

Location: Brooke County, WV
Field: Brooke
Facility: Russell Hervey BRK Pad

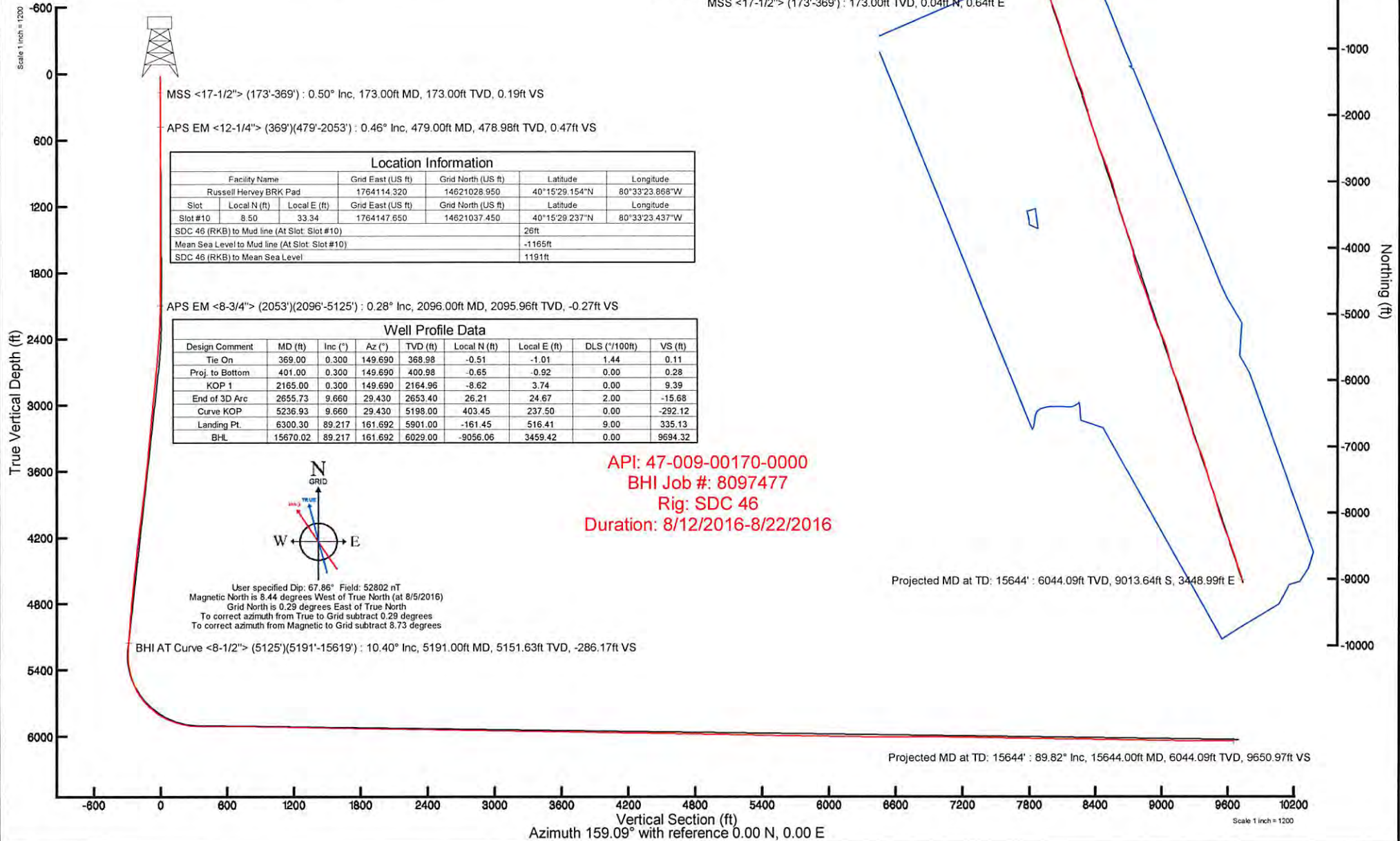
Slot: Slot #10
Well: Russell Hervey BRK 10H
Wellbore: Russell Hervey BRK 10H PWB

Plot reference wellpath is Russell Hervey BRK 10H PWP Rev-B.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to SDC 46 (RKB)	North Reference: Grid north
SDC 46 (RKB) to Mean Sea Level: 1191 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #10): -1165 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: edsanyar on 2016-09-22
	Database: WA_MPL_EASTERUS_Delb

Scale 1 inch = 2000
Easting (ft)
-2000 -1000 0 1000 2000 3000 4000

BHI AT Curve <8-1/2"> (5125')(5191'-15619') : 5151.63ft TVD, 400.44ft N, 246.29ft E

APS EM <8-3/4"> (2053')(2096'-5125') : 2095.96ft TVD, 2.43ft S, 7.14ft W
APS EM <12-1/4"> (369')(479'-2053') : 478.98ft TVD, 0.98ft S, 1.24ft W
MSS <17-1/2"> (173'-369') : 173.00ft TVD, 0.04ft N, 0.64ft E

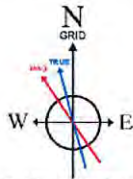


MSS <17-1/2"> (173'-369') : 0.50° Inc, 173.00ft MD, 173.00ft TVD, 0.19ft VS
APS EM <12-1/4"> (369')(479'-2053') : 0.46° Inc, 479.00ft MD, 478.98ft TVD, 0.47ft VS

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Russell Hervey BRK Pad	1764114.320	14621028.950	40°15'29.154"N	80°33'23.868"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #10	8.50	33.34	1764147.650	14621037.450
SDC 46 (RKB) to Mud line (At Slot: Slot #10)			26ft	
Mean Sea Level to Mud line (At Slot: Slot #10)			-1165ft	
SDC 46 (RKB) to Mean Sea Level			1191ft	

APS EM <8-3/4"> (2053')(2096'-5125') : 0.28° Inc, 2096.00ft MD, 2095.96ft TVD, -0.27ft VS

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	369.00	0.300	149.690	368.98	-0.51	-1.01	1.44
Proj. to Bottom	401.00	0.300	149.690	400.98	-0.65	-0.92	0.28
KOP 1	2165.00	0.300	149.690	2164.96	-8.62	3.74	9.39
End of 3D Arc	2655.73	9.660	29.430	2653.40	26.21	24.67	-15.68
Curve KOP	5236.93	9.660	29.430	5198.00	403.45	237.50	-292.12
Landing Pt.	6300.30	89.217	161.692	5901.00	-161.45	516.41	335.13
BHL	15670.02	89.217	161.692	6029.00	-9056.06	3459.42	9694.32



User specified Dip: 67.86° Field: 52802 nT
Magnetic North is 8.44 degrees West of True North (at 8/5/2016)
Grid North is 0.29 degrees East of True North
To correct azimuth from True to Grid subtract 0.29 degrees
To correct azimuth from Magnetic to Grid subtract 8.73 degrees

BHI AT Curve <8-1/2"> (5125')(5191'-15619') : 10.40° Inc, 5191.00ft MD, 5151.63ft TVD, -286.17ft VS



Actual Wellpath Report

Russell Hervey BRK 10H AWP Proj: 15644
Page 1 of 9

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Office of Oil and Gas
JUG 03 2017
Department of Environmental Protection



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Brooke County, WV	Well	Russell Hervey BRK 10H
Field	Brooke	Wellbore	Russell Hervey BRK 10H AWP
Facility	Russell Hervey BRK Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Edsaryar
Scale	0.999618	Report Generated	9/22/2016 at 5:28:28 PM
Convergence at slot	0.29° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Russell_Hervey_BRK_10H_AWP_Proj_15644_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	8.50	33.34	1764147.65	14621037.45	40°15'29.237"N	80°33'23.437"W
Facility Reference Pt			1764114.32	14621028.95	40°15'29.154"N	80°33'23.868"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 (RKB) to Facility Vertical Datum	1191.00ft
Horizontal Reference Pt	Slot	SDC 46 (RKB) to Mean Sea Level	1191.00ft
Vertical Reference Pt	SDC 46 (RKB)	SDC 46 (RKB) to Mud Line at Slot (Slot #10)	26.00ft
MD Reference Pt	SDC 46 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	159.09°

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Brooke County, WV	Well	Russell Hervey BRK 10H
Field	Brooke	Wellbore	Russell Hervey BRK 10H AWP
Facility	Russell Hervey BRK Pad		

WELLPATH DATA (183 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	86.490	0.00	0.00	0.00	0.00	1764147.65	14621037.45	40°15'29.237"N	80°33'23.437"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	86.490	26.00	0.00	0.00	0.00	1764147.65	14621037.45	40°15'29.237"N	80°33'23.437"W	0.00	0.000	0.00	0.00	0.00
173.00	0.500	86.490	173.00	0.19	0.04	0.64	1764148.29	14621037.49	40°15'29.237"N	80°33'23.429"W	0.64	86.490	0.34	0.34	58.84
269.00	1.300	261.090	268.99	0.09	-0.10	-0.02	1764147.63	14621037.35	40°15'29.236"N	80°33'23.438"W	0.11	189.635	1.87	0.83	181.87
369.00	0.300	149.690	368.98	0.11	-0.51	-1.01	1764146.64	14621036.94	40°15'29.232"N	80°33'23.450"W	1.13	243.327	1.44	-1.00	-111.40
479.00	0.460	239.390	478.98	0.47	-0.98	-1.24	1764146.41	14621036.47	40°15'29.227"N	80°33'23.453"W	1.58	231.730	0.50	0.15	81.55
572.00	0.170	183.280	571.98	0.66	-1.31	-1.57	1764146.08	14621036.14	40°15'29.224"N	80°33'23.458"W	2.04	230.230	0.42	-0.31	-60.33
665.00	0.100	299.300	664.98	0.72	-1.40	-1.65	1764146.00	14621036.05	40°15'29.223"N	80°33'23.459"W	2.17	229.568	0.25	-0.08	124.75
758.00	0.320	233.830	757.98	0.73	-1.52	-1.93	1764145.72	14621035.93	40°15'29.222"N	80°33'23.462"W	2.46	231.796	0.32	0.24	-70.40
851.00	0.240	226.050	850.98	0.87	-1.81	-2.28	1764145.37	14621035.64	40°15'29.219"N	80°33'23.467"W	2.91	231.593	0.10	-0.09	-8.37
943.00	0.140	218.760	942.98	1.01	-2.03	-2.49	1764145.16	14621035.42	40°15'29.217"N	80°33'23.470"W	3.21	230.815	0.11	-0.11	-7.92
1036.00	0.430	220.970	1035.98	1.23	-2.38	-2.79	1764144.86	14621035.07	40°15'29.213"N	80°33'23.473"W	3.67	229.512	0.31	0.31	2.38
1129.00	0.500	255.160	1128.97	1.35	-2.75	-3.41	1764144.24	14621034.70	40°15'29.210"N	80°33'23.481"W	4.38	231.132	0.30	0.08	36.76
1222.00	0.400	261.140	1221.97	1.24	-2.90	-4.12	1764143.53	14621034.55	40°15'29.208"N	80°33'23.491"W	5.04	234.858	0.12	-0.11	6.43
1314.00	0.280	270.660	1313.97	1.09	-2.95	-4.66	1764142.99	14621034.50	40°15'29.208"N	80°33'23.498"W	5.52	237.701	0.14	-0.13	10.35
1407.00	0.240	278.740	1406.97	0.91	-2.92	-5.08	1764142.57	14621034.53	40°15'29.208"N	80°33'23.503"W	5.86	240.161	0.06	-0.04	8.69
1500.00	0.200	211.810	1499.97	0.91	-3.02	-5.36	1764142.29	14621034.43	40°15'29.207"N	80°33'23.507"W	6.16	240.574	0.26	-0.04	-71.97
1593.00	0.200	225.180	1592.97	1.08	-3.28	-5.56	1764142.09	14621034.17	40°15'29.205"N	80°33'23.509"W	6.46	239.498	0.05	0.00	14.38
1686.00	0.200	277.350	1685.97	1.06	-3.37	-5.84	1764141.81	14621034.08	40°15'29.204"N	80°33'23.513"W	6.74	240.003	0.19	0.00	56.10
1778.00	0.170	328.300	1777.97	0.85	-3.23	-6.07	1764141.58	14621034.22	40°15'29.205"N	80°33'23.516"W	6.88	241.952	0.18	-0.03	55.38
1871.00	0.400	292.590	1870.97	0.50	-2.99	-6.44	1764141.21	14621034.46	40°15'29.208"N	80°33'23.521"W	7.10	245.089	0.30	0.25	-38.40
1964.00	0.210	359.850	1963.96	0.11	-2.70	-6.74	1764140.91	14621034.75	40°15'29.211"N	80°33'23.524"W	7.26	248.200	0.40	-0.20	72.32
2053.00	0.270	277.250	2052.96	-0.14	-2.51	-6.95	1764140.70	14621034.94	40°15'29.212"N	80°33'23.527"W	7.39	250.165	0.36	0.07	-92.81
2096.00	0.280	305.630	2095.96	-0.27	-2.43	-7.14	1764140.52	14621035.02	40°15'29.213"N	80°33'23.530"W	7.54	251.173	0.31	0.02	66.00
2189.00	1.480	17.310	2188.95	-1.41	-1.15	-6.96	1764140.69	14621036.30	40°15'29.226"N	80°33'23.527"W	7.06	260.590	1.52	1.29	77.08
2282.00	4.170	28.900	2281.83	-4.53	2.95	-4.97	1764142.68	14621040.40	40°15'29.266"N	80°33'23.501"W	5.78	300.710	2.94	2.89	12.46
2374.00	6.010	24.510	2373.46	-10.07	10.26	-1.36	1764146.29	14621047.71	40°15'29.338"N	80°33'23.454"W	10.35	352.468	2.04	2.00	-4.77
2467.00	7.070	24.800	2465.86	-17.49	19.89	3.06	1764150.71	14621057.33	40°15'29.433"N	80°33'23.397"W	20.12	8.755	1.14	1.14	0.31
2560.00	7.930	32.010	2558.06	-25.35	30.53	8.86	1764156.51	14621067.96	40°15'29.538"N	80°33'23.321"W	31.79	16.193	1.37	0.92	7.75
2653.00	8.710	34.610	2650.08	-33.21	41.76	16.27	1764163.91	14621079.20	40°15'29.649"N	80°33'23.225"W	44.82	21.279	0.93	0.84	2.80

Actual Wellpath Report

Russell Hervey BRK 10H AWP Proj: 15644



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY
Area	Brooke County, WV
Field	Brooke
Facility	Russell Hervey BRK Pad
Slot	Wellbore
Slot #10	Russell Hervey BRK 10H
	Russell Hervey BRK 10H AWB

WELLPATH DATA (183 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]	[ft]	[ft]	[°]	[ft]	[ft/100ft]	[°/100ft]
2745.00	9.420	31.840	2740.94	-41.71	53.89	24.19	1764171.83	14621091.32	40°15'29.768"N	80°33'23.122"W	59.07	24.177	0.91	-3.01	
2838.00	9.980	33.630	2832.61	-50.99	67.07	32.67	1764180.31	14621104.49	40°15'29.898"N	80°33'23.012"W	74.60	25.973	0.68	1.92	
2931.00	9.840	32.670	2924.22	-60.38	80.47	41.42	1764189.06	14621117.89	40°15'30.030"N	80°33'22.898"W	90.50	27.240	0.23	-1.03	
3023.00	9.190	29.580	3014.95	-69.72	93.47	49.29	1764196.93	14621130.89	40°15'30.158"N	80°33'22.795"W	105.67	27.806	0.90	-3.36	
3116.00	9.190	32.390	3106.76	-78.89	106.20	56.94	1764204.57	14621143.61	40°15'30.284"N	80°33'22.696"W	120.50	28.197	0.48	3.02	
3209.00	9.170	32.650	3198.57	-87.73	118.71	64.92	1764212.54	14621156.12	40°15'30.407"N	80°33'22.592"W	135.30	28.671	0.05	-0.28	
3302.00	8.360	30.950	3290.48	-96.30	130.75	72.39	1764220.01	14621168.15	40°15'30.525"N	80°33'22.495"W	149.45	28.971	0.91	-1.83	
3395.00	8.810	33.500	3382.44	-104.62	142.49	79.80	1764227.42	14621179.88	40°15'30.641"N	80°33'22.399"W	163.31	29.250	0.63	2.74	
3487.00	9.060	32.920	3473.32	-113.00	154.44	87.62	1764235.24	14621191.83	40°15'30.759"N	80°33'22.297"W	177.57	29.568	0.29	-0.63	
3580.00	8.300	30.280	3565.26	-121.53	166.39	94.99	1764242.60	14621203.77	40°15'30.876"N	80°33'22.201"W	191.59	29.721	0.92	-2.84	
3673.00	9.270	28.550	3657.17	-130.60	178.76	101.95	1764249.56	14621216.15	40°15'30.998"N	80°33'22.111"W	205.79	29.697	1.08	-1.86	
3765.00	9.470	25.040	3747.94	-140.68	192.13	108.70	1764256.31	14621229.51	40°15'31.130"N	80°33'22.023"W	220.75	29.499	0.66	-3.82	
3858.00	10.220	26.990	3839.57	-151.53	206.41	115.68	1764263.29	14621243.78	40°15'31.271"N	80°33'21.932"W	236.62	29.267	0.88	2.10	
3951.00	10.470	27.720	3931.06	-162.65	221.25	123.35	1764270.96	14621258.61	40°15'31.417"N	80°33'21.832"W	253.31	29.142	0.30	0.78	
4043.00	11.040	29.400	4021.44	-173.80	236.32	131.57	1764279.17	14621273.68	40°15'31.566"N	80°33'21.725"W	270.48	29.106	0.71	1.83	
4136.00	11.790	31.540	4112.60	-185.28	252.18	140.91	1764288.50	14621289.53	40°15'31.722"N	80°33'21.604"W	288.87	29.195	0.93	2.30	
4229.00	10.680	29.590	4203.82	-196.55	267.77	150.13	1764297.73	14621305.11	40°15'31.875"N	80°33'21.484"W	306.98	29.279	1.26	-2.10	
4322.00	9.930	27.770	4295.32	-207.33	282.36	158.13	1764305.71	14621319.70	40°15'32.019"N	80°33'21.380"W	323.62	29.250	0.88	-1.96	
4414.00	10.320	35.450	4385.89	-217.13	296.09	166.60	1764314.19	14621333.43	40°15'32.155"N	80°33'21.269"W	339.74	29.365	1.53	8.35	
4507.00	11.170	34.630	4477.26	-226.84	310.29	176.55	1764324.13	14621347.62	40°15'32.294"N	80°33'21.140"W	357.00	29.640	0.93	-0.88	
4600.00	10.140	37.210	4568.65	-236.26	324.22	186.62	1764334.20	14621361.55	40°15'32.432"N	80°33'21.009"W	374.09	29.925	1.22	2.77	
4692.00	9.730	36.690	4659.27	-244.70	336.90	196.16	1764343.74	14621374.22	40°15'32.556"N	80°33'20.885"W	389.85	30.210	0.46	-0.57	
4785.00	9.520	32.800	4750.96	-253.47	349.67	205.03	1764352.60	14621386.99	40°15'32.682"N	80°33'20.770"W	405.35	30.385	0.73	-4.18	
4878.00	9.650	37.410	4842.67	-262.11	362.33	213.93	1764361.50	14621399.64	40°15'32.807"N	80°33'20.655"W	420.77	30.559	0.84	4.96	
4971.00	8.800	43.110	4934.47	-269.32	373.71	223.53	1764371.09	14621411.02	40°15'32.919"N	80°33'20.530"W	435.46	30.885	1.34	6.13	
5064.00	8.640	41.670	5026.39	-275.66	384.12	233.03	1764380.59	14621421.43	40°15'33.021"N	80°33'20.407"W	449.28	31.243	0.29	-1.55	
5156.00	9.510	39.300	5086.63	-280.27	391.45	239.27	1764386.83	14621428.75	40°15'33.093"N	80°33'20.326"W	458.78	31.435	1.55	-3.89	
5191.00	10.400	36.740	5151.63	-286.17	400.44	246.29	1764393.84	14621437.73	40°15'33.182"N	80°33'20.235"W	470.12	31.593	1.51	-3.88	
5238.00	9.250	44.500	5197.95	-290.01	406.53	251.47	1764399.03	14621443.83	40°15'33.242"N	80°33'20.168"W	478.02	31.740	3.73	16.51	
5284.00	8.740	64.180	5243.39	-291.85	410.69	257.21	1764404.76	14621447.99	40°15'33.283"N	80°33'20.093"W	484.59	32.058	6.75	42.78	



Actual Wellpath Report

Russell Hervey BRK 10H AWP Proj: 15644'
Page 4 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Brooke County, WV	Well	Russell Hervey BRK 10H
Field	Brooke	Wellbore	Russell Hervey BRK 10H AWB
Facility	Russell Hervey BRK Pad		

WELLPATH DATA (183 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]
5331.00	9.170	84.220	5289.83	-291.18	412.63	264.15	1764411.70	14621449.92	40°15'33.301"N	80°33'20.004"W	489.94	32.626	6.67	0.91	42.64
5377.00	9.930	108.760	5335.21	-287.68	411.72	271.56	1764419.10	14621449.01	40°15'33.292"N	80°33'19.908"W	493.21	33.408	8.93	1.65	53.35
5423.00	12.260	126.580	5380.36	-281.03	407.53	279.24	1764426.78	14621444.82	40°15'33.250"N	80°33'19.809"W	494.02	34.419	8.96	5.07	38.74
5470.00	14.790	137.720	5426.06	-271.23	400.12	287.29	1764434.82	14621437.41	40°15'33.177"N	80°33'19.706"W	492.57	35.678	7.70	5.38	23.70
5516.00	17.370	146.640	5470.26	-259.06	390.03	295.01	1764442.55	14621427.33	40°15'33.077"N	80°33'19.607"W	489.04	37.103	7.75	5.61	19.39
5563.00	21.440	150.820	5514.59	-243.70	376.67	303.06	1764450.60	14621413.97	40°15'32.944"N	80°33'19.504"W	483.45	38.820	9.14	8.66	8.89
5609.00	24.820	152.920	5556.88	-225.77	360.73	311.56	1764459.09	14621398.04	40°15'32.786"N	80°33'19.395"W	476.65	40.817	7.56	7.35	4.57
5655.00	28.520	153.490	5597.98	-205.24	342.30	320.86	1764468.39	14621379.62	40°15'32.603"N	80°33'19.277"W	469.17	43.148	8.06	8.04	1.24
5686.00	31.780	154.190	5624.78	-189.74	328.32	327.72	1764475.24	14621365.65	40°15'32.465"N	80°33'19.189"W	463.89	44.947	10.58	10.52	2.26
5748.00	38.870	156.000	5675.34	-154.00	295.81	342.76	1764490.28	14621333.15	40°15'32.143"N	80°33'18.997"W	452.76	49.205	11.56	11.44	2.92
5795.00	43.040	157.150	5710.83	-123.23	267.54	354.99	1764502.51	14621304.89	40°15'31.863"N	80°33'18.841"W	444.52	52.996	9.02	8.87	2.45
5841.00	46.380	157.890	5743.51	-90.88	237.64	367.36	1764514.87	14621275.00	40°15'31.567"N	80°33'18.684"W	437.52	57.101	7.35	7.26	1.61
5887.00	51.590	158.480	5773.69	-56.19	205.43	380.25	1764527.75	14621242.80	40°15'31.248"N	80°33'18.520"W	432.19	61.620	11.37	11.33	1.28
5933.00	56.010	158.390	5800.85	-19.08	170.92	393.89	1764541.39	14621208.30	40°15'30.906"N	80°33'18.346"W	429.37	66.543	9.61	9.61	-0.20
5980.00	61.150	157.920	5825.35	21.01	133.70	408.81	1764556.30	14621171.10	40°15'30.538"N	80°33'18.156"W	430.12	71.890	10.97	10.94	-1.00
6026.00	67.290	158.220	5845.34	62.40	95.30	424.27	1764571.76	14621132.71	40°15'30.158"N	80°33'17.959"W	434.84	77.341	13.36	13.35	0.65
6072.00	70.520	158.530	5861.90	105.31	55.40	440.08	1764587.56	14621092.83	40°15'29.763"N	80°33'17.757"W	443.56	82.825	7.05	7.02	0.67
6119.00	72.560	158.820	5876.78	149.89	13.88	456.29	1764603.77	14621051.32	40°15'29.351"N	80°33'17.551"W	456.50	88.258	4.38	4.34	0.62
6165.00	74.400	159.590	5889.86	193.99	-27.35	471.95	1764619.42	14621010.11	40°15'28.943"N	80°33'17.352"W	472.74	93.317	4.31	4.00	1.67
6211.00	79.610	159.950	5900.20	238.79	-69.39	487.44	1764634.90	14620968.08	40°15'28.527"N	80°33'17.155"W	492.36	98.102	11.35	11.33	0.78
6304.00	89.910	161.190	5908.68	331.25	-156.61	518.20	1764665.65	14620880.90	40°15'27.664"N	80°33'16.764"W	541.35	106.816	11.15	11.08	1.33
6397.00	89.910	161.760	5908.83	424.16	-244.79	547.75	1764695.19	14620792.75	40°15'26.791"N	80°33'16.388"W	599.96	114.080	0.61	0.00	0.61
6490.00	89.630	161.440	5909.20	517.07	-333.04	577.10	1764724.53	14620704.54	40°15'25.917"N	80°33'16.015"W	666.30	119.989	0.46	-0.30	-0.34
6582.00	89.420	161.250	5909.96	609.00	-420.20	606.53	1764753.95	14620617.41	40°15'25.054"N	80°33'15.641"W	737.87	124.714	0.31	-0.23	-0.21
6675.00	89.380	159.920	5910.94	701.96	-507.91	637.44	1764784.84	14620529.74	40°15'24.186"N	80°33'15.248"W	815.05	128.548	1.43	-0.04	-1.43
6768.00	89.450	159.980	5911.89	794.95	-595.27	669.32	1764816.71	14620442.41	40°15'23.321"N	80°33'14.843"W	895.73	131.649	0.10	0.08	0.06
6861.00	89.420	163.670	5912.80	887.82	-683.61	698.32	1764845.71	14620354.11	40°15'22.447"N	80°33'14.475"W	977.23	134.390	3.97	-0.03	3.97
6953.00	89.230	164.490	5913.89	979.46	-772.07	723.56	1764870.93	14620265.68	40°15'21.572"N	80°33'14.155"W	1058.13	136.858	0.91	-0.21	0.89
7046.00	89.200	164.220	5915.16	1072.06	-861.62	748.64	1764896.00	14620176.16	40°15'20.685"N	80°33'13.837"W	1141.42	139.014	0.29	-0.03	-0.29
7139.00	88.830	162.990	5916.76	1164.76	-950.82	774.88	1764922.23	14620086.99	40°15'19.803"N	80°33'13.505"W	1226.58	140.821	1.38	-0.40	-1.32



Actual Wellpath Report

Russell Hervey BRK 10H AWP Proj: 15644'
Page 5 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Brooke County, WV	Well	Russell Hervey BRK 10H
Field	Brooke	Wellbore	Russell Hervey BRK 10H AWP
Facility	Russell Hervey BRK Pad		

WELLPATH DATA (183 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]
7232.00	88.770	161.970	5918.71	1257.57	-1039.49	802.87	1764950.21	14619998.36	40°15'18.925"N	80°33'13.149"W	1313.44	142.318	1.10	-0.06	-1.10
7325.00	88.680	162.750	5920.78	1350.40	-1128.09	831.05	1764978.38	14619909.79	40°15'18.048"N	80°33'12.792"W	1401.15	143.622	0.84	-0.10	0.84
7418.00	88.710	162.120	5922.90	1443.22	-1216.73	859.10	1765006.42	14619821.19	40°15'17.171"N	80°33'12.435"W	1489.46	144.775	0.68	0.03	-0.68
7510.00	88.830	159.330	5924.87	1535.15	-1303.55	889.46	1765036.77	14619734.41	40°15'16.311"N	80°33'12.050"W	1578.09	145.693	3.03	0.13	-3.03
7603.00	88.950	157.050	5926.67	1628.11	-1389.87	924.01	1765071.30	14619648.12	40°15'15.457"N	80°33'11.610"W	1668.99	146.383	2.45	0.13	-2.45
7695.00	89.050	156.370	5928.28	1720.02	-1474.36	960.38	1765107.66	14619563.66	40°15'14.620"N	80°33'11.146"W	1759.56	146.920	0.75	0.11	-0.74
7788.00	89.140	158.100	5929.75	1812.95	-1560.10	996.36	1765143.62	14619477.95	40°15'13.771"N	80°33'10.688"W	1851.12	147.436	1.86	0.10	1.86
7881.00	89.050	162.810	5931.22	1905.89	-1647.70	1027.46	1765174.71	14619390.38	40°15'12.904"N	80°33'10.292"W	1941.80	148.054	5.06	-0.10	5.06
7974.00	89.080	164.630	5932.73	1998.57	-1736.96	1053.52	1765200.77	14619301.16	40°15'12.020"N	80°33'09.962"W	2031.49	148.762	1.96	0.03	1.96
8066.00	88.950	163.200	5934.32	2090.23	-1825.34	1079.01	1765226.25	14619212.81	40°15'11.146"N	80°33'09.639"W	2120.41	149.411	1.56	-0.14	-1.55
8160.00	89.110	163.340	5935.91	2183.97	-1915.35	1106.07	1765253.29	14619122.84	40°15'10.255"N	80°33'09.296"W	2211.77	149.995	0.23	0.17	0.15
8253.00	89.020	165.220	5937.43	2276.57	-2004.86	1131.26	1765278.47	14619033.37	40°15'09.369"N	80°33'08.977"W	2302.00	150.566	2.02	-0.10	2.02
8345.00	89.080	164.030	5938.95	2368.12	-2093.55	1155.65	1765302.85	14618944.71	40°15'08.492"N	80°33'08.668"W	2391.33	151.101	1.29	0.07	-1.29
8437.00	89.020	162.260	5940.48	2459.88	-2181.58	1182.32	1765329.51	14618856.71	40°15'07.620"N	80°33'08.330"W	2481.36	151.544	1.92	-0.07	-1.92
8527.00	89.110	160.350	5941.94	2549.79	-2266.82	1211.16	1765358.34	14618771.50	40°15'06.777"N	80°33'07.963"W	2570.09	151.884	2.12	0.10	-2.12
8619.00	89.020	163.130	5943.45	2641.67	-2354.16	1239.98	1765387.15	14618684.19	40°15'05.912"N	80°33'07.597"W	2660.76	152.223	3.02	-0.10	3.02
8712.00	89.080	162.500	5944.99	2734.46	-2443.00	1267.45	1765414.62	14618595.39	40°15'05.033"N	80°33'07.249"W	2752.21	152.579	0.68	0.06	-0.68
8805.00	89.020	158.010	5946.53	2827.41	-2530.50	1298.86	1765446.01	14618507.93	40°15'04.167"N	80°33'06.849"W	2844.37	152.829	4.83	-0.06	-4.83
8897.00	89.050	155.720	5948.08	2919.32	-2615.08	1335.00	1765482.14	14618423.37	40°15'03.329"N	80°33'06.389"W	2936.13	152.956	2.49	0.03	-2.49
8990.00	88.980	157.210	5949.68	3012.21	-2700.33	1372.13	1765519.25	14618338.16	40°15'02.485"N	80°33'05.916"W	3028.95	153.063	1.60	-0.08	1.60
9083.00	89.110	160.950	5951.23	3105.18	-2787.17	1405.32	1765552.43	14618251.35	40°15'01.625"N	80°33'05.493"W	3121.42	153.242	4.02	0.14	4.02
9175.00	89.140	162.020	5952.63	3197.08	-2874.40	1434.54	1765581.63	14618164.16	40°15'00.761"N	80°33'05.122"W	3212.49	153.477	1.16	0.03	1.16
9268.00	89.050	161.900	5954.10	3289.96	-2962.82	1463.33	1765610.42	14618075.77	40°14'59.886"N	80°33'04.756"W	3304.48	153.715	0.16	-0.10	-0.13
9361.00	89.050	163.170	5955.65	3382.77	-3051.52	1491.24	1765638.32	14617987.11	40°14'59.008"N	80°33'04.402"W	3396.40	153.956	1.37	0.00	1.37
9454.00	88.980	164.320	5957.24	3475.45	-3140.78	1517.27	1765664.33	14617897.87	40°14'58.125"N	80°33'04.072"W	3488.07	154.215	1.24	-0.08	1.24
9547.00	89.050	165.030	5958.84	3568.00	-3230.46	1541.84	1765688.90	14617808.23	40°14'57.238"N	80°33'03.761"W	3579.55	154.486	0.77	0.08	0.76
9639.00	89.050	164.440	5960.37	3659.54	-3319.20	1566.06	1765713.11	14617719.52	40°14'56.359"N	80°33'03.455"W	3670.10	154.741	0.64	0.00	-0.64
9732.00	89.110	162.220	5961.86	3752.26	-3408.28	1592.73	1765739.77	14617630.48	40°14'55.478"N	80°33'03.117"W	3762.07	154.953	2.39	0.06	-2.39
9825.00	89.050	160.810	5963.36	3845.17	-3496.47	1622.22	1765769.24	14617542.33	40°14'54.605"N	80°33'02.742"W	3854.46	155.111	1.52	-0.06	-1.52
9918.00	89.050	164.250	5964.90	3937.97	-3585.15	1650.13	1765797.14	14617453.68	40°14'53.727"N	80°33'02.388"W	3946.67	155.285	3.70	0.00	3.70

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Brooke County, WV	Well	Russell Hervey BRK 10H
Field	Brooke	Wellbore	Russell Hervey BRK 10H AWB
Facility	Russell Hervey BRK Pad		

WELLPATH DATA (183 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]
10010.00	89.020	163.130	5966.45	4029.66	-3673.43	1675.96	1765822.96	14617365.43	40°14'52.853"N	80°33'02.061"W	4037.69	155.476	1.22	-0.03	-1.22
10103.00	88.950	159.110	5968.10	4122.57	-3761.40	1706.04	1765853.04	14617277.50	40°14'51.983"N	80°33'01.678"W	4130.22	155.603	4.32	-0.08	-4.32
10196.00	89.050	158.920	5969.72	4215.56	-3848.22	1739.34	1765886.32	14617190.71	40°14'51.123"N	80°33'01.255"W	4223.04	155.678	0.23	0.11	-0.20
10288.00	89.110	164.080	5971.20	4307.43	-3935.42	1768.52	1765915.49	14617103.54	40°14'50.260"N	80°33'00.884"W	4314.54	155.802	5.61	0.07	5.61
10381.00	89.170	168.120	5972.59	4399.71	-4025.67	1790.85	1765937.82	14617013.33	40°14'49.367"N	80°33'00.602"W	4406.04	156.018	4.34	0.06	4.34
10474.00	89.050	169.540	5974.04	4491.35	-4116.90	1808.87	1765955.82	14616922.14	40°14'48.465"N	80°33'00.376"W	4496.76	156.280	1.53	-0.13	1.53
10567.00	89.080	163.210	5975.56	4583.54	-4207.22	1830.76	1765977.71	14616831.85	40°14'47.571"N	80°33'00.099"W	4588.29	156.484	6.81	0.03	-6.81
10660.00	88.950	162.860	5977.16	4676.31	-4296.16	1857.89	1766004.83	14616742.94	40°14'46.691"N	80°32'59.755"W	4680.68	156.614	0.40	-0.14	-0.38
10752.00	89.020	161.020	5978.79	4768.18	-4383.61	1886.41	1766033.33	14616655.53	40°14'45.825"N	80°32'59.393"W	4772.27	156.716	2.00	0.08	-2.00
10845.00	89.050	160.400	5980.35	4861.13	-4471.38	1917.13	1766064.04	14616567.79	40°14'44.956"N	80°32'59.003"W	4865.04	156.792	0.67	0.03	-0.67
10938.00	89.110	159.010	5981.85	4954.11	-4558.59	1949.38	1766096.28	14616480.61	40°14'44.093"N	80°32'58.593"W	4957.90	156.847	1.50	0.06	-1.49
11031.00	89.020	159.650	5983.36	5047.09	-4645.59	1982.20	1766129.09	14616393.65	40°14'43.232"N	80°32'58.175"W	5050.81	156.893	0.69	-0.10	0.69
11124.00	89.080	161.500	5984.90	5140.04	-4733.28	2013.13	1766160.00	14616305.99	40°14'42.363"N	80°32'57.782"W	5143.60	156.959	1.99	0.06	1.99
11216.00	88.800	162.160	5986.61	5231.92	-4820.68	2041.81	1766188.68	14616218.63	40°14'41.498"N	80°32'57.418"W	5235.26	157.045	0.78	-0.30	0.72
11309.00	88.830	161.610	5988.53	5324.79	-4909.05	2070.72	1766217.57	14616130.29	40°14'40.624"N	80°32'57.051"W	5327.91	157.129	0.59	0.03	-0.59
11402.00	88.740	163.140	5990.50	5417.62	-4997.66	2098.87	1766245.71	14616041.71	40°14'39.747"N	80°32'56.694"W	5420.50	157.219	1.65	-0.10	1.65
11494.00	88.800	160.340	5992.48	5509.49	-5085.00	2127.69	1766274.52	14615954.41	40°14'38.882"N	80°32'56.328"W	5512.19	157.294	3.04	0.07	-3.04
11587.00	89.110	156.810	5994.17	5602.45	-5171.54	2161.65	1766308.47	14615867.89	40°14'38.025"N	80°32'55.895"W	5605.14	157.316	3.81	0.33	-3.80
11680.00	89.170	155.250	5995.57	5695.31	-5256.51	2199.43	1766346.23	14615782.96	40°14'37.184"N	80°32'55.414"W	5698.10	157.295	1.68	0.06	-1.68
11772.00	89.140	156.200	5996.93	5787.14	-5340.37	2237.24	1766384.03	14615699.14	40°14'36.353"N	80°32'54.932"W	5790.06	157.270	1.03	-0.03	1.03
11865.00	89.050	158.350	5998.40	5880.07	-5426.13	2273.16	1766419.94	14615613.40	40°14'35.504"N	80°32'54.474"W	5883.04	157.270	2.31	-0.10	2.31
11957.00	89.110	163.640	5999.87	5971.98	-5513.07	2303.11	1766449.87	14615526.50	40°14'34.643"N	80°32'54.094"W	5974.81	157.327	5.75	0.07	5.75
12050.00	89.140	165.660	6001.29	6064.52	-5602.74	2327.72	1766474.48	14615436.86	40°14'33.756"N	80°32'53.782"W	6067.04	157.439	2.17	0.03	2.17
12143.00	89.020	167.490	6002.79	6156.72	-5693.18	2349.31	1766496.06	14615346.45	40°14'32.861"N	80°32'53.510"W	6158.87	157.576	1.97	-0.13	1.97
12236.00	89.380	164.380	6004.09	6249.03	-5783.38	2371.91	1766518.65	14615256.30	40°14'31.969"N	80°32'53.224"W	6250.87	157.700	3.37	0.39	-3.34
12329.00	89.380	159.060	6005.09	6341.90	-5871.65	2401.07	1766547.79	14615168.06	40°14'31.095"N	80°32'52.854"W	6343.61	157.759	5.72	0.00	-5.72
12421.00	89.570	156.370	6005.94	6433.86	-5956.76	2435.95	1766582.66	14615082.98	40°14'30.252"N	80°32'52.410"W	6435.60	157.758	2.93	0.21	-2.92
12514.00	89.630	158.640	6006.59	6526.81	-6042.68	2471.53	1766618.23	14614997.09	40°14'29.401"N	80°32'51.957"W	6528.59	157.755	2.44	0.06	2.44
12607.00	89.970	162.320	6006.91	6619.77	-6130.32	2502.60	1766649.29	14614909.49	40°14'28.534"N	80°32'51.562"W	6621.47	157.793	3.97	0.37	3.96
12699.00	90.000	162.140	6006.93	6711.63	-6217.93	2530.68	1766677.35	14614821.91	40°14'27.666"N	80°32'51.205"W	6713.19	157.854	0.20	0.03	-0.20

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY
Area	Brooke County, WV
Field	Brooke
Facility	Russell Hervey BRK Pad
Well	Russell Hervey BRK 10H
Wellbore	Russell Hervey BRK 10H AWB
Slot	Slot #10

WELLPATH DATA (183 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(ft)	(ft)	(ft)	(°)	(ft/100ft)	(ft/100ft)	(°/100ft)
1292.00	89.910	161.070	6007.01	6804.54	-6306.18	2560.02	1766706.69	14614733.70	40°14'26.793"N	80°32'50.833"W	6806.00	157.905	1.15	-0.10	-1.15
12885.00	89.970	163.760	6007.11	6897.37	-6394.82	2588.12	1766734.77	14614645.09	40°14'25.916"N	80°32'50.476"W	6898.70	157.966	2.89	0.06	2.89
12978.00	89.630	165.060	6007.43	6989.97	-6484.40	2613.11	1766759.76	14614555.55	40°14'25.029"N	80°32'50.160"W	6991.12	158.051	1.44	-0.37	1.40
13071.00	89.020	163.790	6008.53	7082.56	-6573.97	2638.08	1766784.71	14614466.00	40°14'24.143"N	80°32'49.844"W	7083.54	158.135	1.51	-0.66	-1.37
13163.00	89.080	164.010	6010.05	7174.22	-6662.35	2663.59	1766810.21	14614377.66	40°14'23.268"N	80°32'49.521"W	7175.07	158.209	0.25	0.07	0.24
13256.00	89.080	163.600	6011.54	7266.90	-6751.65	2689.52	1766836.14	14614288.39	40°14'22.384"N	80°32'49.192"W	7267.62	158.280	0.44	0.00	-0.44
13349.00	89.170	161.740	6012.96	7359.70	-6840.42	2717.22	1766863.83	14614199.66	40°14'21.506"N	80°32'48.841"W	7360.34	158.336	2.00	0.10	-2.00
13442.00	89.140	160.434	6014.34	7452.66	-6927.83	2748.90	1766895.49	14614112.28	40°14'20.640"N	80°32'48.438"W	7453.27	158.357	3.57	-0.03	-3.57
13534.00	88.920	156.640	6015.89	7544.61	-7012.83	2784.05	1766930.63	14614027.32	40°14'19.799"N	80°32'47.991"W	7545.25	158.347	1.95	-0.24	-1.93
13627.00	89.080	159.000	6017.52	7637.57	-7098.93	2819.16	1766965.72	14613941.25	40°14'18.946"N	80°32'47.544"W	7638.22	158.341	2.54	0.17	2.54
13720.00	88.950	161.500	6019.12	7730.53	-7186.44	2850.58	1766997.13	14613853.77	40°14'18.080"N	80°32'47.144"W	7731.15	158.364	2.69	-0.14	2.69
13813.00	88.890	162.410	6020.87	7823.39	-7274.85	2879.38	1767025.92	14613765.40	40°14'17.205"N	80°32'46.779"W	7823.95	158.406	0.98	-0.06	0.98
13905.00	88.950	165.430	6022.60	7915.04	-7363.22	2904.85	1767051.39	14613677.06	40°14'16.330"N	80°32'46.456"W	7915.50	158.470	3.28	0.07	3.28
13998.00	89.110	163.690	6024.18	8007.60	-7452.85	2929.61	1767076.13	14613587.47	40°14'15.443"N	80°32'46.143"W	8007.97	158.541	1.88	0.17	-1.87
14091.00	89.450	161.480	6025.35	8100.41	-7541.57	2957.44	1767103.95	14613498.78	40°14'14.565"N	80°32'45.790"W	8100.73	158.587	2.40	0.37	-2.38
14183.00	89.450	160.860	6026.23	8192.35	-7628.65	2987.13	1767133.63	14613411.74	40°14'13.703"N	80°32'45.413"W	8192.63	158.616	0.67	0.00	-0.67
14276.00	89.260	162.380	6027.28	8285.25	-7716.89	3016.45	1767162.94	14613323.52	40°14'12.829"N	80°32'45.040"W	8285.49	158.650	1.65	-0.20	1.63
14369.00	89.200	164.730	6028.53	8377.95	-7806.07	3042.78	1767189.26	14613234.38	40°14'11.947"N	80°32'44.707"W	8378.14	158.704	2.53	-0.06	2.53
14462.00	88.950	164.440	6030.03	8470.51	-7895.72	3067.49	1767213.96	14613144.77	40°14'11.060"N	80°32'44.394"W	8470.65	158.769	0.41	-0.27	-0.31
14555.00	89.200	163.950	6031.53	8563.13	-7985.19	3092.82	1767239.28	14613055.33	40°14'10.174"N	80°32'44.073"W	8563.22	158.828	0.59	0.27	-0.53
14647.00	89.080	162.830	6032.91	8654.86	-8073.34	3119.11	1767265.56	14612967.22	40°14'09.302"N	80°32'43.740"W	8654.92	158.876	1.22	-0.13	-1.22
14740.00	89.020	159.560	6034.45	8747.77	-8161.35	3149.08	1767295.52	14612879.24	40°14'08.431"N	80°32'43.360"W	8747.82	158.901	3.52	-0.06	-3.52
14833.00	88.980	158.480	6036.08	8840.76	-8248.17	3182.38	1767328.80	14612792.45	40°14'07.571"N	80°32'42.936"W	8840.80	158.902	1.16	-0.04	-1.16
14926.00	89.110	157.720	6037.63	8933.73	-8334.45	3217.06	1767363.47	14612706.21	40°14'06.717"N	80°32'42.495"W	8933.78	158.894	0.83	0.14	-0.82
15019.00	89.110	158.750	6039.07	9026.71	-8420.80	3251.54	1767397.94	14612619.88	40°14'05.862"N	80°32'42.056"W	9026.76	158.887	1.11	0.00	1.11
15111.00	89.050	160.260	6040.55	9118.69	-8506.97	3283.75	1767430.13	14612533.75	40°14'05.009"N	80°32'41.646"W	9118.74	158.893	1.64	-0.07	1.64
15204.00	89.450	161.240	6041.77	9211.64	-8594.76	3314.40	1767460.78	14612446.00	40°14'04.139"N	80°32'41.257"W	9211.69	158.912	1.14	0.43	1.05
15297.00	89.350	162.930	6042.74	9304.51	-8683.24	3343.01	1767489.37	14612357.55	40°14'03.264"N	80°32'40.894"W	9304.54	158.944	1.82	-0.11	1.82
15390.00	89.780	163.000	6043.45	9397.29	-8772.16	3370.25	1767516.61	14612268.66	40°14'02.384"N	80°32'40.548"W	9397.31	158.983	0.47	0.46	0.08
15482.00	89.910	162.000	6043.69	9489.13	-8859.90	3397.92	1767544.26	14612180.96	40°14'01.515"N	80°32'40.197"W	9489.13	159.017	1.10	0.14	-1.09

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Brooke County, WV	Well	Russell Hervey BRK 10H
Field	Brooke	Wellbore	Russell Hervey BRK 10H AWB
Facility	Russell Hervey BRK Pad		

WELLPATH DATA (183 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]	
15575.00	89.850	161.500	6043.89	9582.03	-8948.22	3427.04	1767573.37	14612092.67	40°14'00.641"N	80°32'39.828"W	9582.03	159.044	0.54	-0.06	-0.54	
15619.00	89.820	161.430	6044.02	9625.99	-8989.94	3441.03	1767587.35	14612050.97	40°14'00.228"N	80°32'39.650"W	9625.99	159.055	0.17	-0.07	-0.16	
15644.00	89.820	161.430	6044.09	9650.97	-9013.64	3448.99	1767595.31	14612027.28	40°13'59.993"N	80°32'39.549"W	9650.97	159.061	0.00	0.00	0.00	

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Russell Hervey BRK 10H LP Rev-1	5901.00	-161.45	516.41	1764663.87	14620876.06	40°15'27.616"N	80°33'16.787"W	point
Russell Hervey BRK 10H BHL Rev-1	6029.00	-9056.06	3459.42	1767605.74	14611984.87	40°13'59.574"N	80°32'39.417"W	point

WELLPATH COMPOSITION - Ref Wellbore: Russell Hervey BRK 10H AWB				Ref Wellpath: Russell Hervey BRK 10H AWP Proj: 15644'	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
26.00	369.00	OWSG EMS rev2 + HRGM	01_MSS <17-1/2"> (173'-369')	Russell Hervey BRK 10H AWB	
369.00	2053.00	BHI NaviTrak (Axial)	02_APS EM <12-1/4"> (369')(479'-2053')	Russell Hervey BRK 10H AWB	
2053.00	5125.00	BHI NaviTrak (Axial)	03_APS EM <8-3/4"> (2053')(2096'-5125')	Russell Hervey BRK 10H AWB	
5125.00	15619.00	BHI AutoTrak Curve (Short)	04_BHI AT Curve <8-1/2">(5125')(5191'-15619')	Russell Hervey BRK 10H AWB	
15619.00	15644.00	Blind Drilling (std)	Projection to bit	Russell Hervey BRK 10H AWB	

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Brooke County, WV	Well	Russell Hervey BRK 10H
Field	Brooke	Wellbore	Russell Hervey BRK 10H AWB
Facility	Russell Hervey BRK Pad		

COMMENTS

Wellpath general comments
 API: 47-009-00170-0000
 BHI Job #: 8097477
 Rig: SDC 46
 Duration: 8/12/2016-8/22/2016
 MSS <17-1/2"> (173'-369')
 APS EM <12-1/4"> (369')(479'-2053')
 APS EM <8-3/4"> (2053')(2096'-5125')
 BHI AT Curve <8-1/2"> (5125')(5191'-15619')
 Projected MD at TD: 15644'