



# XTO ENERGY INC

Location: Marion County, WV  
 Field: Marion  
 Facility: Sands Pad

Slot: Slot #06  
 Well: Crands Unit 6H  
 Wellbore: Crands Unit 6H PWB



Plot reference wellpath is Crands Unit 6H PWP Rev-B.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (N70), US feet
True vertical depths are referenced to Patterson 579 (RKB)	North Reference: True north
Reference wellpath measured depths are referenced to Patterson 579 (RKB)	Scale: True distance
Patterson 579 (RKB) to Mean Sea Level: 1261 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #06): 1235 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: daniel on 2020-01-27, Database: WVA_MPL_EasternUS_DeM

Location Information						
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Sands Pad		1770291.903	351831.811	39°27'47.2674"N	80°18'48.9893"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #06	-13.71	14.56	1770306.340	351817.970	39°27'47.1319"N	80°18'48.8036"W
Patterson 579 (RKB) to Ground level (At Slot: Slot #06): 26ft						
Mean Sea Level to Ground level (At Slot: Slot #06): -1235ft						
Patterson 579 (RKB) to Mean Sea Level: 1261ft						

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #06	Crands Unit 6H	Crands Unit 6H AWP	Crands Unit 6H AWP Proj 19967
Slot #06	Crands Unit 6H	Crands Unit 6H PWB	Crands Unit 6H PWP Rev-B.0

Javins Gyro Surveys <17-1/2">(50'-450') : 0.71° Inc, 76.00ft MD, 76.00ft TVD, -0.03ft VS  
 Javins EM Surveys <12-1/4">(450')(549'-3106') : 1.32° Inc, 575.00ft MD, 574.94ft TVD, 1.14ft VS

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6293.00	18.130	43.570	6138.66	852.31	775.17	0.40	-54.35
Proj. To Bottom	6363.00	18.130	43.570	6205.19	868.10	790.18	0.00	-54.89
Hold Tangent	6372.72	18.104	42.010	6214.42	870.31	792.23	5.00	-55.01
Curve KOP	7151.81	18.104	42.010	6954.95	1050.20	954.26	0.00	-67.59
FTP	7871.26	70.000	134.985	7492.45	869.97	1317.14	10.00	316.47
Landing Pt.	8071.26	90.000	134.985	7527.00	731.44	1455.74	10.00	512.43
BHL	19963.98	90.000	134.985	7527.00	-7675.79	9867.36	0.00	12405.16

Javins EM Surveys <8-3/4">(3106')(3201'-6267') : 10.09° Inc, 3227.00ft MD, 3204.44ft TVD, -14.75ft VS

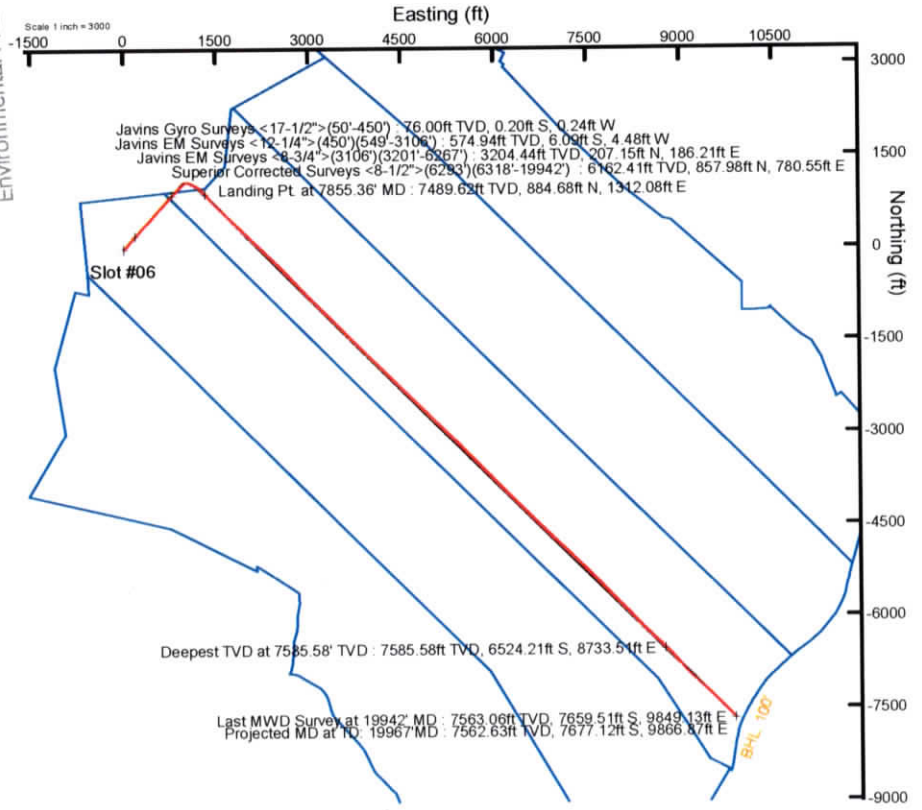
As Drilled Target Details							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Landing Pt	7855.36	70.00	138.41	7489.62	884.68	1312.08	302.48
Deepest TVD	18349.00	89.79	135.24	7585.58	-6524.21	8733.51	10789.11
Last MWD Survey	19942.00	90.99	134.79	7563.06	-7659.51	9849.13	12380.75
Projection to TD	19967.00	90.99	134.79	7562.63	-7677.12	9866.87	12405.75

Superior Corrected Surveys <8-1/2">(6293')(6318'-19942') : 18.31° Inc, 6318.00ft MD, 6162.41ft TVD, -54.55ft VS

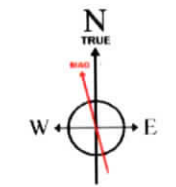
Landing Pt. at 7855.36' MD : 70.00° Inc, 7855.36ft MD, 7489.62ft TVD, 302.48ft VS

Deepest TVD at 7585.58' TVD : 89.79° Inc, 18349.00ft MD, 7585.58ft TVD, 10789.11ft VS  
 Last MWD Survey at 19942' MD : 90.99° Inc, 19942.00ft MD, 7563.06ft TVD, 12380.75ft VS  
 Projected MD at TD : 19967' MD : 90.99° Inc, 19967.00ft MD, 7562.63ft TVD, 12405.75ft VS

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API: 47-049-02493-0000  
 BHI Job #: 110232256A  
 Rig: Pattern 579  
 Duration: 01/12/2020-01/16/2020



User specified (HDGM) Dip: 66.44° Field: 52144 nT  
 Magnetic North is 9.12 degrees West of True North (at 12/23/2019)  
 To correct azimuth from Magnetic to True subtract 9.12 degrees

Vertical Section (ft)  
 Azimuth 134.99° with reference 0.00 N, 0.00 E  
 Scale 1 inch = 2000



**Actual Wellpath Report**  
Crands Unit 6H AWP Proj: 19967'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

REPORT SETUP INFORMATION			
Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 6.0
North Reference	True	User	Delaset
Scale	0.999945	Report Generated	1/27/2020 at 5:11:46 PM
Convergence at slot	0.52° West	Database	WA_MPL_EasternUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-13.71	14.56	1770306.34	351817.97	39°27'47.1319"N	80°18'48.8036"W
Facility Reference Pt			1770291.90	351831.81	39°27'47.2674"N	80°18'48.9893"W
Field Reference Pt			609601.22	0.00	38°23'48.7532"N	84°21'9.7646"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 579 (RKB) to Facility Vertical Datum	1261.00ft
Horizontal Reference Pt	Slot	Patterson 579 (RKB) to Mean Sea Level	1261.00ft
Vertical Reference Pt	Patterson 579 (RKB)	Patterson 579 (RKB) to Ground Level at Slot (Slot #06)	26.00ft
MD Reference Pt	Patterson 579 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	134.99°

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REFERENCE WELLPATH IDENTIFICATION			
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Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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)	Comments
0.00†	0.000	230.600	0.00	0.00	0.00	0.00	1770306.34	351817.97	39°27'47.1319"N	80°18'48.8036"W	0.00	0.000	0.00	0.00	0.00	
26.00	0.000	230.600	26.00	0.00	0.00	0.00	1770306.34	351817.97	39°27'47.1319"N	80°18'48.8036"W	0.00	0.000	0.00	0.00	0.00	
76.00	0.710	230.600	76.00	-0.03	-0.20	-0.24	1770306.10	351817.78	39°27'47.1299"N	80°18'48.8067"W	0.31	230.600	1.42	1.42	0.00	Javins Gyro Surveys <17-1/2">(50'-450')
126.00	0.710	217.500	125.99	-0.02	-0.64	-0.67	1770305.67	351817.34	39°27'47.1256"N	80°18'48.8121"W	0.92	226.242	0.32	0.00	-26.20	
176.00	0.640	183.800	175.99	0.20	-1.16	-0.87	1770305.46	351816.81	39°27'47.1204"N	80°18'48.8148"W	1.46	216.929	0.79	-0.14	-67.40	
226.00	0.660	209.700	225.99	0.46	-1.69	-1.04	1770305.29	351816.29	39°27'47.1152"N	80°18'48.8168"W	1.98	211.467	0.58	0.04	51.80	
276.00	0.770	217.700	275.98	0.58	-2.21	-1.38	1770304.94	351815.77	39°27'47.1101"N	80°18'48.8213"W	2.61	212.073	0.30	0.22	16.00	
326.00	0.770	214.800	325.98	0.68	-2.75	-1.78	1770304.53	351815.24	39°27'47.1047"N	80°18'48.8263"W	3.28	212.929	0.08	0.00	-5.80	
376.00	0.840	219.900	375.98	0.78	-3.31	-2.21	1770304.10	351814.68	39°27'47.0992"N	80°18'48.8318"W	3.98	213.728	0.20	0.14	10.20	
426.00	0.960	218.500	425.97	0.86	-3.92	-2.70	1770303.60	351814.08	39°27'47.0932"N	80°18'48.8381"W	4.76	214.622	0.24	0.24	-2.80	
476.00	0.960	221.800	475.96	0.93	-4.56	-3.24	1770303.06	351813.44	39°27'47.0869"N	80°18'48.8450"W	5.59	215.449	0.11	0.00	6.60	
575.00	1.320	216.740	574.94	1.14	-6.09	-4.48	1770301.81	351811.92	39°27'47.0717"N	80°18'48.8607"W	7.56	216.339	0.38	0.36	-5.11	Javins EM Surveys <12-1/4">(450')(549'-3106')
669.00	0.750	190.070	668.93	1.64	-7.56	-5.23	1770301.04	351810.46	39°27'47.0572"N	80°18'48.8704"W	9.20	214.689	0.78	-0.61	-28.37	
764.00	0.720	73.740	763.92	2.29	-8.01	-4.77	1770301.50	351810.01	39°27'47.0528"N	80°18'48.8644"W	9.32	210.782	1.31	-0.03	-122.45	
858.00	1.450	72.840	857.91	3.13	-7.49	-3.07	1770303.21	351810.51	39°27'47.0579"N	80°18'48.8427"W	8.09	202.261	0.78	0.78	-0.96	
953.00	1.830	74.760	952.87	4.44	-6.74	-0.45	1770305.83	351811.24	39°27'47.0653"N	80°18'48.8094"W	6.75	183.855	0.40	0.40	2.02	
1048.00	1.280	84.980	1047.83	5.88	-6.25	2.07	1770308.35	351811.71	39°27'47.0702"N	80°18'48.7773"W	6.58	161.691	0.65	-0.58	10.76	
1142.00	0.900	67.430	1141.81	6.83	-5.87	3.79	1770310.08	351812.07	39°27'47.0739"N	80°18'48.7553"W	6.99	147.123	0.53	-0.40	-18.67	
1237.00	1.220	27.380	1236.80	6.81	-4.69	4.95	1770311.25	351813.24	39°27'47.0856"N	80°18'48.7405"W	6.81	133.439	0.83	0.34	-42.16	
1332.00	1.540	36.660	1331.77	6.32	-2.76	6.18	1770312.49	351815.15	39°27'47.1046"N	80°18'48.7249"W	6.77	114.108	0.41	0.34	9.77	
1427.00	1.750	39.300	1426.73	5.99	-0.62	7.86	1770314.19	351817.28	39°27'47.1258"N	80°18'48.7035"W	7.88	94.490	0.23	0.22	2.78	
1521.00	3.060	40.620	1520.65	5.66	2.40	10.40	1770316.76	351820.27	39°27'47.1556"N	80°18'48.6710"W	10.67	77.013	1.39	1.39	1.40	
1616.00	5.120	39.050	1615.40	5.03	7.62	14.72	1770321.13	351825.45	39°27'47.2072"N	80°18'48.6159"W	16.57	62.646	2.17	2.17	-1.65	
1711.00	6.690	36.880	1709.89	3.81	15.33	20.71	1770327.19	351833.12	39°27'47.2834"N	80°18'48.5395"W	25.77	53.486	1.67	1.65	-2.28	
1806.00	8.080	38.830	1804.10	2.31	24.96	28.22	1770334.78	351842.67	39°27'47.3786"N	80°18'48.4438"W	37.68	48.506	1.49	1.46	2.05	
1900.00	9.160	42.180	1897.04	1.23	35.65	37.39	1770344.05	351853.28	39°27'47.4843"N	80°18'48.3270"W	51.66	46.360	1.27	1.15	3.56	
1995.00	9.970	42.990	1990.72	0.58	47.27	48.07	1770354.84	351864.80	39°27'47.5991"N	80°18'48.1907"W	67.42	45.480	0.86	0.85	0.85	
2090.00	9.690	38.370	2084.33	-0.63	59.56	58.64	1770365.52	351876.99	39°27'47.7205"N	80°18'48.0559"W	83.58	44.557	0.88	-0.29	-4.86	
2185.00	10.060	37.740	2177.92	-2.60	72.39	68.68	1770375.67	351889.73	39°27'47.8473"N	80°18'47.9279"W	99.79	43.497	0.41	0.39	-0.66	
2279.00	9.930	37.210	2270.49	-4.73	85.33	78.61	1770385.72	351902.58	39°27'47.9753"N	80°18'47.8013"W	116.02	42.652	0.17	-0.14	-0.56	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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]	Comments
2374.00	9.980	38.750	2364.06	-6.74	98.28	88.72	1770395.94	351915.43	39°27'48.1032"N	80°18'47.6725"W	132.40	42.073	0.29	0.05	1.62	
2468.00	9.940	42.640	2456.65	-7.96	110.60	99.31	1770406.64	351927.66	39°27'48.2250"N	80°18'47.5374"W	148.64	41.922	0.72	-0.04	4.14	
2563.00	9.570	43.860	2550.27	-8.45	122.32	110.34	1770417.77	351939.28	39°27'48.3409"N	80°18'47.3968"W	164.73	42.051	0.45	-0.39	1.28	
2658.00	9.710	43.620	2643.93	-8.79	133.82	121.34	1770428.87	351950.68	39°27'48.4545"N	80°18'47.2566"W	180.64	42.199	0.15	0.15	-0.25	
2753.00	10.060	42.480	2737.52	-9.35	145.74	132.47	1770440.11	351962.49	39°27'48.5723"N	80°18'47.1147"W	196.94	42.269	0.42	0.37	-1.20	
2847.00	10.010	41.260	2830.08	-10.24	157.93	143.40	1770451.15	351974.59	39°27'48.6928"N	80°18'46.9753"W	213.32	42.238	0.23	-0.05	-1.30	
2942.00	9.790	41.040	2923.67	-11.33	170.23	154.15	1770462.01	351986.79	39°27'48.8144"N	80°18'46.8383"W	229.65	42.161	0.23	-0.23	-0.23	
3037.00	9.750	40.360	3017.29	-12.54	182.45	164.66	1770472.63	351998.91	39°27'48.9351"N	80°18'46.7042"W	245.77	42.065	0.13	-0.04	-0.72	
3132.00	9.950	41.130	3110.89	-13.74	194.76	175.27	1770483.35	352011.13	39°27'49.0568"N	80°18'46.5690"W	262.01	41.984	0.25	0.21	0.81	
3227.00	10.090	41.820	3204.44	-14.75	207.15	186.21	1770494.41	352023.41	39°27'49.1792"N	80°18'46.4294"W	278.54	41.954	0.19	0.15	0.73	Javins EM Surveys <8-3/4">(3106')(3201'-6267')
3322.00	9.900	42.060	3298.00	-15.63	219.41	197.23	1770505.54	352035.58	39°27'49.3004"N	80°18'46.2889"W	295.03	41.953	0.20	-0.20	0.25	
3417.00	9.910	43.490	3391.58	-16.26	231.41	208.33	1770516.75	352047.47	39°27'49.4190"N	80°18'46.1474"W	311.37	41.996	0.26	0.01	1.51	
3514.00	10.070	41.840	3487.11	-16.95	243.78	219.73	1770528.26	352059.74	39°27'49.5413"N	80°18'46.0020"W	328.19	42.030	0.34	0.16	-1.70	
3609.00	10.350	42.310	3580.61	-17.80	256.28	231.02	1770539.65	352072.13	39°27'49.6648"N	80°18'45.8581"W	345.03	42.032	0.31	0.29	0.49	
3704.00	11.080	41.670	3673.95	-18.73	269.41	242.83	1770551.59	352085.15	39°27'49.7946"N	80°18'45.7075"W	362.69	42.030	0.78	0.77	-0.67	
3799.00	13.650	41.080	3766.74	-20.02	284.68	256.27	1770565.16	352100.30	39°27'49.9455"N	80°18'45.5362"W	383.03	41.993	2.71	2.71	-0.62	
3893.00	14.970	42.410	3857.82	-21.33	302.01	271.74	1770580.79	352117.49	39°27'50.1167"N	80°18'45.3388"W	406.27	41.981	1.45	1.40	1.41	
3988.00	16.680	41.950	3949.22	-22.60	321.21	289.13	1770598.35	352136.53	39°27'50.3065"N	80°18'45.1171"W	432.17	41.992	1.80	1.80	-0.48	
4082.00	17.740	42.560	4039.01	-23.93	341.79	307.84	1770617.24	352156.94	39°27'50.5099"N	80°18'44.8786"W	459.98	42.009	1.14	1.13	0.65	
4177.00	18.770	42.840	4129.22	-25.11	363.66	328.02	1770637.62	352178.62	39°27'50.7260"N	80°18'44.6213"W	489.74	42.051	1.09	1.08	0.29	
4271.00	18.510	45.740	4218.30	-25.48	385.16	348.99	1770658.78	352199.93	39°27'50.9386"N	80°18'44.3539"W	519.75	42.180	1.02	-0.28	3.09	
4366.00	18.040	46.820	4308.50	-24.82	405.75	370.52	1770680.50	352220.32	39°27'51.1421"N	80°18'44.0795"W	549.47	42.401	0.61	-0.49	1.14	
4460.00	17.680	44.880	4397.98	-24.38	425.82	391.20	1770701.36	352240.21	39°27'51.3405"N	80°18'43.8157"W	578.24	42.574	0.74	-0.38	-2.06	
4555.00	17.480	41.110	4488.54	-25.37	446.80	410.76	1770721.11	352261.00	39°27'51.5477"N	80°18'43.5663"W	606.92	42.594	1.22	-0.21	-3.97	
4649.00	17.540	40.780	4578.19	-27.37	468.16	429.30	1770739.84	352282.20	39°27'51.7589"N	80°18'43.3300"W	635.19	42.521	0.12	0.06	-0.35	
4744.00	17.320	40.390	4668.82	-29.55	489.77	447.81	1770758.54	352303.64	39°27'51.9725"N	80°18'43.0939"W	663.63	42.438	0.26	-0.23	-0.41	
4839.00	17.120	40.330	4759.57	-31.82	511.20	466.02	1770776.95	352324.90	39°27'52.1843"N	80°18'42.8617"W	691.74	42.353	0.21	-0.21	-0.06	
4933.00	18.030	41.580	4849.18	-33.81	532.63	484.63	1770795.75	352346.16	39°27'52.3960"N	80°18'42.6244"W	720.11	42.299	1.05	0.97	1.33	
5031.00	18.990	39.330	4942.11	-36.29	556.31	504.81	1770816.13	352369.65	39°27'52.6301"N	80°18'42.3672"W	751.20	42.221	1.22	0.98	-2.30	
5126.00	18.920	39.900	5031.96	-39.18	580.08	524.48	1770836.02	352393.24	39°27'52.8650"N	80°18'42.1163"W	782.03	42.118	0.21	-0.07	0.60	

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**Actual Wellpath Report**  
 Crands Unit 6H AWP Proj: 19967'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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]	Comments
5220.00	18.990	41.580	5120.86	-41.44	603.21	544.41	1770856.16	352416.19	39°27'53.0936"N	80°18'41.8623"W	812.55	42.067	0.59	0.07	1.79	
5314.00	19.010	43.000	5209.74	-42.88	625.85	565.00	1770876.95	352438.64	39°27'53.3174"N	80°18'41.5997"W	843.15	42.075	0.49	0.02	1.51	
5409.00	18.540	42.720	5299.68	-44.02	648.26	585.80	1770897.95	352460.86	39°27'53.5389"N	80°18'41.3345"W	873.73	42.102	0.50	-0.49	-0.29	
5504.00	19.170	44.840	5389.59	-44.66	670.42	607.04	1770919.39	352482.82	39°27'53.7578"N	80°18'41.0636"W	904.41	42.160	0.98	0.66	2.23	
5599.00	19.070	43.070	5479.35	-45.22	692.82	628.64	1770941.19	352505.02	39°27'53.9792"N	80°18'40.7883"W	935.51	42.220	0.62	-0.11	-1.86	
5694.00	18.060	41.010	5569.40	-46.76	715.26	648.90	1770961.65	352527.29	39°27'54.2011"N	80°18'40.5299"W	965.75	42.215	1.27	-1.06	-2.17	
5788.00	18.470	43.050	5658.67	-48.27	737.14	668.63	1770981.58	352548.98	39°27'54.4173"N	80°18'40.2784"W	995.21	42.210	0.81	0.44	2.17	
5883.00	18.760	44.290	5748.70	-48.97	759.07	689.57	1771002.71	352570.72	39°27'54.6340"N	80°18'40.0114"W	1025.52	42.253	0.52	0.31	1.31	
5977.00	18.050	40.900	5837.89	-50.19	780.90	709.66	1771023.00	352592.37	39°27'54.8498"N	80°18'39.7552"W	1055.19	42.264	1.37	-0.76	-3.61	
6072.00	17.630	42.460	5928.32	-51.88	802.64	729.00	1771042.54	352613.93	39°27'55.0646"N	80°18'39.5085"W	1084.29	42.248	0.67	-0.44	1.64	
6166.00	17.820	42.310	6017.86	-53.18	823.78	748.30	1771062.02	352634.89	39°27'55.2735"N	80°18'39.2625"W	1112.90	42.251	0.21	0.20	-0.16	
6261.00	18.060	43.920	6108.24	-54.13	845.13	768.30	1771082.21	352656.06	39°27'55.4846"N	80°18'39.0075"W	1142.16	42.273	0.58	0.25	1.69	
6293.00	18.130	43.570	6138.66	-54.35	852.31	775.17	1771089.15	352663.18	39°27'55.5556"N	80°18'38.9199"W	1152.10	42.286	0.40	0.22	-1.09	
6318.00	18.310	43.520	6162.41	-54.55	857.98	780.55	1771094.59	352668.80	39°27'55.6116"N	80°18'38.8512"W	1159.91	42.295	0.72	0.72	-0.20	Superior Corrected Surveys <8-1/2">(6293)(6318-19942)
6332.00	18.550	43.600	6175.69	-54.66	861.19	783.60	1771097.66	352671.98	39°27'55.6433"N	80°18'38.8123"W	1164.34	42.299	1.72	1.71	0.57	
6427.00	17.130	43.010	6266.12	-55.51	882.36	803.57	1771117.82	352692.97	39°27'55.8525"N	80°18'38.5578"W	1193.43	42.324	1.51	-1.49	-0.62	
6522.00	17.950	42.860	6356.70	-56.53	903.32	823.07	1771137.51	352713.75	39°27'56.0597"N	80°18'38.3091"W	1222.06	42.338	0.86	0.86	-0.16	
6617.00	18.150	42.630	6447.03	-57.69	924.94	843.05	1771157.68	352735.19	39°27'56.2733"N	80°18'38.0544"W	1251.50	42.348	0.22	0.21	-0.24	
6711.00	17.120	43.310	6536.61	-58.70	945.78	862.46	1771177.27	352755.85	39°27'56.4793"N	80°18'37.8069"W	1279.97	42.362	1.12	-1.10	0.72	
6806.00	18.310	42.780	6627.10	-59.68	966.91	882.18	1771197.19	352776.80	39°27'56.6881"N	80°18'37.5554"W	1308.88	42.377	1.26	1.25	-0.56	
6901.00	18.450	42.500	6717.25	-60.91	988.94	902.47	1771217.68	352798.65	39°27'56.9059"N	80°18'37.2966"W	1338.83	42.382	0.17	0.15	-0.29	
6995.00	18.180	43.600	6806.49	-61.91	1010.53	922.64	1771238.04	352820.05	39°27'57.1192"N	80°18'37.0396"W	1368.37	42.397	0.47	-0.29	1.17	
7090.00	17.390	45.480	6896.95	-62.15	1031.22	942.98	1771258.56	352840.55	39°27'57.3237"N	80°18'36.7802"W	1397.36	42.441	1.03	-0.83	1.98	
7184.00	18.540	54.310	6986.39	-59.61	1049.79	965.14	1771280.89	352858.92	39°27'57.5072"N	80°18'36.4976"W	1426.02	42.594	3.14	1.22	9.39	
7278.00	20.890	78.500	7075.02	-47.92	1061.87	993.75	1771309.61	352870.74	39°27'57.6266"N	80°18'36.1328"W	1454.34	43.102	8.96	2.50	25.73	
7373.00	25.530	98.130	7162.43	-22.13	1062.35	1030.69	1771346.55	352870.89	39°27'57.6314"N	80°18'35.6618"W	1480.17	44.133	9.43	4.88	20.66	
7468.00	33.310	109.470	7245.18	17.88	1050.74	1075.65	1771391.40	352858.86	39°27'57.5165"N	80°18'35.0885"W	1503.69	45.671	10.04	8.19	11.94	
7563.00	39.960	119.140	7321.44	70.87	1027.14	1126.99	1771442.52	352834.80	39°27'57.2833"N	80°18'34.4339"W	1524.84	47.654	9.25	7.00	10.18	
7657.00	48.820	120.900	7388.55	134.35	994.21	1183.83	1771499.05	352801.36	39°27'56.9578"N	80°18'33.7093"W	1545.93	49.976	9.52	9.43	1.87	
7752.00	58.510	129.680	7444.84	209.63	949.83	1245.90	1771560.72	352756.42	39°27'56.5191"N	80°18'32.9178"W	1566.67	52.680	12.61	10.20	9.24	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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]	Comments
7846.00	69.080	138.240	7486.35	293.73	891.23	1306.25	1771620.53	352697.29	39°27'55.9400"N	80°18'32.1484"W	1581.32	55.695	13.89	11.24	9.11	
7855.36†	70.000	138.408	7489.62	302.48	884.68	1312.08	1771626.30	352690.69	39°27'55.8753"N	80°18'32.0740"W	1582.47	56.010	9.97	9.83	1.80	Landing Pt. at 7855.36' MD
7941.00	78.420	139.870	7512.91	384.60	822.40	1365.92	1771679.58	352627.92	39°27'55.2597"N	80°18'31.3875"W	1594.40	58.949	9.97	9.83	1.71	
8035.00	86.400	136.750	7525.32	477.53	752.90	1427.86	1771740.87	352557.87	39°27'54.5728"N	80°18'30.5979"W	1614.20	62.197	9.10	8.49	-3.32	
8130.00	89.790	133.720	7528.47	572.45	685.51	1494.70	1771807.10	352489.88	39°27'53.9066"N	80°18'29.7456"W	1644.40	65.363	4.78	3.57	-3.19	
8225.00	90.040	134.060	7528.61	667.44	619.65	1563.17	1771874.96	352423.40	39°27'53.2557"N	80°18'28.8728"W	1681.50	68.376	0.44	0.26	0.36	
8320.00	90.040	134.120	7528.55	762.43	553.55	1631.40	1771942.59	352356.69	39°27'52.6023"N	80°18'28.0028"W	1722.75	71.257	0.06	0.00	0.06	
8414.00	90.440	134.110	7528.15	856.41	488.12	1698.89	1772009.48	352290.65	39°27'51.9556"N	80°18'27.1424"W	1767.62	73.970	0.43	0.43	-0.01	
8509.00	90.250	133.070	7527.58	951.38	422.62	1767.69	1772077.68	352224.54	39°27'51.3082"N	80°18'26.2652"W	1817.51	76.554	1.11	-0.20	-1.09	
8603.00	90.650	134.330	7526.84	1045.35	357.68	1835.65	1772145.05	352158.99	39°27'50.6663"N	80°18'25.3988"W	1870.17	78.974	1.41	0.43	1.34	
8698.00	90.250	133.710	7526.10	1140.34	291.66	1903.96	1772212.75	352092.36	39°27'50.0138"N	80°18'24.5279"W	1926.17	81.291	0.78	-0.42	-0.65	
8792.00	90.100	134.030	7525.81	1234.32	226.52	1971.72	1772279.92	352026.61	39°27'49.3699"N	80°18'23.6639"W	1984.69	83.446	0.38	-0.16	0.34	
8887.00	90.960	134.370	7524.93	1329.30	160.29	2039.83	1772347.42	351959.77	39°27'48.7153"N	80°18'22.7957"W	2046.11	85.507	0.97	0.91	0.36	
8981.00	89.760	134.230	7524.34	1423.29	94.64	2107.10	1772414.09	351893.52	39°27'48.0664"N	80°18'21.9380"W	2109.22	87.428	1.29	-1.28	-0.15	
9076.00	90.380	133.530	7524.23	1518.27	28.79	2175.57	1772481.96	351827.06	39°27'47.4156"N	80°18'21.0650"W	2175.76	89.242	0.98	0.65	-0.74	
9170.00	89.360	133.530	7524.44	1612.24	-35.95	2243.72	1772549.52	351761.71	39°27'46.7756"N	80°18'20.1962"W	2244.01	90.918	1.09	-1.09	0.00	
9265.00	89.910	134.390	7525.04	1707.22	-101.89	2312.10	1772617.30	351695.16	39°27'46.1239"N	80°18'19.3244"W	2314.35	92.523	1.07	0.58	0.91	
9359.00	89.330	133.680	7525.67	1801.21	-167.22	2379.68	1772684.27	351629.21	39°27'45.4780"N	80°18'18.4629"W	2385.55	94.020	0.98	-0.62	-0.76	
9453.00	89.180	134.600	7526.89	1895.19	-232.68	2447.13	1772751.13	351563.15	39°27'44.8310"N	80°18'17.6030"W	2458.17	95.432	0.99	-0.16	0.98	
9548.00	89.580	134.150	7527.92	1990.18	-299.12	2515.03	1772818.42	351496.11	39°27'44.1744"N	80°18'16.7373"W	2532.76	96.782	0.63	0.42	-0.47	
9642.00	89.760	135.320	7528.46	2084.17	-365.27	2581.80	1772884.58	351429.35	39°27'43.5204"N	80°18'15.8861"W	2607.52	98.053	1.26	0.19	1.24	
9737.00	90.100	136.050	7528.57	2179.16	-433.25	2648.17	1772950.33	351360.79	39°27'42.8486"N	80°18'15.0400"W	2683.38	99.291	0.85	0.36	0.77	
9832.00	90.130	136.240	7528.38	2274.14	-501.75	2713.99	1773015.52	351291.69	39°27'42.1714"N	80°18'14.2009"W	2759.98	100.474	0.20	0.03	0.20	
9927.00	89.980	136.290	7528.29	2369.12	-570.39	2779.67	1773080.57	351222.46	39°27'41.4930"N	80°18'13.3637"W	2837.59	101.596	0.17	-0.16	0.05	
10021.00	90.070	136.110	7528.25	2463.10	-638.24	2844.73	1773145.01	351154.04	39°27'40.8223"N	80°18'12.5342"W	2915.45	102.645	0.21	0.10	-0.19	
10116.00	89.760	135.920	7528.39	2558.08	-706.59	2910.70	1773210.36	351085.09	39°27'40.1467"N	80°18'11.6932"W	2995.24	103.645	0.38	-0.33	-0.20	
10210.00	90.250	135.500	7528.38	2652.08	-773.88	2976.34	1773275.38	351017.22	39°27'39.4816"N	80°18'10.8564"W	3075.30	104.575	0.69	0.52	-0.45	
10305.00	89.670	136.200	7528.45	2747.07	-842.04	3042.51	1773340.93	350948.46	39°27'38.8078"N	80°18'10.0129"W	3156.88	105.470	0.96	-0.61	0.74	
10399.00	89.670	133.740	7528.99	2841.06	-908.47	3109.01	1773406.82	350881.44	39°27'38.1512"N	80°18'9.1652"W	3239.02	106.289	2.62	0.00	-2.62	
10494.00	89.790	134.700	7529.44	2936.05	-974.72	3177.09	1773474.29	350814.58	39°27'37.4963"N	80°18'8.2973"W	3323.25	107.056	1.02	0.13	1.01	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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]	Comments
10588.00	90.070	134.170	7529.56	3030.04	-1040.53	3244.21	1773540.81	350748.16	39°27'36.8458"N	80°18'7.4416"W	3406.99	107.783	0.64	0.30	-0.56	
10682.00	90.350	134.750	7529.21	3124.04	-1106.37	3311.30	1773607.30	350681.73	39°27'36.1950"N	80°18'6.5864"W	3491.24	108.475	0.69	0.30	0.62	
10777.00	90.040	134.750	7528.89	3219.03	-1173.25	3378.77	1773674.15	350614.24	39°27'35.5339"N	80°18'5.7263"W	3576.67	109.149	0.33	-0.33	0.00	
10871.00	90.010	134.380	7528.85	3313.03	-1239.21	3445.74	1773740.52	350547.68	39°27'34.8819"N	80°18'4.8726"W	3661.80	109.780	0.39	-0.03	-0.39	
10966.00	90.930	135.370	7528.07	3408.03	-1306.24	3513.06	1773807.22	350480.05	39°27'34.2194"N	80°18'4.0144"W	3748.04	110.396	1.42	0.97	1.04	
11061.00	90.780	135.830	7526.65	3503.01	-1374.10	3579.52	1773873.06	350411.59	39°27'33.5486"N	80°18'3.1672"W	3834.20	111.001	0.51	-0.16	0.48	
11155.00	90.810	135.150	7525.35	3597.00	-1441.13	3645.41	1773938.34	350343.97	39°27'32.8860"N	80°18'2.3273"W	3919.93	111.570	0.72	0.03	-0.72	
11250.00	90.350	135.210	7524.38	3691.99	-1508.51	3712.37	1774004.68	350275.99	39°27'32.2199"N	80°18'1.4737"W	4007.15	112.114	0.49	-0.48	0.06	
11345.00	90.190	134.410	7523.94	3786.99	-1575.46	3779.76	1774071.47	350208.44	39°27'31.5581"N	80°18'0.6146"W	4094.96	112.627	0.86	-0.17	-0.84	
11440.00	90.900	134.980	7523.03	3881.98	-1642.28	3847.29	1774138.38	350141.02	39°27'30.8977"N	80°17'59.7538"W	4183.15	113.116	0.96	0.75	0.60	
11534.00	90.040	134.940	7522.26	3975.98	-1708.69	3913.80	1774204.29	350074.00	39°27'30.2412"N	80°17'58.9060"W	4270.54	113.585	0.92	-0.91	-0.04	
11629.00	90.190	134.310	7522.07	4070.98	-1775.43	3981.42	1774271.29	350006.66	39°27'29.5815"N	80°17'58.0441"W	4359.34	114.033	0.68	0.16	-0.66	
11723.00	91.360	135.300	7520.80	4164.96	-1841.66	4048.10	1774337.37	349939.83	39°27'28.9268"N	80°17'57.1941"W	4447.34	114.463	1.63	1.24	1.05	
11818.00	90.190	133.890	7519.51	4259.95	-1908.35	4115.74	1774404.40	349872.54	39°27'28.2675"N	80°17'56.3319"W	4536.64	114.876	1.93	-1.23	-1.48	
11912.00	89.880	134.970	7519.46	4353.94	-1974.15	4182.87	1774470.92	349806.13	39°27'27.6171"N	80°17'55.4762"W	4625.33	115.266	1.20	-0.33	1.15	
12007.00	89.820	134.260	7519.71	4448.94	-2040.87	4250.49	1774537.93	349738.81	39°27'26.9575"N	80°17'54.6142"W	4715.06	115.648	0.75	-0.06	-0.75	
12102.00	89.980	134.070	7519.87	4543.93	-2107.06	4318.64	1774605.47	349672.01	39°27'26.3033"N	80°17'53.7456"W	4805.24	116.008	0.26	0.17	-0.20	
12197.00	90.380	135.090	7519.57	4638.92	-2173.74	4386.30	1774672.53	349604.72	39°27'25.6441"N	80°17'52.8830"W	4895.39	116.362	1.15	0.42	1.07	
12291.00	89.300	133.410	7519.83	4732.91	-2239.33	4453.63	1774739.25	349538.53	39°27'24.9958"N	80°17'52.0248"W	4984.92	116.694	2.12	-1.15	-1.79	
12386.00	90.310	134.770	7520.16	4827.90	-2305.43	4521.86	1774806.88	349471.82	39°27'24.3424"N	80°17'51.1551"W	5075.65	117.014	1.78	1.06	1.43	
12481.00	90.750	134.810	7519.28	4922.89	-2372.35	4589.28	1774873.69	349404.29	39°27'23.6808"N	80°17'50.2958"W	5166.19	117.336	0.47	0.46	0.04	
12576.00	90.470	134.590	7518.27	5017.88	-2439.17	4656.80	1774940.60	349336.87	39°27'23.0203"N	80°17'49.4351"W	5256.93	117.645	0.37	-0.29	-0.23	
12670.00	90.380	134.300	7517.57	5111.88	-2504.99	4723.91	1775007.10	349270.45	39°27'22.3696"N	80°17'48.5797"W	5346.99	117.936	0.32	-0.10	-0.31	
12764.00	90.470	134.490	7516.87	5205.87	-2570.75	4791.07	1775073.66	349204.09	39°27'21.7196"N	80°17'47.7236"W	5437.20	118.217	0.22	0.10	0.20	
12859.00	90.100	134.900	7516.40	5300.87	-2637.57	4858.60	1775140.58	349136.67	39°27'21.0591"N	80°17'46.8629"W	5528.36	118.496	0.58	-0.39	0.43	
12954.00	90.620	134.780	7515.80	5395.86	-2704.55	4925.96	1775207.33	349069.08	39°27'20.3969"N	80°17'46.0043"W	5619.58	118.769	0.56	0.55	-0.13	
13049.00	90.590	134.760	7514.80	5490.86	-2771.46	4993.40	1775274.16	349001.57	39°27'19.7356"N	80°17'45.1447"W	5710.96	119.031	0.04	-0.03	-0.02	
13143.00	90.560	134.820	7513.86	5584.85	-2837.68	5060.11	1775340.26	348934.75	39°27'19.0809"N	80°17'44.2944"W	5801.48	119.283	0.07	-0.03	0.06	
13238.00	90.650	135.030	7512.85	5679.85	-2904.76	5127.37	1775406.90	348867.07	39°27'18.4178"N	80°17'43.4371"W	5893.01	119.532	0.24	0.09	0.22	
13332.00	90.710	134.930	7511.74	5773.84	-2971.20	5193.86	1775472.78	348800.03	39°27'17.7610"N	80°17'42.5897"W	5983.66	119.772	0.12	0.06	-0.11	

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**Actual Wellpath Report**  
 Crands Unit 6H AWP Proj: 19967'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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)	Comments	
13427.00	90.010	133.920	7511.14	5868.83	-3037.69	5261.70	1775540.02	348732.93	39°27'17.1037"N	80°17'41.7249"W	6075.61	119.999	1.29	-0.74	-1.06		
13522.00	90.560	134.510	7510.67	5963.82	-3103.94	5329.79	1775607.50	348666.07	39°27'16.4488"N	80°17'40.8571"W	6167.75	120.215	0.85	0.58	0.62		
13616.00	89.910	133.910	7510.28	6057.81	-3169.49	5397.17	1775674.27	348599.92	39°27'15.8008"N	80°17'39.9983"W	6259.00	120.424	0.94	-0.69	-0.64		
13711.00	90.350	135.930	7510.07	6152.81	-3236.56	5464.43	1775740.93	348532.24	39°27'15.1377"N	80°17'39.1410"W	6351.01	120.638	2.18	0.46	2.13		
13806.00	89.980	135.620	7509.79	6247.80	-3304.64	5530.69	1775806.56	348463.57	39°27'14.4648"N	80°17'38.2965"W	6442.76	120.859	0.51	-0.39	-0.33		
13900.00	89.880	135.810	7509.91	6341.79	-3371.93	5596.32	1775871.58	348395.69	39°27'13.7995"N	80°17'37.4599"W	6533.66	121.070	0.23	-0.11	0.20		
13995.00	89.480	135.200	7510.44	6436.78	-3439.70	5662.90	1775937.54	348327.33	39°27'13.1297"N	80°17'36.6114"W	6625.71	121.275	0.77	-0.42	-0.64		
14089.00	89.820	135.610	7511.01	6530.78	-3506.63	5728.90	1776002.92	348259.81	39°27'12.4680"N	80°17'35.7702"W	6716.90	121.471	0.57	0.36	0.44		
14184.00	90.070	136.110	7511.11	6625.77	-3574.81	5795.06	1776068.46	348191.04	39°27'11.7940"N	80°17'34.9270"W	6808.96	121.669	0.59	0.26	0.53		
14279.00	90.380	135.490	7510.73	6720.76	-3642.91	5861.29	1776134.06	348122.34	39°27'11.1207"N	80°17'34.0829"W	6901.12	121.862	0.73	0.33	-0.65		
14373.00	89.980	136.430	7510.44	6814.74	-3710.48	5926.63	1776198.79	348054.19	39°27'10.4528"N	80°17'33.2501"W	6992.33	122.049	1.09	-0.43	1.00		
14467.00	89.910	135.880	7510.53	6908.72	-3778.28	5991.74	1776263.28	347985.81	39°27'9.7826"N	80°17'32.4202"W	7083.53	122.235	0.59	-0.07	-0.59		
14562.00	89.180	135.220	7511.28	7003.71	-3846.09	6058.27	1776329.19	347917.40	39°27'9.1122"N	80°17'31.5724"W	7176.00	122.409	1.04	-0.77	-0.69		
14657.00	89.950	136.420	7512.00	7098.70	-3914.22	6124.47	1776394.77	347848.68	39°27'8.4387"N	80°17'30.7286"W	7268.44	122.583	1.50	0.81	1.26		
14751.00	89.980	135.010	7512.06	7192.69	-3981.51	6190.10	1776459.78	347780.80	39°27'7.7735"N	80°17'29.8921"W	7360.01	122.749	1.50	0.03	-1.50		
14846.00	89.510	134.790	7512.48	7287.69	-4048.56	6257.40	1776526.46	347713.14	39°27'7.1106"N	80°17'29.0345"W	7452.91	122.903	0.55	-0.49	-0.23		
14941.00	88.960	134.310	7513.75	7382.67	-4115.20	6325.09	1776593.54	347645.90	39°27'6.4518"N	80°17'28.1718"W	7545.97	123.049	0.77	-0.58	-0.51		
15036.00	89.300	134.660	7515.19	7477.66	-4181.76	6392.86	1776660.70	347578.73	39°27'5.7938"N	80°17'27.3081"W	7639.10	123.190	0.51	0.36	0.37		
15130.00	89.580	134.890	7516.11	7571.65	-4247.97	6459.58	1776726.82	347511.93	39°27'5.1393"N	80°17'26.4577"W	7731.20	123.330	0.39	0.30	0.24		
15225.00	89.610	134.690	7516.78	7666.65	-4314.89	6527.00	1776793.63	347444.40	39°27'4.4776"N	80°17'25.5985"W	7824.33	123.468	0.21	0.03	-0.21		
15319.00	89.910	135.460	7517.18	7760.65	-4381.45	6593.38	1776859.40	347377.25	39°27'3.8197"N	80°17'24.7525"W	7916.42	123.605	0.88	0.32	0.82		
15414.00	89.050	134.300	7518.04	7855.64	-4448.48	6660.69	1776926.10	347309.62	39°27'3.1570"N	80°17'23.8946"W	8009.61	123.738	1.52	-0.91	-1.22		
15509.00	89.210	134.440	7519.48	7950.63	-4514.90	6728.59	1776993.39	347242.58	39°27'2.5003"N	80°17'23.0293"W	8102.98	123.862	0.22	0.17	0.15		
15603.00	89.790	134.970	7520.30	8044.62	-4581.02	6795.40	1777059.59	347175.86	39°27'1.8467"N	80°17'22.1779"W	8195.32	123.985	0.84	0.62	0.56		
15698.00	88.990	134.540	7521.31	8139.61	-4647.91	6862.86	1777126.44	347108.37	39°27'1.1854"N	80°17'21.3182"W	8288.66	124.108	0.96	-0.84	-0.45		
15793.00	89.180	133.840	7522.83	8234.59	-4714.12	6930.97	1777193.94	347041.55	39°27'0.5309"N	80°17'20.4502"W	8382.20	124.222	0.76	0.20	-0.74		
15887.00	88.900	133.510	7524.41	8328.55	-4779.02	6998.94	1777261.32	346976.04	39°26'59.8892"N	80°17'19.5838"W	8474.92	124.326	0.46	-0.30	-0.35		
15982.00	87.610	134.280	7527.30	8423.49	-4844.86	7067.37	1777329.14	346909.59	39°26'59.2384"N	80°17'18.7118"W	8568.57	124.432	1.58	-1.36	0.81		
16077.00	89.080	134.370	7530.04	8518.44	-4911.20	7135.30	1777396.47	346842.64	39°26'58.5824"N	80°17'17.8461"W	8662.13	124.540	1.55	1.55	0.09		
16171.00	89.850	134.650	7530.92	8612.43	-4977.10	7202.33	1777462.90	346776.14	39°26'57.9310"N	80°17'16.9919"W	8754.72	124.646	0.87	0.82	0.30		

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Crands Unit 6H AWP Proj: 19967'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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]	Comments
16265.00	89.050	134.240	7531.82	8706.42	-5042.92	7269.44	1777529.40	346709.72	39°26'57.2803"N	80°17'16.1367"W	8847.36	124.750	0.96	-0.85	-0.44	
16360.00	88.620	134.800	7533.75	8801.40	-5109.51	7337.16	1777596.51	346642.52	39°26'56.6219"N	80°17'15.2737"W	8940.97	124.853	0.74	-0.45	0.59	
16455.00	86.740	131.630	7537.60	8896.26	-5174.50	7406.32	1777665.08	346576.91	39°26'55.9794"N	80°17'14.3922"W	9034.88	124.940	3.88	-1.98	-3.34	
16549.00	88.070	135.450	7541.86	8990.11	-5239.17	7474.38	1777732.54	346511.63	39°26'55.3400"N	80°17'13.5249"W	9127.72	125.029	4.30	1.41	4.06	
16644.00	88.650	135.200	7544.58	9085.07	-5306.70	7541.14	1777798.69	346443.50	39°26'54.6724"N	80°17'12.6741"W	9221.17	125.134	0.66	0.61	-0.26	
16739.00	88.310	136.100	7547.10	9180.03	-5374.61	7607.53	1777864.45	346375.00	39°26'54.0010"N	80°17'11.8281"W	9314.55	125.241	1.01	-0.36	0.95	
16834.00	88.340	136.010	7549.87	9274.97	-5442.98	7673.43	1777929.73	346306.04	39°26'53.3251"N	80°17'10.9884"W	9407.84	125.349	0.10	0.03	-0.09	
16928.00	88.410	136.610	7552.54	9368.91	-5510.92	7738.33	1777994.01	346237.52	39°26'52.6534"N	80°17'10.1613"W	9500.11	125.457	0.64	0.07	0.64	
17023.00	88.310	137.080	7555.26	9463.82	-5580.20	7803.28	1778058.33	346167.66	39°26'51.9685"N	80°17'9.3336"W	9593.22	125.569	0.51	-0.11	0.49	
17117.00	88.250	136.390	7558.08	9557.74	-5648.62	7867.68	1778122.10	346098.67	39°26'51.2921"N	80°17'8.5130"W	9685.41	125.677	0.74	-0.06	-0.73	
17212.00	88.410	135.540	7560.85	9652.68	-5716.88	7933.68	1778187.48	346029.81	39°26'50.6172"N	80°17'7.6719"W	9778.86	125.776	0.91	0.17	-0.89	
17307.00	88.280	134.790	7563.59	9747.64	-5784.22	8000.64	1778253.81	345961.87	39°26'49.9514"N	80°17'6.8187"W	9872.56	125.866	0.80	-0.14	-0.79	
17402.00	88.500	136.010	7566.26	9842.60	-5851.84	8067.31	1778319.87	345893.66	39°26'49.2830"N	80°17'5.9691"W	9966.22	125.956	1.30	0.23	1.28	
17497.00	88.410	136.340	7568.82	9937.54	-5920.35	8133.07	1778385.00	345824.55	39°26'48.6056"N	80°17'5.1311"W	10059.69	126.052	0.36	-0.09	0.35	
17591.00	88.740	135.050	7571.16	10031.51	-5987.60	8198.71	1778450.02	345756.72	39°26'47.9408"N	80°17'4.2947"W	10152.35	126.141	1.42	0.35	-1.37	
17686.00	89.420	138.390	7572.69	10126.44	-6056.74	8263.82	1778514.50	345686.99	39°26'47.2572"N	80°17'3.4650"W	10245.72	126.239	3.59	0.72	3.52	
17781.00	87.910	135.790	7574.90	10221.34	-6126.29	8328.47	1778578.52	345616.86	39°26'46.5696"N	80°17'2.6412"W	10339.00	126.338	3.16	-1.59	-2.74	
17876.00	88.310	135.820	7578.03	10316.27	-6194.37	8394.66	1778644.09	345548.19	39°26'45.8965"N	80°17'1.7978"W	10432.67	126.423	0.42	0.42	0.03	
17970.00	88.100	133.890	7580.98	10410.22	-6260.63	8461.26	1778710.08	345481.33	39°26'45.2414"N	80°17'0.9491"W	10525.61	126.498	2.06	-0.22	-2.05	
18065.00	88.840	134.020	7583.51	10505.17	-6326.55	8529.63	1778777.84	345414.81	39°26'44.5897"N	80°17'0.0780"W	10619.78	126.565	0.79	0.78	0.14	
18159.00	89.670	133.110	7584.74	10599.13	-6391.32	8597.73	1778845.35	345349.42	39°26'43.9493"N	80°16'59.2101"W	10713.08	126.626	1.31	0.88	-0.97	
18254.00	89.760	134.590	7585.21	10694.11	-6457.13	8666.24	1778913.26	345283.00	39°26'43.2986"N	80°16'58.3372"W	10807.32	126.689	1.56	0.09	1.56	
18349.00	89.790	135.240	7585.58	10789.11	-6524.21	8733.51	1778979.92	345215.32	39°26'42.6354"N	80°16'57.4799"W	10901.35	126.761	0.68	0.03	0.68	Deepest TVD at 7585.58' TVD
18444.00	90.350	134.470	7585.47	10884.11	-6591.21	8800.86	1779046.65	345147.71	39°26'41.9730"N	80°16'56.6218"W	10995.41	126.831	1.00	0.59	-0.81	
18538.00	90.160	136.950	7585.05	10978.09	-6658.49	8866.49	1779111.66	345079.84	39°26'41.3078"N	80°16'55.7855"W	11088.29	126.906	2.65	-0.20	2.64	
18632.00	91.330	139.130	7583.83	11071.94	-6728.38	8929.33	1779173.86	345009.39	39°26'40.6168"N	80°16'54.9848"W	11180.52	126.999	2.63	1.24	2.32	
18727.00	90.280	140.480	7582.49	11166.60	-6800.94	8990.63	1779234.51	344936.29	39°26'39.8995"N	80°16'54.2037"W	11273.16	127.106	1.80	-1.11	1.42	
18822.00	88.750	139.340	7583.30	11261.24	-6873.61	9051.81	1779295.01	344863.07	39°26'39.1811"N	80°16'53.4243"W	11365.81	127.212	2.01	-1.61	-1.20	
18916.00	91.110	133.410	7583.41	11355.16	-6941.62	9116.63	1779359.21	344794.48	39°26'38.5087"N	80°16'52.5984"W	11458.58	127.287	6.79	2.51	-6.31	
19010.00	90.990	133.680	7581.69	11449.12	-7006.37	9184.75	1779426.74	344729.12	39°26'37.8685"N	80°16'51.7303"W	11552.00	127.337	0.31	-0.13	0.29	

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 Crands Unit 6H AWP Proj: 19967'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

WELLPATH DATA (221 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)	Comments
19105.00	91.180	133.210	7579.89	11544.06	-7071.68	9253.71	1779495.11	344663.19	39°26'37.2227"N	80°16'50.8516"W	11646.45	127.387	0.53	0.20	-0.49	
19200.00	90.710	133.400	7578.32	11639.01	-7136.83	9322.83	1779563.63	344597.42	39°26'36.5785"N	80°16'49.9709"W	11740.94	127.435	0.53	-0.49	0.20	
19295.00	90.650	133.960	7577.19	11733.98	-7202.44	9391.53	1779631.73	344531.20	39°26'35.9299"N	80°16'49.0955"W	11835.37	127.485	0.59	-0.06	0.59	
19390.00	90.840	133.730	7575.96	11828.95	-7268.24	9460.04	1779699.64	344464.78	39°26'35.2793"N	80°16'48.2226"W	11929.78	127.535	0.31	0.20	-0.24	
19484.00	90.840	134.930	7574.58	11922.93	-7333.92	9527.28	1779766.27	344398.50	39°26'34.6299"N	80°16'47.3659"W	12023.12	127.588	1.28	0.00	1.28	
19579.00	90.930	134.880	7573.11	12017.92	-7400.97	9594.55	1779832.93	344330.84	39°26'33.9669"N	80°16'46.5087"W	12117.34	127.646	0.11	0.09	-0.05	
19674.00	91.420	135.330	7571.17	12112.90	-7468.26	9661.59	1779899.36	344262.96	39°26'33.3017"N	80°16'45.6545"W	12211.52	127.703	0.70	0.52	0.47	
19769.00	91.360	135.130	7568.86	12207.87	-7535.68	9728.48	1779965.62	344194.94	39°26'32.6350"N	80°16'44.8023"W	12305.68	127.761	0.22	-0.06	-0.21	
19864.00	92.650	136.510	7565.54	12302.80	-7603.76	9794.64	1780031.16	344126.26	39°26'31.9619"N	80°16'43.9593"W	12399.69	127.823	1.99	1.36	1.45	
19942.00	90.990	134.790	7563.06	12380.75	-7659.51	9849.13	1780085.15	344070.03	39°26'31.4107"N	80°16'43.2650"W	12476.92	127.872	3.06	-2.13	-2.21	Last MWD Survey at 19942' MD
19967.00‡	90.990	134.790	7562.63	12405.75	-7677.12	9866.87	1780102.73	344052.26	39°26'31.2366"N	80°16'43.0390"W	12501.73	127.885	0.00	0.00	0.00	Projected MD at TD: 19967' MD

HOLE & CASING SECTIONS - Ref Wellbore: Crands Unit 6H AWB Ref Wellpath: Crands Unit 6H AWP Proj: 19967'									
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)
24in Conductor	26.00	102.00	76.00	26.00	102.00	0.00	0.00	-0.41	-0.47
17.5in Open Hole	102.00	550.00	448.00	102.00	549.95	-0.41	-0.47	-5.65	-4.14
13.375in Casing Surface	26.00	550.00	524.00	26.00	549.95	0.00	0.00	-5.65	-4.14
12.25in Open Hole	550.00	3150.00	2600.00	549.95	3128.62	-5.65	-4.14	197.11	177.32
9.625in Casing Intermediate	26.00	3150.00	3124.00	26.00	3128.62	0.00	0.00	197.11	177.32
8.75in Open Hole	3150.00	6363.00	3213.00	3128.62	6205.12	197.11	177.32	868.25	790.31
8.5in Open Hole	6363.00	19967.00	13604.00	6205.12	7562.63	868.25	790.31	-7677.12	9866.87
5.5in Casing Production	26.00	19967.00	19941.00	26.00	7562.63	0.00	0.00	-7677.12	9866.87

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# Actual Wellpath Report

Crands Unit 6H AWP Proj: 19967'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Crands Unit 6H - BHL - Rev-2	7527.00	-7675.79	9867.36	1780103.23	344053.58	39°26'31.2497"N	80°16'43.0327"W	point
Crands Unit 6H - LP - Rev-2	7527.00	731.44	1455.74	1771768.56	352536.15	39°27'54.3606"N	80°18'30.2424"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Crands Unit 6H AWB Ref Wellpath: Crands Unit 6H AWP Proj: 19967'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	476.00	BH Generic gyro - northseeking (Standard)	01_Javins Gyro Surveys <17-1/2">(50'-450')	Crands Unit 6H AWB	12/16/2019
476.00	3132.00	OWSG MWD rev2 + HRGM	02_Javins EM Surveys <12-1/4">(450')(549'-3106')	Crands Unit 6H AWB	12/16/2019
3132.00	6293.00	OWSG MWD rev2 + HRGM	03_Javins EM Surveys <8-3/4">(3106')(3201'-6267')	Crands Unit 6H AWB	12/16/2019
6293.00	19967.00	OWSG MWD rev2 + HRGM + Multi-Station Correction	06_Superior Corrected Surveys <8-1/2">(6293')(6318'-19942')	Crands Unit 6H AWB	1/17/2020

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**Actual Wellpath Report**  
Crands Unit 6H AWP Proj: 19967'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	XTO ENERGY INC	Well	Crands Unit 6H
Field	Marion	API	47-049-02493-0000
Facility	Sands Pad	Wellbore	Crands Unit 6H AWB
Slot	Slot #06		

COMMENTS
<p><b>Wellpath general comments</b> API: 47-049-02493-0000 BHI Job #: 110232256A Rig: Patteron 579 Duration: 01/12/2020-01/16/2020 Javins Gyro Surveys &lt;17-1/2"&gt;(50'-450') Javins EM Surveys &lt;12-1/4"&gt;(450')(549'-3106') Javins EM Surveys &lt;8-3/4"&gt;(3106')(3201'-6267') Superior Corrected Surveys &lt;8-1/2"&gt;(6293')(6318'-19942') Landing Pt. at 7855.36' MD Deepest TVD at 7585.58' TVD Last MWD Survey at 19942' MD Projected MD at TD: 19967' MD</p>

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