643519	-80.78339540	
13,532.00	88.75	151.44	6,600.99	-6,614.13	2,839.56	14,427,110.01	1,701,363.86	39.72620585	-80.78323439	
13,625.00	89.23	151.71	6,602.63	-6,695.90	2,883.82	14,427,028.23	1,701,408.12	39.72598097	-80.78307768	
13,720.00	90.02	151.27	6,603.25	-6,779.38	2,929.16	14,426,944.75	1,701,453.47	39.72575142	-80.78291713	
13,814.00	90.29	149.60	6,603.00	-6,861.14	2,975.54	14,426,863.00	1,701,499.84	39.72552658	-80.78275289	
13,908.00	88.66	149.77	6,603.86	-6,942.28	3,022.99	14,426,781.86	1,701,547.29	39.72530343	-80.78258485	
14,003.00	88.97	150.21	6,605.83	-7,024.52	3,070.49	14,426,699.61	1,701,594.79	39.72507724	-80.78241661	
14,098.00	89.45	149.77	6,607.14	-7,106.78	3,118.00	14,426,617.35	1,701,642.30	39.72485102	-80.78224835	
14,193.00	88.26	149.42	6,609.03	-7,188.70	3,166.07	14,426,535.44	1,701,690.37	39.72462573	-80.78207810	
14,288.00	88.84	149.34	6,611.44	-7,270.42	3,214.44	14,426,453.71	1,701,738.74	39.72440096	-80.78190677	
14,383.00	89.23	149.16	6,613.04	-7,352.06	3,263.01	14,426,372.08	1,701,787.31	39.72417645	-80.78173476	
14,478.00	89.85	148.54	6,613.80	-7,433.35	3,312.15	14,426,290.78	1,701,836.45	39.72395285	-80.78156070	
14,572.00	90.42	148.37	6,613.58	-7,513.46	3,361.32	14,426,210.67	1,701,885.63	39.72373252	-80.78138649	
14,667.00	89.85	148.90	6,613.36	-7,594.58	3,410.77	14,426,129.56	1,701,935.07	39.72350942	-80.78121135	
14,762.00	90.33	148.02	6,613.21	-7,675.55	3,460.46	14,426,048.59	1,701,984.76	39.72328673	-80.78103532	

Company:	Tug Hill Operating LLC	Local Co-ordinate Reference:	Well Evad 01HM (G)
Project:	Marshall County, West Virginia	TVD Reference:	RKB=1291+18 @ 1309.00ft (PD 528)
Site:	Accettolo/Evad Pad	MD Reference:	RKB=1291+18 @ 1309.00ft (PD 528)
Well:	Evad 01HM (G)	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	DB_Jul2216dt_v14

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Survey								JUL 20 2020	
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	WV Department of Environmental Protection Latitude	WV Department of Environmental Protection Longitude
14,857.00	89.98	150.65	6,612.95	-7,757.25	3,508.91	14,425,966.88	1,702,033.21	39.72306201	-80.78086373
14,950.00	90.42	151.09	6,612.62	-7,838.49	3,554.18	14,425,885.65	1,702,078.48	39.72283861	-80.78070343
15,045.00	89.71	150.74	6,612.52	-7,921.51	3,600.36	14,425,802.63	1,702,124.66	39.72261030	-80.78053992
15,140.00	90.29	150.39	6,612.52	-8,004.25	3,647.05	14,425,719.89	1,702,171.35	39.72238277	-80.78037461
15,245.00	89.45	151.27	6,612.75	-8,095.93	3,698.22	14,425,628.21	1,702,222.52	39.72213064	-80.78019341
15,340.00	89.71	151.71	6,613.45	-8,179.40	3,743.57	14,425,544.73	1,702,267.87	39.72190108	-80.78003288
15,435.00	88.44	149.95	6,614.99	-8,262.34	3,789.86	14,425,461.80	1,702,314.16	39.72167300	-80.77986896
15,530.00	88.40	149.16	6,617.60	-8,344.21	3,837.98	14,425,379.93	1,702,362.28	39.72144784	-80.77969855
15,624.00	88.70	148.54	6,619.98	-8,424.63	3,886.59	14,425,299.51	1,702,410.89	39.72122665	-80.77952638
15,719.00	88.84	148.46	6,622.02	-8,505.61	3,936.21	14,425,218.53	1,702,460.51	39.72100391	-80.77935061
15,749.00	89.10	148.19	6,622.56	-8,531.14	3,951.97	14,425,193.00	1,702,476.26	39.72093370	-80.77929482
Survey @ 15749.00 MD 6622.56 TVD									
15,800.00	89.10	148.19	6,623.36	-8,574.47	3,978.84	14,425,149.66	1,702,503.14	39.72081451	-80.77919961
Survey projected to 15800.00 MD 6623.36 TVD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
158.00	158.00	-0.05	0.31	MWD surveys
15,749.00	6,622.56	-8,531.14	3,951.97	Survey @ 15749.00 MD 6622.56 TVD
15,800.00	6,623.36	-8,574.47	3,978.84	Survey projected to 15800.00 MD 6623.36 TVD