

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

API 47-009-00227 County BROOKE District BUFFALO
Quad BETHANY Pad Name WORTHLEY BRK PAD Field/Pool Name PANHANDLE FIELD WET
Farm name KIMBERLY CARMAN WORTHLEY Well Number WORTHLEY BRK 210H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,451,752.65 Easting 537,852.45
Landing Point of Curve Northing 4,451,818.99 Easting 538,330.11
Bottom Hole Northing 4,449,573.50 Easting 539,325.69

Elevation (ft) 1156.51 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

Date permit issued 05/15/2018 Date drilling commenced 05/16/2018 Date drilling ceased 07/05/2018
Date completion activities began 09/20/2018 Date completion activities ceased 10/23/2018
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 183 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 800 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 329 Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) N

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Reviewed

1-17-19 C-JLQ

Reviewed by:
JB 1-17-19

API 47-009 - 00227 Farm name KIMBERLY CARMAN WORTHLEY Well number WORTHLEY BRK 210H

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	126	NEW	PLS2/234.29#		Y
Surface	26	20	380	NEW	J-55/94#	249.8', 291.8'	Y, 45 BBLs
Coal	SEE SURFACE						
Intermediate 1	17.50	13.375	600	NEW	J-55/54.50#		Y, 25 BBLs
Intermediate 2	12.25	9.625	1740	NEW	J-55/36#		Y, 31 BBLs
Intermediate 3							
Production	8.75/8.50	5.5	14884	NEW	HCP-110/20#		Y, 15 BBLs
Tubing		2.375	6644	NEW	P-110/4.7#		N
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	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	796	15.60	1.19	947.24	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	586	15.60	1.20	703.2	SURFACE	8
Intermediate 2	CLASS A	646	15.60	1.19	768.74	SURFACE	8
Intermediate 3							
Production	CLASS A	2,746	15.60	1.19	3267.74	SURFACE	24
Tubing							

Drillers TD (ft) 14,884 Loggers TD (ft) 14,884
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,410'

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 _____

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 181 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

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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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Thomsuzc
Scale	0.999618	Report Generated	7/26/2018 at 7:41:38 AM
Convergence at slot	0.29° East	Database/Source file	WA_Pennsylvania/Worthley_BRK_210H_AWP_Proj_14884_MD.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	19.22	-42.38	1764603.93	14605458.39	40°12'55.206"N	80°33'18.558"W
Facility Reference Pt			1764646.29	14605439.18	40°12'55.014"N	80°33'18.013"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC41 (RKB) to Facility Vertical Datum	1182.30ft
Horizontal Reference Pt	Slot	SDC41 (RKB) to Mean Sea Level	1182.30ft
Vertical Reference Pt	SDC41 (RKB)	SDC41 (RKB) to Ground Level at Slot (Slot #210H)	26.00ft
MD Reference Pt	SDC41 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	146.25°

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Actual Wellpath Report

Worthley BRK 210H AWP Proj: 14884'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00†	0.000	59.790	0.00	0.00	0.00	0.00	1764603.93	14605458.39	40°12'55.206"N	80°33'18.558"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	59.790	26.00	0.00	0.00	0.00	1764603.93	14605458.39	40°12'55.206"N	80°33'18.558"W	0.00	0.000	0.00	0.00	0.00
161.00	0.920	59.790	160.99	0.07	0.55	0.94	1764604.87	14605458.93	40°12'55.211"N	80°33'18.546"W	1.08	59.790	0.68	0.68	44.29
222.00	1.130	54.890	221.98	0.08	1.14	1.85	1764605.78	14605459.52	40°12'55.217"N	80°33'18.534"W	2.17	58.435	0.37	0.34	-8.03
312.00	1.100	54.500	311.97	0.04	2.15	3.28	1764607.21	14605460.53	40°12'55.227"N	80°33'18.516"W	3.92	56.768	0.03	-0.03	-0.43
321.00	1.210	51.100	320.97	0.02	2.26	3.43	1764607.36	14605460.64	40°12'55.228"N	80°33'18.514"W	4.10	56.589	1.44	1.22	-37.78
405.00	1.240	55.340	404.95	-0.07	3.33	4.86	1764608.79	14605461.72	40°12'55.239"N	80°33'18.495"W	5.90	55.572	0.11	0.04	5.05
498.00	1.200	50.920	497.93	-0.18	4.52	6.45	1764610.38	14605462.90	40°12'55.250"N	80°33'18.475"W	7.87	54.968	0.11	-0.04	-4.75
541.00	1.010	49.790	540.92	-0.26	5.05	7.09	1764611.02	14605463.43	40°12'55.256"N	80°33'18.466"W	8.70	54.533	0.44	-0.44	-2.63
618.00	0.850	49.140	617.91	-0.41	5.86	8.04	1764611.97	14605464.24	40°12'55.264"N	80°33'18.454"W	9.95	53.900	0.21	-0.21	-0.84
708.00	2.830	65.350	707.86	-0.14	7.22	10.56	1764614.49	14605465.61	40°12'55.277"N	80°33'18.421"W	12.79	55.628	2.25	2.20	18.01
799.00	6.030	65.620	798.57	0.99	10.13	16.96	1764620.88	14605468.52	40°12'55.305"N	80°33'18.339"W	19.75	59.137	3.52	3.52	0.30
890.00	8.570	62.720	888.83	2.54	15.22	27.34	1764631.26	14605473.60	40°12'55.355"N	80°33'18.205"W	31.29	60.902	2.82	2.79	-3.19
981.00	10.120	61.960	978.62	4.10	22.08	40.42	1764644.34	14605480.46	40°12'55.422"N	80°33'18.036"W	46.06	61.353	1.71	1.70	-0.84
1072.00	11.230	59.060	1068.04	5.33	30.40	55.08	1764658.99	14605488.77	40°12'55.504"N	80°33'17.846"W	62.91	61.107	1.35	1.22	-3.19
1163.00	11.450	67.850	1157.27	7.58	38.36	71.05	1764674.95	14605496.73	40°12'55.582"N	80°33'17.640"W	80.74	61.635	1.91	0.24	9.66
1254.00	12.450	71.560	1246.30	11.98	44.87	88.72	1764692.62	14605503.24	40°12'55.645"N	80°33'17.412"W	99.42	63.173	1.39	1.10	4.08
1344.00	12.480	69.590	1334.18	16.79	51.33	107.04	1764710.93	14605509.69	40°12'55.708"N	80°33'17.175"W	118.71	64.381	0.47	0.03	-2.19
1434.00	12.030	65.090	1422.13	20.47	58.67	124.66	1764728.54	14605517.03	40°12'55.780"N	80°33'16.947"W	137.77	64.796	1.17	-0.50	-5.00
1527.00	12.480	65.660	1513.01	23.61	66.89	142.60	1764746.48	14605525.25	40°12'55.860"N	80°33'16.716"W	157.51	64.870	0.50	0.48	0.61
1620.00	14.400	64.530	1603.46	26.92	76.01	162.20	1764766.07	14605534.36	40°12'55.949"N	80°33'16.462"W	179.13	64.892	2.08	2.06	-1.22
1687.00	15.850	63.790	1668.14	29.32	83.63	177.93	1764781.80	14605541.99	40°12'56.024"N	80°33'16.259"W	196.61	64.825	2.18	2.16	-1.10
1763.00	17.260	61.450	1740.99	31.70	93.60	197.15	1764801.01	14605551.95	40°12'56.121"N	80°33'16.011"W	218.24	64.602	2.05	1.86	-3.08
1824.00	17.540	61.910	1799.19	33.43	102.26	213.21	1764817.06	14605560.60	40°12'56.206"N	80°33'15.803"W	236.46	64.377	0.51	0.46	0.75
1914.00	15.110	59.250	1885.56	35.38	114.64	235.25	1764839.10	14605572.99	40°12'56.327"N	80°33'15.518"W	261.70	64.019	2.82	-2.70	-2.96
2005.00	13.410	55.470	1973.76	35.86	126.69	254.14	1764857.98	14605585.03	40°12'56.445"N	80°33'15.274"W	283.97	63.504	2.13	-1.87	-4.15
2098.00	15.500	47.780	2063.81	33.88	141.16	272.23	1764876.06	14605596.49	40°12'56.587"N	80°33'15.040"W	306.65	62.593	3.05	2.25	-8.27
2190.00	16.150	45.530	2152.33	29.69	158.38	290.47	1764894.29	14605616.71	40°12'56.757"N	80°33'14.804"W	330.84	61.398	0.97	0.71	-2.45
2283.00	15.920	44.050	2241.71	24.59	176.61	308.57	1764912.38	14605634.93	40°12'56.936"N	80°33'14.569"W	355.53	60.215	0.50	-0.25	-1.59
2376.00	15.600	41.430	2331.22	18.69	195.15	325.71	1764929.52	14605653.46	40°12'57.118"N	80°33'14.347"W	379.70	59.072	0.84	-0.34	-2.82

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Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

WELLPATH DATA (174 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2469.00	15.300	39.420	2420.86	11.94	214.01	341.78	1764945.58	14605672.31	40°12'57.304"N	80°33'14.139"W	403.25	57.947	0.66	-0.32	-2.16
2561.00	15.420	40.960	2509.57	5.20	232.62	357.50	1764961.30	14605690.92	40°12'57.487"N	80°33'13.935"W	426.52	56.949	0.46	0.13	1.67
2654.00	16.970	43.090	2598.88	-1.15	251.87	374.88	1764978.67	14605710.16	40°12'57.676"N	80°33'13.709"W	451.63	56.104	1.78	1.67	2.29
2747.00	17.170	41.250	2687.78	-7.79	272.10	393.20	1764996.98	14605730.38	40°12'57.875"N	80°33'13.472"W	478.17	55.316	0.62	0.22	-1.98
2840.00	16.580	38.460	2776.78	-15.40	292.81	410.51	1765014.28	14605751.09	40°12'58.079"N	80°33'13.248"W	504.24	54.500	1.08	-0.63	-3.00
2932.00	17.380	40.160	2864.77	-23.22	313.59	427.53	1765031.30	14605771.86	40°12'58.284"N	80°33'13.027"W	530.21	53.740	1.02	0.87	1.85
3025.00	18.580	48.620	2953.24	-29.04	334.01	447.61	1765051.37	14605792.26	40°12'58.484"N	80°33'12.767"W	558.50	53.270	3.09	1.29	9.10
3118.00	18.340	49.200	3041.45	-32.80	353.36	469.81	1765073.56	14605811.61	40°12'58.675"N	80°33'12.479"W	587.86	53.052	0.32	-0.26	0.62
3210.00	17.380	45.270	3129.02	-37.19	372.49	490.53	1765094.27	14605830.73	40°12'58.863"N	80°33'12.211"W	615.93	52.788	1.67	-1.04	-4.27
3303.00	18.060	45.690	3217.61	-42.48	392.34	510.71	1765114.45	14605850.57	40°12'59.058"N	80°33'11.949"W	644.01	52.468	0.74	0.73	0.45
3396.00	17.720	44.450	3306.11	-48.02	412.51	530.94	1765134.66	14605870.74	40°12'59.256"N	80°33'11.687"W	672.35	52.155	0.55	-0.37	-1.33
3489.00	18.840	44.790	3394.42	-53.90	433.27	551.43	1765155.15	14605891.49	40°12'59.460"N	80°33'11.422"W	701.28	51.842	1.21	1.20	0.37
3581.00	20.380	44.450	3481.08	-60.12	455.25	573.11	1765176.82	14605913.46	40°12'59.676"N	80°33'11.141"W	731.92	51.538	1.68	1.67	-0.37
3674.00	19.300	41.500	3568.56	-67.35	478.32	594.64	1765198.34	14605936.52	40°12'59.903"N	80°33'10.862"W	763.14	51.187	1.58	-1.16	-3.17
3767.00	18.080	42.470	3656.65	-74.70	500.48	614.56	1765218.26	14605958.67	40°13'00.121"N	80°33'10.604"W	792.57	50.842	1.35	-1.31	1.04
3860.00	19.140	47.260	3744.80	-80.52	521.47	635.51	1765239.20	14605979.66	40°13'00.328"N	80°33'10.332"W	822.07	50.629	2.00	1.14	5.15
3952.00	18.430	45.320	3831.90	-85.63	541.93	656.93	1765260.61	14606000.11	40°13'00.529"N	80°33'10.055"W	851.61	50.479	1.03	-0.77	-2.11
4045.00	18.050	44.590	3920.22	-91.33	562.53	677.49	1765281.17	14606020.70	40°13'00.731"N	80°33'09.789"W	880.59	50.297	0.48	-0.41	-0.78
4138.00	18.980	45.240	4008.41	-97.13	583.44	698.35	1765302.01	14606041.60	40°13'00.937"N	80°33'09.518"W	910.00	50.123	1.02	1.00	0.70
4231.00	17.670	41.660	4096.69	-103.58	604.64	718.47	1765322.13	14606062.79	40°13'01.145"N	80°33'09.258"W	939.03	49.917	1.86	-1.41	-3.85
4323.00	18.360	41.420	4184.18	-110.80	625.93	737.34	1765340.99	14606084.08	40°13'01.355"N	80°33'09.013"W	967.19	49.672	0.75	0.75	-0.26
4416.00	20.980	42.480	4271.75	-118.52	649.20	758.27	1765361.92	14606107.34	40°13'01.584"N	80°33'08.742"W	998.22	49.431	2.84	2.82	1.14
4509.00	20.610	37.380	4358.70	-127.77	674.49	779.46	1765383.09	14606132.61	40°13'01.832"N	80°33'08.467"W	1030.77	49.129	1.99	-0.40	-5.48
4602.00	19.380	37.880	4446.09	-137.93	699.67	798.87	1765402.49	14606157.79	40°13'02.080"N	80°33'08.215"W	1061.95	48.787	1.34	-1.32	0.54
4691.00	19.970	43.760	4529.90	-145.87	722.31	818.45	1765422.07	14606180.42	40°13'02.303"N	80°33'07.961"W	1091.60	48.571	2.32	0.66	6.61
4781.00	20.820	43.370	4614.26	-152.76	745.04	840.06	1765443.67	14606203.14	40°13'02.527"N	80°33'07.681"W	1122.85	48.431	0.96	0.94	-0.43
4873.00	20.020	45.110	4700.48	-159.45	768.04	862.45	1765466.05	14606226.13	40°13'02.753"N	80°33'07.391"W	1154.86	48.314	1.09	-0.87	1.89
4966.00	19.270	40.700	4788.07	-166.64	790.91	883.73	1765487.33	14606248.99	40°13'02.978"N	80°33'07.115"W	1185.97	48.173	1.79	-0.81	-4.74
5059.00	19.810	42.290	4875.71	-174.55	814.20	904.35	1765507.93	14606272.27	40°13'03.207"N	80°33'06.848"W	1216.87	48.003	0.81	0.58	1.71
5151.00	19.360	50.020	4962.40	-179.97	835.53	926.52	1765530.10	14606293.60	40°13'03.417"N	80°33'06.561"W	1247.62	47.956	2.86	-0.49	8.40

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Worthley BRK 210H AWP Proj: 14884'MD
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5244.00	18.490	44.090	5050.38	-184.75	856.03	948.60	1765552.17	14606314.09	40°13'03.618"N	80°33'06.275"W	1277.74	47.936	2.27	-0.94	-6.38	
5337.00	17.050	46.120	5138.95	-190.26	876.08	968.69	1765572.25	14606334.12	40°13'03.815"N	80°33'06.014"W	1306.09	47.874	1.69	-1.55	2.18	
5430.00	16.760	57.160	5227.95	-192.44	892.80	989.79	1765593.34	14606350.84	40°13'03.979"N	80°33'05.741"W	1332.96	47.949	3.46	-0.31	11.87	
5476.00	17.550	66.090	5271.91	-191.15	899.21	1001.70	1765605.25	14606357.25	40°13'04.042"N	80°33'05.587"W	1346.10	48.086	5.97	1.72	19.41	
5522.00	18.270	74.670	5315.69	-187.69	903.93	1015.00	1765618.54	14606361.97	40°13'04.088"N	80°33'05.416"W	1359.16	48.313	5.94	1.57	18.65	
5569.00	19.550	82.900	5360.16	-181.83	906.85	1029.91	1765633.45	14606364.89	40°13'04.116"N	80°33'05.223"W	1372.26	48.636	6.29	2.72	17.51	
5615.00	21.450	91.120	5403.25	-173.57	907.64	1045.96	1765649.49	14606365.67	40°13'04.123"N	80°33'05.016"W	1384.86	49.050	7.49	4.13	17.87	
5662.00	22.770	99.940	5446.81	-162.37	905.90	1063.52	1765667.04	14606363.94	40°13'04.105"N	80°33'04.790"W	1397.04	49.576	7.59	2.81	18.77	
5708.00	24.730	106.500	5488.92	-148.82	901.63	1081.52	1765685.04	14606359.67	40°13'04.062"N	80°33'04.558"W	1408.05	50.183	7.15	4.26	14.26	
5754.00	26.880	112.790	5530.34	-132.74	894.86	1100.34	1765703.85	14606352.91	40°13'03.994"N	80°33'04.316"W	1418.28	50.880	7.56	4.67	13.67	
5801.00	28.940	118.590	5571.88	-113.80	885.30	1120.12	1765723.62	14606343.35	40°13'03.899"N	80°33'04.062"W	1427.74	51.678	7.25	4.38	12.34	
5847.00	31.500	122.920	5611.63	-92.90	873.44	1139.99	1765743.48	14606331.49	40°13'03.780"N	80°33'03.807"W	1436.13	52.541	7.31	5.57	9.41	
5893.00	33.690	127.070	5650.38	-69.81	859.22	1160.26	1765763.75	14606317.27	40°13'03.639"N	80°33'03.546"W	1443.77	53.479	6.80	4.76	9.02	
5940.00	36.050	131.240	5688.95	-44.13	842.24	1181.07	1765784.55	14606300.30	40°13'03.470"N	80°33'03.279"W	1450.62	54.507	7.14	5.02	8.87	
5986.00	38.450	135.780	5725.57	-16.98	823.06	1201.23	1765804.70	14606281.13	40°13'03.280"N	80°33'03.020"W	1456.15	55.582	7.93	5.22	9.87	
6033.00	40.550	140.080	5761.84	12.58	800.86	1221.23	1765824.69	14606258.94	40°13'03.059"N	80°33'02.764"W	1460.40	56.744	7.33	4.47	9.15	
6079.00	43.480	143.380	5796.02	43.27	776.69	1240.27	1765843.73	14606234.77	40°13'02.819"N	80°33'02.520"W	1463.39	57.944	7.97	6.37	7.17	
6125.00	46.170	147.200	5828.65	75.67	750.03	1258.71	1765862.15	14606208.12	40°13'02.555"N	80°33'02.284"W	1465.22	59.210	8.27	5.85	8.30	
6172.00	50.830	147.700	5859.78	110.86	720.36	1277.63	1765881.08	14606178.47	40°13'02.261"N	80°33'02.042"W	1466.72	60.585	9.95	9.91	1.06	
6239.00	57.600	148.580	5898.94	165.15	674.22	1306.29	1765909.72	14606132.34	40°13'01.803"N	80°33'01.676"W	1470.02	62.700	10.16	10.10	1.31	
6332.00	61.870	146.650	5945.80	245.42	606.42	1349.33	1765952.74	14606064.57	40°13'01.131"N	80°33'01.126"W	1479.33	65.800	4.93	4.59	-2.08	
6425.00	67.150	147.510	5985.81	329.33	535.97	1394.92	1765998.32	14605994.15	40°13'00.433"N	80°33'00.542"W	1494.34	68.982	5.74	5.68	0.92	
6518.00	72.880	150.020	6017.59	416.60	461.26	1440.19	1766043.57	14605919.47	40°12'59.692"N	80°32'59.964"W	1512.25	72.241	6.66	6.16	2.70	
6611.00	79.610	152.330	6039.69	506.54	382.16	1483.69	1766087.05	14605840.40	40°12'58.908"N	80°32'59.408"W	1532.12	75.556	7.63	7.24	2.48	
6703.00	89.970	153.310	6048.03	597.43	300.77	1525.48	1766128.82	14605759.04	40°12'58.102"N	80°32'58.875"W	1554.84	78.847	11.31	11.26	1.07	
6796.00	90.030	153.740	6048.03	689.68	217.52	1566.94	1766170.27	14605675.82	40°12'57.277"N	80°32'58.346"W	1581.96	82.097	0.47	0.06	0.46	
6889.00	90.520	153.500	6047.58	781.91	134.20	1608.26	1766211.57	14605592.54	40°12'56.452"N	80°32'57.819"W	1613.85	85.230	0.59	0.53	-0.26	
6982.00	89.480	151.050	6047.58	874.39	51.89	1651.52	1766254.82	14605510.25	40°12'55.636"N	80°32'57.266"W	1652.34	88.200	2.86	-1.12	-2.63	
7074.00	89.420	149.800	6048.47	966.14	-28.12	1696.93	1766300.21	14605430.28	40°12'54.843"N	80°32'56.686"W	1697.16	90.949	1.36	-0.07	-1.36	
7167.00	89.320	152.960	6049.49	1058.82	-109.39	1742.11	1766345.37	14605349.03	40°12'54.038"N	80°32'56.109"W	1745.54	93.593	2.43	-0.11	2.43	

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Actual Wellpath Report

Worthley BRK 210H AWP Proj: 14884'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

WELLPATH DATA (174 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
7260.00	89.350	155.440	6050.57	1151.00	-192.79	1783.23	1766386.48	14605265.67	40°12'53.212"N	80°32'55.585"W	1793.62	96.170	3.63	0.03	3.63
7353.00	89.480	154.700	6051.52	1242.90	-277.11	1822.43	1766425.66	14605181.38	40°12'52.377"N	80°32'55.085"W	1843.38	98.646	0.81	0.14	-0.80
7445.00	89.420	153.010	6052.40	1334.08	-359.69	1862.96	1766466.18	14605098.83	40°12'51.559"N	80°32'54.568"W	1897.37	100.928	1.84	-0.07	-1.84
7538.00	89.450	152.260	6053.32	1426.50	-442.28	1905.71	1766508.91	14605016.27	40°12'50.740"N	80°32'54.022"W	1956.36	103.066	0.81	0.03	-0.81
7631.00	89.450	159.130	6054.21	1518.18	-526.99	1943.96	1766547.15	14604931.60	40°12'49.901"N	80°32'53.535"W	2014.13	105.168	7.39	0.00	7.39
7724.00	89.630	165.600	6054.96	1607.48	-615.57	1972.12	1766575.30	14604843.06	40°12'49.025"N	80°32'53.178"W	2065.96	107.335	6.96	0.19	6.96
7816.00	89.570	166.110	6055.60	1694.14	-704.77	1994.60	1766597.77	14604753.88	40°12'48.142"N	80°32'52.894"W	2115.46	109.460	0.56	-0.07	0.55
7909.00	89.480	165.740	6056.37	1781.71	-794.98	2017.22	1766620.38	14604663.71	40°12'47.249"N	80°32'52.608"W	2168.22	111.509	0.41	-0.10	-0.40
8002.00	90.460	161.580	6056.42	1870.43	-884.20	2043.38	1766646.53	14604574.52	40°12'46.366"N	80°32'52.277"W	2226.48	113.399	4.60	1.05	-4.47
8095.00	92.590	158.970	6053.95	1960.61	-971.70	2074.75	1766677.89	14604487.06	40°12'45.500"N	80°32'51.878"W	2291.02	115.096	3.62	2.29	-2.81
8187.00	93.020	154.770	6049.44	2050.90	-1056.19	2110.84	1766713.96	14604402.61	40°12'44.664"N	80°32'51.419"W	2360.33	116.582	4.58	0.47	-4.57
8280.00	90.220	151.000	6046.81	2143.22	-1138.91	2153.20	1766756.30	14604319.92	40°12'43.844"N	80°32'50.878"W	2435.85	117.876	5.05	-3.01	-4.05
8373.00	87.540	149.440	6048.63	2235.97	-1219.60	2199.37	1766802.46	14604239.25	40°12'43.044"N	80°32'50.288"W	2514.89	119.009	3.33	-2.88	-1.68
8465.00	86.980	149.480	6053.03	2327.72	-1298.75	2246.07	1766849.14	14604160.14	40°12'42.260"N	80°32'49.692"W	2594.53	120.038	0.61	-0.61	0.04
8558.00	86.860	149.390	6058.03	2420.44	-1378.71	2293.29	1766896.34	14604080.21	40°12'41.467"N	80°32'49.088"W	2675.82	121.014	0.16	-0.13	-0.10
8651.00	86.740	151.920	6063.22	2513.01	-1459.64	2338.79	1766941.83	14603999.30	40°12'40.665"N	80°32'48.507"W	2756.90	121.968	2.72	-0.13	2.72
8743.00	88.710	155.460	6066.87	2604.15	-1542.03	2379.53	1766982.55	14603916.95	40°12'39.849"N	80°32'47.987"W	2835.49	122.945	4.40	2.14	3.85
8836.00	88.830	156.700	6068.87	2695.76	-1627.02	2417.23	1767020.23	14603831.99	40°12'39.007"N	80°32'47.507"W	2913.79	123.944	1.34	0.13	1.33
8929.00	88.890	157.070	6070.72	2787.14	-1712.54	2453.73	1767056.72	14603746.51	40°12'38.160"N	80°32'47.042"W	2992.25	124.912	0.40	0.06	0.40
9021.00	89.230	154.560	6072.23	2877.84	-1796.44	2491.41	1767094.39	14603662.63	40°12'37.329"N	80°32'46.562"W	3071.54	125.794	2.75	0.37	-2.73
9114.00	89.510	155.230	6073.25	2969.78	-1880.65	2530.87	1767133.83	14603578.45	40°12'36.495"N	80°32'46.059"W	3153.12	126.616	0.78	0.30	0.72
9207.00	88.800	159.350	6074.62	3061.03	-1966.42	2566.76	1767169.71	14603492.73	40°12'35.646"N	80°32'45.602"W	3233.43	127.456	4.49	-0.76	4.43
9299.00	88.770	160.090	6076.57	3150.48	-2052.69	2598.64	1767201.57	14603406.48	40°12'34.792"N	80°32'45.197"W	3311.57	128.306	0.80	-0.03	0.80
9392.00	88.920	156.490	6078.45	3241.40	-2139.06	2633.03	1767235.95	14603320.14	40°12'33.936"N	80°32'44.759"W	3392.41	129.090	3.87	0.16	-3.87
9484.00	88.980	158.630	6080.13	3331.59	-2224.08	2668.14	1767271.05	14603235.16	40°12'33.094"N	80°32'44.312"W	3473.54	129.814	2.33	0.07	2.33
9577.00	88.770	163.670	6081.96	3421.42	-2312.04	2698.17	1767301.07	14603147.23	40°12'32.224"N	80°32'43.931"W	3553.26	130.593	5.42	-0.23	5.42
9670.00	88.920	165.010	6083.84	3509.80	-2401.57	2723.27	1767326.16	14603057.74	40°12'31.338"N	80°32'43.614"W	3630.94	131.408	1.45	0.16	1.44
9762.00	90.000	163.030	6084.70	3597.40	-2490.01	2748.59	1767351.47	14602969.34	40°12'30.463"N	80°32'43.293"W	3708.76	132.174	2.45	1.17	-2.15
9855.00	90.310	158.900	6084.45	3687.33	-2577.90	2778.92	1767381.78	14602881.47	40°12'29.592"N	80°32'42.908"W	3790.51	132.851	4.45	0.33	-4.44
9948.00	89.350	156.490	6084.73	3778.48	-2663.94	2814.21	1767417.06	14602795.47	40°12'28.740"N	80°32'42.459"W	3875.09	133.429	2.79	-1.03	-2.59

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Actual Wellpath Report

Worthley BRK 210H AWP Proj: 14884'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

WELLPATH DATA (174 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
10040.00	89.290	154.720	6085.82	3869.24	-2747.71	2852.21	1767455.04	14602711.73	40°12'27.911"N	80°32'41.975"W	3960.43	133.931	1.92	-0.07	-1.92	
10133.00	89.170	153.750	6087.07	3961.33	-2831.46	2892.63	1767495.45	14602628.01	40°12'27.081"N	80°32'41.459"W	4047.77	134.388	1.05	-0.13	-1.04	
10226.00	89.290	162.040	6088.32	4052.33	-2917.54	2927.59	1767530.40	14602541.97	40°12'26.229"N	80°32'41.014"W	4133.14	134.901	8.91	0.13	8.91	
10318.00	89.350	166.890	6089.41	4139.69	-3006.15	2952.22	1767555.02	14602453.39	40°12'25.352"N	80°32'40.703"W	4213.38	135.519	5.27	0.07	5.27	
10411.00	89.200	164.970	6090.59	4227.24	-3096.35	2974.83	1767577.62	14602363.23	40°12'24.459"N	80°32'40.417"W	4293.83	136.147	2.07	-0.16	-2.06	
10504.00	89.720	154.280	6091.47	4317.58	-3183.40	3007.16	1767609.94	14602276.21	40°12'23.597"N	80°32'40.006"W	4379.16	136.631	11.51	0.56	-11.49	
10596.00	89.290	148.750	6092.27	4409.16	-3264.22	3051.02	1767653.78	14602195.42	40°12'22.797"N	80°32'39.446"W	4468.09	136.934	6.03	-0.47	-6.01	
10689.00	89.050	148.900	6093.61	4502.05	-3343.79	3099.15	1767701.90	14602115.89	40°12'22.008"N	80°32'38.831"W	4559.13	137.174	0.30	-0.26	0.16	
10782.00	88.950	150.740	6095.24	4594.85	-3424.16	3145.90	1767748.62	14602035.54	40°12'21.211"N	80°32'38.234"W	4649.90	137.425	1.98	-0.11	1.98	
10874.00	89.080	148.770	6096.82	4686.66	-3503.62	3192.23	1767794.93	14601956.11	40°12'20.424"N	80°32'37.642"W	4739.80	137.663	2.15	0.14	-2.14	
10967.00	88.980	149.050	6098.39	4779.55	-3583.25	3240.25	1767842.93	14601876.51	40°12'19.634"N	80°32'37.029"W	4831.04	137.878	0.32	-0.11	0.30	
11060.00	89.050	151.310	6099.99	4872.31	-3663.92	3286.48	1767889.15	14601795.87	40°12'18.835"N	80°32'36.438"W	4921.92	138.108	2.43	0.08	2.43	
11153.00	88.920	153.630	6101.64	4964.74	-3746.37	3329.46	1767932.11	14601713.45	40°12'18.018"N	80°32'35.890"W	5012.05	138.372	2.50	-0.14	2.49	
11245.00	88.580	152.800	6103.65	5056.04	-3828.48	3370.91	1767973.54	14601631.37	40°12'17.204"N	80°32'35.361"W	5101.01	138.637	0.97	-0.37	-0.90	
11338.00	88.770	154.970	6105.80	5148.19	-3911.96	3411.83	1768014.45	14601547.93	40°12'16.377"N	80°32'34.839"W	5190.76	138.907	2.34	0.20	2.33	
11431.00	88.950	157.210	6107.65	5239.80	-3996.96	3449.51	1768052.12	14601462.96	40°12'15.536"N	80°32'34.359"W	5279.66	139.205	2.42	0.19	2.41	
11524.00	88.950	158.710	6109.35	5330.84	-4083.14	3484.40	1768087.00	14601376.81	40°12'14.682"N	80°32'33.915"W	5367.79	139.524	1.61	0.00	1.61	
11617.00	88.770	160.100	6111.20	5421.38	-4170.18	3517.11	1768119.69	14601289.81	40°12'13.820"N	80°32'33.499"W	5455.32	139.856	1.51	-0.19	1.49	
11709.00	88.620	161.040	6113.30	5510.50	-4256.92	3547.71	1768150.28	14601203.10	40°12'12.962"N	80°32'33.111"W	5541.44	140.192	1.03	-0.16	1.02	
11802.00	88.430	156.890	6115.69	5601.17	-4343.67	3581.07	1768183.63	14601116.38	40°12'12.103"N	80°32'32.687"W	5629.53	140.497	4.47	-0.20	-4.46	
11895.00	88.310	154.320	6118.34	5692.89	-4428.33	3619.46	1768222.00	14601031.76	40°12'11.264"N	80°32'32.197"W	5719.32	140.739	2.77	-0.13	-2.76	
11987.00	88.400	155.980	6120.98	5783.74	-4511.77	3658.11	1768260.63	14600948.35	40°12'10.438"N	80°32'31.705"W	5808.43	140.965	1.81	0.10	1.80	
12080.00	88.980	157.090	6123.11	5875.22	-4597.06	3695.13	1768297.64	14600863.09	40°12'09.593"N	80°32'31.233"W	5898.04	141.208	1.35	0.62	1.19	
12173.00	89.050	158.030	6124.70	5966.40	-4683.00	3730.62	1768333.12	14600777.18	40°12'08.742"N	80°32'30.782"W	5987.33	141.458	1.01	0.08	1.01	
12266.00	88.920	157.080	6126.35	6057.58	-4768.94	3766.12	1768368.61	14600691.28	40°12'07.891"N	80°32'30.330"W	6076.72	141.701	1.03	-0.14	-1.02	
12359.00	89.140	159.560	6127.93	6148.50	-4855.35	3800.47	1768402.94	14600604.91	40°12'07.035"N	80°32'29.893"W	6165.87	141.948	2.68	0.24	2.67	
12452.00	89.140	165.200	6129.32	6237.79	-4943.94	3828.61	1768431.07	14600516.35	40°12'06.158"N	80°32'29.536"W	6253.06	142.246	6.06	0.00	6.06	
12544.00	89.290	168.560	6130.58	6323.87	-5033.51	3849.49	1768451.94	14600426.81	40°12'05.272"N	80°32'29.273"W	6336.78	142.592	3.66	0.16	3.65	
12637.00	89.260	163.630	6131.76	6411.32	-5123.75	3871.83	1768474.27	14600336.60	40°12'04.379"N	80°32'28.991"W	6422.14	142.923	5.30	-0.03	-5.30	
12729.00	89.110	154.800	6133.07	6500.87	-5209.67	3904.44	1768506.87	14600250.72	40°12'03.528"N	80°32'28.577"W	6510.40	143.150	9.60	-0.16	-9.60	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

WELLPATH DATA (174 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
12822.00	89.260	154.660	6134.40	6592.85	-5293.76	3944.14	1768546.55	14600166.66	40°12'02.695"N	80°32'28.071"W	6601.53	143.312	0.22	0.16	-0.15
12915.00	89.110	150.290	6135.72	6685.27	-5376.21	3987.10	1768589.50	14600084.24	40°12'01.879"N	80°32'27.523"W	6693.32	143.439	4.70	-0.16	-4.70
13007.00	89.050	151.800	6137.20	6776.93	-5456.70	4031.63	1768634.02	14600003.79	40°12'01.081"N	80°32'26.954"W	6784.51	143.541	1.64	-0.07	1.64
13100.00	89.200	152.720	6138.62	6869.41	-5539.00	4074.91	1768677.28	14599921.52	40°12'00.265"N	80°32'26.402"W	6876.44	143.659	1.00	0.16	0.99
13193.00	89.110	155.380	6139.99	6961.53	-5622.60	4115.60	1768717.95	14599837.94	40°11'59.437"N	80°32'25.883"W	6967.92	143.797	2.86	-0.10	2.86
13286.00	89.050	156.060	6141.48	7053.25	-5707.37	4153.84	1768756.17	14599753.21	40°11'58.598"N	80°32'25.396"W	7058.92	143.953	0.73	-0.06	0.73
13379.00	89.050	155.170	6143.02	7145.00	-5792.06	4192.23	1768794.55	14599668.55	40°11'57.759"N	80°32'24.907"W	7150.01	144.103	0.96	0.00	-0.96
13471.00	88.980	156.790	6144.60	7235.66	-5876.08	4229.67	1768831.98	14599584.57	40°11'56.927"N	80°32'24.430"W	7240.05	144.253	1.76	-0.08	1.76
13564.00	89.080	156.380	6146.18	7327.14	-5961.41	4266.62	1768868.92	14599499.27	40°11'56.081"N	80°32'23.959"W	7330.92	144.408	0.45	0.11	-0.44
13657.00	89.170	153.120	6147.60	7419.09	-6045.50	4306.28	1768908.56	14599415.21	40°11'55.248"N	80°32'23.454"W	7422.41	144.537	3.51	0.10	-3.51
13750.00	89.140	152.800	6148.97	7511.44	-6128.32	4348.56	1768950.82	14599332.42	40°11'54.428"N	80°32'22.915"W	7514.41	144.641	0.35	-0.03	-0.34
13842.00	89.140	151.360	6150.35	7602.95	-6209.60	4391.63	1768993.87	14599251.17	40°11'53.622"N	80°32'22.365"W	7605.63	144.731	1.57	0.00	-1.57
13935.00	89.080	152.980	6151.80	7695.44	-6291.83	4435.04	1769037.27	14599168.97	40°11'52.808"N	80°32'21.811"W	7697.84	144.820	1.74	-0.06	1.74
14028.00	89.110	155.560	6153.27	7787.52	-6375.60	4475.41	1769077.62	14599085.24	40°11'51.978"N	80°32'21.296"W	7789.57	144.933	2.77	0.03	2.77
14121.00	89.080	163.450	6154.74	7877.96	-6462.63	4507.94	1769110.14	14598998.24	40°11'51.116"N	80°32'20.883"W	7879.54	145.103	8.48	-0.03	8.48
14214.00	89.170	163.690	6156.16	7966.73	-6551.82	4534.24	1769136.43	14598909.08	40°11'50.233"N	80°32'20.550"W	7967.79	145.315	0.28	0.10	0.26
14306.00	89.170	159.480	6157.49	8055.42	-6639.08	4563.29	1769165.47	14598821.86	40°11'49.370"N	80°32'20.182"W	8056.12	145.498	4.58	0.00	-4.58
14399.00	89.080	153.530	6158.91	8146.89	-6724.32	4600.35	1769202.51	14598736.65	40°11'48.525"N	80°32'19.710"W	8147.37	145.623	6.40	-0.10	-6.40
14492.00	89.140	149.590	6160.36	8239.46	-6806.07	4644.62	1769246.77	14598654.93	40°11'47.715"N	80°32'19.145"W	8239.85	145.689	4.24	0.06	-4.24
14585.00	89.420	152.080	6161.53	8332.14	-6887.27	4689.94	1769292.07	14598573.76	40°11'46.911"N	80°32'18.566"W	8332.47	145.747	2.69	0.30	2.68
14677.00	89.570	149.350	6162.34	8423.85	-6967.50	4734.93	1769337.05	14598493.56	40°11'46.115"N	80°32'17.992"W	8424.11	145.801	2.97	0.16	-2.97
14770.00	89.350	150.780	6163.21	8516.64	-7048.09	4781.34	1769383.43	14598413.01	40°11'45.317"N	80°32'17.399"W	8516.85	145.848	1.56	-0.24	1.54
14859.00	89.420	154.250	6164.17	8605.09	-7127.03	4822.40	1769424.48	14598334.10	40°11'44.534"N	80°32'16.875"W	8605.24	145.916	3.90	0.08	3.90
14884.00	89.420	154.250	6164.42	8629.85	-7149.54	4833.27	1769435.34	14598311.59	40°11'44.311"N	80°32'16.737"W	8629.97	145.940	0.00	0.00	0.00

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Worthley BRK 210H AWB Ref Wellpath: Worthley BRK 210H AWP Proj: 14884'MD

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
20in Casing Surface	26.00	380.00	354.00	26.00	379.95	0.00	0.00	3.02	4.42
17.5in Open Hole	380.00	600.00	220.00	379.95	599.91	3.02	4.42	5.68	7.83
13.375in Casing Intermediate	26.00	600.00	574.00	26.00	599.91	0.00	0.00	5.68	7.83
12.25in Open Hole	600.00	1739.00	1139.00	599.91	1718.04	5.68	7.83	90.28	190.95
9.625in Casing Intermediate	26.00	1739.00	1713.00	26.00	1718.04	0.00	0.00	90.28	190.95
8.75in Open Hole	1739.00	6245.00	4506.00	1718.04	5902.14	90.28	190.95	669.89	1308.94
8.5in Open Hole	6245.00	14884.00	8639.00	5902.14	6164.42	669.89	1308.94	-7149.54	4833.27

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Worthley BRK 210H LP Rev-4	6046.13	310.44	1528.13	1766131.48	14605768.71	40°12'58.198"N	80°32'58.840"W	point
Worthley BRK 210H BHL Rev-3	6146.00	-7180.70	4798.76	1769400.85	14598280.45	40°11'44.005"N	80°32'17.183"W	point

WELLPATH COMPOSITION - Ref Wellbore: Worthley BRK 210H AWB Ref Wellpath: Worthley BRK 210H AWP Proj: 14884'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	6172.00	OWSG MWD rev2 - Standard	01 Premier Directional Drilling <8-3/4">(161'-6172')	Worthley BRK 210H AWB
6172.00	14859.00	BHI AutoTrak Curve (Short)	02 BH AT Curve <8-1/2"> (6172')(6239'-14859')	Worthley BRK 210H AWB
14859.00	14884.00	Blind Drilling (std)	Projection to bit	Worthley BRK 210H AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #210H
Area	Brooke County, WV	Well	Worthley BRK 210H
Field	Brooke	Wellbore	Worthley BRK 210H AWB
Facility	Worthley BRK Pad		

COMMENTS
<p>Wellpath general comments API: 47-009-00227-0000 BH Job #: 9226034 Rig: SDC 41 Duration: 06/30/2018 - 07/03/2018</p>

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Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	9/20/2018
Job End Date:	10/9/2018
State:	West Virginia
County:	Brooke
API Number:	47-009-00227-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Worthley BRK 210H
Latitude:	40.21533501
Longitude:	-80.55515498
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,104
Total Base Water Volume (gal):	10,363,506
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	Southwestern Energy	Carrier/Base Fluid	Water	7732-18-5	100.00000	83.08147	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	15.91280	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.74056	
			Hydrogen Chloride	7647-01-0	17.50000	0.17218	
WFRA-2000	U.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	60.00000	0.03917	
			2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.01959	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01606	
BIOC11139A	Nalco Champion	Anti-Bacterial Agent	Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00711	
			Glutaraldehyde	111-30-8	10.00000	0.00237	
			Ethanol	64-17-5	5.00000	0.00093	

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FSTI-IC-001	FSTI	Iron Control Additive					
			Acetic acid	64-19-7	60.00000	0.00204	
			Citric Acid	77-92-9	40.00000	0.00155	
SCAL16486A	Nalco Champion	Scale Inhibitor					
			Ethylene Glycol	107-21-1	30.00000	0.00168	
			Amine Triphosphate	Proprietary	30.00000	0.00150	
Econo-CI200	Economy Polymers & Chemicals	Acid Corrosion Inhibitors					
			Methanol	67-56-1	80.00000	0.00082	
			Fatty acid	Proprietary	10.00000	0.00013	
LT FLUSH SYSTEM I	U.S. Well Services, LLC	Other					
			Mineral oil, petroleum distillates, hrdotreated light naphthenic	64742-53-6	100.00000	0.00004	

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.

* 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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**WORTHLEY BRK 210H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	8/18/2018	14,777	14,678	36
2	9/21/2018	14,643	14,536	42
3	9/21/2018	14,503	14,396	42
4	9/21/2018	14,363	14,256	42
5	9/21/2018	14,223	14,116	42
6	9/21/2018	14,083	13,976	42
7	9/22/2018	13,943	13,836	42
8	9/22/2018	13,803	13,696	42
9	9/22/2018	13,663	13,556	42
10	9/24/2018	13,523	13,416	42
11	9/25/2018	13,383	13,276	42
12	9/25/2018	13,243	13,136	42
13	9/25/2018	13,103	12,996	42
14	9/25/2018	12,963	12,854	42
15	9/26/2018	12,823	12,716	42
16	9/26/2018	12,683	12,576	42
17	9/26/2018	12,543	12,436	42
18	9/27/2018	12,403	12,296	42
19	9/27/2018	12,263	12,156	42
20	9/27/2018	12,123	12,016	42
21	9/27/2018	11,983	11,876	42
22	9/28/2018	11,843	11,736	42
23	9/28/2018	11,703	11,596	42
24	9/29/2018	11,563	11,456	42
25	9/29/2018	11,423	11,316	42
26	9/29/2018	11,283	11,176	42
27	9/29/2018	11,143	11,036	42
28	9/29/2018	11,003	10,896	42
29	9/30/2018	10,863	10,756	42
30	9/30/2018	10,723	10,616	42
31	9/30/2018	10,583	10,476	42
32	10/1/2018	10,443	10,336	42
33	10/1/2018	10,303	10,196	42
34	10/1/2018	10,166	10,056	42
35	10/2/2018	10,023	9,916	42
36	10/2/2018	9,883	9,776	42
37	10/2/2018	9,743	9,636	42
38	10/3/2018	9,603	9,496	42
39	10/4/2018	9,463	9,356	42
40	10/4/2018	9,323	9,221	42
41	10/4/2018	9,183	9,076	42
42	10/4/2018	9,043	8,936	42
43	10/5/2018	8,903	8,796	42

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**WORTHLEY BRK 210H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	10/5/2018	8,763	8,661	42
45	10/5/2018	8,623	8,516	42
46	10/5/2018	8,480	8,376	42
47	10/6/2018	8,343	8,236	42
48	10/6/2018	8,203	8,096	42
49	10/6/2018	8,063	7,956	42
50	10/7/2018	7,923	7,816	42
51	10/7/2018	7,783	7,676	42
52	10/7/2018	7,643	7,536	42
53	10/8/2018	7,503	7,396	42
54	10/8/2018	7,363	7,256	42
55	10/9/2018	7,223	7,116	42
56	10/9/2018	7,083	6,976	42
57	10/9/2018	6,943	6,836	42
58	10/9/2018	6,803	6,696	42

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**Worthley BRK 210H
ATTACHMENT 2
STIM REPORT**

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/other
1	9/20/2018	82	7,854	7,907	4,169	294,420	5,336	0
2	9/21/2018	87	7,814	6,316	4,417	276,740	4,905	0
3	9/21/2018	84	7,932	6,162	4,245	270,720	4,329	0
4	9/21/2018	87	8,302	5,901	4,422	284,340	4,346	0
5	9/21/2018	86	7,815	5,829	4,629	280,890	4,915	0
6	9/22/2018	83	7,871	5,855	4,462	287,300	4,782	0
7	9/22/2018	82	8,394	5,888	4,506	283,460	4,438	0
8	9/22/2018	83	8,092	5,730	4,844	288,680	4,506	0
9	9/24/2018	87	7,900	5,417	4,572	287,340	4,758	0
10	9/25/2018	87	7,891	5,599	4,316	289,320	4,505	0
11	9/25/2018	86	7,516	5,659	4,898	285,160	4,166	0
12	9/25/2018	83	8,037	5,700	4,588	286,240	4,130	0
13	9/25/2018	83	8,132	4,950	4,319	285,340	4,476	0
14	9/26/2018	87	7,933	5,385	4,524	291,380	4,523	0
15	9/26/2018	85	7,966	5,706	4,832	281,560	4,384	0
16	9/26/2018	85	8,056	5,467	4,686	285,560	4,513	0
17	9/26/2018	86	8,189	6,208	4,353	290,120	4,411	0
18	9/27/2018	83	8,048	5,632	4,378	278,040	3,956	0
19	9/27/2018	83	7,514	5,509	4,549	279,700	4,360	0
20	9/27/2018	88	7,355	5,626	4,500	274,360	4,011	0
21	9/28/2018	87	7,469	3,708	4,621	283,840	4,536	0
22	9/28/2018	85	7,645	5,174	4,785	287,440	4,215	0
23	9/28/2018	88	7,296	5,520	4,538	289,680	4,253	0
24	9/29/2018	87	7,426	5,728	4,539	291,780	4,207	0
25	9/29/2018	86	7,437	5,405	4,751	263,100	3,745	0
26	9/29/2018	85	7,557	5,610	4,713	282,480	3,747	0
27	9/29/2018	83	7,160	5,222	4,865	290,000	5,147	0
28	9/30/2018	86	7,752	5,786	4,718	278,800	4,082	0
29	9/30/2018	86	7,323	6,038	4,816	287,800	3,554	0
30	9/30/2018	90	6,994	5,410	4,789	282,560	3,702	0
31	9/30/2018	86	6,975	5,193	5,050	282,040	4,834	0
32	10/1/2018	86	7,265	5,056	4,550	307,960	3,801	0
33	10/1/2018	87	7,511	5,458	4,628	290,040	3,882	0
34	10/1/2018	89	7,079	5,281	4,775	289,140	4,033	0
35	10/2/2018	88	7,308	5,081	4,490	292,980	3,768	0
36	10/2/2018	86	7,204	5,199	4,708	291,200	3,674	0
37	10/3/2018	53	7,616	5,289	4,202	270,840	6,470	0
38	10/4/2018	87	6,984	4,620	4,905	293,280	4,049	0
39	10/4/2018	85	7,144	5,529	4,540	300,460	4,358	0
40	10/4/2018	87	7,131	5,368	4,475	285,020	4,214	0
41	10/4/2018	90	6,706	5,618	4,629	290,340	5,341	0
42	10/5/2018	87	7,040	5,721	4,701	276,940	3,803	0
43	10/5/2018	87	6,999	5,702	4,678	293,240	4,071	0
44	10/5/2018	86	7,017	5,841	4,465	287,340	4,129	0
45	10/5/2018	83	7,516	5,522	4,553	290,220	3,710	0
46	10/5/2018	82	7,645	5,068	4,440	282,220	3,787	0
47	10/6/2018	86	7,465	5,701	4,539	295,520	4,239	0
48	10/6/2018	67	7,839	5,637	4,254	277,750	6,344	0
49	10/7/2018	87	7,205	5,699	4,515	298,740	3,815	0
50	10/7/2018	88	6,791	5,542	4,559	293,740	4,105	0
51	10/7/2018	90	7,011	5,798	4,555	289,640	4,148	0
52	10/8/2018	89	7,254	5,861	4,551	261,620	3,700	0
53	10/8/2018	90	6,917	5,926	4,626	284,380	4,109	0

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Worthley BRK 210H
ATTACHMENT 2
STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	10/8/2018	90	6,555	5,925	4,740	288,300	4,142	0
55	10/9/2018	90	6,372	5,306	4,691	287,420	4,090	0
56	10/9/2018	90	6,689	5,650	4,692	264,340	3,816	0
57	10/9/2018	87	7,540	5,809	4,387	292,400	3,877	0
58	10/9/2018	89	6,653	5,786	4,811	278,940	4,022	0

RECEIVED
Office of Oil and Gas
JAN 15 2019
WV Department of
Environmental Protection



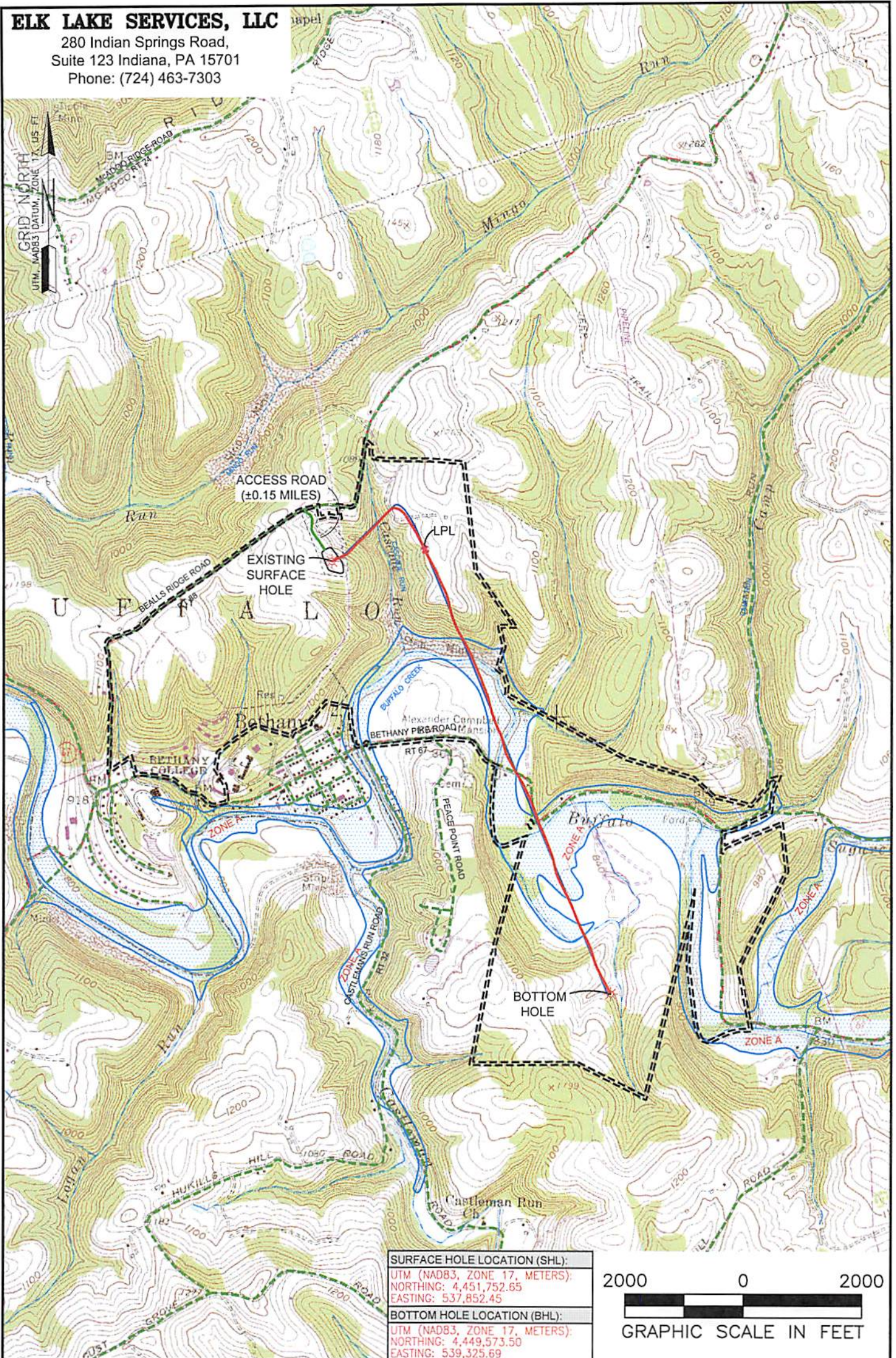
Well Name: Worthley BRK 210H

LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	183.00	183.00	
Top of Salt Water	800.00	800.00	NA	NA	
Pittsburgh Coal	329.00	329.00	482.00	482.00	
Pottsville (ss)	482.00	482.00	784.00	784.00	
Raven Cliff (ss)	784.00	784.00	1182.00	1182.00	
Maxton (ss)	1182.00	1182.00	1510.00	1510.00	
Big Injun (ss)	1510.00	1510.00	5431.00	5430.00	
Rhinestreet (shale)	5431.00	5430.00	5698.00	5682.00	
Cashaqua (shale)	5698.00	5682.00	5762.00	5737.00	
Middlesex (shale)	5762.00	5737.00	6111.00	5819.00	
Burket (shale)	6111.00	5819.00	6131.00	5833.00	
Tully (ls)	6131.00	5833.00	6219.00	5887.00	
Mahantango (shale)	6219.00	5887.00	6513.00	6016.00	
Marcellus (shale)	6513.00	6016.00	NA	NA	Gas

RECEIVED
 Office of Oil and Gas
 JAN 15 2019
 WV Department of
 Environmental Protection

ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303



SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,451,752.65
EASTING: 537,852.45

BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,449,573.50
EASTING: 539,325.69



NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

LEGEND:	PROPOSED SURFACE HOLE / BOTTOM HOLE	ACCESS ROAD
EXISTING / PRODUCING WELLHEAD	PUBLIC ROAD	ACCESS ROAD TO PREV. SITE
LPL* LANDING POINT LOCATION	LEASE BOUNDARY	EXISTING PATH
FLOOD PLAIN	PROPOSED PATH	

WELL OPERATOR:
SWN PRODUCTION COMPANY, LLC

ADDRESS:
1300 FORT PIERPONT DR STE 201, MORGANTOWN, WV 26508

SURFACE OWNER:
KIMBERLY CARMAN WORTHLEY

WELL (FARM) NAME: WORTHLEY BRK	WELL # 210H	SERIAL # XXXX
COUNTY BROOKE COUNTY - 9	DISTRICT: BUFFALO	
USGS 7 1/2 QUADRANGLE MAP NAME BETHANY, WV		

Latitude: 40°15'00" SURFACE HOLE 3767'

BOTTOM HOLE 10608'

Latitude: 40°12'30"

BOTTOM HOLE 4626'

Longitude: 80°30'00"

SURFACE HOLE 12629'

Longitude: 80°32'30"

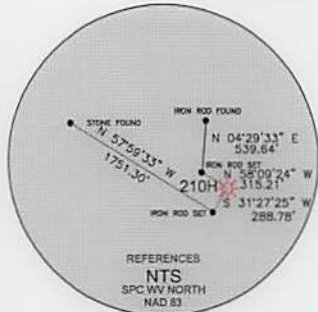
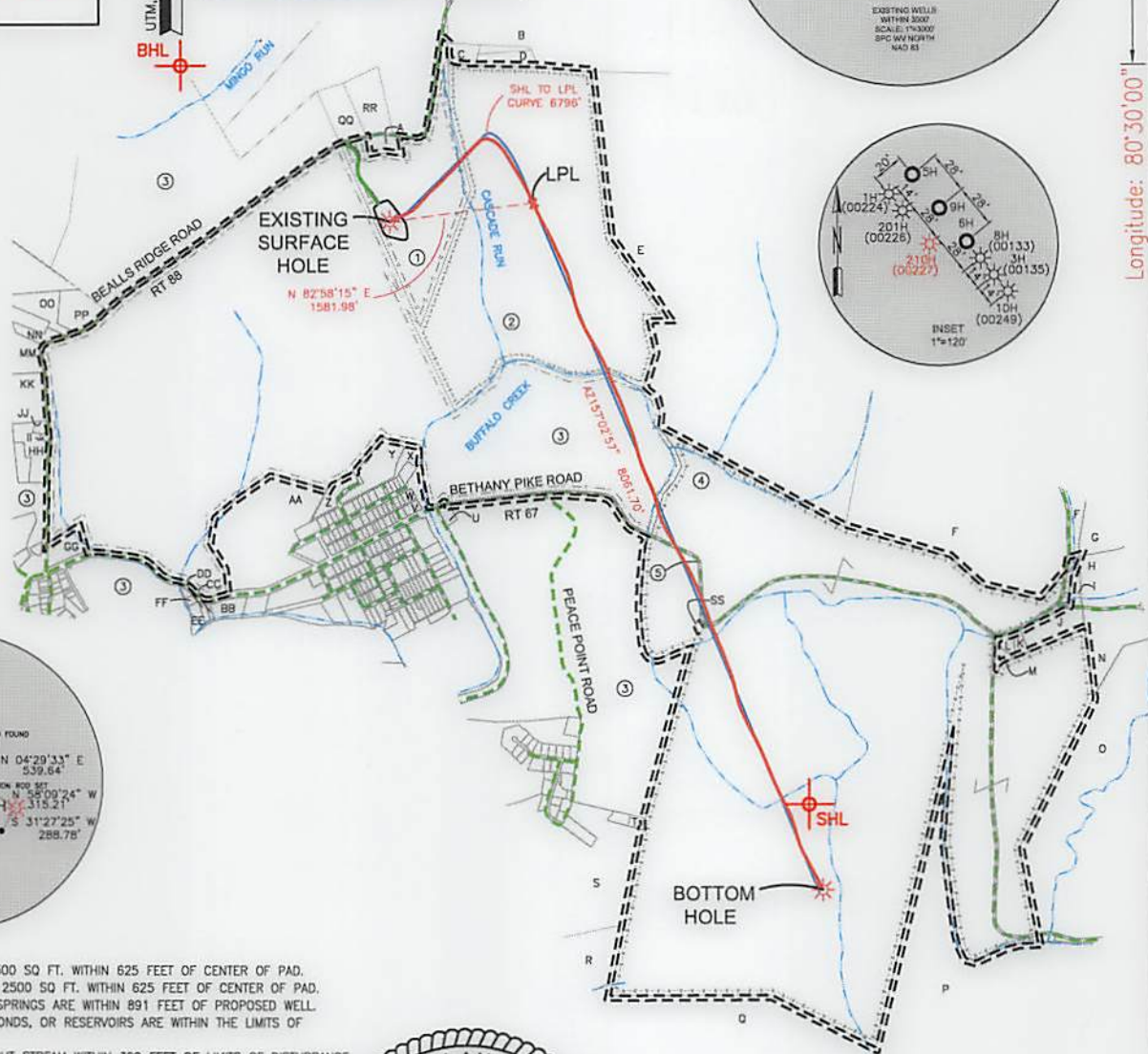
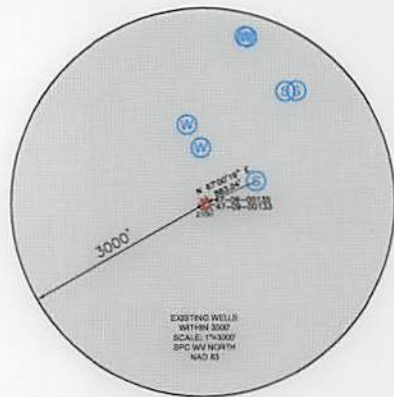
ELK LAKE SERVICES, LLC

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Suite 123 Indiana, PA 15701
Phone: (724) 463-7303

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,752.65 EASTING: 537,852.45
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,818.99 EASTING: 538,330.11
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,449,573.50 EASTING: 539,325.69

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,752.62 EASTING: 537,852.36
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,909.95 EASTING: 538,290.54
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,449,564.78 EASTING: 539,314.46



WELL RESTRICTIONS

1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 891 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS ARE WITHIN THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
 2. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
 3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.
 4. WELLBORE PARCELS ARE DESIGNATED WITH UNIQUE LINE TYPES.
- I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2164



COMPANY:
SWN Production Company, LLC **SWN** Production Company™

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SURVEY SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)	COMPANY: SWN Production Company, LLC OPERATOR'S WELL #: WORTHLEY BRK 210H API WELL #: 47 STATE 009 COUNTY 00227 PERMIT
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WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1156.51'

DISTRICT: BUFFALO COUNTY: BROOKE COUNTY QUADRANGLE: BETHANY

SURFACE OWNER: KIMBERLY CARMAN WORTHLEY ACREAGE: ±40.00

OIL & GAS ROYALTY OWNER: COLONIAL CORP, A NEVADA CORP, & KIMBERLY J. CARMAN AKA KIMBERLY J. WORTHLEY, A MARRIED WOMAN DEALING IN HER SASP ACREAGE: ±40.00

DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,164' TVD 14,884' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY

ADDRESS: 1300 FORT PIERPONT DR STE 201 ADDRESS: 1300 FORT PIERPONT DR STE 201

CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508



LEGEND:	<ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD LPL* LANDING POINT LOCATION ⊙ EXISTING WATER WELL ⊙ EXISTING SPRING — SURVEYED BOUNDARY — DRILLING UNIT ===== LEASE BOUNDARY — EXISTING PATH — PROPOSED PATH 	REVISIONS: DATE: 01-09-2019 FILE NO: 17-02 DRAWN BY: JMB SCALE: 1" = 2000' DRAWING NO: 1 WELL LOCATION PLAT 1
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ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	KIMBERLY CARMAN WORTHLEY (S) COLONIAL CORP, A NEVADA CORP, & KIMBERLY J. CARMAN AKA KIMBERLY J. WORTHLEY, A MARRIED WOMAN DEALING IN HER SASP (R)	3-B38-27
TRACT	SURFACE OWNER	TAX PARCEL
2	KIMBERLY CARMEN WORTHLEY	3-B38-25
3	BETHANY COLLEGE	3-B38-31
4	TRUST OF GENE CHARLES VALENTINE	3-B43-28
5	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS	BETHANY PIKE

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	CARRINGTON MORTGAGE SERVICES,LLC	3-B38-26
B	MARK WEAVER OWEN & VIRGINIA BEALL KREUTZ	3-B38-19
C	LANCE M. ELSON	3-B38-21
D	NOLTE & GLADYS VANCAMP	3-B38-23
E	MARK W OWEN & VIRGINIA BEALL KRUETZ	3-B38-24
F	RAYMOND L & LINDSEY G TREDWAY	3-B39-11
G	VICKI G & SHAWN P HAMILTON	3-B44-1
H	JAMES R & LINDA R GREATHOUSE	3-B39-12
I	DONNA M WEEKLEY	3-B44-2
J	CURTIS LEE & LOUANN L NEEL	3-B44-7
K	JANICE F JACKSON	3-B44-8
L	JANICE F JACKSON	3-B44-9
M	JANICE F JACKSON	3-B44-10
N	MILDRED MAIN	3-B44-06
O	FORNEY & SONS HOLDING CO LLC	3-B44-05
P	ST OF WV DEPT OF COMM DIV	3-B44-14
Q	ST OF WV DEPT OF COMM DIV	3-B43-62
R	SAMUEL & MELANIE DONINI	3-B43-57
S	TRUST OF GENE CHARLES VALENTINE	3-B43-49.3
T	MARY E COLLINS	3-B43-49
U	RICHARD FRANCIS GORBY	3-B43-27
V	JAMES & KATHLEEN KEEGAN	2-B43C-37
W	BARBARA L CHAMBERS	2-B43C-36
X	BETHANY COLLEGE	2-B43C-3
Y	BETHANY COLLEGE	2-B43C-2
Z	BETHANY COLLEGE	2-B43C-1
AA	BETHANY COLLEGE	1-B43B-26
BB	TRAVIS G & GREGORY B STRAUB	2-B43F-84
CC	GEORGE JR SONNEWALD	2-B43F-82
DD	GEORGE JR SONNEWALD	2-B43F-81
EE	WILLIAM MITCHELL HEIRS	2-B43B-22
FF	MITCHELL DONALD STEVEN	2-B43F-83
GG	JOHN HUFF HEIRS	2-B43B-4
HH	DANNY M & SANDRA L HOLLADAY	3-B43-3
II	DENNIS & DERRELLE RUSCHELL	3-B43-2
JJ	DENNIS & DERRELLE RUSCHELL	3-B43-1
KK	RUTH GERMON & JEFFREY WOY & SUE MOORE & PATRICIA WEST & SARA WOY	3-B38-37
MM	ALLEN JOHNSON & CHARLES WARREN ETAL	3-B38-36
NN	DAVID G OWENS & LINDA WALTERS	3-B38-35
OO	DAVID G OWENS & LINDA WALTERS	3-B38-33
PP	DAVID G OWENS & LINDA WALTERS	3-B38-32
QQ	CHARLES F & DONNA BROWN	3-B38-30
RR	JEFFREY WILLIAM HENSLER	3-B38-29
SS	CLYDE B ROBERTS	3-B43-29

REVISIONS:	COMPANY:		 	
	OPERATOR'S		WORTHLEY BRK	
	WELL #:		210H	
	DISTRICT:	COUNTY:	STATE:	DATE: 01-09-2019
BUFFALO	BROOKE COUNTY	WV	FILE NO: 17-02	
			DRAWN BY: JMB	
			SCALE: N/A	
			DRAWING NO: 1	
			WELL LOCATION PLAT 1	

ELK LAKE SERVICES, LLC


280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303

TRACT	SURFACE OWNER	TAX PARCEL
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4	TRUST OF GENE CHARLES VALENTINE	3-B43-28
5	TRANSPORTATION, DIVISION OF HIGHWAYS WEST VIRGINIA DEPARTMENT OF BETHANY PIKE	

TRACT	SURFACE OWNER	TAX PARCEL
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D	NOLTE & GLADYS VANCAMP	3-B38-23
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F	RAYMOND J & LINDSEY G TREDWAY	3-B39-11
G	VICKI G & SHAWN P HAMILTON	3-B44-1
H	JAMES R & LINDA R GREATHOUSE	3-B39-12
I	DONNA M WEEKLEY	3-B44-2
J	CURTIS LEE & LOUANN L NEEL	3-B44-7
K	JANICE F JACKSON	3-B44-8
L	JANICE F JACKSON	3-B44-9
M	JANICE F JACKSON	3-B44-10
N	MILDRED MAIN	3-B44-06
O	FORNEY & SONS HOLDING CO LLC	3-B44-02
P	ST OF WV DEPT OF COMM DIV	3-B44-14
Q	ST OF WV DEPT OF COMM DIV	3-B43-82
R	SAMUEL & MELANIE DONINI	3-B43-27
S	TRUST OF GENE CHARLES VALENTINE	3-B43-49.2
T	MARY E COLLINS	3-B43-49
U	RICHARD FRANCIS GORBY	3-B43-27
V	JAMES & KATHLEEN KEEGAN	3-B43C-37
W	BARBARA J CHAMBERS	3-B43C-36
X	BETHANY COLLEGE	3-B43C-3
Y	BETHANY COLLEGE	3-B43C-2
Z	BETHANY COLLEGE	3-B43C-1
AA	BETHANY COLLEGE	1-B43B-26
BB	TRAVIS G & GREGORY B STRAUB	3-B43F-84
CC	GEORGE JR SONNEWALD	3-B43F-82
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GG	JOHN HUFF HEIRS	3-B43B-4
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II	DENNIS & DERRELLE RUSCHELL	3-B43-2
JJ	DENNIS & DERRELLE RUSCHELL	3-B43-1
KK	RUTH GERMON & JEFFREY WOY & SUE MOORE & PATRICIA WEST & SARA WOY	3-B38-37
MM	ALLEN JOHNSON & CHARLES WARREN ETAL	3-B38-36
NN	DAVID G OWENS & LINDA WALTERS	3-B38-32
OO	DAVID G OWENS & LINDA WALTERS	3-B38-33
PP	DAVID G OWENS & LINDA WALTERS	3-B38-32
QQ	CHARLES F & DONNA BROWN	3-B38-30
RR	JEFFREY WILLIAM HENSLER	3-B38-29
SS	CLYDE B ROBERTS	3-B43-29

ADJOINING OWNERS TABLE

WELL BORE TABLE FOR SURFACE \ ROYALTY OWNERS

		COMPANY:	REVISIONS:
OPERATOR'S: WORTHLEY BRK 210H		WELL #:	
DISTRICT:	COUNTY:	STATE:	
BUFFALO	BROOKE COUNTY	WV	
DRAWING NO: 1	SCALE: N/A	DRAWN BY: JMB	DATE: 01-09-2019
WELL LOCATION PLAT 1		FILE NO: 17-02	
PROPERTY NUMBER 2501152499		PVD ID 2001152499	