



Actual Wellpath Report

Crim East Unit 11H AWP Proj: 18937'
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REFERENCE WELLPATH IDENTIFICATION

Operator	XTO ENERGY INC	Well	Crim East Unit 11H
Field	Marion	API/Legal	
Facility	Crim Pad	Wellbore	Crim East Unit 11H AWB
Slot	Slot #11		

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	0.999944	Report Generated	4/2/2020 at 1:34:14 PM
Convergence at slot	0.51° 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	20.12	-22.26	1773546.29	354914.43	39°28'18.0240"N	80°18'7.8461"W
Facility Reference Pt			1773568.37	354894.11	39°28'17.8251"N	80°18'7.5622"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	1247.00ft
Horizontal Reference Pt	Slot	Patterson 579 (RKB) to Mean Sea Level	1247.00ft
Vertical Reference Pt	Patterson 579 (RKB)	Patterson 579 (RKB) to Ground Level at Slot (Slot #11)	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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WELLPATH DATA (208 stations) † = interpolated, ‡ = extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
0.00†	0.000	93.300	0.00	0.00	0.00	0.00	1773546.29	354914.43	39°28'18.0240"N	80°18'7.8461"W	0.00	0.00	0.00	0.00	
26.00	0.000	93.300	26.00	0.00	0.00	0.00	1773546.29	354914.43	39°28'18.0240"N	80°18'7.8461"W	0.00	0.00	0.00	0.00	
76.00	0.320	93.300	76.00	0.10	-0.01	0.14	1773546.43	354914.42	39°28'18.0239"N	80°18'7.8443"W	0.14	93.300	0.64	0.64	Javins Gyros <17-1/2">(50'-450')
126.00	0.470	275.900	126.00	0.05	0.01	0.07	1773546.36	354914.43	39°28'18.0240"N	80°18'7.8451"W	0.07	86.172	1.58	0.30	-354.80
176.00	0.130	219.400	176.00	-0.10	-0.02	-0.17	1773546.12	354914.41	39°28'18.0238"N	80°18'7.8482"W	0.17	263.868	0.83	-0.68	-113.00
226.00	0.450	42.800	226.00	-0.11	0.08	-0.07	1773546.22	354914.51	39°28'18.0248"N	80°18'7.8469"W	0.11	320.587	1.16	0.64	-353.20
276.00	0.800	20.800	276.00	-0.26	0.55	0.19	1773546.48	354914.98	39°28'18.0295"N	80°18'7.8437"W	0.58	18.926	0.84	0.70	-44.00
326.00	0.830	8.300	325.99	-0.62	1.24	0.37	1773546.67	354915.66	39°28'18.0362"N	80°18'7.8414"W	1.29	16.467	0.36	0.06	-25.00
376.00	0.490	340.100	375.99	-1.03	1.80	0.35	1773546.65	354916.22	39°28'18.0417"N	80°18'7.8417"W	1.83	10.878	0.92	-0.68	-56.40
426.00	0.450	328.100	425.99	-1.41	2.16	0.17	1773546.48	354916.59	39°28'18.0454"N	80°18'7.8439"W	2.17	4.458	0.21	-0.08	-24.00
476.00	0.570	5.200	475.98	-1.76	2.58	0.09	1773546.40	354917.01	39°28'18.0495"N	80°18'7.8450"W	2.58	1.944	0.69	0.24	74.20
526.00	1.340	41.670	524.97	-2.14	3.93	0.90	1773547.23	354918.36	39°28'18.0629"N	80°18'7.8346"W	4.04	12.911	0.95	0.78	36.84
576.00	1.410	48.370	575.96	-2.14	4.48	1.44	1773547.77	354918.89	39°28'18.0682"N	80°18'7.8276"W	4.70	17.893	0.55	0.22	20.94
626.00	1.360	53.100	625.96	-1.92	5.91	3.20	1773549.54	354920.31	39°28'18.0824"N	80°18'7.8052"W	6.72	28.430	0.13	-0.05	5.03
676.00	0.890	62.900	675.91	-1.53	6.93	4.76	1773551.11	354921.31	39°28'18.0924"N	80°18'7.7854"W	8.40	34.497	0.53	-0.48	10.32
726.00	0.570	67.840	725.91	-1.12	7.44	5.84	1773552.20	354921.81	39°28'18.0975"N	80°18'7.7716"W	9.46	38.160	0.35	-0.34	5.26
776.00	0.410	78.120	775.90	-0.76	7.68	6.61	1773552.97	354922.05	39°28'18.0999"N	80°18'7.7617"W	10.14	40.718	0.19	-0.17	10.82
826.00	0.510	84.860	825.90	-0.30	7.79	7.37	1773553.73	354922.15	39°28'18.1010"N	80°18'7.7521"W	10.72	43.395	0.12	0.11	7.08
876.00	0.360	271.700	875.90	-0.25	7.84	7.49	1773553.85	354922.20	39°28'18.1014"N	80°18'7.7506"W	10.84	43.694	0.92	-0.16	-184.21
926.00	0.350	291.350	925.90	-0.73	7.95	6.92	1773553.28	354922.32	39°28'18.1026"N	80°18'7.7578"W	10.54	41.029	0.13	-0.01	20.68
976.00	0.650	291.340	975.89	-1.48	8.25	6.16	1773552.52	354922.62	39°28'18.1055"N	80°18'7.7676"W	10.29	36.726	0.32	0.32	-0.01
1026.00	0.670	267.050	1025.89	-2.35	8.42	5.10	1773551.46	354922.80	39°28'18.1072"N	80°18'7.7811"W	9.84	31.204	0.29	0.02	-25.57
1076.00	0.860	278.830	1075.88	-3.29	8.50	3.84	1773550.21	354922.89	39°28'18.1080"N	80°18'7.7971"W	9.33	24.313	0.26	0.20	12.40
1126.00	0.720	254.020	1125.87	-4.16	8.44	2.56	1773548.93	354922.85	39°28'18.1074"N	80°18'7.8134"W	8.82	16.874	0.39	-0.15	-26.12
1176.00	1.310	225.200	1175.86	-4.45	7.52	1.23	1773547.59	354921.94	39°28'18.0984"N	80°18'7.8304"W	7.62	9.292	0.81	0.63	-30.66
1226.00	1.420	187.750	1225.83	-3.75	5.61	0.31	1773546.65	354920.04	39°28'18.0795"N	80°18'7.8421"W	5.62	3.177	0.94	0.12	-39.84
1276.00	1.560	180.520	1275.80	-2.13	3.15	0.14	1773546.46	354917.58	39°28'18.0552"N	80°18'7.8443"W	3.16	2.562	0.25	0.15	-7.61
1326.00	0.460	193.140	1325.78	-1.05	1.52	0.04	1773546.35	354915.95	39°28'18.0391"N	80°18'7.8455"W	1.52	1.683	1.20	-1.18	13.57
1376.00	0.210	243.450	1375.78	-0.90	1.07	-0.20	1773546.10	354915.51	39°28'18.0346"N	80°18'7.8486"W	1.09	349.581	0.38	-0.26	52.96
1426.00	0.620	2213.78	1425.78	-1.05	1.42	-0.06	1773546.24	354915.85	39°28'18.0380"N	80°18'7.8469"W	1.42	357.499	0.85	0.43	159.03



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Facility	Crim Pad	Wellbore	Crim East Unit 11H AWB
Slot	Slot #11		

WELLPATH DATA (208 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(°)	(ft)	(°)	(ft/100ft)	(ft/100ft)	(°/100ft)	
2307.00	1.390	40.840	2306.77	-1.22	2.69	0.96	1773547.27	354917.11	39°28'18.0506"N	80°18'7.8338"W	2.86	19.666	0.84	0.83	6.78	
2403.00	1.350	35.010	2402.74	-1.50	4.50	2.37	1773548.70	354918.90	39°28'18.0684"N	80°18'7.8158"W	5.08	27.808	0.15	-0.04	-6.07	
2498.00	1.630	29.380	2497.71	-2.06	6.59	3.68	1773550.02	354920.99	39°28'18.0891"N	80°18'7.7992"W	7.55	29.155	0.33	0.28	-5.93	
2592.00	1.410	32.390	2591.67	-2.67	8.73	4.95	1773551.32	354923.12	39°28'18.1103"N	80°18'7.7829"W	10.04	29.557	0.25	-0.23	3.20	
2687.00	1.150	36.630	2686.65	-3.06	10.48	6.15	1773552.53	354924.86	39°28'18.1276"N	80°18'7.7677"W	12.15	30.383	0.29	-0.27	4.46	
2782.00	2.050	32.090	2781.61	-3.58	12.69	7.82	1773554.02	354927.05	39°28'18.1494"N	80°18'7.7489"W	14.80	30.981	0.96	0.95	-4.78	
2876.00	4.020	36.790	2875.47	-4.43	16.75	10.48	1773556.92	354931.09	39°28'18.1895"N	80°18'7.7124"W	19.76	32.042	2.11	2.10	5.00	
2971.00	6.370	37.590	2970.08	-5.58	23.59	15.69	1773562.19	354937.88	39°28'18.2572"N	80°18'7.6459"W	28.34	33.630	2.47	2.47	0.84	
3066.00	7.810	42.260	3064.35	-6.57	32.55	23.25	1773569.83	354946.77	39°28'18.3457"N	80°18'7.5496"W	40.00	35.539	1.63	1.52	4.92	
3129.00	8.040	42.310	3126.75	-6.98	38.97	29.09	1773575.73	354953.14	39°28'18.4092"N	80°18'7.4751"W	48.64	36.741	0.37	0.37	0.08	
3324.00	7.960	42.630	3319.85	-8.17	58.99	47.42	1773594.23	354972.99	39°28'18.6070"N	80°18'7.2414"W	75.69	38.792	0.05	-0.04	0.16	lavins MWD Surveys <8-3/4">(3103°)(3298°-6525°)
3419.00	7.570	37.990	3413.98	-9.20	68.76	55.73	1773602.62	354982.69	39°28'18.7036"N	80°18'7.1355"W	88.51	39.020	0.78	-0.41	-4.88	
3513.00	7.800	40.950	3507.14	-10.41	78.46	63.72	1773610.70	354992.32	39°28'18.7995"N	80°18'7.0336"W	101.08	39.079	0.49	0.24	3.15	
3608.00	7.930	44.430	3601.24	-10.93	88.01	72.53	1773619.60	355001.78	39°28'18.8938"N	80°18'6.9212"W	114.05	39.492	0.52	0.14	3.66	
3702.00	7.690	42.700	3694.37	-11.24	97.26	81.33	1773628.48	355010.96	39°28'18.9853"N	80°18'6.8089"W	126.79	39.903	0.36	-0.26	-1.84	
3797.00	7.840	42.060	3788.50	-11.83	106.75	89.98	1773637.22	355020.36	39°28'19.0790"N	80°18'6.6986"W	139.61	40.130	0.18	0.16	-0.67	
3891.00	7.750	41.740	3881.63	-12.51	116.23	98.50	1773645.82	355029.77	39°28'19.1728"N	80°18'6.5900"W	152.36	40.279	0.11	-0.10	-0.34	
3986.00	7.720	44.800	3975.77	-12.90	125.54	107.26	1773654.66	355039.00	39°28'19.2648"N	80°18'6.4783"W	165.12	40.510	0.43	-0.03	3.22	
4080.00	7.780	44.780	4068.91	-12.94	134.54	116.19	1773663.67	355047.92	39°28'19.3537"N	80°18'6.3645"W	177.77	40.815	0.06	0.06	-0.02	
4175.00	7.470	44.450	4163.07	-13.02	143.51	125.04	1773672.60	355056.81	39°28'19.4424"N	80°18'6.2516"W	190.34	41.066	0.33	-0.33	-0.35	
4270.00	7.240	44.560	4257.23	-13.13	152.48	133.86	1773681.50	355065.70	39°28'19.5310"N	80°18'6.1392"W	202.90	41.279	0.28	0.28	0.12	
4364.00	7.240	44.500	4350.43	-13.23	161.21	142.45	1773690.17	355074.35	39°28'19.6173"N	80°18'6.0296"W	215.13	41.465	0.53	-0.53	-0.06	
4459.00	7.420	42.300	4444.65	-13.57	170.02	150.77	1773698.57	355083.09	39°28'19.7043"N	80°18'5.9234"W	227.24	41.567	0.35	0.19	-2.32	
4553.00	6.870	42.230	4537.92	-14.12	178.67	158.64	1773706.51	355091.67	39°28'19.7899"N	80°18'5.8232"W	238.93	41.601	0.59	-0.59	-0.07	
4648.00	7.460	43.400	4632.18	-14.57	187.36	166.69	1773714.64	355100.28	39°28'19.8757"N	80°18'5.7204"W	250.78	41.660	0.64	0.62	1.23	
4743.00	8.280	41.370	4726.29	-15.17	196.97	175.45	1773723.48	355109.82	39°28'19.9707"N	80°18'5.6088"W	263.78	41.693	0.91	0.86	-2.14	
4837.00	7.480	41.480	4819.40	-15.97	206.64	183.98	1773732.10	355119.40	39°28'20.0663"N	80°18'5.5000"W	276.67	41.680	0.85	-0.85	0.12	
4932.00	8.020	41.290	4913.53	-16.78	216.25	192.45	1773740.65	355128.94	39°28'20.1613"N	80°18'5.3920"W	289.48	41.667	0.57	0.57	-0.20	
5029.00	7.430	41.140	5009.65	-17.64	226.06	201.04	1773749.33	355138.67	39°28'20.2582"N	80°18'5.2825"W	302.52	41.648	0.61	-0.61	-0.15	
5124.00	8.150	42.060	5103.77	-18.39	235.68	209.59	1773757.97	355148.22	39°28'20.3533"N	80°18'5.1734"W	315.40	41.647	0.77	0.76	0.97	



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Facility	Crim Pad	Wellbore	Crim East Unit 11H AWB
Slot	Slot #11		

WELLPATH DATA (208 stations)

MD	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 F/100ft	Build Rate F/100ft	Turn Rate F/100ft	Comments
5218.00	7.630	42.740	5196.88	-18.98	245.21	218.29	1773766.75	355157.67	39°28'20.4475"N	80°18'5.0625"W	328.30	41.676	0.56	-0.59	0.72	
5313.00	8.070	43.190	5290.99	-19.44	254.71	227.13	1773775.68	355167.08	39°28'20.5413"N	80°18'4.9497"W	341.27	41.725	0.47	0.46	0.47	
5408.00	8.020	43.310	5385.06	-19.84	264.39	236.24	1773784.87	355176.68	39°28'20.6371"N	80°18'4.8336"W	354.56	41.782	0.06	-0.09	0.13	
5502.00	7.410	45.060	5478.20	-20.03	273.44	245.03	1773793.74	355185.66	39°28'20.7265"N	80°18'4.7215"W	367.17	41.864	0.70	-0.65	1.86	
5598.00	7.810	43.840	5573.36	-20.15	282.52	253.93	1773802.72	355194.66	39°28'20.8162"N	80°18'4.6080"W	379.87	41.950	0.45	0.42	-1.27	
5693.00	8.170	42.230	5667.44	-20.60	292.17	262.94	1773811.81	355204.23	39°28'20.9117"N	80°18'4.4931"W	393.07	41.985	0.45	0.38	-1.69	
5789.00	7.850	41.660	5762.50	-21.31	302.12	271.88	1773820.84	355214.10	39°28'21.0100"N	80°18'4.3791"W	406.45	41.984	0.34	-0.33	-0.59	
5884.00	8.270	43.900	5856.56	-21.82	311.89	280.93	1773829.98	355223.78	39°28'21.1065"N	80°18'4.2637"W	419.76	42.010	0.55	0.44	2.36	
5979.00	7.820	44.540	5950.63	-22.00	321.42	290.20	1773839.34	355233.23	39°28'21.2007"N	80°18'4.1455"W	433.05	42.078	0.48	-0.47	0.67	
6075.00	8.030	42.020	6045.71	-22.40	331.06	299.27	1773848.49	355242.78	39°28'21.2960"N	80°18'4.0298"W	446.28	42.113	0.42	0.22	-2.62	
6170.00	7.500	42.010	6139.84	-23.06	340.60	307.86	1773857.17	355252.24	39°28'21.3902"N	80°18'3.9203"W	459.11	42.110	0.56	-0.56	-0.01	
6265.00	7.990	42.730	6233.97	-23.65	350.05	316.49	1773865.88	355261.62	39°28'21.4837"N	80°18'3.8102"W	471.92	42.118	0.53	0.52	0.76	
6361.00	8.120	41.210	6329.02	-24.36	360.05	325.49	1773874.96	355271.54	39°28'21.5825"N	80°18'3.6955"W	485.37	42.113	0.26	0.14	-1.58	
6456.00	7.550	42.210	6423.14	-25.10	369.72	334.10	1773883.66	355281.13	39°28'21.6781"N	80°18'3.5857"W	498.32	42.103	0.62	-0.60	1.05	
6551.00	7.620	41.330	6517.31	-25.81	379.08	342.45	1773892.09	355290.41	39°28'21.7705"N	80°18'3.4792"W	510.86	42.094	0.14	0.07	-0.93	
6603.00	7.320	38.830	6568.86	-26.38	384.25	346.81	1773896.49	355295.54	39°28'21.8216"N	80°18'3.3737"W	517.61	42.088	0.85	-0.58	-4.81	BH AT Curve -8-1/2"> (6551')(6603'-18912')
6642.00	7.310	44.540	6607.55	-26.67	387.95	350.11	1773899.83	355299.22	39°28'21.8582"N	80°18'3.3816"W	522.57	42.065	1.86	-0.03	14.64	
6736.00	7.120	69.220	6700.83	-24.32	394.28	359.75	1773909.52	355305.46	39°28'21.9208"N	80°18'3.2586"W	533.74	42.378	3.28	-0.20	26.26	
6831.00	7.330	69.740	6795.07	-19.37	398.47	370.94	1773920.75	355309.55	39°28'21.9622"N	80°18'3.1159"W	544.40	42.951	0.23	0.22	0.55	
6925.00	7.260	43.770	6888.34	-16.99	404.84	380.68	1773930.54	355315.83	39°28'22.0251"N	80°18'2.9918"W	555.70	43.238	3.48	-0.07	-27.63	
7019.00	6.660	67.080	6981.66	-15.06	411.25	389.81	1773939.73	355322.16	39°28'22.0885"N	80°18'2.8753"W	566.63	43.467	3.05	-0.64	24.80	
7114.00	15.020	113.060	7075.03	-1.53	408.56	406.26	1773956.16	355319.33	39°28'22.0620"N	80°18'2.6655"W	576.17	44.838	12.02	8.80	48.40	
7208.00	22.380	125.250	7164.04	27.46	393.44	432.13	1773981.99	355303.97	39°28'21.9125"N	80°18'2.3357"W	584.40	47.683	8.83	7.83	12.97	
7302.00	31.570	132.310	7247.74	69.78	366.48	465.02	1774014.53	355276.72	39°28'21.6480"N	80°18'1.9163"W	592.07	51.758	10.34	9.78	7.51	
7397.00	41.370	132.120	7324.04	126.11	328.59	506.80	1774055.97	355238.47	39°28'21.2716"N	80°18'1.3835"W	604.00	57.042	10.32	10.32	-0.20	
7491.00	48.910	127.360	7390.32	192.36	286.19	558.08	1774106.87	355195.61	39°28'20.8525"N	80°18'0.7296"W	627.18	62.851	8.78	8.02	-5.06	
7586.00	57.160	130.100	7447.41	267.74	238.67	617.17	1774165.53	355147.57	39°28'20.3828"N	80°17'59.9761"W	661.71	68.857	8.98	8.68	2.88	
7680.00	65.750	135.210	7492.30	350.14	182.69	677.71	1774225.57	355091.05	39°28'19.8295"N	80°17'59.2041"W	701.91	74.913	10.31	9.14	5.44	Landing Pt at 7680' MD
7775.00	74.520	134.550	7524.55	439.40	119.72	740.97	1774288.26	355027.52	39°28'19.2071"N	80°17'58.3975"W	750.58	80.822	9.25	9.23	-0.69	
7870.00	81.700	131.580	7544.12	532.23	56.31	808.86	1774355.57	354963.52	39°28'18.5804"N	80°17'57.5319"W	810.81	86.017	8.15	7.56	-3.13	



Actual Wellpath Report

Crim East Unit 11H AWP Proj: 18937
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REFERENCE WELLPATH IDENTIFICATION

Operator	XTO ENERGY INC	Well	Crim East Unit 11H
Field	Marion	API/ Legal	
Facility	Crim Pad	Wellbore	Crim East Unit 11H AWB
Slot	Slot #11		

WELLPATH DATA (208 stations)

MD	Inclination °	Azimuth °	TVD ft	Vert Sect ft	North ft	East ft	Grid East JUS ft	Grid North JUS ft	Latitude	Longitude	Closure Dist ft	Closure Dir °	DLS °/100ft	Build Rate °/100ft	Turn Rate °/100ft	Comments
13643.00	89.050	133.660	7532.89	6300.20	-4014.10	4895.57	1778405.55	350857.01	39°27'38.3463"N	80°17'5.4297"W	6330.85	129.350	1.89	-1.52	-1.14	
13738.00	88.370	132.730	7535.03	6395.13	-4079.11	4964.81	1778474.20	350791.39	39°27'37.7036"N	80°17'4.5471"W	6425.61	129.407	1.21	-0.72	-0.98	
13833.00	88.120	134.470	7537.94	6490.05	-4144.59	5033.57	1778542.37	350725.30	39°27'37.0563"N	80°17'3.6706"W	6520.32	129.468	1.85	-0.28	1.83	
13927.00	88.520	133.960	7540.69	6584.00	-4210.12	5100.92	1778609.12	350659.18	39°27'36.4086"N	80°17'2.8121"W	6613.96	129.535	0.69	0.43	-0.54	
14022.00	88.460	135.080	7543.20	6678.97	-4276.70	5168.63	1778676.23	350592.00	39°27'35.7504"N	80°17'1.9490"W	6708.57	129.606	1.18	-0.06	1.18	
14116.00	87.420	133.980	7546.58	6772.90	-4342.58	5235.59	1778742.60	350525.53	39°27'35.0991"N	80°17'1.0954"W	6802.16	129.673	1.61	-1.11	-1.17	
14211.00	88.890	133.960	7549.64	6867.83	-4408.50	5303.93	1778810.34	350459.01	39°27'34.4475"N	80°17'0.2244"W	6896.85	129.733	1.55	1.55	-0.02	
14306.00	89.880	135.870	7550.66	6962.82	-4475.57	5371.20	1778877.00	350391.34	39°27'33.7845"N	80°16'59.3670"W	6991.45	129.803	2.26	1.04	2.01	
14401.00	89.320	135.770	7551.32	7057.81	-4543.69	5437.40	1778942.59	350322.62	39°27'33.1110"N	80°16'58.5231"W	7085.93	129.883	0.60	-0.58	-0.11	
14495.00	87.970	133.510	7553.54	7151.77	-4609.72	5504.26	1779008.85	350256.02	39°27'32.4583"N	80°16'57.6708"W	7179.58	129.946	2.80	-1.44	-2.40	
14590.00	89.260	135.770	7555.84	7246.74	-4676.45	5571.83	1779075.82	350188.69	39°27'31.7987"N	80°16'56.8096"W	7274.23	130.007	2.74	1.36	2.38	
14685.00	88.980	135.530	7557.30	7341.72	-4744.37	5638.23	1779141.61	350120.18	39°27'31.1272"N	80°16'55.9632"W	7368.76	130.079	0.39	-0.29	-0.25	
14779.00	89.050	135.780	7558.91	7435.70	-4811.58	5703.92	1779206.70	350052.39	39°27'30.4628"N	80°16'55.1258"W	7462.31	130.150	0.28	0.07	0.27	
14874.00	89.020	135.500	7560.51	7530.68	-4879.50	5770.34	1779272.50	349983.89	39°27'29.7914"N	80°16'54.2794"W	7556.87	130.218	0.30	-0.03	-0.29	
14968.00	88.680	136.410	7562.40	7624.64	-4947.05	5835.67	1779337.22	349915.76	39°27'29.1236"N	80°16'53.4466"W	7650.38	130.289	1.03	-0.36	0.97	
15062.90	88.000	135.650	7565.15	7719.49	-5015.32	5901.53	1779402.47	349846.91	39°27'28.4487"N	80°16'52.6071"W	7744.77	130.359	1.07	-0.72	-0.80	
15157.00	88.650	134.510	7567.90	7813.55	-5081.92	5967.95	1779468.28	349779.72	39°27'27.7903"N	80°16'51.7606"W	7838.51	130.416	1.39	0.69	-1.21	
15252.00	88.650	134.980	7570.14	7908.52	-5148.78	6035.40	1779535.13	349712.27	39°27'27.1294"N	80°16'50.9008"W	7933.22	130.467	0.49	0.00	0.49	
15346.00	86.770	134.820	7573.89	8002.44	-5215.07	6101.93	1779601.06	349645.38	39°27'26.4740"N	80°16'50.0529"W	8026.86	130.519	2.01	-2.00	-0.17	
15441.00	87.170	134.430	7578.91	8097.30	-5281.71	6169.45	1779667.98	349578.15	39°27'25.8152"N	80°16'49.1923"W	8121.49	130.567	0.59	0.42	-0.41	
15536.00	86.890	134.950	7583.84	8192.17	-5348.43	6236.90	1779734.82	349510.83	39°27'25.1556"N	80°16'48.3326"W	8216.12	130.615	0.62	-0.29	0.55	
15630.00	87.080	134.470	7588.78	8286.04	-5414.47	6303.61	1779800.94	349444.20	39°27'24.5028"N	80°16'47.4823"W	8309.75	130.661	0.55	0.20	-0.51	
15725.00	87.110	134.590	7593.60	8380.92	-5481.01	6371.24	1779867.97	349377.07	39°27'23.8450"N	80°16'46.6202"W	8404.41	130.705	0.13	0.03	0.13	
15820.00	87.080	135.020	7598.41	8475.79	-5547.87	6438.56	1779934.69	349309.62	39°27'23.1840"N	80°16'45.7623"W	8499.05	130.750	0.45	-0.03	0.45	
15915.00	87.200	135.130	7603.15	8570.68	-5615.05	6505.56	1780001.08	349241.84	39°27'22.5199"N	80°16'44.9083"W	8593.67	130.798	0.17	0.13	0.12	
16010.00	87.200	134.910	7607.79	8665.56	-5682.17	6572.63	1780067.55	349174.13	39°27'21.8563"N	80°16'44.0534"W	8688.30	130.844	0.23	0.00	-0.23	
16104.00	87.440	133.250	7612.19	8759.44	-5747.48	6640.09	1780134.41	349108.22	39°27'21.2106"N	80°16'43.1937"W	8782.04	130.879	1.78	0.26	-1.77	
16199.00	87.480	134.580	7616.40	8854.33	-5813.31	6708.45	1780202.18	349041.79	39°27'20.5599"N	80°16'42.3224"W	8876.82	130.911	1.40	0.04	1.40	
16293.00	88.430	134.620	7619.75	8948.27	-5879.27	6775.34	1780268.47	348975.24	39°27'19.9078"N	80°16'41.4699"W	8970.56	130.950	1.01	1.01	0.04	
16388.00	88.890	134.500	7621.97	9043.24	-5945.91	6843.01	1780335.54	348908.00	39°27'19.2490"N	80°16'40.6074"W	9065.35	130.987	0.50	0.48	-0.13	



Actual Wellpath Report

Crim East Unit 11H AWP Proj: 18937
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REFERENCE WELLPATH IDENTIFICATION

Operator	XTO ENERGY INC	Well	Crim East Unit 11H
Field	Marion	API/Legal	
Facility	Crim Pad	Wellbore	Crim East Unit 11H AWB
Slot	Slot #11		

WELLPATH DATA (208 stations) † = interpolated, ‡ = extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
16483.00	89.750	135.750	7623.10	9138.23	-6013.22	6910.03	1780401.96	348840.10	39°27'18.5835"N	80°16'39.7532"W	9160.10	131.030	1.60	0.91	1.32	
16577.00	89.510	135.670	7623.71	9232.22	-6080.51	6975.67	1780496.99	348772.23	39°27'17.9183"N	80°16'38.9166"W	9253.78	131.078	0.27	-0.26	-0.09	
16671.00	89.350	135.540	7624.64	9326.21	-6147.67	7041.43	1780532.14	348704.49	39°27'17.2543"N	80°16'38.0785"W	9347.49	131.123	0.22	-0.17	-0.14	
16766.00	89.140	134.410	7625.89	9421.20	-6214.81	7108.63	1780598.73	348636.76	39°27'16.5906"N	80°16'37.2221"W	9442.27	131.162	1.21	-0.22	-1.19	
16860.00	88.150	135.030	7628.12	9515.17	-6280.93	7175.40	1780664.91	348570.04	39°27'15.9369"N	80°16'36.3711"W	9536.06	131.197	1.24	-1.03	0.66	
16955.00	88.280	134.640	7631.08	9610.13	-6347.88	7242.73	1780731.64	348502.90	39°27'15.2750"N	80°16'35.5129"W	9630.82	131.233	0.43	0.14	-0.41	
17050.00	88.680	135.020	7633.60	9705.09	-6414.83	7310.08	1780798.38	348434.95	39°27'14.6131"N	80°16'34.6546"W	9725.60	131.268	0.58	0.42	0.40	Deepest TVD at 7633.60' TVD
17143.00	92.310	134.790	7632.79	9798.07	-6480.47	7375.95	1780863.65	348368.74	39°27'13.9642"N	80°16'33.8152"W	9818.40	131.302	3.91	3.90	-0.26	
17238.00	92.680	132.120	7628.66	9892.94	-6545.73	7444.84	1780931.96	348302.87	39°27'13.3190"N	80°16'32.9371"W	9913.24	131.323	2.82	0.39	-2.80	
17333.00	93.630	136.500	7623.43	9987.76	-6611.97	7512.70	1780999.22	348236.02	39°27'12.6641"N	80°16'32.0723"W	10007.94	131.351	4.71	1.00	4.61	
17427.00	92.920	135.980	7618.06	10081.59	-6679.75	7577.61	1781063.52	348167.67	39°27'11.9940"N	80°16'31.2451"W	10101.45	131.397	0.94	-0.76	-0.55	
17522.00	92.190	134.410	7613.82	10176.49	-6747.09	7644.49	1781129.79	348099.75	39°27'11.3283"N	80°16'30.3928"W	10196.14	131.432	1.82	-0.77	-1.65	
17617.00	92.620	134.790	7609.83	10271.40	-6813.73	7712.07	1781196.77	348032.50	39°27'10.6694"N	80°16'29.5315"W	10290.92	131.461	0.80	0.45	0.40	
17712.00	93.630	135.750	7604.66	10366.26	-6881.12	7778.83	1781262.92	347964.53	39°27'10.0032"N	80°16'28.6807"W	10385.56	131.496	1.47	1.06	1.01	
17807.00	94.070	137.220	7598.28	10461.01	-6949.86	7844.09	1781327.56	347895.21	39°27'9.3236"N	80°16'27.8490"W	10479.99	131.541	1.61	0.46	1.55	
17901.00	94.220	136.300	7591.48	10554.72	-7018.15	7908.31	1781391.17	347826.35	39°27'8.6484"N	80°16'27.0305"W	10573.36	131.587	0.99	0.16	-0.98	
17995.00	93.540	135.460	7585.12	10648.49	-7085.48	7973.60	1781455.85	347758.45	39°27'7.9828"N	80°16'26.1985"W	10666.88	131.625	1.15	-0.72	-0.89	
18090.00	94.680	138.000	7578.31	10743.19	-7154.47	8038.55	1781520.17	347688.89	39°27'7.3008"N	80°16'25.3709"W	10761.25	131.670	2.92	1.20	2.67	
18185.00	94.530	135.860	7570.68	10837.82	-7223.64	8103.21	1781584.21	347619.15	39°27'6.6169"N	80°16'24.5468"W	10855.55	131.716	2.25	-0.16	-2.25	
18278.00	94.870	134.220	7563.06	10930.51	-7289.22	8168.70	1781649.11	347552.98	39°27'5.9685"N	80°16'23.7122"W	10948.08	131.744	1.80	0.37	-1.76	
18374.00	94.900	134.390	7554.89	11026.15	-7356.03	8237.15	1781716.96	347485.57	39°27'5.3080"N	80°16'22.8399"W	11043.63	131.766	0.18	0.03	0.18	
18468.00	95.240	134.180	7546.58	11119.78	-7421.41	8304.18	1781783.40	347419.60	39°27'4.6617"N	80°16'21.9857"W	11137.18	131.787	0.42	0.36	-0.22	
18563.00	95.270	134.240	7537.88	11214.37	-7487.37	8371.99	1781850.61	347353.04	39°27'4.0095"N	80°16'21.1216"W	11231.69	131.807	0.07	0.03	0.06	
18658.00	95.020	134.630	7529.36	11308.98	-7553.61	8439.55	1781917.57	347286.20	39°27'3.3546"N	80°16'20.2606"W	11326.21	131.829	0.49	-0.26	0.41	
18753.00	94.500	132.960	7521.48	11403.63	-7619.13	8507.88	1781985.31	347220.08	39°27'2.7068"N	80°16'19.3898"W	11420.82	131.846	1.84	-0.55	-1.76	
18847.00	94.590	135.000	7514.03	11497.31	-7684.20	8575.31	1782052.15	347154.42	39°27'2.0635"N	80°16'18.5305"W	11514.46	131.863	2.17	0.10	2.17	
18912.00	96.720	136.070	7507.62	11561.99	-7730.36	8620.61	1782097.04	347107.86	39°27'1.6071"N	80°16'17.9532"W	11579.01	131.884	3.66	3.28	1.65	Last MWD Survey at 18912' MD
18937.00#	96.720	136.070	7504.70	11586.81	-7748.24	8637.84	1782114.11	347089.82	39°27'1.4304"N	80°16'17.7337"W	11603.77	131.892	0.00	0.00	0.00	Projected MD at TD: 20115' MD



Actual Wellpath Report

Crim East Unit 11H AWP Proj: 18937'
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REFERENCE WELLPATH IDENTIFICATION

Operator	XTO ENERGY INC	Well	Crim East Unit 11H
Field	Marion	API/ILegal	
Facility	Crim Pad	Wellbore	Crim East Unit 11H AWB
Slot	Slot #11		

HOLE & CASING SECTIONS - Ref Wellbore: Crim East Unit 11H AWB Ref Wellpath: Crim East Unit 11H AWP Proj: 18937'

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]
30in Conductor	26.00	76.00	50.00	26.00	76.00	0.00	0.00	-0.01	0.14
17.5in Open Hole	76.00	530.00	454.00	76.00	529.98	-0.01	0.14	3.23	0.35
13.375in Casing Surface	26.00	530.00	504.00	26.00	529.98	0.00	0.00	3.23	0.35
12.25in Open Hole	530.00	3181.00	2651.00	529.98	3178.24	3.23	0.35	44.34	33.99
9.625in Casing Intermediate	26.00	3181.00	3155.00	26.00	3178.24	0.00	0.00	44.34	33.99
8.75in Open Hole	3181.00	6525.00	3344.00	3178.24	6491.54	44.34	33.99	376.50	340.17
8.5in Open Hole	6525.00	18937.00	12412.00	6491.54	7504.70	376.50	340.17	-7748.24	8637.84
5.5in Casing Production	26.00	18937.00	18911.00	26.00	7504.70	0.00	0.00	-7748.24	8637.84

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Crim East Unit 11H - BHL - Rev-3	7546.00	-7749.91	8635.60	1782111.85	347088.17	39°27'1.4138"N	80°16'17.7623"W	point
Crim East Unit 11H - LP - Rev-3	7546.00	51.47	830.64	1774377.31	354958.47	39°28'18.5325"N	80°17'57.2540"W	point

WELLPATH COMPOSITION - Ref Wellbore: Crim East Unit 11H AWB Ref Wellpath: Crim East Unit 11H AWP Proj: 18937'

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 Gyros <17-1/2">(50-450)	Crim East Unit 11H AWB	
476.00	3129.00	OWSG MWD rev2 + HRGM	02_Javins MWD Surveys <12-1/4">(450)(549-3103)	Crim East Unit 11H AWB	
3129.00	6551.00	OWSG MWD rev2 + HRGM	03_Javins MWD Surveys <8-3/4">(3103)(3298-6525)	Crim East Unit 11H AWB	
6551.00	18937.00	BH AutoTrak Curve (Short)	04_BH AT Curve <8-1/2">(6551)(6603-18912)	Crim East Unit 11H AWB	



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REFERENCE WELLPATH IDENTIFICATION

Operator	XTO ENERGY INC	Well	Crim East Unit 11H
Field	Marion	API/Legal	
Facility	Crim Pad	Wellbore	Crim East Unit 11H AWB
Slot	Slot #11		

COMMENTS

Wellpath general comments

API: 47-049-02490-0000
 BH Job#: 110033839A
 Rig: Patterson 579
 Duration: 9/19/2019 - 9/25/2019
 Javins Gyros <17'-1/2">(50'-450')
 Javins MWD Surveys <12'-1/4">(450')(549'-3103)
 Javins MWD Surveys <8'-3/4">(3103)(3298'-6525')
 BH AT Curve <8'-1/2">(6551')(6603'-18912')
 Landing Pt. at 7680' MD
 Deepest TVD at 7633.60' TVD
 Last MWD Survey at 18912' MD
 Projected MD at TD: 20115' MD