



Actual Wellpath Report

WDTN-5N-HSM AWP Proj: 21910'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot N
Area	Monongalia County, WV	Well	WDTN-5N-HSM
Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Edsaryar
Scale	0.999942	Report Generated	17/May/2019 at 22:09
Convergence at slot	0.53° West	Database/Source file	WA_MPL_EASTERNUS_Defn/WDTN-5N-HSM_AWP_Proj_21910.xml

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-19.87	2.27	1764429.72	440510.96	39°42'23.186"N	80°20'14.272"W
Facility Reference Pt			1764427.45	440530.83	39°42'23.382"N	80°20'14.303"W
Field Reference Pt			609601.22	0.00	38°23'48.753"N	84°21'09.765"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 801 (RKB) to Facility Vertical Datum	1416.94ft
Horizontal Reference Pt	Slot	Patterson 801 (RKB) to Mean Sea Level	1416.94ft
Vertical Reference Pt	Patterson 801 (RKB)	Patterson 801 (RKB) to Mud Line at Slot (Slot N)	29.00ft
MD Reference Pt	Patterson 801 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	133.62°

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Office of Oil and Gas
OCT 28 2019
WV Department of
Environmental Protection



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Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

WELLPATH DATA (237 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
0.00H	0.000	92.430	0.00	0.00	0.00	0.00	1764429.72	440510.96	39°42'23.186"N	80°20'14.272"W	0.00	0.000	0.00	0.00	0.00
29.00	0.000	92.430	29.00	0.00	0.00	0.00	1764429.72	440510.96	39°42'23.186"N	80°20'14.272"W	0.00	0.000	0.00	0.00	0.00
100.00	0.550	92.430	100.00	0.26	-0.01	0.34	1764430.06	440510.95	39°42'23.186"N	80°20'14.267"W	0.34	92.430	0.77	0.77	130.18
200.00	0.020	156.880	200.00	0.63	-0.05	0.83	1764430.55	440510.91	39°42'23.185"N	80°20'14.261"W	0.83	93.519	0.54	-0.53	64.45
300.00	0.190	78.430	300.00	0.74	-0.03	1.00	1764430.72	440510.93	39°42'23.186"N	80°20'14.259"W	1.00	91.935	0.19	0.17	-78.45
400.00	0.480	108.350	400.00	1.22	-0.13	1.56	1764431.28	440510.75	39°42'23.185"N	80°20'14.252"W	1.56	94.858	0.33	0.29	29.92
500.00	0.070	22.050	499.99	1.57	-0.21	1.98	1764431.70	440510.83	39°42'23.184"N	80°20'14.246"W	1.99	95.993	0.48	-0.41	-86.30
600.00	0.490	105.220	599.99	1.93	-0.26	2.41	1764432.13	440510.70	39°42'23.184"N	80°20'14.241"W	2.43	96.226	0.49	0.42	83.17
700.00	0.300	157.140	699.99	2.54	-0.62	2.93	1764432.65	440510.34	39°42'23.180"N	80°20'14.234"W	2.99	101.899	0.39	-0.19	51.92
800.00	0.410	134.590	799.99	3.14	-1.11	3.28	1764433.00	440509.85	39°42'23.175"N	80°20'14.230"W	3.47	108.666	0.18	0.11	-22.55
900.00	0.390	129.370	899.99	3.84	-1.58	3.80	1764433.52	440509.38	39°42'23.171"N	80°20'14.223"W	4.11	112.522	0.04	-0.02	-5.22
1000.00	0.490	142.630	999.98	4.60	-2.13	4.32	1764434.04	440508.83	39°42'23.165"N	80°20'14.216"W	4.82	116.247	0.14	0.10	13.26
1100.00	0.420	146.280	1099.98	5.38	-2.78	4.79	1764434.51	440508.18	39°42'23.159"N	80°20'14.210"W	5.53	120.117	0.08	-0.07	3.65
1200.00	0.240	175.850	1199.98	5.89	-3.29	5.01	1764434.72	440507.67	39°42'23.154"N	80°20'14.207"W	5.99	123.320	0.24	-0.18	29.57
1300.00	0.240	158.040	1299.98	6.24	-3.69	5.10	1764434.82	440507.27	39°42'23.150"N	80°20'14.206"W	6.30	125.919	0.07	0.00	-17.81
1444.00	0.130	104.820	1443.98	6.66	-4.01	5.37	1764435.09	440506.95	39°42'23.147"N	80°20'14.202"W	6.70	126.787	0.13	-0.08	-36.96
1538.00	0.030	175.610	1537.98	6.77	-4.07	5.47	1764435.19	440506.89	39°42'23.146"N	80°20'14.201"W	6.82	126.607	0.13	-0.11	75.31
1633.00	0.030	191.680	1632.98	6.80	-4.12	5.47	1764435.19	440506.84	39°42'23.146"N	80°20'14.201"W	6.85	126.953	0.01	0.00	16.92
1727.00	0.040	322.440	1726.98	6.78	-4.11	5.45	1764435.17	440506.85	39°42'23.146"N	80°20'14.201"W	6.83	127.066	0.07	0.01	139.11
1821.00	0.300	324.430	1820.98	6.51	-3.89	5.28	1764435.00	440507.07	39°42'23.148"N	80°20'14.204"W	6.56	126.349	0.28	0.28	2.12
1916.00	0.440	318.150	1915.97	5.90	-3.41	4.90	1764434.61	440507.55	39°42'23.153"N	80°20'14.209"W	5.97	124.892	0.15	0.15	-6.61
2010.00	0.500	313.120	2009.97	5.13	-2.86	4.35	1764434.07	440508.10	39°42'23.158"N	80°20'14.216"W	5.21	123.336	0.08	0.06	-5.35
2104.00	0.540	327.890	2103.97	4.29	-2.21	3.82	1764433.54	440508.75	39°42'23.164"N	80°20'14.223"W	4.41	120.039	0.15	0.04	15.71
2199.00	0.590	318.760	2198.96	3.37	-1.46	3.26	1764432.98	440509.50	39°42'23.172"N	80°20'14.230"W	3.57	114.157	0.11	0.05	-9.61
2293.00	0.630	353.230	2292.96	2.49	-0.58	2.88	1764432.60	440510.38	39°42'23.180"N	80°20'14.235"W	2.94	101.482	0.39	0.04	36.67
2388.00	0.550	356.400	2387.95	1.75	0.39	2.79	1764432.51	440511.35	39°42'23.190"N	80°20'14.236"W	2.82	82.065	0.09	-0.08	3.34
2482.00	0.440	343.560	2481.95	1.11	1.19	2.66	1764432.38	440512.15	39°42'23.198"N	80°20'14.238"W	2.91	65.975	0.17	-0.12	-13.66
2577.00	0.350	8.630	2576.95	0.58	1.90	2.61	1764432.43	440512.86	39°42'23.205"N	80°20'14.237"W	3.23	53.908	0.20	0.01	26.39
2668.00	0.490	8.600	2667.94	0.19	2.56	2.71	1764432.43	440513.52	39°42'23.211"N	80°20'14.237"W	3.73	46.609	0.07	-0.07	-0.03
2762.00	0.400	16.210	2761.94	-0.14	3.19	2.85	1764432.57	440514.15	39°42'23.218"N	80°20'14.236"W	4.28	41.746	0.06	0.01	8.10



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Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

WELLPATH DATA (237 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)
2857.00	0.390	350.510	2856.94	-0.55	3.83	2.89	1764432.61	440514.79	39°42'23.224"N	80°20'14.235"W	4.80	37.025	0.19	-0.01	-27.05
2932.00	0.370	343.970	2931.94	-0.96	4.32	2.78	1764432.50	440515.28	39°42'23.229"N	80°20'14.237"W	5.14	32.795	0.06	-0.03	-8.72
2956.00	0.340	324.560	2955.94	-1.10	4.45	2.72	1764432.44	440515.41	39°42'23.230"N	80°20'14.237"W	5.21	31.428	0.51	-0.12	-80.88
3050.00	0.310	307.450	3049.94	-1.63	4.83	2.36	1764432.07	440515.79	39°42'23.234"N	80°20'14.242"W	5.37	25.989	0.11	-0.03	-18.20
3145.00	0.610	320.680	3144.93	-2.39	5.38	1.83	1764431.55	440516.34	39°42'23.239"N	80°20'14.249"W	5.68	18.797	0.33	0.32	13.93
3239.00	0.650	305.880	3238.93	-3.41	6.08	1.08	1764430.80	440517.04	39°42'23.246"N	80°20'14.259"W	6.17	10.090	0.18	0.04	-15.74
3334.00	2.570	255.690	3333.89	-5.08	5.87	-1.42	1764428.30	440516.83	39°42'23.244"N	80°20'14.291"W	6.04	346.403	2.33	2.02	-52.83
3428.00	5.570	250.800	3427.64	-8.28	3.85	-7.77	1764421.95	440514.81	39°42'23.223"N	80°20'14.372"W	8.67	296.331	3.21	3.19	-5.20
3523.00	7.900	247.680	3521.98	-13.05	-0.15	-18.17	1764411.56	440510.81	39°42'23.183"N	80°20'14.504"W	18.17	269.526	2.48	2.45	-3.28
3617.00	10.020	240.060	3614.83	-18.00	-6.69	-31.23	1764398.49	440504.27	39°42'23.117"N	80°20'14.670"W	31.94	257.916	2.58	2.26	-8.11
3712.00	11.880	236.540	3709.10	-22.52	-16.20	-46.55	1764383.17	440494.76	39°42'23.021"N	80°20'14.865"W	49.29	250.808	2.08	1.96	-3.71
3806.00	13.260	234.120	3799.84	-26.65	-27.86	-63.36	1764366.37	440483.10	39°42'22.905"N	80°20'15.079"W	69.21	246.266	1.57	1.47	-2.57
3900.00	14.910	233.180	3891.01	-30.62	-41.42	-81.78	1764347.95	440469.54	39°42'22.769"N	80°20'15.313"W	91.67	243.135	1.77	1.76	-1.00
3995.00	17.420	232.370	3982.25	-34.82	-57.43	-102.82	1764326.90	440453.53	39°42'22.609"N	80°20'15.580"W	117.78	240.814	2.65	2.64	-0.85
4090.00	21.350	238.920	4071.86	-41.55	-75.05	-128.91	1764300.82	440435.91	39°42'22.432"N	80°20'15.912"W	149.17	239.792	4.72	4.72	6.89
4184.00	20.550	242.170	4159.65	-51.31	-91.59	-158.16	1764271.57	440419.38	39°42'22.266"N	80°20'16.284"W	182.76	239.925	1.50	-0.85	3.46
4279.00	20.860	249.160	4248.52	-63.91	-105.39	-188.71	1764241.02	440405.57	39°42'22.127"N	80°20'16.674"W	216.15	240.818	2.62	0.33	7.36
4373.00	20.910	250.230	4336.35	-78.64	-117.02	-220.14	1764209.59	440393.95	39°42'22.009"N	80°20'17.074"W	249.31	242.006	0.41	0.05	1.14
4468.00	20.440	248.910	4425.23	-93.32	-128.72	-251.57	1764178.16	440382.25	39°42'21.891"N	80°20'17.475"W	282.59	242.902	0.70	-0.49	-1.39
4562.00	20.950	252.760	4513.17	-108.51	-139.61	-282.94	1764146.80	440371.36	39°42'21.780"N	80°20'17.875"W	315.51	243.737	1.55	0.54	4.10
4657.00	20.070	251.710	4602.15	-124.46	-149.76	-314.64	1764115.10	440361.21	39°42'21.677"N	80°20'18.279"W	348.46	244.547	1.00	-0.93	-1.11
4751.00	21.160	252.610	4690.13	-140.28	-159.89	-346.14	1764083.60	440351.08	39°42'21.574"N	80°20'18.681"W	381.29	245.207	1.21	1.16	0.96
4846.00	19.880	251.930	4779.10	-156.25	-170.03	-377.86	1764051.88	440340.94	39°42'21.471"N	80°20'19.086"W	414.35	245.774	1.37	-1.35	-0.72
4940.00	21.170	249.290	4867.13	-171.18	-180.99	-408.93	1764020.81	440329.98	39°42'21.360"N	80°20'19.482"W	447.20	246.127	1.69	1.37	-2.81
5035.00	19.760	246.780	4956.13	-184.93	-193.39	-439.74	1763990.01	440317.59	39°42'21.234"N	80°20'19.875"W	480.38	246.261	1.75	-1.48	-2.64
5129.00	21.380	249.500	5044.14	-198.66	-205.65	-470.39	1763959.35	440305.32	39°42'21.110"N	80°20'20.265"W	513.38	246.385	2.00	1.72	2.89
5224.00	24.630	252.780	5131.58	-215.87	-217.58	-505.53	1763924.22	440293.39	39°42'20.989"N	80°20'20.714"W	550.37	246.713	3.68	3.42	3.45
5318.00	26.940	253.030	5216.21	-229.60	-229.60	-544.61	1763885.14	440281.88	39°42'20.867"N	80°20'21.212"W	591.03	247.141	2.46	2.46	0.27
5413.00	27.250	256.020	5300.79	-258.09	-241.13	-586.30	1763843.45	440269.84	39°42'20.749"N	80°20'21.744"W	633.95	247.644	1.47	1.47	3.15
5507.00	25.860	254.720	5384.87	-280.22	-251.73	-626.97	1763802.79	440259.24	39°42'20.640"N	80°20'22.263"W	675.62	248.124	1.60	-1.48	-1.38



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WELLPATH DATA (237 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/100ft)	(ft/100ft)	(ft/100ft)
5602.00	25.380	255.700	5470.53	-301.73	-262.22	-666.68	1763763.08	440248.75	39°42'20.53"N	80°20'22.770"W	716.40	248.529	0.67	-0.51	1.03
5696.00	23.380	252.920	5556.15	-321.56	-272.68	-704.03	1763725.73	440238.30	39°42'20.426"N	80°20'23.247"W	755.00	248.828	2.45	-2.13	-2.96
5791.00	21.320	249.980	5644.01	-338.45	-284.13	-738.28	1763691.48	440226.85	39°42'20.310"N	80°20'23.683"W	791.07	248.951	2.47	-2.17	-3.09
5885.00	22.770	249.830	5731.13	-354.08	-296.25	-771.42	1763658.35	440214.73	39°42'20.187"N	80°20'24.106"W	826.35	248.991	1.54	1.54	-0.16
5987.00	22.150	249.960	5825.40	-371.33	-309.65	-808.01	1763621.76	440201.33	39°42'20.051"N	80°20'24.572"W	865.31	249.032	0.61	-0.61	0.13
6082.00	19.480	245.460	5914.19	-385.17	-322.37	-839.25	1763590.52	440188.61	39°42'19.923"N	80°20'24.971"W	899.03	248.988	3.27	-2.81	-4.74
6177.00	20.660	246.920	6003.42	-397.69	-335.51	-869.08	1763560.69	440175.47	39°42'19.790"N	80°20'25.351"W	931.59	248.891	1.35	1.24	1.54
6271.00	22.670	251.190	6090.78	-412.64	-347.86	-901.49	1763528.29	440163.12	39°42'19.665"N	80°20'25.764"W	966.27	248.900	2.72	2.14	4.54
6366.00	24.050	252.920	6178.00	-430.58	-359.45	-937.32	1763492.45	440151.53	39°42'19.547"N	80°20'26.221"W	1003.88	249.019	1.62	1.45	1.82
6460.00	22.070	248.190	6264.49	-447.30	-371.64	-972.03	1763457.74	440139.35	39°42'19.423"N	80°20'26.663"W	1040.66	249.077	2.88	-2.11	-5.03
6555.00	21.930	249.650	6352.57	-462.51	-384.44	-1005.24	1763424.54	440126.55	39°42'19.294"N	80°20'27.087"W	1076.24	249.071	0.59	-0.15	-1.54
6649.00	22.540	250.170	6439.58	-478.27	-396.65	-1038.64	1763391.14	440114.33	39°42'19.170"N	80°20'27.513"W	1111.81	249.098	0.68	0.65	0.55
6672.16	22.320	249.080	6460.99	-482.14	-399.73	-1046.93	1763382.86	440111.26	39°42'19.139"N	80°20'27.618"W	1120.64	249.103	2.03	-0.95	-4.71
6743.00	22.710	250.420	6526.43	-494.09	-409.11	-1072.38	1763357.41	440101.87	39°42'19.044"N	80°20'27.943"W	1147.77	249.118	0.91	0.55	1.89
6838.00	22.450	251.430	6614.15	-510.82	-421.04	-1106.85	1763322.94	440089.95	39°42'18.923"N	80°20'28.382"W	1184.22	249.174	0.49	-0.27	1.06
6932.00	22.320	253.130	6701.07	-527.99	-431.93	-1140.94	1763288.84	440079.05	39°42'18.812"N	80°20'28.817"W	1219.97	249.265	0.70	-0.14	1.81
7027.00	20.850	249.010	6789.41	-544.12	-443.23	-1174.00	1763255.79	440067.76	39°42'18.697"N	80°20'29.239"W	1254.88	249.317	2.22	-1.55	-4.34
7121.00	21.500	247.110	6877.06	-558.16	-455.92	-1205.48	1763224.31	440055.07	39°42'18.569"N	80°20'29.640"W	1288.82	249.283	1.01	0.69	-2.02
7216.00	22.330	246.770	6965.19	-572.20	-469.81	-1238.11	1763191.69	440041.18	39°42'18.429"N	80°20'30.056"W	1324.25	249.220	0.88	0.87	-0.36
7310.00	23.030	249.170	7051.93	-587.15	-483.39	-1271.70	1763158.09	440027.60	39°42'18.291"N	80°20'30.484"W	1360.48	249.188	1.23	0.74	2.55
7404.00	22.730	249.780	7138.53	-603.08	-496.21	-1305.93	1763123.87	440014.78	39°42'18.161"N	80°20'30.920"W	1397.02	249.195	0.41	-0.32	0.65
7437.00	22.560	248.470	7168.99	-608.56	-500.73	-1317.80	1763112.00	440010.26	39°42'18.116"N	80°20'31.072"W	1409.73	249.194	1.61	-0.52	-3.97
7496.00	22.360	247.380	7223.51	-617.83	-509.20	-1338.69	1763091.11	440001.79	39°42'18.030"N	80°20'31.338"W	1432.26	249.175	0.78	-0.34	-1.85
7591.00	23.380	234.700	7311.10	-628.74	-527.06	-1370.77	1763059.03	439983.94	39°42'17.851"N	80°20'31.746"W	1468.61	248.968	5.29	1.07	-13.35
7685.00	21.410	212.730	7398.16	-629.09	-552.31	-1395.32	1763034.49	439958.68	39°42'17.599"N	80°20'32.057"W	1500.65	248.405	9.09	-2.10	-23.37
7779.00	24.310	201.590	7484.81	-618.58	-584.76	-1411.72	1763018.08	439926.24	39°42'17.277"N	80°20'32.263"W	1528.04	247.500	5.53	3.09	-11.85
7874.00	26.670	194.060	7570.57	-600.72	-623.64	-1424.10	1763005.70	439887.36	39°42'16.891"N	80°20'32.421"W	1554.75	246.351	4.22	2.48	-7.93
7969.00	33.520	187.350	7662.74	-574.65	-670.40	-1432.65	1762997.16	439840.60	39°42'16.428"N	80°20'32.513"W	1581.75	244.923	8.02	7.21	-7.06
8064.00	39.750	173.490	7729.07	-535.75	-726.45	-1432.56	1762997.24	439784.25	39°42'15.871"N	80°20'32.513"W	1606.36	243.101	10.87	6.56	-14.59
8158.00	44.560	155.580	7798.99	-481.83	-786.89	-1415.45	1763014.36	439724.12	39°42'15.279"N	80°20'32.287"W	1619.47	240.929	13.73	5.12	-19.05



Actual Wellpath Report

WDTN-5N-HSM AWP Proj: 21910'

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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot N
Area	Monongalia County, WV	Well	WDTN-5N-HSM
Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

WELLPATH DATA (237 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
8253.00	50.520	150.350	7863.12	-415.73	-849.18	-1383.49	1763046.31	439661.83	39°42'14.666"N	80°20'31.870"W	1623.32	238.459	7.47	6.27	-5.51
8347.00	58.530	150.820	7917.63	-342.57	-915.82	-1345.94	1763083.86	439595.20	39°42'14.011"N	80°20'31.382"W	1627.97	235.768	8.53	8.52	0.50
8442.00	67.830	152.110	7960.44	-261.97	-990.23	-1305.52	1763124.28	439520.79	39°42'13.279"N	80°20'30.856"W	1638.58	232.820	9.86	9.79	1.36
8536.00	76.900	153.460	7988.89	-177.45	-1069.83	-1264.62	1763165.18	439441.20	39°42'12.496"N	80°20'30.323"W	1656.44	229.770	9.75	9.65	1.44
8630.00	78.410	152.420	8008.99	-90.80	-1151.60	-1222.85	1763206.95	439359.43	39°42'11.692"N	80°20'29.776"W	1679.74	226.719	1.94	1.61	-1.11
8725.00	84.880	149.180	8022.79	-1.06	-1233.58	-1177.00	1763252.79	439277.46	39°42'10.886"N	80°20'29.183"W	1705.01	223.656	7.60	6.81	-3.41
8819.00	88.490	146.150	8028.22	89.95	-1312.84	-1126.82	1763302.97	439198.20	39°42'10.108"N	80°20'28.531"W	1730.11	220.640	5.01	3.84	-3.22
8914.00	90.060	143.290	8029.43	183.16	-1390.38	-1071.96	1763357.82	439120.67	39°42'09.346"N	80°20'27.820"W	1755.63	217.632	3.43	1.65	-3.01
9008.00	89.750	142.240	8029.58	275.96	-1465.22	-1015.08	1763414.70	439045.83	39°42'08.612"N	80°20'27.083"W	1782.49	214.714	1.16	-0.33	-1.12
9103.00	89.820	139.210	8029.94	370.22	-1538.75	-954.95	1763474.83	438972.30	39°42'07.891"N	80°20'26.305"W	1810.99	211.824	3.19	0.07	-3.19
9197.00	89.850	136.530	8030.21	463.95	-1608.45	-891.90	1763537.87	438902.60	39°42'07.208"N	80°20'25.490"W	1839.19	209.009	2.85	0.03	-2.85
9291.00	89.480	135.090	8030.76	557.88	-1675.85	-826.38	1763603.39	438835.21	39°42'06.548"N	80°20'24.644"W	1868.53	206.248	1.58	-0.39	-1.53
9385.00	89.940	134.250	8031.24	651.86	-1741.93	-759.53	1763670.23	438769.13	39°42'05.901"N	80°20'23.781"W	1900.32	203.559	1.02	0.49	-0.89
9484.00	90.430	133.640	8030.92	750.86	-1810.64	-688.25	1763741.51	438700.43	39°42'05.229"N	80°20'22.861"W	1937.03	200.813	0.79	0.49	-0.62
9579.00	90.280	130.940	8030.33	845.82	-1874.55	-617.99	1763811.77	438636.52	39°42'04.603"N	80°20'21.954"W	1973.79	198.246	2.85	-0.16	-2.84
9673.00	90.800	131.210	8029.44	939.73	-1936.31	-547.13	1763882.62	438574.76	39°42'04.000"N	80°20'21.040"W	2012.13	195.778	0.62	0.55	0.29
9767.00	90.580	131.670	8028.31	1033.65	-1998.52	-476.67	1763953.08	438512.56	39°42'03.391"N	80°20'20.131"W	2054.58	193.415	0.54	-0.23	0.49
9862.00	90.580	131.350	8027.35	1128.58	-2061.48	-405.53	1764024.21	438449.61	39°42'02.776"N	80°20'19.214"W	2100.99	191.129	0.34	0.00	-0.34
9956.00	91.080	133.770	8025.99	1222.55	-2125.04	-336.31	1764093.43	438386.04	39°42'02.154"N	80°20'18.321"W	2151.49	188.993	2.63	0.53	2.57
10051.00	89.850	132.680	8025.21	1317.54	-2190.10	-267.09	1764162.65	438320.99	39°42'01.517"N	80°20'17.427"W	2206.33	186.953	1.73	-1.29	-1.15
10145.00	89.540	133.110	8025.72	1411.53	-2254.08	-198.92	1764231.51	438257.01	39°42'00.891"N	80°20'16.539"W	2262.78	185.026	0.56	-0.33	0.46
10240.00	89.910	133.230	8026.17	1506.53	-2319.08	-128.94	1764300.79	438192.02	39°42'00.256"N	80°20'15.645"W	2322.66	183.182	0.41	0.39	0.13
10334.00	89.480	132.950	8026.67	1600.52	-2383.29	-60.29	1764369.43	438127.81	39°41'59.627"N	80°20'14.759"W	2384.06	181.449	0.55	-0.46	-0.30
10428.00	89.750	134.150	8027.30	1694.52	-2448.05	7.83	1764437.55	438063.05	39°41'58.994"N	80°20'13.880"W	2448.07	179.817	1.31	0.29	1.28
10523.00	89.080	134.440	8028.27	1789.50	-2514.39	75.83	1764505.54	437996.72	39°41'58.344"N	80°20'13.002"W	2515.54	178.273	0.77	-0.71	0.31
10618.00	88.340	135.160	8030.41	1884.46	-2581.32	143.22	1764572.93	437929.80	39°41'57.689"N	80°20'12.132"W	2585.29	176.824	1.09	-0.78	0.76
10713.00	87.870	134.720	8033.55	1979.38	-2648.38	210.43	1764640.13	437862.74	39°41'57.032"N	80°20'11.264"W	2656.73	175.457	0.68	-0.49	-0.46
10807.00	87.870	134.750	8037.05	2073.30	-2714.50	277.17	1764706.86	437796.62	39°41'56.385"N	80°20'10.442"W	2728.61	174.170	0.00	0.00	0.03
10901.00	87.870	134.750	8040.54	2167.21	-2780.63	343.87	1764773.56	437730.50	39°41'55.738"N	80°20'09.541"W	2801.81	172.950	0.00	0.00	0.00
10996.00	89.510	134.890	8042.71	2262.17	-2847.57	411.23	1764840.93	437663.56	39°41'55.082"N	80°20'08.671"W	2877.11	171.782	1.73	1.73	0.15



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot N
Operator	CNX GAS COMPANY, LLC	Well	WDTN-5N-HSM
Area	Monongalia County, WV	Wellbore	WDTN-5N-HSM AWB
Field	Monongalia		
Facility	WTN-5 Pad		

WELLPATH DATA (237 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]
11090.00	89.570	134.320	8043.47	2356.15	-2913.58	478.15	1764907.84	437597.56	39°41'54.436"N	80°20'07.807"W	2952.55	170.680	0.61	0.06	-0.61
11184.00	89.850	133.580	8043.94	2450.14	-2978.82	545.83	1764975.51	437532.32	39°41'53.798"N	80°20'06.934"W	3028.41	169.617	0.84	0.30	-0.79
11279.00	89.820	132.780	8044.22	2545.14	-3043.82	615.10	1765044.78	437467.32	39°41'53.162"N	80°20'06.040"W	3105.35	168.575	0.84	-0.03	-0.84
11373.00	90.120	131.800	8044.27	2639.11	-3107.07	684.64	1765114.31	437404.07	39°41'52.543"N	80°20'05.143"W	3181.61	167.574	1.09	0.32	-1.04
11468.00	90.220	132.160	8043.98	2734.07	-3170.62	755.26	1765184.93	437340.53	39°41'51.991"N	80°20'04.232"W	3259.33	166.602	0.39	0.11	0.38
11562.00	90.620	133.010	8043.29	2828.06	-3234.22	824.46	1765252.36	437276.93	39°41'51.292"N	80°20'03.339"W	3337.65	165.699	1.00	0.43	0.90
11657.00	90.550	135.160	8042.32	2923.04	-3300.31	892.70	1765322.36	437210.85	39°41'50.652"N	80°20'02.458"W	3418.91	164.864	2.26	-0.07	2.26
11751.00	89.380	134.880	8042.38	3017.01	-3366.80	959.14	1765388.80	437144.36	39°41'50.001"N	80°20'01.601"W	3500.76	164.099	1.28	-1.24	-0.30
11846.00	89.540	134.280	8043.28	3111.99	-3433.48	1026.80	1765456.46	437077.69	39°41'49.349"N	80°20'00.727"W	3583.73	163.350	0.65	0.17	-0.63
11940.00	89.380	134.180	8044.16	3205.98	-3499.04	1094.15	1765523.81	437012.13	39°41'48.707"N	80°19'59.858"W	3666.13	162.635	0.20	-0.17	-0.11
12035.00	89.380	131.430	8045.19	3300.96	-3563.59	1163.84	1765593.49	436947.59	39°41'48.075"N	80°19'58.959"W	3748.82	161.913	2.89	0.00	-2.89
12129.00	89.350	130.960	8046.23	3394.87	-3625.49	1234.57	1765664.22	436885.69	39°41'47.470"N	80°19'58.046"W	3829.93	161.195	0.50	-0.03	-0.50
12224.00	89.320	130.500	8047.34	3489.74	-3687.48	1306.55	1765736.20	436823.71	39°41'46.864"N	80°19'57.118"W	3912.10	160.490	0.49	-0.03	-0.48
12318.00	89.420	130.500	8048.37	3583.60	-3748.52	1378.03	1765807.67	436762.67	39°41'46.267"N	80°19'56.197"W	3993.79	159.816	0.11	0.11	0.00
12413.00	89.380	133.790	8049.36	3678.55	-3812.25	1448.45	1765878.09	436698.94	39°41'45.644"N	80°19'55.288"W	4078.15	159.196	3.46	-0.04	3.46
12507.00	88.710	132.150	8050.93	3772.53	-3876.31	1517.22	1765946.85	436634.88	39°41'45.017"N	80°19'54.401"W	4162.66	158.624	1.88	-0.71	-1.74
12601.00	88.180	129.550	8053.48	3866.37	-3937.77	1588.29	1766017.92	436573.43	39°41'44.416"N	80°19'53.484"W	4246.02	158.033	2.82	-0.56	-2.77
12696.00	87.840	133.650	8056.78	3961.24	-4000.79	1659.28	1766088.90	436510.41	39°41'43.800"N	80°19'52.569"W	4331.23	157.474	4.33	-0.36	4.32
12791.00	87.940	133.980	8060.28	4056.17	-4066.52	1727.78	1766157.39	436444.69	39°41'43.157"N	80°19'51.685"W	4418.35	156.980	0.36	0.11	0.35
12885.00	87.840	135.250	8063.74	4150.09	-4132.49	1794.65	1766224.26	436378.72	39°41'42.511"N	80°19'50.822"W	4505.36	156.526	1.35	-0.11	1.35
12980.00	87.940	135.780	8067.24	4244.97	-4200.22	1861.17	1766290.78	436310.99	39°41'41.848"N	80°19'49.963"W	4594.11	156.101	0.57	0.11	0.56
13074.00	87.970	136.280	8070.59	4338.93	-4267.83	1926.31	1766355.99	436243.39	39°41'41.185"N	80°19'49.120"W	4682.45	155.707	0.53	0.03	0.53
13169.00	87.870	135.930	8074.04	4433.68	-4336.24	1992.21	1766421.81	436174.98	39°41'40.515"N	80°19'48.270"W	4771.99	155.324	0.38	-0.11	-0.37
13263.00	87.870	136.960	8077.54	4527.50	-4404.32	2056.94	1766486.53	436106.91	39°41'39.848"N	80°19'47.424"W	4860.97	154.966	1.09	0.00	1.10
13358.00	86.920	135.800	8081.85	4622.29	-4473.02	2122.41	1766552.00	436038.21	39°41'39.175"N	80°19'46.569"W	4951.01	154.616	1.58	-1.00	-1.22
13452.00	86.980	134.620	8086.86	4716.12	-4539.63	2188.53	1766618.12	435971.60	39°41'38.523"N	80°19'45.735"W	5039.64	154.262	1.26	0.06	-1.26
13547.00	87.720	134.240	8091.25	4801.00	-4606.07	2256.30	1766685.89	435905.17	39°41'37.829"N	80°19'44.860"W	5129.01	153.902	0.88	0.78	-0.40
13641.00	87.690	134.640	8095.01	4884.92	-4671.83	2323.36	1766752.94	435839.41	39°41'37.229"N	80°19'43.995"W	5217.66	153.558	0.43	-0.03	0.43
13736.00	87.690	134.840	8098.84	4969.82	-4738.64	2390.79	1766820.36	435772.60	39°41'36.575"N	80°19'43.124"W	5307.60	153.228	0.21	0.00	0.21
13830.00	87.070	134.460	8103.14	5053.71	-4804.63	2457.59	1766887.16	435706.61	39°41'35.929"N	80°19'42.262"W	5396.69	152.910	0.77	-0.66	-0.40



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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot N
Operator	CNX GAS COMPANY, LLC	Well	WDTN-5N-HSM
Area	Monongalia County, WV	Wellbore	WDTN-5N-HSM AWB
Field	Monongalia		
Facility	WTN-5 Pad		

WELLPATH DATA (237 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/100ft)	(ft/100ft)	(°/100ft)
13925.00	86.210	134.620	8108.71	5188.53	-4871.15	2525.18	1766954.75	435640.10	39°41'35.278"N	80°19'41.390"W	5486.77	152.598	0.92	-0.91	0.17
14019.00	86.180	134.180	8114.94	5282.32	-4936.78	2592.20	1767021.76	435574.48	39°41'34.635"N	80°19'40.525"W	5575.95	152.297	0.47	-0.03	-0.47
14114.00	86.180	133.920	8121.27	5377.10	-5002.68	2660.32	1767089.88	435508.58	39°41'33.990"N	80°19'39.645"W	5666.05	151.997	0.27	0.00	-0.27
14208.00	88.120	134.560	8125.95	5470.98	-5068.18	2727.58	1767157.14	435443.09	39°41'33.349"N	80°19'38.777"W	5755.53	151.712	2.17	2.06	0.68
14302.00	90.120	135.840	8127.39	5565.92	-5134.87	2793.80	1767223.36	435376.40	39°41'32.666"N	80°19'37.922"W	5845.70	151.450	2.53	2.13	1.36
14397.00	90.860	136.040	8126.58	5659.84	-5203.13	2859.87	1767289.41	435308.14	39°41'32.027"N	80°19'37.069"W	5937.29	151.205	0.81	0.78	0.21
14491.00	89.290	135.780	8126.45	5753.76	-5270.64	2925.27	1767354.81	435240.63	39°41'31.366"N	80°19'36.225"W	6028.01	150.969	1.69	-1.67	-0.28
14586.00	89.350	135.740	8127.58	5848.69	-5338.70	2991.54	1767421.08	435172.58	39°41'30.699"N	80°19'35.369"W	6119.72	150.736	0.08	0.06	-0.04
14680.00	89.320	136.190	8128.67	5942.60	-5406.27	3056.88	1767486.41	435105.01	39°41'30.038"N	80°19'34.525"W	6210.66	150.515	0.48	-0.03	0.48
14773.00	88.550	135.600	8130.40	6036.51	-5473.04	3121.59	1767551.12	435038.25	39°41'29.384"N	80°19'33.690"W	6300.67	150.301	1.04	-0.83	-0.63
14867.00	88.370	134.140	8132.53	6129.46	-5539.33	3188.18	1767617.71	434971.96	39°41'28.735"N	80°19'32.830"W	6391.30	150.077	1.56	-0.19	-1.55
14960.00	88.400	134.050	8135.55	6222.42	-5604.02	3254.95	1767684.47	434907.28	39°41'28.101"N	80°19'31.969"W	6480.72	149.851	0.10	0.03	-0.10
15054.00	88.430	131.200	8138.15	6316.36	-5667.65	3324.08	1767753.60	434843.66	39°41'27.479"N	80°19'31.077"W	6570.52	149.608	3.03	0.03	-3.03
15148.00	89.010	130.550	8140.25	6410.22	-5729.14	3395.14	1767824.65	434782.16	39°41'26.878"N	80°19'30.161"W	6659.58	149.349	0.93	0.62	-0.69
15242.00	89.970	132.000	8141.09	6504.14	-5791.15	3465.78	1767895.29	434720.16	39°41'26.271"N	80°19'29.250"W	6749.00	149.101	1.85	1.02	1.54
15335.00	90.060	130.840	8141.06	6597.07	-5852.67	3535.52	1767965.02	434658.64	39°41'25.669"N	80°19'28.350"W	6837.66	148.864	1.25	0.10	-1.25
15429.00	90.120	133.130	8140.91	6691.02	-5915.55	3605.38	1768034.89	434595.77	39°41'25.054"N	80°19'27.449"W	6927.66	148.639	2.44	0.06	2.44
15523.00	91.050	134.780	8139.95	6785.01	-5980.79	3673.05	1768102.54	434530.53	39°41'24.416"N	80°19'26.576"W	7018.62	148.444	2.01	0.99	1.76
15617.00	91.020	131.480	8138.26	6878.98	-6045.03	3741.63	1768171.12	434466.29	39°41'23.787"N	80°19'25.692"W	7109.30	148.244	3.51	-0.03	-3.51
15710.00	91.320	133.490	8136.36	6971.94	-6107.83	3810.19	1768239.68	434403.50	39°41'23.173"N	80°19'24.807"W	7198.83	148.043	2.18	0.32	2.16
15804.00	91.140	135.050	8134.34	7065.91	-6173.43	3877.48	1768306.97	434337.91	39°41'22.531"N	80°19'23.939"W	7290.14	147.867	1.67	-0.19	1.66
15898.00	90.890	136.540	8132.67	7159.82	-6240.80	3943.01	1768372.49	434270.54	39°41'21.871"N	80°19'23.093"W	7382.07	147.715	1.61	-0.27	1.59
15992.00	89.880	137.000	8132.04	7253.68	-6309.28	4007.39	1768436.87	434202.06	39°41'21.200"N	80°19'22.261"W	7474.37	147.578	1.18	-1.07	0.49
16086.00	89.850	134.850	8132.26	7347.59	-6376.81	4072.77	1768502.25	434134.53	39°41'20.538"N	80°19'21.417"W	7566.45	147.434	2.29	-0.03	-2.29
16180.00	91.230	133.550	8131.38	7441.58	-6442.34	4140.16	1768569.63	434069.01	39°41'19.897"N	80°19'20.547"W	7657.98	147.273	2.02	1.47	-1.38
16275.00	91.450	133.710	8129.16	7536.55	-6507.87	4208.90	1768638.37	434003.48	39°41'19.255"N	80°19'19.660"W	7750.31	147.108	0.29	0.23	0.17
16369.00	92.460	132.030	8125.95	7630.49	-6571.78	4277.75	1768707.21	433939.57	39°41'18.630"N	80°19'18.787"W	7841.40	146.939	2.08	1.07	-1.79
16464.00	93.480	132.530	8121.03	7725.33	-6635.61	4347.94	1768777.40	433875.75	39°41'18.006"N	80°19'17.867"W	7933.21	146.765	1.20	1.07	0.53
16558.00	93.450	131.490	8115.35	7819.12	-6698.98	4417.66	1768847.11	433812.96	39°41'17.391"N	80°19'16.968"W	8023.98	146.595	1.10	-0.03	-1.11
16652.00	92.370	133.010	8110.57	7912.97	-6761.52	4487.14	1768916.59	433749.85	39°41'16.774"N	80°19'16.072"W	8114.96	146.431	1.98	-1.15	1.62



Actual Wellpath Report

WDTN-5N-HSM AWP Proj: 21910'

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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot N
Area	Monongalia County, WV	Well	WDTN-5N-HSM
Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

WELLPATH DATA (237 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	("/100ft)	("/100ft)	("/100ft)
16747.00	91.320	133.210	8107.51	8007.92	-6826.41	4556.46	1768985.91	433684.96	39°41'16.139"N	80°19'15.178"W	8207.39	146.278	1.13	-1.11	0.21
16841.00	91.540	131.230	8105.17	8101.85	-6889.55	4626.05	1769055.49	433621.82	39°41'15.521"N	80°19'14.280"W	8298.57	146.120	2.12	0.23	-2.11
16935.00	91.420	131.990	8102.74	8195.76	-6951.95	4696.31	1769125.74	433559.43	39°41'14.911"N	80°19'13.374"W	8389.57	145.959	0.82	-0.13	0.81
17030.00	91.510	132.310	8100.31	8290.70	-7015.68	4766.72	1769196.15	433495.70	39°41'14.287"N	80°19'12.466"W	8481.83	145.806	0.35	0.09	0.34
17124.00	92.280	131.020	8097.20	8384.59	-7078.14	4836.90	1769266.33	433433.25	39°41'13.676"N	80°19'11.561"W	8572.96	145.653	1.60	0.82	-1.37
17219.00	92.160	131.010	8093.52	8479.42	-7140.44	4908.53	1769327.95	433370.96	39°41'13.067"N	80°19'10.638"W	8664.84	145.494	0.13	-0.13	-0.01
17314.00	92.500	134.690	8089.66	8574.32	-7204.98	4978.10	1769407.52	433306.42	39°41'12.436"N	80°19'09.740"W	8757.47	145.358	3.89	0.36	0.87
17408.00	93.240	135.510	8084.95	8668.17	-7271.48	5044.37	1769473.79	433232.92	39°41'11.784"N	80°19'08.885"W	8849.86	145.250	1.17	0.79	0.87
17502.00	93.110	133.020	8079.75	8762.01	-7336.98	5111.58	1769540.99	433174.42	39°41'11.143"N	80°19'08.018"W	8942.01	145.136	2.65	-0.14	-2.65
17597.00	93.230	133.500	8074.49	8856.86	-7401.99	5180.66	1769610.06	433109.42	39°41'10.507"N	80°19'07.127"W	9034.85	145.012	0.52	0.13	0.51
17691.00	93.200	133.450	8069.22	8950.72	-7466.56	5248.76	1769678.17	433044.85	39°41'09.875"N	80°19'06.248"W	9126.83	144.894	0.06	-0.03	-0.05
17786.00	92.060	133.200	8064.86	9045.61	-7531.67	5317.80	1769747.20	432979.74	39°41'09.238"N	80°19'05.357"W	9219.82	144.776	1.23	-1.20	-0.26
17880.00	92.030	134.200	8061.51	9139.55	-7596.57	5385.71	1769815.11	432914.84	39°41'08.602"N	80°19'04.481"W	9312.03	144.665	1.06	-0.03	1.06
17975.00	90.890	134.720	8059.09	9234.51	-7663.09	5453.50	1769882.89	432848.33	39°41'07.951"N	80°19'03.606"W	9405.51	144.562	1.32	-1.20	0.55
18069.00	90.920	135.310	8057.60	9328.47	-7729.57	5519.94	1769949.32	432781.86	39°41'07.300"N	80°19'02.749"W	9498.21	144.468	0.63	0.03	0.63
18163.00	90.990	136.440	8056.04	9422.38	-7797.03	5585.37	1770014.76	432714.40	39°41'06.639"N	80°19'01.904"W	9591.15	144.384	1.20	0.07	1.20
18258.00	90.990	136.200	8054.39	9517.26	-7865.73	5650.97	1770080.35	432645.71	39°41'05.966"N	80°19'01.057"W	9685.20	144.305	0.25	0.00	-0.25
18352.00	90.920	136.910	8052.83	9611.12	-7933.96	5715.60	1770144.98	432577.47	39°41'05.298"N	80°19'00.223"W	9778.34	144.231	0.76	-0.07	0.76
18447.00	90.960	137.860	8051.27	9705.91	-8003.87	5779.91	1770209.29	432507.58	39°41'04.613"N	80°18'59.392"W	9872.65	144.165	1.00	0.04	1.00
18541.00	90.830	136.430	8049.80	9799.71	-8072.76	5843.84	1770273.21	432438.68	39°41'03.937"N	80°18'58.566"W	9965.94	144.099	1.53	-0.14	-1.52
18636.00	90.920	131.910	8048.35	9894.67	-8138.93	5911.95	1770341.32	432372.52	39°41'03.290"N	80°18'57.687"W	10059.50	144.006	4.76	0.09	-4.76
18732.00	90.990	131.950	8046.75	9990.62	-8203.08	5983.37	1770412.72	432308.38	39°41'02.662"N	80°18'56.767"W	10153.38	143.893	0.08	0.07	0.04
18828.00	90.990	132.500	8045.09	10086.58	-8267.58	6054.44	1770483.80	432243.88	39°41'02.031"N	80°18'55.850"W	10247.40	143.784	0.57	0.00	0.57
18923.00	90.830	129.370	8043.58	10181.45	-8329.81	6126.19	1770555.54	432181.65	39°41'01.423"N	80°18'54.925"W	10340.02	143.667	3.30	-0.17	-3.29
19017.00	89.910	128.010	8042.97	10275.09	-8388.57	6199.56	1770628.91	432122.90	39°41'00.848"N	80°18'53.980"W	10430.85	143.534	1.75	-0.98	-1.45
19112.00	89.880	130.520	8043.15	10369.81	-8448.69	6273.11	1770702.45	432062.78	39°41'00.261"N	80°18'53.032"W	10522.94	143.406	2.64	-0.03	2.64
19206.00	90.520	130.540	8042.82	10463.67	-8509.77	6344.55	1770773.89	432001.70	39°40'59.664"N	80°18'52.111"W	10614.59	143.293	0.68	0.68	0.02
19304.00	90.590	130.790	8041.87	10561.54	-8573.63	6418.88	1770848.22	431937.85	39°40'59.039"N	80°18'51.153"W	10710.24	143.179	0.26	0.07	0.26
19398.00	90.520	131.260	8040.96	10655.44	-8635.33	6489.80	1770919.12	431876.15	39°40'58.436"N	80°18'50.239"W	10802.14	143.074	0.51	-0.07	0.50
19493.00	90.520	131.260	8040.10	10750.35	-8697.98	6561.21	1770990.53	431813.51	39°40'57.823"N	80°18'49.319"W	10895.15	142.971	0.00	0.00	0.00



Actual Wellpath Report

WDTN-5N-HSM AWP Proj: 21910'

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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot N
Area	Monongalia County, WV	Well	WDTN-5N-HSM
Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

WELLPATH DATA (237 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 ft/100ft	Build Rate ft/100ft	Turn Rate ft/100ft
19588.00	90.650	133.300	8039.13	10845.32	-8761.88	6631.49	1771060.81	431749.61	39°40'57.198"N	80°18'48.412"W	10988.50	142.880	2.15	0.14	2.15
19682.00	90.620	134.730	8038.09	10939.31	-8827.19	6699.08	1771128.40	431684.30	39°40'56.558"N	80°18'47.540"W	11081.38	142.805	1.52	-0.03	1.52
19777.00	90.520	134.620	8037.14	11034.29	-8893.98	6766.63	1771195.95	431617.52	39°40'55.904"N	80°18'46.669"W	11175.43	142.736	0.16	-0.11	-0.12
19871.00	90.590	136.920	8036.23	11128.21	-8961.33	6832.19	1771261.50	431550.17	39°40'55.245"N	80°18'45.822"W	11268.73	142.678	2.45	0.07	2.45
19966.00	90.310	139.260	8035.48	11222.91	-9032.02	6895.64	1771324.95	431479.49	39°40'54.552"N	80°18'45.003"W	11363.42	142.639	2.48	-0.29	2.46
20060.00	90.310	138.390	8034.98	11316.52	-9102.77	6957.53	1771386.83	431408.74	39°40'53.858"N	80°18'44.203"W	11457.21	142.608	0.93	0.00	-0.93
20155.00	90.280	137.750	8034.49	11411.23	-9173.45	7021.01	1771450.31	431338.07	39°40'53.165"N	80°18'43.383"W	11551.91	142.571	0.67	-0.03	-0.67
20250.00	90.220	135.210	8034.07	11506.11	-9242.33	7086.42	1771515.71	431269.19	39°40'52.490"N	80°18'42.538"W	11646.37	142.521	2.67	-0.06	-2.67
20344.00	90.370	133.770	8033.59	11600.09	-9308.20	7153.48	1771582.76	431203.32	39°40'51.845"N	80°18'41.673"W	11739.45	142.457	1.54	0.16	-1.53
20439.00	90.430	132.400	8032.92	11695.08	-9373.09	7222.85	1771652.14	431138.44	39°40'51.210"N	80°18'40.778"W	11833.19	142.382	1.44	0.06	-1.44
20533.00	90.280	131.010	8032.34	11789.03	-9435.62	7293.03	1771722.31	431075.91	39°40'50.599"N	80°18'39.874"W	11925.57	142.299	1.49	-0.16	-1.48
20628.00	90.280	129.390	8031.88	11883.85	-9496.94	7365.59	1771794.86	431014.59	39°40'49.999"N	80°18'38.938"W	12018.47	142.204	1.71	0.00	-1.71
20722.00	90.280	128.420	8031.42	11977.53	-9555.97	7438.74	1771868.01	430955.56	39°40'49.422"N	80°18'37.996"W	12109.97	142.101	1.03	0.00	-1.03
20816.00	90.030	129.810	8031.16	12071.24	-9615.27	7511.67	1771940.93	430896.27	39°40'48.843"N	80°18'37.057"W	12201.58	142.002	1.50	-0.27	1.48
20911.00	89.940	131.860	8031.19	12166.12	-9677.39	7583.54	1772012.80	430834.15	39°40'48.235"N	80°18'36.130"W	12294.79	141.917	2.16	-0.09	2.16
21005.00	89.880	131.550	8031.34	12260.07	-9739.93	7653.72	1772082.98	430771.62	39°40'47.623"N	80°18'35.225"W	12387.31	141.839	0.34	-0.06	-0.33
21100.00	89.970	133.150	8031.46	12355.04	-9803.92	7723.92	1772153.18	430707.63	39°40'46.997"N	80°18'34.320"W	12481.02	141.768	1.69	0.00	1.68
21194.00	89.970	135.680	8031.51	12449.03	-9869.70	7791.06	1772220.31	430641.85	39°40'46.353"N	80°18'33.454"W	12574.25	141.713	2.69	0.09	2.69
21288.00	90.000	138.150	8031.53	12542.86	-9938.35	7855.27	1772284.51	430573.21	39°40'45.680"N	80°18'32.625"W	12667.91	141.677	2.63	0.03	2.63
21382.00	89.910	138.700	8031.61	12636.53	-10008.67	7917.64	1772346.89	430502.89	39°40'44.991"N	80°18'31.819"W	12761.76	141.653	0.59	-0.10	0.59
21477.00	89.940	136.930	8031.73	12731.27	-10079.06	7981.44	1772410.68	430432.51	39°40'44.301"N	80°18'30.995"W	12856.55	141.625	1.86	0.03	-1.86
21571.00	89.970	134.100	8031.81	12825.21	-10146.12	8047.30	1772476.53	430365.46	39°40'43.644"N	80°18'30.145"W	12950.01	141.581	3.01	0.03	-3.01
21665.00	89.850	131.330	8031.95	12919.19	-10202.87	8116.36	1772544.59	430301.70	39°40'43.020"N	80°18'29.255"W	13042.88	141.517	2.95	-0.13	-2.95
21760.00	89.940	131.570	8032.13	13014.12	-10272.76	8187.56	1772616.79	430238.82	39°40'42.405"N	80°18'28.337"W	13136.43	141.445	0.27	0.09	0.25
21854.00	90.150	134.940	8032.05	13108.11	-10337.16	8256.01	1772688.24	430174.42	39°40'41.775"N	80°18'27.454"W	13229.46	141.387	3.59	0.22	3.59
21885.00	89.820	135.530	8032.06	13193.10	-10359.17	8277.84	1772707.06	430152.41	39°40'41.559"N	80°18'27.172"W	13260.29	141.372	2.18	-1.06	1.90
21910.00	89.820	135.530	8032.14	13164.08	-10377.02	8295.36	1772724.58	430134.57	39°40'41.384"N	80°18'26.946"W	13285.16	141.361	0.00	0.00	0.00



Actual Wellpath Report

WDTN-5N-HSM AWP Proj: 21910'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot N
Area	Monongalia County, WV	Well	WDTN-5N-HSM
Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

HOLE & CASING SECTIONS - Ref Wellbore: WDTN-5N-HSM AWB Ref Wellpath: WDTN-5N-HSM AWP Proj: 21910'											
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start EW [ft]	End N/S [ft]	End EW [ft]		
20in Conductor	29.00	129.00	100.00	29.00	129.00	0.00	0.00	-0.03	0.58		0.58
17.5in Open Hole	129.00	1377.00	1248.00	129.00	1376.98	-0.03	0.58	-3.92	5.23		5.23
13.375in Casing Surface	29.00	1347.10	1318.10	29.00	1347.08	0.00	0.00	-3.85	5.18		5.18
12.25in Open Hole	1377.00	2975.00	1598.00	1376.98	2974.94	-3.92	5.23	4.54	2.65		2.65
9.625in Casing Intermediate	29.00	2935.20	2906.20	29.00	2935.14	0.00	0.00	4.34	2.78		2.78
8.75in Open Hole	2975.00	7467.00	4492.00	2974.94	7196.70	4.54	2.65	-505.00	-1328.46		-1328.46
8.5in Open Hole	7467.00	21910.00	14443.00	7196.70	8032.14	-505.00	-1328.46	-10377.02	8295.36		8295.36
5.5in Casing Production	29.00	21910.00	21881.00	29.00	8032.14	0.00	0.00	-10377.02	8295.36		8295.36

TARGETS											
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape			
WDTN-5N-HSM LP Rev-3	7715.00	-1298.21	-1235.32	1763194.48	439212.83	39°42'10.242"N	80°20'29.921"W	point			
WDTN-5N-HSM AZI Rev-3	8035.00	-1597.73	-921.04	1763508.74	438913.33	39°42'07.311"N	80°20'25.864"W	point			
WDTN-5N-HSM LP Rev-6	8035.00	-1262.01	-1200.82	1763228.97	439249.02	39°42'10.603"N	80°20'29.484"W	point			
WDTN-5N-HSM BHL Rev-6	8077.51	-10379.29	8293.36	1772722.58	430132.30	39°40'41.362"N	80°18'26.971"W	point			

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Actual Wellpath Report

WDTN-5N-HSM AWP Proj: 21910'
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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot N
Area	Monongalia County, WV	Well	WDTN-5N-HSM
Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

WELLPATH COMPOSITION - Ref Wellbore: WDTN-5N-HSM AWB Ref Wellpath: WDTN-5N-HSM AWP Proj: 21910'

Start MD	End MD	Positional Uncertainty Model	Log Name/Comment	Wellbore
[ft]	[ft]			
29.00	1300.00	VESSI GyroFlex v4	01 VES Gyro <17-1/2"> (100'-1300')	WDTN-5N-HSM AWB
1300.00	2932.00	BHI NavTrak (Axial)	02 APS EM <12-1/4"> (1300')(1444'-2932')	WDTN-5N-HSM AWB
2932.00	7404.00	BHI NavTrak (Axial)	03 APS EM <8-3/4"> (2932')(2956'-7404')	WDTN-5N-HSM AWB
7404.00	21885.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8-1/2"> (7404')(7437'-21885')	WDTN-5N-HSM AWB
21885.00	21910.00	Blind Drilling (std)	Projection to bit	WDTN-5N-HSM AWB

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Actual Wellpath Report
 WDTN-5N-HSM AWP Proj: 21910'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot N
Area	Monongalia County, WV	Well	WDTN-5N-HSM
Field	Monongalia	Wellbore	WDTN-5N-HSM AWB
Facility	WTN-5 Pad		

COMMENTS

Wellpath general comments
 API: 47-061-01826-0000
 BH Job #: 109733832-A
 Rig: Patterson 801
 Duration: 5/9/2019-5/16/2019
 VES Gyro <17-1/2"> (100'-1300')
 APS EM <12-1/4"> (1300')(1444'-2932')
 APS EM <8-3/4"> (2932')(2956'-7404')
 BH AT Curve <8-1/2"> (7404')(7437'-21885')
 Projected MID at TD: 21910'

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