

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

API 47 - 009 - 00243 County BROOKE District BUFFALO
Quad BETHANY Pad Name THOMAS PARKINSON BRK PAD Field/Pool Name PANHANDLE FIELD WET
Farm name BETHANY COLLEGE Well Number THOMAS PARKINSON BRK 6H
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 4451457.53 Easting 537103.20
Landing Point of Curve Northing 4451135.92 Easting 536945.89
Bottom Hole Northing 4449125.24 Easting 537794.89

Elevation (ft) 1,160.5 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 2/12/2018 Date drilling commenced 2/18/2018 Date drilling ceased 4/18/2018
Date completion activities began 5/12/2018 Date completion activities ceased 7/14/2018
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 401 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 813 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 347 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed
C. J. [Signature] 1/17/19

Reviewed by:
981.17.19

API 47-009 - 00243 Farm name BETHANY COLLEGE Well number THOMAS PARKINSON BRK 6H

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	24	20	126	NEW	J-55/94#		Y
Surface	17.5	13.375	486	NEW	J-54.50/48#	321.9	Y, 78
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1738	NEW	J-55/36#		Y, 26
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	13652	NEW	HCP-110/20#		Y
Tubing		2.375	6458	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	486	15.60	1.20	583.2	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	659	15.60	1.19	784.21	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2,492	15.60	1.19	2965.48	SURFACE	24
Tubing							

Drillers TD (ft) 13652 Loggers TD (ft) 13652

Deepest formation penetrated MARCELLUS Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5,411

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

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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 _____

API 47- 009 - 00243 Farm name BETHANY COLLEGE Well number THOMAS PARKINSON BRK 6H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
		SEE	ATTACHMENT	2				

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PRODUCING FORMATION(S)	DEPTHS	
<u>MARCELLUS</u>	<u>5,992</u> TVD	<u>6,384</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2440 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 4,929 mcfpd Oil 507 bpd NGL _____ bpd Water 182 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
	<u>SEE</u>	<u>ATTACHMENT</u>	<u>3</u>		

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company BAKER HUGHES
Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

Cementing Company BJ SERVICES
Address 2228 PHILIPPI PIKE City CLARKSBURG State WV Zip 26301

Stimulating Company US WELL SERVICES
Address 770 S. POST OAK LN #405 City HOUSTON State TX Zip 77056

Please insert additional pages as applicable.

Completed by BOBBY WILLIAMS Telephone 832-796-2884
Signature [Signature] Title REGULATORY ANALYST Date 10/5/18

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Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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SOUTHWESTERN ENERGY

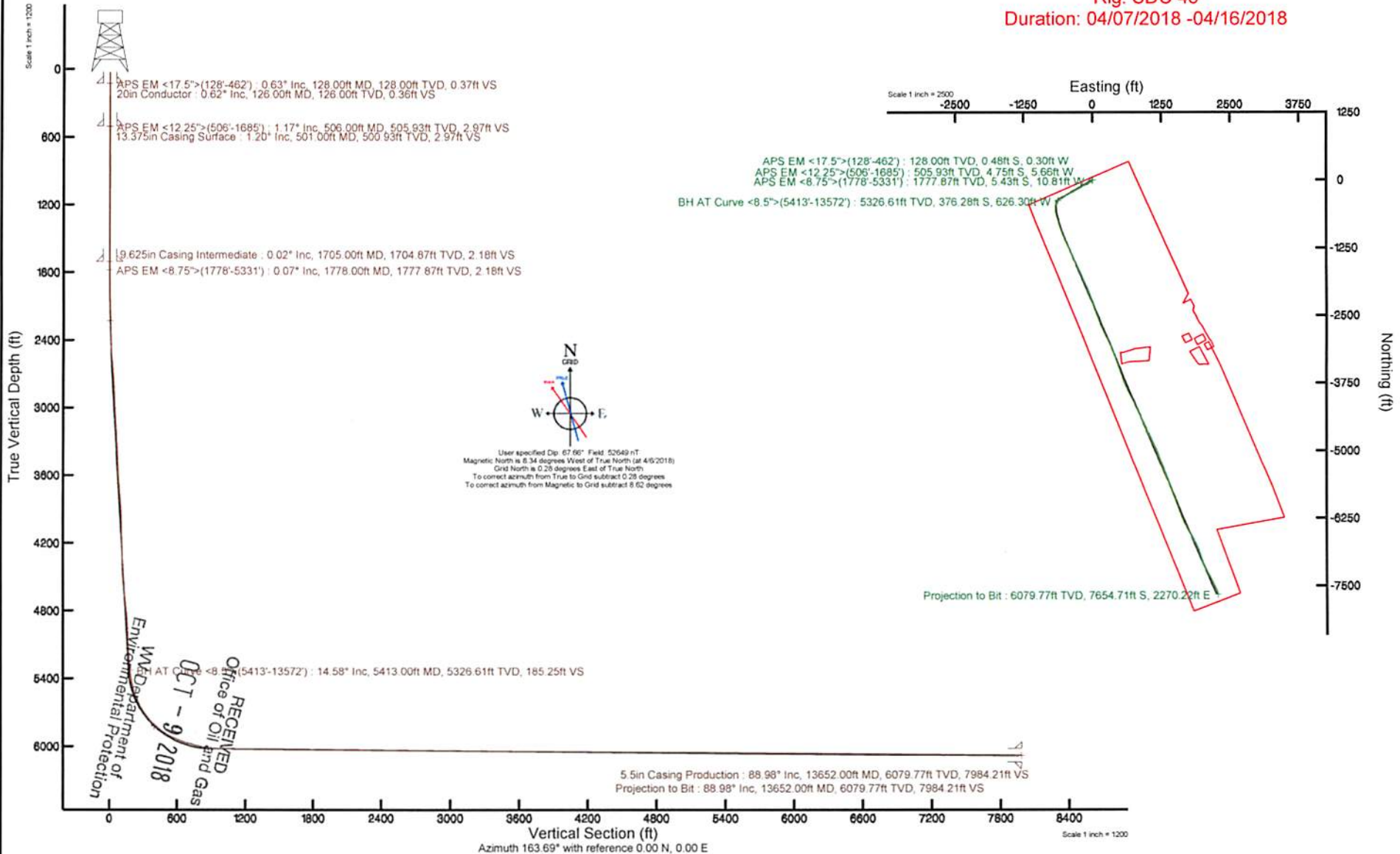
Location: Brooke County, WV Slot: Slot #6H
 Field: Brooke Well: Thomas Parkinson BRK 6H
 Facility: Thomas Parkinson BRK Pad Wellbore: Thomas Parkinson BRK 6H PWB

Plot reference wellpath is Thomas Parkinson BRK 6H PWP Rev-B.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (KB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to SDC 46 (KB)	North Reference: Grid north
SDC 46 (KB) to Mean Sea Level: 1186.7 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot #6H): -1160.7 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: thomsuzc on 2016-04-25
	Database: WA, Pennsylvania



Location Information						
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Thomas Parkinson BRK Pad		1762113.450	14604537.070	40°12'46.220"N	80°33'50.731"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #6H	-46.93	32.60	1762146.035	14604490.153	40°12'45.755"N	80°33'50.314"W
SDC 46 (KB) to Ground level (At Slot: Slot #6H)				26ft		
Mean Sea Level to Ground level (At Slot: Slot #6H)				-1160.7ft		
SDC 46 (KB) to Mean Sea Level				1186.7ft		

API: 47-009-00243-0000
 Job #: 9083861
 Rig: SDC 46
 Duration: 04/07/2018 -04/16/2018



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson 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	0.999617	Report Generated	4/25/2018 at 7:25:38 AM
Convergence at slot	0.29° East	Database/Source file	WA_Pennsylvania/Thomas_Parkinson_BRK_6H_AWP_Proj__13652_MD.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-46.93	32.60	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W
Facility Reference Pt			1762113.45	14604537.07	40°12'46.220"N	80°33'50.731"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 46 (KB) to Facility Vertical Datum	1186.70ft
Horizontal Reference Pt	Slot	SDC 46 (KB) to Mean Sea Level	1186.70ft
Vertical Reference Pt	SDC 46 (KB)	SDC 46 (KB) to Ground Level at Slot (Slot #6H)	26.00ft
MD Reference Pt	SDC 46 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	163.69°

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Actual Wellpath Report

Thomas Parkinson BRK 6H AWP Proj: 13652'MD
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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	211.910	0.00	0.00	0.00	0.00	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	211.910	26.00	0.00	0.00	0.00	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W	0.00	0.000	0.00	0.00	0.00
128.00	0.630	211.910	128.00	0.37	-0.48	-0.30	1762145.74	14604489.68	40°12'45.750"N	80°33'50.318"W	0.56	211.910	0.62	0.62	-145.19
219.00	0.810	227.790	218.99	0.99	-1.33	-1.04	1762145.00	14604488.82	40°12'45.742"N	80°33'50.327"W	1.69	217.892	0.29	0.20	17.45
309.00	1.060	230.960	308.98	1.59	-2.28	-2.16	1762143.88	14604487.87	40°12'45.733"N	80°33'50.342"W	3.14	223.329	0.28	0.28	3.52
405.00	1.270	225.920	404.96	2.43	-3.58	-3.61	1762142.43	14604486.57	40°12'45.720"N	80°33'50.361"W	5.09	225.199	0.24	0.22	-5.25
462.00	1.490	243.070	461.94	2.86	-4.36	-4.72	1762141.31	14604485.80	40°12'45.712"N	80°33'50.375"W	6.43	227.298	0.82	0.39	30.09
506.00	1.170	252.920	505.93	2.97	-4.75	-5.66	1762140.37	14604485.41	40°12'45.708"N	80°33'50.387"W	7.39	230.010	0.89	-0.73	22.39
601.00	1.250	251.500	600.91	3.02	-5.36	-7.57	1762138.47	14604484.79	40°12'45.702"N	80°33'50.412"W	9.28	234.690	0.09	0.08	-1.49
695.00	1.280	254.010	694.89	3.05	-5.98	-9.55	1762136.48	14604484.18	40°12'45.696"N	80°33'50.438"W	11.27	237.965	0.07	0.03	2.67
788.00	0.760	247.620	787.87	3.11	-6.50	-11.12	1762134.92	14604483.66	40°12'45.691"N	80°33'50.458"W	12.88	239.702	0.57	-0.56	-6.87
881.00	0.060	270.470	880.87	3.17	-6.73	-11.74	1762134.30	14604483.42	40°12'45.689"N	80°33'50.466"W	13.54	240.167	0.76	-0.75	24.57
973.00	0.170	82.780	972.87	3.17	-6.72	-11.65	1762134.38	14604483.44	40°12'45.689"N	80°33'50.465"W	13.45	240.047	0.25	0.12	187.29
1066.00	0.220	24.270	1065.87	3.06	-6.54	-11.44	1762134.59	14604483.62	40°12'45.691"N	80°33'50.462"W	13.18	240.269	0.21	0.05	-62.91
1159.00	0.120	89.690	1158.87	2.95	-6.37	-11.27	1762134.77	14604483.78	40°12'45.693"N	80°33'50.460"W	12.95	240.522	0.22	-0.11	70.34
1251.00	0.170	45.610	1250.87	2.91	-6.28	-11.08	1762134.96	14604483.88	40°12'45.694"N	80°33'50.457"W	12.73	240.469	0.13	0.05	-47.91
1344.00	0.160	34.260	1343.87	2.77	-6.07	-10.91	1762135.13	14604484.08	40°12'45.696"N	80°33'50.455"W	12.48	240.894	0.04	-0.01	-12.20
1437.00	0.280	19.140	1436.87	2.50	-5.75	-10.76	1762135.28	14604484.40	40°12'45.699"N	80°33'50.453"W	12.20	241.878	0.14	0.13	-16.26
1530.00	0.130	315.460	1529.87	2.22	-5.46	-10.76	1762135.28	14604484.69	40°12'45.702"N	80°33'50.453"W	12.07	243.091	0.27	-0.16	-68.47
1622.00	0.040	113.360	1621.87	2.15	-5.40	-10.80	1762135.24	14604484.76	40°12'45.702"N	80°33'50.454"W	12.08	243.446	0.18	-0.10	171.63
1685.00	0.030	133.280	1684.87	2.18	-5.42	-10.77	1762135.27	14604484.74	40°12'45.702"N	80°33'50.453"W	12.06	243.292	0.02	-0.02	31.62
1778.00	0.070	273.560	1777.87	2.18	-5.43	-10.81	1762135.23	14604484.72	40°12'45.702"N	80°33'50.454"W	12.10	243.320	0.10	0.04	150.84
1807.00	0.920	276.320	1806.86	2.08	-5.41	-11.06	1762134.98	14604484.75	40°12'45.702"N	80°33'50.457"W	12.31	243.951	2.93	2.93	9.52
1899.00	1.500	251.300	1898.84	1.85	-5.71	-12.93	1762133.11	14604484.44	40°12'45.699"N	80°33'50.481"W	14.14	246.178	0.84	0.63	-27.20
1992.00	3.150	240.090	1991.76	2.50	-7.38	-16.30	1762129.74	14604482.78	40°12'45.683"N	80°33'50.525"W	17.89	245.659	1.83	1.77	-12.05
2085.00	2.110	218.320	2084.67	4.09	-9.99	-19.58	1762126.46	14604480.16	40°12'45.657"N	80°33'50.567"W	21.98	242.962	1.53	-1.12	-23.41
2178.00	1.780	148.990	2177.63	6.48	-12.57	-19.90	1762126.15	14604477.58	40°12'45.632"N	80°33'50.571"W	23.54	237.709	2.40	-0.35	-74.55
2270.00	1.420	150.720	2269.59	8.97	-14.79	-18.60	1762127.44	14604475.37	40°12'45.610"N	80°33'50.555"W	23.77	231.509	0.39	-0.39	1.88
2363.00	1.980	207.230	2362.55	11.26	-17.23	-18.77	1762127.27	14604472.93	40°12'45.586"N	80°33'50.557"W	25.48	227.462	1.81	0.60	60.76
2456.00	8.300	229.830	2455.14	15.15	-22.99	-24.65	1762121.40	14604467.17	40°12'45.529"N	80°33'50.633"W	33.70	226.988	7.01	6.80	24.30

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Actual Wellpath Report

Thomas Parkinson BRK 6H AWP Proj: 13652'MD
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Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
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Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]	
2549.00	13.100	228.920	2546.50	22.28	-34.25	-37.73	1762108.32	14604455.91	40°12'45.418"N	80°33'50.802"W	50.96	227.762	5.16	5.16	-0.98	
2641.00	14.480	232.190	2635.84	30.86	-48.16	-54.67	1762091.38	14604442.02	40°12'45.282"N	80°33'51.022"W	72.86	228.626	1.72	1.50	3.55	
2734.00	15.580	237.800	2725.66	38.55	-61.94	-74.43	1762071.63	14604428.24	40°12'45.147"N	80°33'51.277"W	96.83	230.233	1.96	1.18	6.03	
2827.00	16.180	246.400	2815.13	43.61	-73.79	-96.88	1762049.20	14604416.40	40°12'45.031"N	80°33'51.567"W	121.77	232.705	2.61	0.65	9.25	
2919.00	16.450	246.610	2903.42	46.84	-84.09	-120.58	1762025.50	14604406.10	40°12'44.930"N	80°33'51.874"W	147.00	235.109	0.30	0.29	0.23	
3012.00	17.040	245.280	2992.48	50.46	-95.01	-145.04	1762001.05	14604395.18	40°12'44.823"N	80°33'52.190"W	173.39	236.772	0.76	0.63	-1.43	
3101.00	15.660	241.460	3077.88	54.91	-106.21	-167.44	1761978.66	14604383.99	40°12'44.714"N	80°33'52.479"W	198.28	237.613	1.96	-1.55	-4.29	
3194.00	13.380	239.260	3167.91	60.25	-117.71	-187.72	1761958.39	14604372.49	40°12'44.601"N	80°33'52.741"W	221.57	237.911	2.52	-2.45	-2.37	
3287.00	12.380	236.100	3258.57	65.95	-128.77	-205.24	1761940.87	14604361.44	40°12'44.493"N	80°33'52.968"W	242.29	237.896	1.31	-1.08	-3.40	
3380.00	12.520	240.150	3349.38	71.32	-139.34	-222.26	1761923.86	14604350.86	40°12'44.389"N	80°33'53.188"W	262.33	237.915	0.95	0.15	4.35	
3472.00	14.320	245.150	3438.87	75.34	-149.09	-241.23	1761904.89	14604341.12	40°12'44.293"N	80°33'53.433"W	283.59	238.283	2.33	1.96	5.43	
3565.00	15.920	247.320	3528.65	78.47	-158.84	-263.44	1761882.70	14604331.37	40°12'44.198"N	80°33'53.720"W	307.62	238.912	1.82	1.72	2.33	
3658.00	14.390	239.580	3618.42	82.70	-169.61	-285.18	1761860.97	14604320.61	40°12'44.093"N	80°33'54.001"W	331.81	239.257	2.72	-1.65	-8.32	
3751.00	14.010	233.380	3708.58	89.42	-182.18	-304.18	1761841.97	14604308.04	40°12'43.969"N	80°33'54.246"W	354.56	239.082	1.68	-0.41	-6.67	
3843.00	12.150	230.350	3798.19	97.13	-195.00	-320.57	1761825.58	14604295.23	40°12'43.844"N	80°33'54.458"W	375.23	238.688	2.15	-2.02	-3.29	
3936.00	10.710	235.730	3889.35	103.67	-206.11	-335.25	1761810.91	14604284.12	40°12'43.734"N	80°33'54.648"W	393.54	238.417	1.93	-1.55	5.78	
4029.00	10.600	242.360	3980.75	108.01	-214.95	-349.97	1761796.20	14604275.29	40°12'43.648"N	80°33'54.839"W	410.71	238.442	1.32	-0.12	7.13	
4125.00	12.510	252.170	4074.81	110.03	-222.23	-367.69	1761778.48	14604268.01	40°12'43.577"N	80°33'55.067"W	429.63	238.852	2.85	1.99	10.22	
4218.00	12.650	247.180	4165.58	111.45	-229.26	-386.67	1761759.51	14604260.98	40°12'43.508"N	80°33'55.312"W	449.53	239.336	1.18	0.15	-5.37	
4311.00	13.340	246.460	4256.19	113.95	-237.50	-405.89	1761740.30	14604252.75	40°12'43.428"N	80°33'55.561"W	470.27	239.667	0.76	0.74	-0.77	
4403.00	14.810	244.540	4345.43	117.16	-246.79	-426.24	1761719.96	14604243.46	40°12'43.337"N	80°33'55.824"W	492.53	239.929	1.68	1.60	-2.09	
4496.00	13.730	246.010	4435.56	120.52	-256.39	-447.06	1761699.15	14604233.86	40°12'43.243"N	80°33'56.093"W	515.36	240.165	1.22	-1.16	1.58	
4589.00	13.110	235.360	4526.03	125.32	-266.87	-465.82	1761680.39	14604223.38	40°12'43.140"N	80°33'56.335"W	536.85	240.191	2.74	-0.67	-11.45	
4682.00	14.080	232.370	4616.43	132.75	-279.78	-483.46	1761662.76	14604210.48	40°12'43.014"N	80°33'56.563"W	558.58	239.942	1.29	1.04	-3.22	
4774.00	13.880	229.510	4705.70	141.33	-293.77	-500.71	1761645.52	14604196.49	40°12'42.876"N	80°33'56.786"W	580.53	239.599	0.78	-0.22	-3.11	
4867.00	13.250	227.410	4796.11	150.62	-308.23	-517.04	1761629.19	14604182.04	40°12'42.734"N	80°33'56.998"W	601.95	239.199	0.86	-0.68	-2.26	
4960.00	13.830	238.920	4886.54	158.18	-321.18	-534.41	1761611.83	14604169.09	40°12'42.607"N	80°33'57.223"W	623.50	238.994	2.96	0.62	12.38	
5053.00	14.590	245.130	4976.70	162.75	-331.85	-554.56	1761591.69	14604158.43	40°12'42.503"N	80°33'57.483"W	646.27	239.104	1.83	0.82	6.68	
5145.00	13.070	242.190	5066.03	166.55	-341.58	-574.28	1761571.98	14604148.71	40°12'42.407"N	80°33'57.738"W	668.18	239.256	1.82	-1.65	-3.20	
5238.00	13.030	235.650	5156.64	171.90	-352.40	-592.23	1761554.03	14604137.89	40°12'42.301"N	80°33'57.970"W	689.15	239.246	1.59	-0.04	-7.03	

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Thomas Parkinson BRK 6H AWP Proj: 13652'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]	
5331.00	13.750	235.070	5247.11	178.67	-364.64	-609.95	1761536.32	14604125.65	40°12'42.181"N	80°33'58.199"W	710.64	239.128	0.79	0.77	-0.62	
5413.00	14.580	234.080	5326.61	185.25	-376.28	-626.30	1761519.98	14604114.02	40°12'42.067"N	80°33'58.410"W	730.64	239.003	1.05	1.01	-1.21	
5460.00	15.160	223.830	5372.05	190.29	-384.18	-635.35	1761510.93	14604106.12	40°12'41.989"N	80°33'58.528"W	742.47	238.839	5.72	1.23	-21.81	
5506.00	15.520	214.490	5416.41	197.18	-393.60	-643.00	1761503.28	14604096.71	40°12'41.897"N	80°33'58.627"W	753.90	238.528	5.42	0.78	-20.30	
5599.00	20.030	199.010	5505.00	218.06	-418.94	-655.25	1761491.04	14604071.38	40°12'41.647"N	80°33'58.786"W	777.72	237.407	6.99	4.85	-16.65	
5645.00	22.530	193.260	5547.87	232.16	-434.97	-659.83	1761486.45	14604055.35	40°12'41.489"N	80°33'58.846"W	790.30	236.607	7.07	5.43	-12.50	
5692.00	25.620	189.150	5590.78	249.17	-453.77	-663.52	1761482.77	14604036.56	40°12'41.303"N	80°33'58.895"W	803.84	235.632	7.48	6.57	-8.74	
5738.00	29.410	185.900	5631.57	268.61	-474.83	-666.26	1761480.03	14604015.51	40°12'41.095"N	80°33'58.932"W	818.15	234.523	8.86	8.24	-7.07	
5785.00	33.330	184.130	5671.69	291.41	-499.20	-668.38	1761477.92	14603991.15	40°12'40.854"N	80°33'58.961"W	834.22	233.245	8.57	8.34	-3.77	
5831.00	36.390	181.500	5709.43	316.25	-525.45	-669.65	1761476.65	14603964.90	40°12'40.595"N	80°33'58.979"W	851.19	231.880	7.41	6.65	-5.72	
5877.00	40.210	177.760	5745.53	343.65	-553.94	-669.42	1761476.87	14603936.42	40°12'40.313"N	80°33'58.977"W	868.90	230.392	9.71	8.30	-8.13	
5923.00	43.350	171.230	5779.85	373.73	-584.41	-666.43	1761479.86	14603905.97	40°12'40.012"N	80°33'58.941"W	886.38	228.752	11.66	6.83	-14.20	
5970.00	46.790	167.110	5813.04	406.84	-617.06	-660.15	1761486.14	14603873.33	40°12'39.689"N	80°33'58.862"W	903.64	226.932	9.59	7.32	-8.77	
6016.00	50.960	165.100	5843.29	441.45	-650.68	-651.81	1761494.48	14603839.72	40°12'39.357"N	80°33'58.757"W	921.00	225.050	9.64	9.07	-4.37	
6063.00	54.820	164.580	5871.64	478.91	-686.85	-642.01	1761504.28	14603803.56	40°12'38.999"N	80°33'58.632"W	940.18	223.067	8.26	8.21	-1.11	
6109.00	59.830	164.050	5896.47	517.62	-724.12	-631.54	1761514.74	14603766.31	40°12'38.630"N	80°33'58.500"W	960.83	221.093	10.93	10.89	-1.15	
6155.00	64.460	163.390	5917.96	558.28	-763.15	-620.13	1761526.14	14603727.30	40°12'38.244"N	80°33'58.355"W	983.34	219.097	10.14	10.07	-1.43	
6202.00	67.990	162.460	5936.90	601.28	-804.25	-607.50	1761538.77	14603686.21	40°12'37.837"N	80°33'58.195"W	1007.91	217.066	7.73	7.51	-1.98	
6248.00	70.390	162.120	5953.24	644.26	-845.21	-594.42	1761551.84	14603645.27	40°12'37.432"N	80°33'58.029"W	1033.31	215.118	5.26	5.22	-0.74	
6295.00	73.260	161.150	5967.90	688.88	-887.59	-580.35	1761565.91	14603602.91	40°12'37.012"N	80°33'57.850"W	1060.48	213.179	6.41	6.11	-2.06	
6341.00	74.580	160.100	5980.64	733.02	-929.28	-565.69	1761580.56	14603561.23	40°12'36.599"N	80°33'57.664"W	1087.92	211.330	3.61	2.87	-2.28	
6387.00	75.950	159.340	5992.34	777.40	-971.01	-550.27	1761595.98	14603519.52	40°12'36.186"N	80°33'57.468"W	1116.09	209.540	3.38	2.98	-1.65	
6434.00	78.040	158.570	6002.92	823.03	-1013.74	-533.82	1761612.42	14603476.80	40°12'35.763"N	80°33'57.259"W	1145.71	207.771	4.72	4.45	-1.64	
6480.00	82.000	155.870	6010.89	868.03	-1055.50	-516.28	1761629.95	14603435.06	40°12'35.350"N	80°33'57.035"W	1175.00	206.065	10.37	8.61	-5.87	
6527.00	86.860	155.900	6015.45	914.36	-1098.18	-497.17	1761649.05	14603392.39	40°12'34.927"N	80°33'56.792"W	1205.48	204.357	10.34	10.34	0.06	
6619.00	88.740	155.640	6018.98	1005.42	-1182.01	-459.45	1761686.76	14603308.60	40°12'34.097"N	80°33'56.311"W	1268.17	201.241	2.06	2.04	-0.28	
6712.00	88.740	156.460	6021.03	1097.57	-1266.98	-421.70	1761724.49	14603223.66	40°12'33.255"N	80°33'55.830"W	1335.32	198.410	0.88	0.00	0.88	
6805.00	88.800	157.320	6023.02	1189.89	-1352.50	-385.21	1761760.97	14603138.17	40°12'32.408"N	80°33'55.365"W	1406.29	195.898	0.93	0.06	0.92	
6897.00	88.800	156.150	6024.95	1281.19	-1437.00	-348.88	1761797.29	14603053.71	40°12'31.572"N	80°33'54.902"W	1478.74	193.646	1.27	0.00	-1.27	
6990.00	89.720	156.730	6026.15	1373.44	-1522.24	-311.71	1761834.44	14602968.50	40°12'30.728"N	80°33'54.428"W	1553.83	191.573	1.17	0.99	0.62	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]
7083.00	89.720	156.320	6026.61	1465.71	-1607.54	-274.67	1761871.48	14602883.23	40°12'29.883"N	80°33'53.956"W	1630.84	189.696	0.44	0.00	-0.44
7176.00	89.880	155.340	6026.93	1557.84	-1692.39	-236.59	1761909.54	14602798.42	40°12'29.043"N	80°33'53.470"W	1708.84	187.958	1.07	0.17	-1.05
7268.00	89.510	156.140	6027.42	1648.95	-1776.26	-198.79	1761947.32	14602714.58	40°12'28.212"N	80°33'52.989"W	1787.35	186.386	0.96	-0.40	0.87
7361.00	89.480	155.990	6028.24	1741.12	-1861.26	-161.06	1761985.04	14602629.61	40°12'27.370"N	80°33'52.508"W	1868.21	184.946	0.16	-0.03	-0.16
7454.00	89.540	156.880	6029.04	1833.38	-1946.50	-123.88	1762022.20	14602544.40	40°12'26.526"N	80°33'52.034"W	1950.44	183.642	0.96	0.06	0.96
7547.00	89.510	158.030	6029.81	1925.82	-2032.39	-88.23	1762057.84	14602458.55	40°12'25.676"N	80°33'51.580"W	2034.30	182.486	1.24	-0.03	1.24
7639.00	89.600	159.170	6030.52	2017.45	-2118.04	-54.66	1762091.40	14602372.93	40°12'24.828"N	80°33'51.153"W	2118.75	181.478	1.24	0.10	1.24
7732.00	89.510	160.120	6031.24	2110.22	-2205.23	-22.31	1762123.73	14602285.77	40°12'23.964"N	80°33'50.741"W	2205.34	180.580	1.03	-0.10	1.02
7825.00	89.510	161.490	6032.04	2203.09	-2293.05	8.26	1762154.30	14602197.98	40°12'23.095"N	80°33'50.353"W	2293.07	179.794	1.47	0.00	1.47
7917.00	89.540	160.840	6032.80	2295.00	-2380.12	37.96	1762183.99	14602110.95	40°12'22.233"N	80°33'49.975"W	2380.43	179.086	0.71	0.03	-0.71
8010.00	89.510	159.940	6033.57	2387.84	-2467.73	69.18	1762215.18	14602023.38	40°12'21.366"N	80°33'49.579"W	2468.70	178.394	0.97	-0.03	-0.97
8103.00	89.540	159.690	6034.34	2480.63	-2555.01	101.26	1762247.26	14601936.13	40°12'20.502"N	80°33'49.171"W	2557.02	177.730	0.27	0.03	-0.27
8195.00	89.540	159.970	6035.08	2572.42	-2641.37	132.99	1762278.97	14601849.80	40°12'19.647"N	80°33'48.767"W	2644.71	177.118	0.30	0.00	0.30
8288.00	89.660	155.880	6035.73	2664.92	-2727.53	167.93	1762313.90	14601763.67	40°12'18.794"N	80°33'48.322"W	2732.69	176.477	4.40	0.13	-4.40
8381.00	89.510	153.810	6036.41	2756.81	-2811.70	207.46	1762353.41	14601679.53	40°12'17.960"N	80°33'47.818"W	2819.35	175.780	2.23	-0.16	-2.23
8474.00	89.480	153.930	6037.23	2848.44	-2895.19	248.41	1762394.35	14601596.07	40°12'17.133"N	80°33'47.296"W	2905.83	175.096	0.13	-0.03	0.13
8566.00	89.480	154.860	6038.06	2939.23	-2978.15	288.17	1762434.09	14601513.15	40°12'16.311"N	80°33'46.789"W	2992.06	174.473	1.01	0.00	1.01
8659.00	89.540	156.420	6038.86	3031.31	-3062.87	326.53	1762472.44	14601428.46	40°12'15.472"N	80°33'46.300"W	3080.23	173.915	1.68	0.06	1.68
8751.00	89.540	157.910	6039.59	3122.71	-3147.65	362.23	1762508.12	14601343.71	40°12'14.633"N	80°33'45.845"W	3168.43	173.435	1.62	0.00	1.62
8844.00	89.480	158.520	6040.39	3215.28	-3234.01	396.74	1762542.62	14601257.39	40°12'13.778"N	80°33'45.406"W	3258.25	173.006	0.66	-0.06	0.66
8937.00	89.480	159.520	6041.23	3307.96	-3320.84	430.04	1762575.91	14601170.59	40°12'12.918"N	80°33'44.982"W	3348.57	172.621	1.08	0.00	1.08
9030.00	89.540	160.440	6042.03	3400.77	-3408.21	461.87	1762607.73	14601083.25	40°12'12.053"N	80°33'44.577"W	3439.37	172.282	0.99	0.06	0.99
9122.00	89.600	161.250	6042.72	3492.65	-3495.12	492.06	1762637.91	14600996.38	40°12'11.193"N	80°33'44.194"W	3529.59	171.986	0.88	0.07	0.88
9215.00	89.540	160.440	6043.42	3585.53	-3582.97	522.58	1762668.41	14600908.57	40°12'10.323"N	80°33'43.806"W	3620.87	171.702	0.87	-0.06	-0.87
9308.00	89.570	160.530	6044.14	3678.38	-3670.62	553.64	1762699.46	14600820.95	40°12'09.456"N	80°33'43.411"W	3712.14	171.423	0.10	0.03	0.10
9400.00	89.720	159.550	6044.71	3770.19	-3757.09	585.05	1762730.86	14600734.51	40°12'08.600"N	80°33'43.012"W	3802.37	171.149	1.08	0.16	-1.07
9493.00	90.120	156.200	6044.84	3862.70	-3843.23	620.07	1762765.86	14600648.40	40°12'07.747"N	80°33'42.566"W	3892.93	170.835	3.63	0.43	-3.60
9586.00	89.480	152.140	6045.17	3954.40	-3926.92	660.58	1762806.36	14600564.74	40°12'06.918"N	80°33'42.049"W	3982.09	170.451	4.42	-0.69	-4.37
9679.00	89.540	153.480	6045.96	4045.72	-4009.64	703.07	1762848.84	14600482.06	40°12'06.098"N	80°33'41.507"W	4070.81	170.055	1.44	0.06	1.44
9771.00	90.030	154.160	6046.31	4136.36	-4092.20	743.66	1762889.41	14600399.53	40°12'05.280"N	80°33'40.989"W	4159.22	169.700	0.91	0.53	0.74

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]
9864.00	89.480	154.670	6046.70	4228.14	-4176.08	783.82	1762929.56	14600315.68	40°12'04.449"N	80°33'40.477"W	4249.00	169.370	0.81	-0.59	0.55
9957.00	89.540	155.540	6047.50	4320.10	-4260.43	822.97	1762968.69	14600231.36	40°12'03.614"N	80°33'39.978"W	4339.19	169.067	0.94	0.06	0.94
10050.00	89.540	156.150	6048.25	4412.22	-4345.29	861.02	1763006.73	14600146.54	40°12'02.774"N	80°33'39.493"W	4429.77	168.792	0.66	0.00	0.66
10143.00	89.540	155.870	6048.99	4504.38	-4430.25	898.83	1763044.52	14600061.61	40°12'01.932"N	80°33'39.011"W	4520.51	168.531	0.30	0.00	-0.30
10235.00	89.690	156.190	6049.61	4595.56	-4514.31	936.21	1763081.88	14599977.58	40°12'01.100"N	80°33'38.535"W	4610.37	168.284	0.38	0.16	0.35
10328.00	89.540	155.890	6050.24	4687.73	-4599.30	973.98	1763119.64	14599892.63	40°12'00.258"N	80°33'38.053"W	4701.30	168.043	0.36	-0.16	-0.32
10421.00	89.600	154.070	6050.93	4779.65	-4683.57	1013.31	1763158.95	14599808.39	40°11'59.423"N	80°33'37.552"W	4791.93	167.792	1.96	0.06	-1.96
10514.00	89.690	154.300	6051.51	4871.37	-4767.28	1053.80	1763199.43	14599724.71	40°11'58.594"N	80°33'37.035"W	4882.37	167.535	0.27	0.10	0.25
10606.00	89.750	154.700	6051.96	4962.19	-4850.32	1093.41	1763239.02	14599641.70	40°11'57.772"N	80°33'36.530"W	4972.04	167.296	0.44	0.07	0.43
10699.00	89.780	155.850	6052.34	5054.19	-4934.79	1132.31	1763277.91	14599557.26	40°11'56.935"N	80°33'36.034"W	5063.03	167.077	1.24	0.03	1.24
10792.00	89.820	158.080	6052.66	5146.54	-5020.37	1168.70	1763314.28	14599471.72	40°11'56.087"N	80°33'35.571"W	5154.61	166.895	2.40	0.04	2.40
10884.00	89.940	160.300	6052.86	5238.25	-5106.36	1201.38	1763346.95	14599385.76	40°11'55.236"N	80°33'35.155"W	5245.78	166.761	2.42	0.13	2.41
10977.00	89.540	157.870	6053.28	5330.94	-5193.23	1234.57	1763380.13	14599298.92	40°11'54.376"N	80°33'34.733"W	5337.96	166.627	2.65	-0.43	-2.61
11070.00	89.540	160.040	6054.03	5423.62	-5280.02	1267.97	1763413.51	14599212.17	40°11'53.517"N	80°33'34.308"W	5430.13	166.496	2.33	0.00	2.33
11163.00	89.540	159.790	6054.77	5516.41	-5367.36	1299.90	1763445.44	14599124.86	40°11'52.652"N	80°33'33.902"W	5522.53	166.386	0.27	0.00	-0.27
11255.00	89.480	159.590	6055.56	5608.19	-5453.64	1331.84	1763477.36	14599038.62	40°11'51.798"N	80°33'33.496"W	5613.90	166.276	0.23	-0.07	-0.22
11348.00	89.510	159.350	6056.38	5700.93	-5540.73	1364.45	1763509.96	14598951.56	40°11'50.936"N	80°33'33.082"W	5706.26	166.166	0.26	0.03	-0.26
11441.00	89.510	159.170	6057.17	5793.65	-5627.70	1397.38	1763542.88	14598864.62	40°11'50.075"N	80°33'32.663"W	5798.59	166.055	0.19	0.00	-0.19
11533.00	89.540	159.900	6057.94	5885.40	-5713.89	1429.55	1763575.03	14598778.47	40°11'49.221"N	80°33'32.254"W	5890.00	165.954	0.79	0.03	0.79
11626.00	89.570	159.610	6058.66	5978.18	-5801.14	1461.73	1763607.20	14598691.25	40°11'48.358"N	80°33'31.845"W	5982.46	165.857	0.31	0.03	-0.31
11719.00	89.510	157.850	6059.41	6070.83	-5887.80	1495.46	1763640.92	14598604.62	40°11'47.500"N	80°33'31.415"W	6074.75	165.749	1.89	-0.06	-1.89
11811.00	89.480	160.210	6060.22	6162.51	-5973.69	1528.38	1763673.83	14598518.76	40°11'46.649"N	80°33'30.997"W	6166.11	165.649	2.57	-0.03	2.57
11904.00	89.540	160.570	6061.01	6255.35	-6061.30	1559.59	1763705.03	14598431.19	40°11'45.782"N	80°33'30.600"W	6258.73	165.571	0.39	0.06	0.39
11997.00	89.510	159.430	6061.78	6348.16	-6148.68	1591.40	1763736.82	14598343.84	40°11'44.917"N	80°33'30.196"W	6351.29	165.489	1.23	-0.03	-1.23
12090.00	89.600	157.500	6062.51	6440.76	-6235.18	1625.54	1763770.94	14598257.37	40°11'44.060"N	80°33'29.762"W	6443.59	165.388	2.08	0.10	-2.08
12183.00	89.660	155.790	6063.11	6533.06	-6320.56	1662.40	1763807.80	14598172.03	40°11'43.215"N	80°33'29.292"W	6535.52	165.264	1.84	0.06	-1.84
12275.00	89.540	152.510	6063.75	6623.77	-6403.34	1702.51	1763847.89	14598089.28	40°11'42.395"N	80°33'28.780"W	6625.81	165.111	3.57	-0.13	-3.57
12368.00	89.510	150.920	6064.52	6714.74	-6485.23	1746.57	1763891.94	14598007.42	40°11'41.584"N	80°33'28.218"W	6716.30	164.927	1.71	-0.03	-1.71
12461.00	89.450	151.010	6065.36	6805.45	-6566.54	1791.71	1763937.05	14597926.14	40°11'40.778"N	80°33'27.641"W	6806.59	164.738	0.12	-0.06	0.10
12553.00	89.290	152.560	6066.38	6895.46	-6647.60	1835.20	1763980.53	14597845.11	40°11'39.975"N	80°33'27.086"W	6896.27	164.567	1.69	-0.17	1.68

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]
12646.00	89.140	154.580	6067.65	6987.00	-6730.87	1876.59	1764021.90	14597761.88	40°11'39.150"N	80°33'26.558"W	6987.57	164.421	2.18	-0.16	2.17
12738.00	89.290	158.710	6068.91	7078.28	-6815.30	1913.05	1764058.35	14597677.47	40°11'38.314"N	80°33'26.094"W	7078.71	164.321	4.49	0.16	4.49
12831.00	89.420	161.200	6069.96	7171.07	-6902.66	1944.92	1764090.21	14597590.15	40°11'37.449"N	80°33'25.689"W	7171.43	164.264	2.68	0.14	2.68
12924.00	89.480	161.980	6070.85	7264.00	-6990.89	1974.29	1764119.57	14597501.95	40°11'36.575"N	80°33'25.316"W	7264.33	164.230	0.84	0.06	0.84
13016.00	89.450	161.040	6071.71	7355.93	-7078.14	2003.47	1764148.73	14597414.74	40°11'35.712"N	80°33'24.946"W	7356.22	164.196	1.02	-0.03	-1.02
13109.00	89.380	154.560	6072.66	7448.39	-7164.20	2038.58	1764183.83	14597328.72	40°11'34.860"N	80°33'24.499"W	7448.59	164.116	6.97	-0.08	-6.97
13202.00	89.170	152.820	6073.84	7539.96	-7247.55	2079.80	1764225.03	14597245.39	40°11'34.034"N	80°33'23.973"W	7540.06	163.988	1.88	-0.23	-1.87
13294.00	89.420	151.860	6074.97	7630.15	-7329.03	2122.50	1764267.72	14597163.95	40°11'33.227"N	80°33'23.428"W	7630.18	163.849	1.08	0.27	-1.04
13387.00	89.290	153.000	6076.02	7721.36	-7411.46	2165.54	1764310.75	14597081.54	40°11'32.410"N	80°33'22.879"W	7721.36	163.712	1.23	-0.14	1.23
13480.00	89.420	155.650	6077.06	7813.10	-7495.27	2205.83	1764351.02	14596997.77	40°11'31.580"N	80°33'22.365"W	7813.11	163.601	2.85	0.14	2.85
13572.00	88.980	158.870	6078.35	7904.50	-7580.10	2241.39	1764386.56	14596912.97	40°11'30.740"N	80°33'21.912"W	7904.54	163.527	3.53	-0.48	3.50
13652.00	88.980	158.870	6079.77	7984.21	-7654.71	2270.22	1764415.38	14596838.39	40°11'30.001"N	80°33'21.545"W	7984.26	163.481	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Thomas Parkinson BRK 6H AWB Ref Wellpath: Thomas Parkinson BRK 6H AWP Proj: 13652'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 Conductor	26.00	126.00	100.00	26.00	126.00	0.00	0.00	-0.46	-0.28
17.5in Open Hole	126.00	505.00	379.00	126.00	504.93	-0.46	-0.28	-4.74	-5.64
13.375in Casing Surface	26.00	501.00	475.00	26.00	500.93	0.00	0.00	-4.72	-5.56
12.25in Open Hole	505.00	1759.00	1254.00	504.93	1758.87	-4.74	-5.64	-5.43	-10.79
9.625in Casing Intermediate	26.00	1705.00	1679.00	26.00	1704.87	0.00	0.00	-5.43	-10.77
8.75in Open Hole	1759.00	5411.00	3652.00	1758.87	5324.68	-5.43	-10.79	-375.98	-625.89
8.5in Open Hole	5411.00	13652.00	8241.00	5324.68	6079.77	-375.98	-625.89	-7654.71	2270.22
5.5in Casing Production	26.00	13652.00	13626.00	26.00	6079.77	0.00	0.00	-7654.71	2270.22

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Actual Wellpath Report

Thomas Parkinson BRK 6H AWP Proj: 13652'MD
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Hardline	6019.00	0.00	0.00	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W	polygon
Thomas Parkinson BRK 6H LP Rev-4	6019.00	-1080.39	-498.66	1761647.57	14603410.18	40°12'35.103"N	80°33'56.810"W	point
Thomas Parkinson BRK 6H BHL Rev-2	6083.00	-7636.07	2234.77	1764379.95	14596857.02	40°11'30.187"N	80°33'22.001"W	point

WELLPATH COMPOSITION - Ref Wellbore: Thomas Parkinson BRK 6H AWB Ref Wellpath: Thomas Parkinson BRK 6H AWP Proj: 13652'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	462.00	BHI NaviTrak (Axial)	01_APS EM <17-1/2"> (128'-462')	Thomas Parkinson BRK 6H AWB
462.00	1685.00	BHI NaviTrak (Axial)	02_APS EM <12-1/4"> (462')(506'-1685')	Thomas Parkinson BRK 6H AWB
1685.00	5331.00	BHI NaviTrak (Axial)	03_APS EM <8-3/4"> (1685')(1778'-5331')	Thomas Parkinson BRK 6H AWB
5331.00	13572.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2"> (5331')(5413'-13572')	Thomas Parkinson BRK 6H AWB
13572.00	13652.00	Blind Drilling (std)	Projection to bit	Thomas Parkinson BRK 6H AWB

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

COMMENTS
<p>Wellpath general comments API: 47-009-00243-0000 Job #: 9083861 Rig: SDC 46 Duration: 04/07/2018 -04/16/2018</p>

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/12/2018
Job End Date:	5/31/2018
State:	West Virginia
County:	Brooke
API Number:	47-009-00243-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Thomas Parkinson BRK 6H
Latitude:	40.21270971
Longitude:	-80.56397609
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,048
Total Base Water Volume (gal):	8,401,824
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	82.16193	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	16.77595	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.78126	
			Hydrogen Chloride	7647-01-0	17.50000	0.18164	
WFRA-2000	U.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	60.00000	0.04052	
			2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.02026	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01661	
BIOC11219A	Nalco Champion	Anti-Bacterial Agent	Methanol	64-17-5	60.00000	0.00941	
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00598	
			Glutaraldehyde	111-30-8	10.00000	0.00199	

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SCAL16486A	Naico Champion	Scale Inhibitor	Ethylene Glycol	107-21-1	30.00000	0.00168
			Amine Triphosphate	Proprietary	30.00000	0.00151
AI-303	J.S. Well Services, LLC	Acid Corrosion Inhibitors	Ethylene glycol	107-21-1	40.00000	0.00039
			Cinnamaldehyde	104-55-2	20.00000	0.00014
			Formic acid	64-18-6	20.00000	0.00014
			Butyl cellosolve	111-76-2	20.00000	0.00012
			Polyether	60828-78-6	10.00000	0.00007
			Acetophenone, thiourea, formaldehyde polymer	68527-49-1	5.00000	0.00003
LT FLUSH SYSTEM I	J.S. Well Services, LLC	Other	Mineral oil, petroleum distillates, hydro treated light naphthenic	64742-53-6	100.00000	0.00037

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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**THOMAS PARKINSON BRK 6H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	7/4/2018	13,565	13,471	36
2	5/13/2018	13,436	13,329	42
3	5/13/2018	13,296	13,189	42
4	5/14/2018	13,156	13,049	42
5	5/14/2018	13,016	12,909	42
6	5/14/2018	12,876	12,771	42
7	5/16/2018	12,736	12,629	42
8	5/17/2018	12,596	12,489	42
9	5/17/2018	12,456	12,349	42
10	5/17/2018	12,316	12,209	42
11	5/17/2018	12,176	12,069	42
12	5/18/2018	12,036	11,929	42
13	5/18/2018	11,896	11,789	42
14	5/19/2018	11,756	11,654	42
15	5/19/2018	11,616	11,509	42
16	5/19/2018	11,476	11,369	42
17	5/20/2018	11,336	11,229	42
18	5/20/2018	11,196	11,089	42
19	5/20/2018	11,056	10,949	42
20	5/21/2018	10,911	10,809	42
21	5/21/2018	10,776	10,669	42
22	5/22/2018	10,636	10,529	42
23	5/23/2018	10,496	10,389	42
24	5/23/2018	10,361	10,249	42
25	5/23/2018	10,216	10,109	42
26	5/24/2018	10,076	9,969	42
27	5/24/2018	9,936	9,829	42
28	5/24/2018	9,796	9,689	42
29	5/25/2018	9,656	9,549	42
30	5/25/2018	9,516	9,409	42
31	5/25/2018	9,376	9,269	42
32	5/26/2018	9,236	9,129	42
33	5/26/2018	9,096	8,989	42
34	5/27/2018	8,956	8,849	42
35	5/27/2018	8,816	8,709	42
36	5/27/2018	8,676	8,569	42
37	5/28/2018	8,536	8,429	42
38	5/28/2018	8,396	8,289	42
39	5/28/2018	8,256	8,149	42
40	5/28/2018	8,116	8,009	42
41	5/29/2018	7,976	7,869	42
42	5/29/2018	7,836	7,729	42
43	5/29/2018	7,696	7,589	42
44	5/29/2018	7,556	7,449	42
45	5/30/2018	7,412	7,309	42
46	5/30/2018	7,276	7,166	42
47	5/30/2018	7,136	7,029	42
48	5/31/2018	6,996	6,885	42
49	5/31/2018	6,859	6,749	42
50	5/31/2018	6,716	6,614	42
51	5/31/2018	6,576	6,469	42

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THOMAS PARKINSON BRK 6H
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
1	5/12/2018	88	7,416	8,533	3,822	280,375	5,673	0
2	5/13/2018	89	7,380	5,730	4,720	279,780	4,723	0
3	5/14/2018	91	7,340	7,308	4,191	279,340	4,628	0
4	5/14/2018	89	7,488	5,510	4,394	281,390	4,895	0
5	5/14/2018	90	7,653	7,466	4,526	280,340	4,865	0
6	5/15/2018	88	7,251	7,929	4,195	282,720	4,664	0
7	5/16/2018	89	7,159	6,076	4,397	282,980	4,533	0
8	5/17/2018	91	7,577	5,650	4,621	279,620	4,445	0
9	5/17/2018	88	7,362	6,016	4,854	279,630	4,868	0
10	5/17/2018	90	7,130	7,805	4,494	281,720	4,237	0
11	5/18/2018	89	7,536	6,112	4,276	280,960	4,577	0
12	5/18/2018	89	7,307	6,126	4,356	280,320	4,673	0
13	5/18/2018	89	7,054	5,401	4,541	281,800	4,104	0
14	5/19/2018	90	7,354	5,398	4,770	281,080	4,104	0
15	5/19/2018	90	7,232	5,711	4,374	280,320	4,474	0
16	5/19/2018	88	7,077	5,210	4,236	281,020	4,069	0
17	5/20/2018	89	7,205	5,612	4,522	280,440	3,984	0
18	5/20/2018	90	7,018	5,631	4,484	280,530	4,450	0
19	5/20/2018	88	6,983	6,009	4,932	279,840	3,827	0
20	5/21/2018	89	7,142	6,058	4,161	280,870	4,492	0
21	5/22/2018	88	7,082	8,160	4,435	280,150	3,867	0
22	5/22/2018	88	7,132	6,047	4,653	279,920	3,829	0
23	5/23/2018	88	6,908	6,118	4,681	280,040	3,796	0
24	5/23/2018	89	6,623	5,886	4,584	279,640	4,143	0
25	5/23/2018	89	7,153	5,684	4,684	280,570	3,759	0
26	5/24/2018	89	6,983	5,928	4,409	280,220	3,725	0
27	5/24/2018	89	7,006	5,326	4,551	279,870	3,873	0
28	5/25/2018	89	6,586	5,360	4,596	280,350	3,756	0
29	5/25/2018	86	6,754	6,135	4,511	279,970	3,703	0
30	5/25/2018	90.2	6,926	5,914	4,406	280,400	4,657	0
31	5/26/2018	88.4	6,903	4,894	4,674	280,330	3,634	0
32	5/26/2018	86.4	6,438	5,701	4,651	280,710	3,621	0
33	5/26/2018	87.1	7,120	5,207	4,683	280,170	4,023	0
34	5/27/2018	87.7	6,592	6,063	4,715	280,160	3,546	0
35	5/27/2018	85.5	6,886	6,500	4,677	279,900	3,521	0
36	5/27/2018	88	6,761	5,429	4,051	280,650	3,533	0
37	5/28/2018	88.3	6,841	5,444	4,638	280,640	3,515	0
38	5/28/2018	86.5	6,827	5,595	4,474	282,160	3,428	0
39	5/28/2018	88.5	6,724	5,260	4,209	279,940	3,498	0
40	5/29/2018	87.7	6,714	5,544	4,606	279,690	3,462	0
41	5/29/2018	89.8	6,469	5,371	4,498	281,400	3,451	0
42	5/29/2018	88.6	6,548	5,886	4,582	280,610	3,435	0
43	5/29/2018	89	6,501	5,704	4,741	280,660	3,202	0
44	5/29/2018	89	6,388	5,621	4,577	279,950	3,420	0
45	5/30/2018	88.2	6,547	5,734	4,876	281,170	3,457	0
46	5/30/2018	87	6,577	6,569	4,023	280,400	3,134	0
47	5/30/2018	90.6	6,659	5,857	4,393	280,230	3,428	0
48	5/31/2018	90.6	6,504	5,620	4,934	281,150	3,404	0
49	5/31/2018	90.4	6,571	5,813	4,311	280,290	3,381	0
50	5/31/2018	89.8	6,429	6,475	4,496	280,600	3,369	0
51	5/31/2018	92.6	6,011	5,561	4,613	280,230	3,562	0

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Well Name: Thomas Parkinson BRK 6H

47009002430000

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	401.00	401.00	
Top of Salt Water	813.00	813.00	NA	NA	
Pittsburgh Coal	339.00	339.00	347.00	347.00	
Maxton (ss)	1170.00	1170.00	1536.00	1536.00	
Big Injun (ss)	1536.00	1536.00	2009.00	2009.00	
Berea (siltstone)	2009.00	2009.00	5563.00	5530.00	
Rhinestreet (shale)	5620.00	5524.00	5775.00	5671.00	
Cashaqua (shale)	5775.00	5671.00	5854.00	5728.00	
Middlesex (shale)	5854.00	5728.00	5931.00	5793.00	
Burket (shale)	5931.00	5793.00	5966.00	5810.00	
Tully (ls)	5966.00	5810.00	6054.00	5866.00	
Mahantango (shale)	6054.00	5866.00	6384.00	5992.00	
Marcellus (shale)	6384.00	5992.00	NA	NA	GAS

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WELL LOCATION PLAT	AS-DRILLED PATH
DRAWING NO: 2018-675	PROPOSED PATH
SCALE: 1" = 200'	LEASE BOUNDARY
DRAWN BY: D. REED	SURVEYED BOUNDARY
DATE: 09-28-2018	NATURAL WATERWAY
REVISIONS:	PUBLIC ROAD

LEGEND:
 ○ PROPOSED SURFACE HOLE / BOTTOM HOLE
 * EXISTING / PRODUCING WELLS
 * L.P.L. LANDING POINT LOCATION
 ○ EXISTING WATER WELL
 ○ EXISTING SPRING

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC
 ADDRESS: P.O. BOX 1300
 STATE: WV ZIP CODE: 26378
 CITY: JANE LEW
 DESIGNATED AGENT: BRITANY WOODY
 ADDRESS: P.O. BOX 1300
 STATE: WV ZIP CODE: 26378
 CITY: JANE LEW

TARGET FORMATION: MARCELLUS
 ESTIMATED DEPTH: 6,011' TWD 13,652.0' TMD
 CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED
 DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

OIL & GAS ROYALTY OWNER: BETHANY COLLEGE
 SURFACE OWNER: BETHANY COLLEGE
 DISTRICT: BUFFALO COUNTY: BROOKE
 WATERSHED: UPPER OHIO SOUTH
 ELEVATION: 1,160.5'
 WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

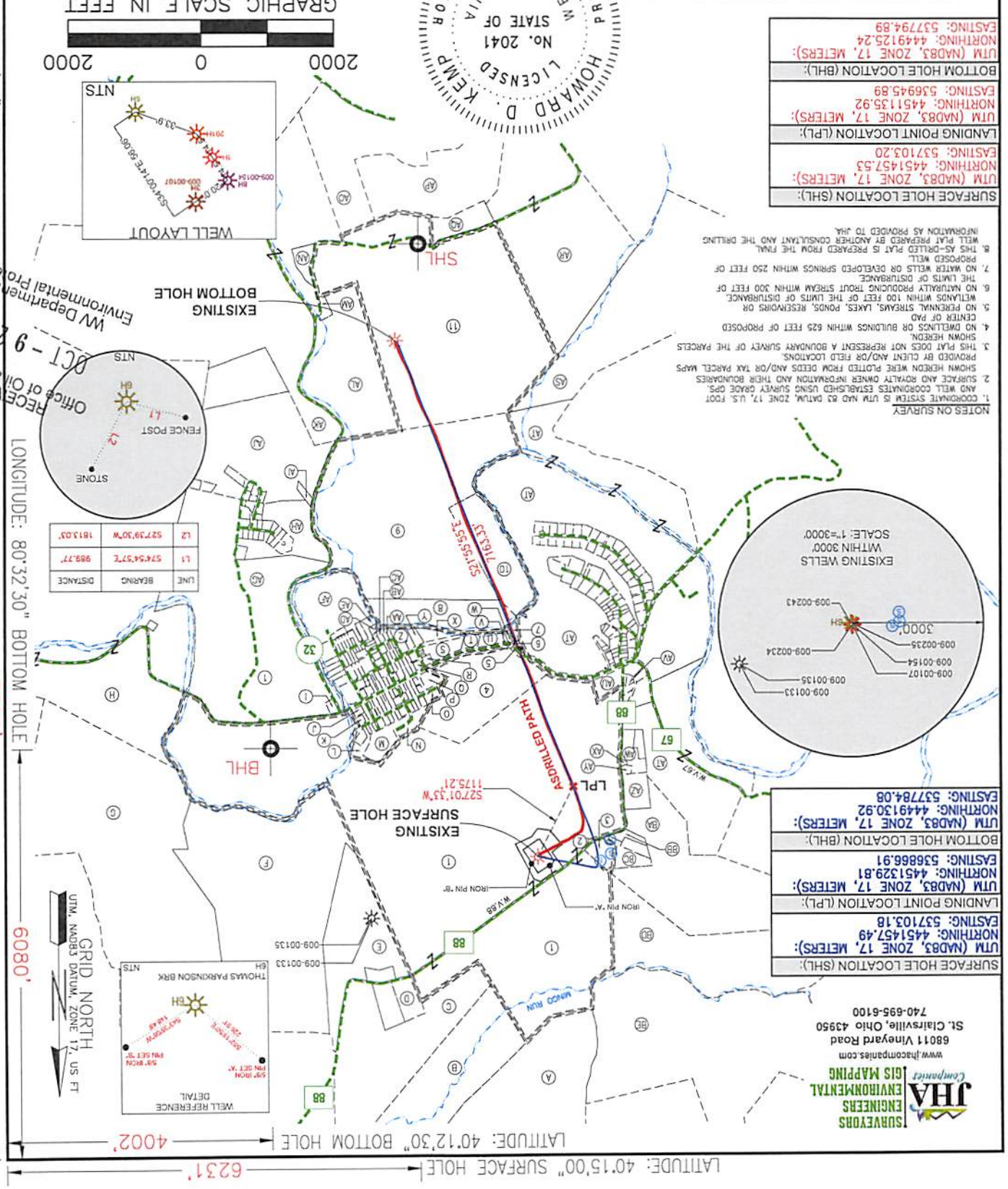
WVDEP OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25034

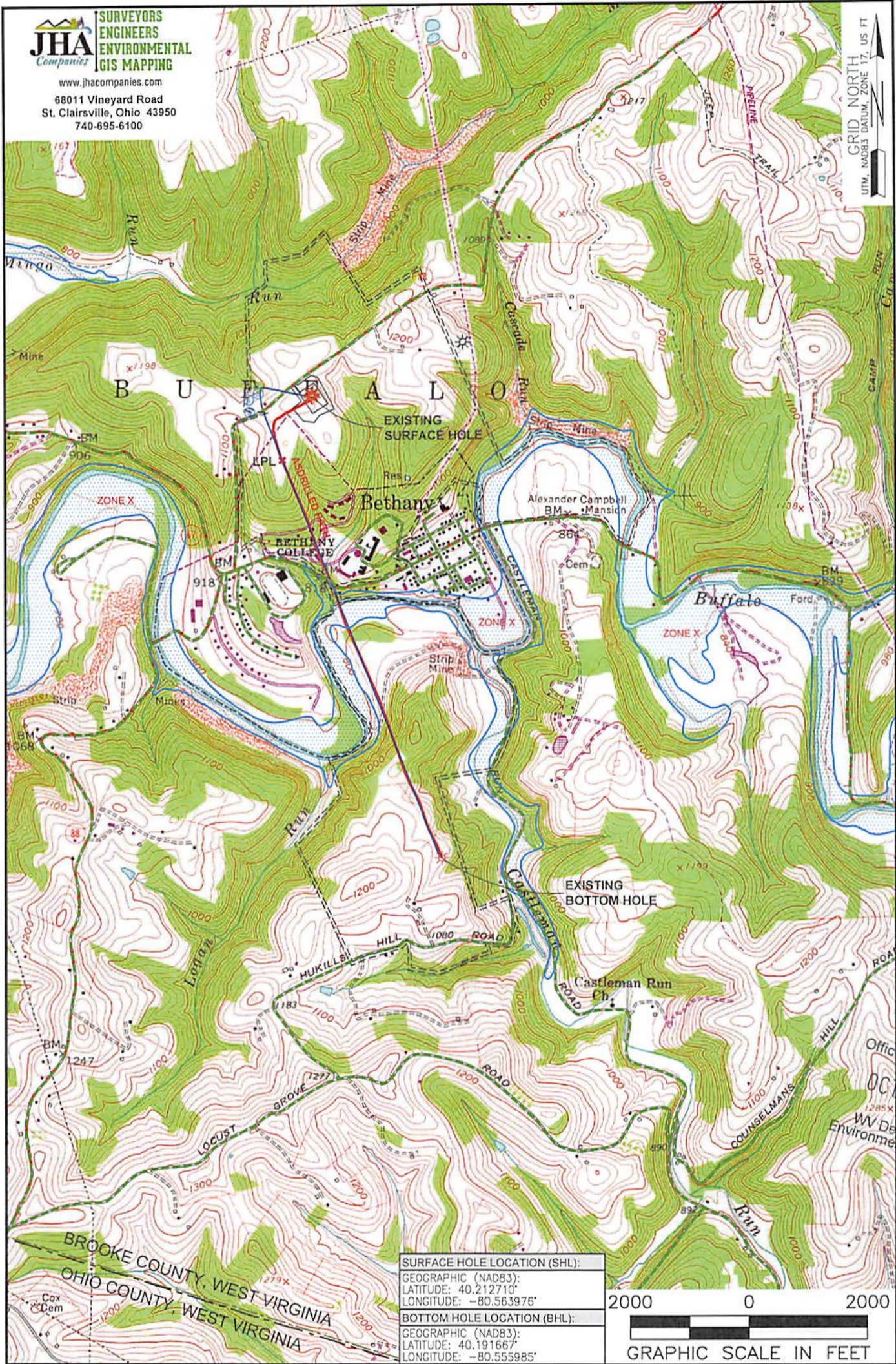
WVDEP UNITED STATES TOPOGRAPHIC MAPS
 ACCURACY: 1/200
 PROVEN SURVEY SOURCE OF GRADE GPS
 ELEVATION: (NAVD 88, US FT)

THOMAS PARKINSON BRK
 OPERATOR'S WELL #: 6H
 API WELL #: 47 STATE 009 COUNTY 00243 PERMIT

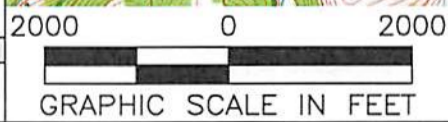
(+) DENOTES LOCATION OF WELL ON MINIMUM DEGREE OF ACCURACY: 1/200
 WVDOP OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25034

PROFESSIONAL SURVEYOR
 STATE OF WEST VIRGINIA
 LICENSED HOWARD D. KEMP
 No. 2041
 P.S. 2041





SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83):
LATITUDE: 40.212710°
LONGITUDE: -80.563976°
BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83):
LATITUDE: 40.191667°
LONGITUDE: -80.555985°



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
- EXISTING / PRODUCING WELLHEAD
- LPL X LANDING POINT LOCATION
- FLOOD PLAN
- NATURAL WATERWAY
- ACCESS ROAD
- PUBLIC ROAD
- LEASE BOUNDARY
- PROPOSED PATH
- ASDRILLED PATH

WELL OPERATOR:
SWN PRODUCTION COMPANY, LLC
ADDRESS:
P.O. BOX 1300 JANE LEW, WV 26378
SURFACE OWNER:
BETHANY COLLEGE

WELL (FARM) NAME:
THOMAS PARKINSON BRK
WELL # 6H **SERIAL #** XXXX
COUNTY: BROOKE **CODE:** 009 **DISTRICT:** BUFFALO
USGS 7 1/2 QUADRANGLE MAP NAME:
BETHANY, WV

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OCT - 9 2018
WV Department of
Environmental Protection

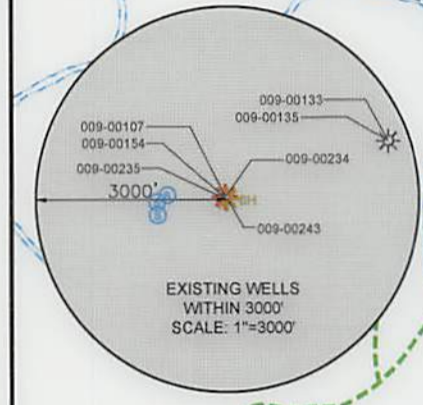
LATITUDE: 40°15'00" SURFACE HOLE | 6231' | 4002' | 6080' | 80°32'30" BOTTOM HOLE | 13591' | 80°32'30" SURFACE HOLE

JHA Companies
**SURVEYORS
 ENGINEERS
 ENVIRONMENTAL
 GIS MAPPING**
 www.jhacompanies.com
 68011 Vineyard Road
 St. Clairsville, Ohio 43950
 740-695-6100

SURFACE HOLE LOCATION (SHL):
 UTM (NAD83, ZONE 17, METERS):
 NORTHING: 4451457.49
 EASTING: 537103.18

LANDING POINT LOCATION (LPL):
 UTM (NAD83, ZONE 17, METERS):
 NORTHING: 4451329.81
 EASTING: 536866.91

BOTTOM HOLE LOCATION (BHL):
 UTM (NAD83, ZONE 17, METERS):
 NORTHING: 4449130.92
 EASTING: 537784.08



- NOTES ON SURVEY**
1. COORDINATE SYSTEM IS UTM NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
 2. 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.
 3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
 4. NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD
 5. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
 6. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF THE LIMITS OF DISTURBANCE.
 7. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
 8. THIS AS-DRILLED PLAT IS PREPARED FROM THE FINAL WELL PLAT PREPARED BY ANOTHER CONSULTANT AND THE DRILLING INFORMATION AS PROVIDED TO JHA.

SURFACE HOLE LOCATION (SHL):
 UTM (NAD83, ZONE 17, METERS):
 NORTHING: 4451457.53
 EASTING: 537103.20

LANDING POINT LOCATION (LPL):
 UTM (NAD83, ZONE 17, METERS):
 NORTHING: 4451135.92
 EASTING: 536945.89

BOTTOM HOLE LOCATION (BHL):
 UTM (NAD83, ZONE 17, METERS):
 NORTHING: 4449125.24
 EASTING: 537794.89

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2041 *[Signature]* 9/28/18





COMPANY: **SWN** Production Company, LLC

<p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)	THOMAS PARKINSON BRK OPERATOR'S WELL #: 6H API WELL #: 47 STATE 009 COUNTY 00243 PERMIT
	WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input checked="" type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> WATERSHED: UPPER OHIO SOUTH DISTRICT: BUFFALO COUNTY: BROOKE SURFACE OWNER: BETHANY COLLEGE OIL & GAS ROYALTY OWNER: BETHANY COLLEGE, A CORPORATION, F/A THE TRUSTEES OF BETHANY COLLEGE, F/A THE TRUSTEES OF BETHANY COLLEGE, A CORPORATION DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input checked="" type="checkbox"/> CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,011' TVD 13,652.0' TMD	WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE * EXISTING / PRODUCING WELLHEAD LPL * LANDING POINT LOCATION ⊕ EXISTING WATER WELL ⊕ EXISTING SPRING --- PUBLIC ROAD --- NATURAL WATERWAY --- SURVEYED BOUNDARY == LEASE BOUNDARY --- AS-DRILLED PATH --- PROPOSED PATH	REVISIONS: DATE: 09-28-2018 DRAWN BY: D. REED SCALE: 1" = 2000' DRAWING NO: 2018-675 WELL LOCATION PLAT	



WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	BETHANY COLLEGE (S) / BETHANY COLLEGE, A CORPORATION, F/K/A THE TRUSTEES OF BETHANY COLLEGE, F/K/A THE TRUSTEES OF BETHANY COLLEGE, A CORPORATION (R)	03-B38-0031.0000
TRACT	SURFACE OWNER	TAX PARCEL
2	WV DOT, DIVISION OF HIGHWAYS	BEALL'S RIDGE RD
3	DAVID G. OWENS & LINDA WALTERS	03-B38-0032.0000
4	BETHANY COLLEGE	01-B43B-0026.0000
5	WV DOT, DIVISION OF HIGHWAYS	BETHANY PIKE
6	MITCHELL DONALD STEVEN	02-B43F-0083.0000
7	WILLIAM MITCHELL HEIRS	02-B43B-0022.0000
8	BETHANY COLLEGE	03-B43-0031.0000
9	VALENTINE GENE C.	03-B43-0033.0000
10	TOWN OF BETHANY	03-B43-0032.0000
11	SAMUEL E. & JUDITH F. JONES	03-B43-0060.0000

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MARK A. & GEORGIA M. FEDAK	03-B38-0014.0000
B	JEFFREY W. HENSLER	03-B38-0028.0000
C	JEFFREY W. HENSLER	03-B38-0027.0001
D	CHARLES F. & DONNA BROWN	03-B38-0030.0000
E	KIMBERLY CARMAN WORTHLEY	03-B38-0027.0000
F	KIMBERLY CARMAN WORTHLEY	03-B38-0025.0000
G	MARK W. OWEN & VIRGINIA BEALL KRUEZ	03-B38-0024.0000
H	GENE CHARLES VALENTINE TRUST	03-B43-0028.0000
I	RICHARD FRANCIS GORBY	03-B43-0027.0000
J	JAMES & KATHLEEN KEEGAN	02-B43C-0037.0000
K	BARBARA L. CHAMBERS	02-B43C-0036.0000
L	BETHANY COLLEGE	02-B43C-0003.0000
M	BETHANY COLLEGE	02-B43C-0002.0000
N	BETHANY COLLEGE	02-B43C-0001.0000
O	BETHANY COLLEGE	02-B43C-0019.0000
P	BETHANY COLLEGE	02-B43C-0020.0000
Q	BETHANY COLLEGE	02-B43C-0057.0000
R	CHURCH OF CHRIST, TRUSTEES	02-B43C-0056.0000
S	BETHANY COLLEGE	02-B43C-0055.0000
T	BETHANY COLLEGE	03-B38-0054.0000
U	TRAVIS G. & GREGORY B. STRAUB	02-B43F-0084.0000
V	GEORGE SONNEWALD, JR.	02-B43F-0082.0000
W	GEORGE SONNEWALD, JR.	02-B43F-0081.0000
X	BETHANY COLLEGE	02-B43G-0001.0000
Y	ANN GABOR TRUST	02-B43G-0019.0000
Z	BETHANY COLLEGE	02-B43G-0001.0000
AA	WALTON J. TURNER, JR.	02-B43G-0007.0000
AB	HUBERT G. & ANITA H. WEAVER	02-B43G-0006.0000
AC	STACEY JO SMITH	02-B43G-0005.0000
AD	LARRY E. & CAROL GRIMES	02-B43G-0008.0000
AE	LARRY E. & CAROL GRIMES	02-B43G-0009.0000
AF	CITY OF BETHANY	02-B43G-0015.0000
AG	BETHANY COLLEGE	03-B38-0031.0000
AH	GENE C. VALENTINE TRUST	03-B43-0035.0000
AI	GENE C. VALENTINE TRUST	03-B43-0056.0000
AJ	GENE C. VALENTINE TRUST	03-B43-0049.0000
AK	WV ST OF DEPT OF COMM DIV OF NAT RES WILDLIFE RES SEC	03-B43-0062.0000
AL	MARY LOU FONNER	03-B48-0058.0000
AM	TRACY T. PUSKARICH	03-B43-0059.0000
AN	ALBERT GLENN & REBECCA ANN AYERS	03-B43-0061.0000
AO	ROBERT M. & CHARLOTTE A. CHAMBERS	03-B48-0024.0000
AP	HARRY L. & BEVERLY R. CHAMBERS	03-B48-0024.0001
AQ	ROBERT M. & CHARLOTTE A. CHAMBERS	03-B48-0023.0000
AR	ANNA MAE MORDEN	03-B48-0022.0000
AS	BRIAN DAVID CORWIN	03-B43-0022.0000
AT	BETHANY COLLEGE	03-B38-0031.0000
AU	JOHN HEIRS HUFF	03-B43B-0004.0000
AV	JOHN T. & PAULA JEAN ROTHWELL	03-B43B-0003.0000
AW	DANNY M. & SANDRA L. HOLLIDAY	03-B43-0003.0000
AX	DENNIS & DERRELLE RUSCHELL	03-B43-0002.0000
AY	DENNIS & DERRELLE RUSCHELL	03-B43-0001.0000
AZ	RUTH GERMON, JEFFREY WOY, SUE MOORE, PATRICIA WEST & SARA WOY	03-B38-0037.0000
BA	ALLEN JOHNSON, CHARLES WARREN & ET AL	03-B38-0036.0000
BB	DAVID G. OWENS & LINDA WALTERS	03-B38-0035.0000
BC	MARSH LIVING TRUST	03-B32-0118.0000
BD	MELVIN E. PELUCHETTE	03-B37-0063.0000
BE	STARVAGGI INDUSTRIES, INC	03-B37-0053.0000

REVISIONS:	 	
	COMPANY:	DATE: 09-28-2018
	OPERATOR'S	THOMAS PARKINSON BRK
	WELL #:	6H
	DISTRICT:	COUNTY:
	BUFFALO	BROOKE
		STATE:
		WV
		DRAWN BY: D. REED
		SCALE: N/A
		DRAWING NO: 2018-675
		WELL LOCATION PLAT

WELL BORE TABLE FOR SURFACE \ ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) \ ROYALTY OWNER (R)	TAX PARCEL
1	BETHANY COLLEGE (S) \ BETHANY COLLEGE (R) BETHANY COLLEGE, A CORPORATION (R) TRUSTEES OF BETHANY COLLEGE, FKA THE TRUSTEES OF BETHANY COLLEGE, A CORPORATION, FKA THE TRUSTEES OF BETHANY COLLEGE, A CORPORATION (R)	03-B38-0031.0000
2	WV DOT, DIVISION OF HIGHWAYS	BEALL'S RIDGE RD
3	DAVID C OWENS & LINDA WALTERS	03-B38-0032.0000
4	BETHANY COLLEGE	01-B438-0028.0000
5	WV DOT, DIVISION OF HIGHWAYS	BETHANY PIKE
6	MITCHELL DONALD STEVEN	03-B437-0083.0000
7	WILLIAM MITCHELL HEIRS	03-B438-0025.0000
8	BETHANY COLLEGE	03-B43-0031.0000
9	VALENTINE GENE C.	03-B43-0033.0000
10	TOWN OF BETHANY	03-B43-0035.0000
11	SAMUEL E. & JUDITH F. JONES	03-B43-0080.0000

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MARK A & GEORGIA M. FEDAK	03-B38-0014.0000
B	JEFFREY W. HENSLEER	03-B38-0028.0000
C	JEFFREY W. HENSLEER	03-B38-0027.0001
D	CHARLES F. & DONNA BROWN	03-B38-0030.0000
E	KIMBERLY GARMAN WORTHLEY	03-B38-0027.0000
F	KIMBERLY GARMAN WORTHLEY	03-B38-0028.0000
G	MARK W. OWEN & VIRGINIA BEALL KRUEZ	03-B38-0024.0000
H	GENE CHARLES VALENTINE TRUST	03-B43-0028.0000
I	RICHARD FRANCIS GORBY	03-B43-0027.0000
J	JAMES & KATHLEEN KEGAN	03-B43C-0038.0000
K	BARBARA L. CHAMBERS	03-B43C-0038.0000
L	BETHANY COLLEGE	03-B43C-0003.0000
M	BETHANY COLLEGE	03-B43C-0005.0000
N	BETHANY COLLEGE	03-B43C-0001.0000
O	BETHANY COLLEGE	03-B43C-0019.0000
P	BETHANY COLLEGE	03-B43C-0020.0000
Q	BETHANY COLLEGE	03-B43C-0027.0000
R	CHURCH OF CHRIST, TRUSTEES	03-B43C-0028.0000
S	BETHANY COLLEGE	03-B43C-0025.0000
T	BETHANY COLLEGE	03-B38-0024.0000
U	TRAVIS C. & GREGORY B. STRAUB	03-B437-0084.0000
V	GEORGE SONNEWALD, JR.	03-B437-0085.0000
W	GEORGE SONNEWALD, JR.	03-B437-0081.0000
X	BETHANY COLLEGE	03-B43C-0001.0000
Y	ANN GABOR TRUST	03-B43C-0019.0000
Z	BETHANY COLLEGE	03-B43C-0001.0000
AA	WALTON J. TURNER, JR.	03-B43C-0007.0000
AB	HUBERT G. & ANITA H. WEAVER	03-B43C-0008.0000
AC	STACEY JO SMITH	03-B43C-0002.0000
AD	LARRY E. & CAROL GRIMES	03-B43C-0008.0000
AE	LARRY E. & CAROL GRIMES	03-B43C-0009.0000
AF	CITY OF BETHANY	03-B43C-0015.0000
AG	BETHANY COLLEGE	03-B38-0031.0000
AH	GENE C. VALENTINE TRUST	03-B43-0025.0000
AI	GENE C. VALENTINE TRUST	03-B43-0028.0000
AJ	GENE C. VALENTINE TRUST	03-B43-0049.0000
AK	WV ST OF DEPT OF COMM DIV OF NAT RES WILDLIFE RES SEC	03-B43-0085.0000
AL	MARY LOU FONNER	03-B48-0028.0000
AM	TRACY T. PUSKARICH	03-B43-0029.0000
AN	ALBERT GLENN & REBECCA ANN AYERS	03-B43-0081.0000
AO	ROBERT M. & CHARLOTTE A. CHAMBERS	03-B48-0024.0000
AP	HARRY L. & BEVERLY R. CHAMBERS	03-B48-0024.0001
AQ	ROBERT M. & CHARLOTTE A. CHAMBERS	03-B48-0023.0000
AR	ANNA MAE MORDEN	03-B48-0022.0000
AS	BRIAN DAVID CORWIN	03-B43-0022.0000
AT	BETHANY COLLEGE	03-B38-0031.0000
AU	JOHN HEIRS HUFF	03-B438-0004.0000
AV	JOHN T. & PAULA JEAN ROTHWELL	03-B438-0003.0000
AW	DANNY M. & SANDRA L. HOLLIDAY	03-B43-0003.0000
AX	DENNIS & DERRELLE RUSCHELL	03-B43-0005.0000
AY	DENNIS & DERRELLE RUSCHELL	03-B43-0001.0000
AZ	RUTH GERMON, JEFFREY WOY, SUE MOORE, PATRICIA WEST & SARA WOY	03-B38-0027.0000
BA	ALLEN JOHNSON, CHARLES WARREN & ET AL	03-B38-0028.0000
BB	DAVID C. OWENS & LINDA WALTERS	03-B38-0025.0000
BC	MARSH LIVING TRUST	03-B32-0118.0000
BD	MELVIN E. PELUCHETTE	03-B37-0083.0000
BE	STARVAGGI INDUSTRIES, INC	03-B37-0023.0000

				COMPANY:	REVISIONS:
Production Company™		Production Company, LLC			
DATE: 09-28-2018	THOMAS PARKINSON BRK		OPERATOR'S:		
DRAWN BY: D. REED	EH		WELL #:		
SCALE: N/A	STATE: WV	COUNTY: BROOKE	DISTRICT: BUFFALO		
DRAWING NO: 2018-875	WELL LOCATION PLAT				

PWD ID 300118285
 COMPLETION ID 250118284