

**REFERENCE WELLPATH IDENTIFICATION**

Operator	GASTAR EXPLORATION INC.	Slot	Slot #3
Area	Marshall County, WV	Well	Armstrong 3H
Field	Marshall	Wellbore	Armstrong 3H (AWB)
Facility	Armstrong	Wellpath	Armstrong 3H (AWP) Proj: 12,868'
		Sidetrack	(none)

**WELLPATH DATA † = interpolated/extrapolated station**

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
0.00	0.00	314.56	0.00	0.00	0.00	0.00	516408.8	4400447.6	39°45'13.615"N	80°48'30.441"W	0.00	0.00	0.00
29.40	0.00	314.56	29.40	0.00	0.00	0.00	516408.8	4400447.6	39°45'13.615"N	80°48'30.441"W	0.00	0.00	0.00
119.40	0.59	314.56	119.40	0.43	0.33	-0.33	516408.6	4400447.6	39°45'13.618"N	80°48'30.445"W	0.46	314.56	0.66
219.40	0.62	318.47	219.39	1.39	1.09	-1.06	516408.4	4400447.9	39°45'13.626"N	80°48'30.454"W	1.52	315.95	0.05
319.40	0.69	334.49	319.39	2.32	2.04	-1.67	516408.2	4400448.2	39°45'13.635"N	80°48'30.462"W	2.64	320.63	0.20
419.40	0.94	3.26	419.38	3.03	3.40	-1.89	516408.2	4400448.6	39°45'13.649"N	80°48'30.465"W	3.89	330.99	0.47
519.40	1.13	10.17	519.36	3.51	5.19	-1.67	516408.2	4400449.1	39°45'13.666"N	80°48'30.462"W	5.45	342.21	0.23
619.40	1.25	12.40	619.34	3.90	7.23	-1.26	516408.4	4400449.8	39°45'13.687"N	80°48'30.457"W	7.34	350.13	0.13
719.40	1.56	37.06	719.31	3.74	9.38	-0.20	516408.7	4400450.4	39°45'13.708"N	80°48'30.443"W	9.38	358.76	0.67
819.40	1.80	52.63	819.27	2.59	11.42	1.87	516409.3	4400451.0	39°45'13.728"N	80°48'30.417"W	11.57	9.28	0.51
919.40	2.08	61.86	919.21	0.64	13.23	4.71	516410.2	4400451.6	39°45'13.746"N	80°48'30.380"W	14.04	19.62	0.42
1019.40	2.53	64.29	1019.13	-1.99	15.04	8.30	516411.3	4400452.1	39°45'13.764"N	80°48'30.334"W	17.18	28.90	0.46
1119.40	2.37	59.98	1119.04	-4.74	17.03	12.08	516412.4	4400452.7	39°45'13.783"N	80°48'30.286"W	20.88	35.35	0.24
1219.40	2.36	61.86	1218.95	-7.31	19.04	15.69	516413.5	4400453.3	39°45'13.803"N	80°48'30.239"W	24.67	39.49	0.08
1257.40	2.53	62.30	1256.92	-8.35	19.80	17.12	516414.0	4400453.6	39°45'13.810"N	80°48'30.221"W	26.17	40.85	0.45
1305.40	1.51	63.60	1304.89	-9.45	20.57	18.62	516414.4	4400453.8	39°45'13.818"N	80°48'30.202"W	27.75	42.16	2.13
1336.40	0.89	65.14	1335.88	-9.89	20.85	19.21	516414.6	4400453.9	39°45'13.821"N	80°48'30.194"W	28.35	42.65	2.00
1368.40	0.61	70.16	1367.88	-10.18	21.02	19.59	516414.7	4400454.0	39°45'13.822"N	80°48'30.189"W	28.73	43.00	0.90
1400.40	0.78	75.43	1399.87	-10.52	21.05	19.97	516414.8	4400454.0	39°45'13.823"N	80°48'30.184"W	29.02	43.49	1.08
1431.40	1.19	109.71	1430.87	-11.04	20.92	20.48	516415.0	4400453.9	39°45'13.822"N	80°48'30.178"W	29.28	44.39	1.53
1463.40	1.69	119.69	1462.86	-11.84	20.58	21.21	516415.2	4400453.8	39°45'13.818"N	80°48'30.169"W	29.55	45.86	1.74
1495.40	2.23	129.01	1494.84	-12.90	19.95	22.10	516415.5	4400453.6	39°45'13.812"N	80°48'30.157"W	29.78	47.92	1.95
1527.40	3.14	131.99	1526.81	-14.33	18.98	23.24	516415.8	4400453.3	39°45'13.802"N	80°48'30.143"W	30.00	50.76	2.88
1558.40	4.03	133.98	1557.75	-16.14	17.65	24.65	516416.2	4400452.9	39°45'13.789"N	80°48'30.125"W	30.32	54.40	2.90
1589.40	4.91	132.98	1588.65	-18.39	15.99	26.41	516416.8	4400452.4	39°45'13.773"N	80°48'30.102"W	30.87	58.80	2.85

51-01615

M.V. Department of Resources

**WELL PATH DATA † = interpolated/extrapolated station**

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
1621.40	5.60	136.07	1620.52	-21.10	13.93	28.49	516417.4	4400451.8	39°45'13.752"N	80°48'30.076"W	31.71	63.94	2.33
1652.40	6.13	138.29	1651.35	-23.97	11.61	30.64	516418.1	4400451.1	39°45'13.729"N	80°48'30.048"W	32.77	69.25	1.86
1716.40	6.84	141.75	1714.94	-30.36	6.06	35.27	516419.5	4400449.4	39°45'13.674"N	80°48'29.989"W	35.79	80.25	1.27
1779.40	7.52	142.34	1777.45	-37.19	-0.15	40.12	516421.0	4400447.5	39°45'13.613"N	80°48'29.927"W	40.12	90.21	1.09
1842.40	6.04	137.64	1840.01	-43.75	-5.86	44.87	516422.4	4400445.8	39°45'13.556"N	80°48'29.866"W	45.25	97.44	2.51
1906.40	5.68	137.16	1903.67	-49.66	-10.67	49.29	516423.8	4400444.3	39°45'13.509"N	80°48'29.810"W	50.43	102.22	0.57
1937.40	5.78	141.59	1934.52	-52.41	-13.02	51.30	516424.4	4400443.6	39°45'13.485"N	80°48'29.784"W	52.93	104.24	1.46
1969.40	6.22	147.31	1966.34	-55.24	-15.74	53.24	516425.0	4400442.8	39°45'13.458"N	80°48'29.759"W	55.52	106.47	2.32
2001.40	6.68	154.68	1998.14	-58.03	-18.88	54.97	516425.5	4400441.8	39°45'13.427"N	80°48'29.737"W	58.13	108.96	2.96
2033.40	7.06	162.11	2029.91	-60.67	-22.44	56.37	516425.9	4400440.7	39°45'13.392"N	80°48'29.720"W	60.67	111.70	3.02
2064.40	7.13	168.54	2060.68	-62.97	-26.13	57.34	516426.2	4400439.6	39°45'13.356"N	80°48'29.707"W	63.02	114.50	2.57
2095.40	7.05	173.68	2091.44	-64.94	-29.91	57.93	516426.4	4400438.4	39°45'13.318"N	80°48'29.700"W	65.20	117.31	2.06
2127.40	7.41	175.02	2123.18	-66.83	-33.92	58.33	516426.5	4400437.2	39°45'13.279"N	80°48'29.695"W	67.47	120.18	1.24
2190.40	8.07	174.33	2185.61	-70.75	-42.37	59.12	516426.7	4400434.6	39°45'13.195"N	80°48'29.685"W	72.73	125.63	1.06
2253.40	8.77	170.50	2247.93	-75.35	-51.50	60.35	516427.1	4400431.9	39°45'13.105"N	80°48'29.669"W	79.34	130.48	1.42
2316.40	8.92	172.65	2310.18	-80.29	-61.08	61.76	516427.6	4400428.9	39°45'13.010"N	80°48'29.652"W	86.87	134.68	0.58
2379.40	7.86	175.14	2372.51	-84.66	-70.22	62.75	516427.9	4400426.2	39°45'12.920"N	80°48'29.639"W	94.18	138.21	1.78
2442.40	8.08	174.13	2434.90	-88.71	-78.92	63.57	516428.1	4400423.5	39°45'12.834"N	80°48'29.629"W	101.34	141.15	0.41
2506.40	8.58	172.41	2498.22	-93.21	-88.12	64.66	516428.4	4400420.7	39°45'12.743"N	80°48'29.615"W	109.30	143.73	0.87
2569.40	8.62	171.86	2560.51	-97.93	-97.46	65.95	516428.8	4400417.9	39°45'12.651"N	80°48'29.599"W	117.67	145.91	0.15
2632.40	7.48	173.26	2622.89	-102.31	-106.20	67.10	516429.2	4400415.2	39°45'12.564"N	80°48'29.584"W	125.62	147.71	1.84
2688.40	7.44	171.22	2678.42	-105.94	-113.41	68.08	516429.5	4400413.0	39°45'12.493"N	80°48'29.572"W	132.27	149.02	0.48
2736.40	6.19	165.93	2726.08	-109.07	-118.99	69.19	516429.8	4400411.3	39°45'12.438"N	80°48'29.558"W	137.64	149.82	2.91
2799.40	6.83	166.64	2788.67	-113.27	-125.93	70.88	516430.3	4400409.2	39°45'12.369"N	80°48'29.537"W	144.50	150.63	1.02
2863.40	8.73	169.26	2852.08	-118.13	-134.40	72.66	516430.9	4400406.6	39°45'12.285"N	80°48'29.514"W	152.79	151.60	3.02
2927.40	10.89	176.06	2915.14	-123.44	-145.21	73.98	516431.3	4400403.3	39°45'12.179"N	80°48'29.497"W	162.97	153.00	3.82
2990.40	12.11	184.57	2976.88	-128.07	-157.73	73.87	516431.2	4400399.5	39°45'12.055"N	80°48'29.499"W	174.17	154.91	3.31
3053.40	11.90	184.96	3038.50	-132.01	-170.79	72.78	516430.9	4400395.5	39°45'11.926"N	80°48'29.514"W	185.65	156.92	0.36
3116.40	12.53	180.35	3100.08	-136.48	-184.10	72.17	516430.7	4400391.5	39°45'11.794"N	80°48'29.522"W	197.74	158.59	1.84
3179.40	11.32	177.37	3161.72	-141.63	-197.11	72.42	516430.8	4400387.5	39°45'11.666"N	80°48'29.519"W	209.99	159.83	2.15
3243.40	8.98	174.00	3224.71	-146.64	-208.35	73.23	516431.0	4400384.1	39°45'11.555"N	80°48'29.509"W	220.84	160.64	3.77

51.016/5

Environmental Protection  
 Division  
 U.S. Environmental Protection Agency  
 Washington, D.C. 20460

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3305.40	8.92	171.02	3285.96	-151.42	-217.91	74.48	516431.4	4400381.2	39°45'11.460"N	80°48'29.493"W	230.29	161.13	0.75
3368.40	8.96	165.62	3348.19	-156.88	-227.49	76.46	516432.0	4400378.2	39°45'11.365"N	80°48'29.468"W	239.99	161.42	1.33
3431.40	8.97	174.11	3410.43	-162.12	-237.13	78.19	516432.6	4400375.3	39°45'11.270"N	80°48'29.446"W	249.68	161.75	2.10
3494.40	8.86	179.29	3472.67	-166.33	-246.86	78.75	516432.7	4400372.3	39°45'11.174"N	80°48'29.439"W	259.12	162.31	1.29
3557.40	8.55	179.91	3534.94	-170.00	-256.40	78.82	516432.8	4400369.4	39°45'11.080"N	80°48'29.439"W	268.24	162.91	0.51
3620.40	8.52	178.16	3597.24	-173.68	-265.74	78.97	516432.8	4400366.6	39°45'10.987"N	80°48'29.437"W	277.23	163.45	0.41
3683.40	9.13	174.14	3659.50	-177.94	-275.38	79.63	516433.0	4400363.6	39°45'10.892"N	80°48'29.429"W	286.66	163.87	1.38
3746.40	9.14	172.56	3721.70	-182.77	-285.32	80.79	516433.4	4400360.6	39°45'10.794"N	80°48'29.414"W	296.53	164.19	0.40
3809.40	9.24	172.83	3783.89	-187.73	-295.30	82.07	516433.7	4400357.6	39°45'10.695"N	80°48'29.398"W	306.49	164.47	0.17
3873.40	9.32	172.31	3847.05	-192.84	-305.53	83.41	516434.1	4400354.5	39°45'10.594"N	80°48'29.381"W	316.71	164.73	0.18
3936.40	9.38	172.76	3909.22	-197.91	-315.68	84.74	516434.6	4400351.4	39°45'10.494"N	80°48'29.364"W	326.85	164.97	0.15
3999.40	9.38	171.93	3971.37	-203.03	-325.85	86.10	516435.0	4400348.3	39°45'10.393"N	80°48'29.347"W	337.04	165.20	0.21
4061.40	9.31	170.41	4032.55	-208.23	-335.80	87.65	516435.4	4400345.2	39°45'10.295"N	80°48'29.328"W	347.05	165.37	0.41
4124.40	8.93	171.47	4094.76	-213.41	-345.66	89.22	516435.9	4400342.2	39°45'10.197"N	80°48'29.308"W	356.99	165.53	0.66
4186.40	8.95	169.19	4156.00	-218.51	-355.16	90.84	516436.4	4400339.3	39°45'10.103"N	80°48'29.287"W	366.59	165.65	0.57
4248.40	8.92	168.44	4217.25	-223.81	-364.60	92.71	516437.0	4400336.5	39°45'10.010"N	80°48'29.264"W	376.21	165.73	0.19
4311.40	9.25	172.39	4279.46	-229.05	-374.41	94.36	516437.5	4400333.5	39°45'09.913"N	80°48'29.243"W	386.12	165.86	1.12
4374.40	9.06	170.07	4341.66	-234.21	-384.31	95.88	516438.0	4400330.5	39°45'09.815"N	80°48'29.224"W	396.09	165.99	0.66
4437.40	8.95	167.37	4403.88	-239.65	-393.98	97.81	516438.5	4400327.5	39°45'09.719"N	80°48'29.199"W	405.94	166.06	0.69
4497.40	8.71	176.87	4463.17	-244.27	-403.07	99.08	516438.9	4400324.7	39°45'09.630"N	80°48'29.183"W	415.07	166.19	2.46
4561.40	8.56	186.05	4526.45	-247.67	-412.65	98.84	516438.9	4400321.8	39°45'09.535"N	80°48'29.186"W	424.32	166.53	2.16
4623.40	8.66	184.05	4587.75	-250.41	-421.89	98.03	516438.6	4400319.0	39°45'09.444"N	80°48'29.197"W	433.13	166.92	0.51
4686.40	8.80	181.13	4650.02	-253.63	-431.44	97.60	516438.5	4400316.1	39°45'09.349"N	80°48'29.203"W	442.34	167.25	0.74
4749.40	9.28	178.01	4712.24	-257.45	-441.34	97.68	516438.5	4400313.1	39°45'09.251"N	80°48'29.202"W	452.02	167.52	1.09
4812.40	9.80	175.01	4774.37	-261.99	-451.75	98.32	516438.7	4400309.9	39°45'09.149"N	80°48'29.194"W	462.33	167.72	1.14
4875.40	10.08	174.81	4836.42	-266.98	-462.59	99.29	516439.0	4400306.6	39°45'09.041"N	80°48'29.182"W	473.12	167.89	0.45
4938.40	10.34	176.63	4898.43	-271.97	-473.72	100.12	516439.2	4400303.2	39°45'08.931"N	80°48'29.172"W	484.18	168.07	0.66
5001.40	9.80	176.08	4960.46	-276.77	-484.71	100.82	516439.5	4400299.9	39°45'08.823"N	80°48'29.163"W	495.09	168.25	0.87
5064.40	9.04	176.56	5022.61	-281.28	-495.00	101.48	516439.7	4400296.7	39°45'08.721"N	80°48'29.155"W	505.30	168.41	1.21
5127.40	9.58	172.57	5084.78	-286.02	-505.14	102.45	516440.0	4400293.6	39°45'08.621"N	80°48'29.143"W	515.43	168.54	1.34
5189.40	10.02	169.62	5145.87	-291.48	-515.56	104.09	516440.5	4400290.5	39°45'08.518"N	80°48'29.122"W	525.97	168.59	1.08

51-01615

Environmental Protection  
 Department of  
 Oil and Gas  
 AHS 05/015  
 WED

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5252.40	8.91	167.52	5208.01	-297.22	-525.72	106.14	516441.1	4400287.4	39°45'08.417"N	80°48'29.096"W	536.33	168.59	1.84
5316.40	8.05	170.15	5271.31	-302.42	-534.97	107.97	516441.6	4400284.6	39°45'08.326"N	80°48'29.073"W	545.76	168.59	1.47
5379.40	8.45	169.07	5333.66	-307.30	-543.86	109.61	516442.1	4400281.8	39°45'08.238"N	80°48'29.052"W	554.80	168.61	0.68
5441.40	8.18	180.48	5395.01	-311.42	-552.75	110.43	516442.4	4400279.1	39°45'08.150"N	80°48'29.042"W	563.67	168.70	2.69
5504.40	8.59	180.58	5457.34	-314.82	-561.93	110.35	516442.4	4400276.3	39°45'08.059"N	80°48'29.043"W	572.67	168.89	0.65
5568.40	8.92	178.87	5520.59	-318.56	-571.68	110.40	516442.4	4400273.4	39°45'07.963"N	80°48'29.043"W	582.24	169.07	0.66
5632.40	9.24	176.83	5583.79	-322.73	-581.77	110.78	516442.5	4400270.3	39°45'07.863"N	80°48'29.038"W	592.22	169.22	0.71
5663.40	9.63	176.48	5614.37	-324.92	-586.84	111.08	516442.6	4400268.8	39°45'07.813"N	80°48'29.035"W	597.26	169.28	1.27
5718.00	10.22	176.73	5668.16	-328.99	-596.23	111.63	516442.8	4400265.9	39°45'07.720"N	80°48'29.028"W	606.59	169.40	1.08
5812.00	8.42	165.39	5760.92	-336.71	-611.22	113.84	516443.4	4400261.3	39°45'07.572"N	80°48'29.000"W	621.73	169.45	2.73
5907.00	7.72	191.03	5855.01	-342.13	-624.22	114.38	516443.6	4400257.4	39°45'07.444"N	80°48'28.993"W	634.61	169.62	3.83
6001.00	9.44	227.89	5948.02	-340.02	-635.59	107.45	516441.5	4400253.9	39°45'07.331"N	80°48'29.082"W	644.61	170.41	6.01
6096.00	17.08	252.64	6040.49	-325.86	-645.00	88.31	516435.6	4400251.0	39°45'07.239"N	80°48'29.328"W	651.02	172.20	9.85
6191.00	25.02	272.72	6129.19	-296.09	-648.22	54.83	516425.4	4400250.1	39°45'07.208"N	80°48'29.756"W	650.54	175.17	11.18
6285.00	32.75	288.58	6211.55	-251.85	-639.15	10.74	516412.0	4400252.8	39°45'07.298"N	80°48'30.321"W	639.24	179.04	11.52
6380.00	41.42	290.07	6287.27	-194.70	-620.14	-43.24	516395.6	4400258.6	39°45'07.487"N	80°48'31.011"W	621.65	183.99	9.17
6475.00	50.97	289.53	6352.95	-126.28	-596.97	-107.68	516375.9	4400265.7	39°45'07.718"N	80°48'31.836"W	606.60	190.23	10.06
6570.00	58.57	289.40	6407.71	-48.83	-571.13	-180.79	516353.7	4400273.5	39°45'07.975"N	80°48'32.771"W	599.06	197.57	8.00
6665.00	66.17	289.73	6451.74	35.19	-542.96	-260.04	516329.5	4400282.1	39°45'08.255"N	80°48'33.785"W	602.02	205.59	8.01
6759.00	75.82	290.34	6482.31	123.89	-512.53	-343.43	516304.1	4400291.4	39°45'08.557"N	80°48'34.852"W	616.96	213.83	10.28
6853.00	81.97	290.90	6500.41	216.05	-480.06	-429.72	516277.8	4400301.3	39°45'08.880"N	80°48'35.956"W	644.29	221.83	6.57
6948.00	87.97	289.64	6508.74	310.58	-447.30	-518.45	516250.8	4400311.3	39°45'09.206"N	80°48'37.091"W	684.74	229.21	6.45
6987.00	90.00	290.15	6509.43	349.54	-434.03	-555.11	516239.6	4400315.3	39°45'09.337"N	80°48'37.560"W	704.65	231.98	5.37
7044.00	89.97	291.23	6509.44	406.52	-413.89	-608.44	516223.4	4400321.4	39°45'09.538"N	80°48'38.242"W	735.87	235.78	1.90
7138.00	90.03	289.64	6509.44	500.47	-381.07	-696.52	516196.5	4400331.4	39°45'09.864"N	80°48'39.369"W	793.95	241.32	1.69
7233.00	90.74	291.38	6508.80	595.42	-347.79	-785.49	516169.4	4400341.6	39°45'10.195"N	80°48'40.507"W	859.04	246.12	1.98
7328.00	90.68	291.63	6507.63	690.41	-312.96	-873.87	516142.5	4400352.2	39°45'10.541"N	80°48'41.638"W	928.22	250.30	0.27
7424.00	91.14	292.40	6506.10	786.39	-276.98	-962.86	516115.4	4400363.2	39°45'10.898"N	80°48'42.776"W	1001.91	253.95	0.93
7518.00	91.17	293.07	6504.21	880.37	-240.66	-1049.54	516089.0	4400374.2	39°45'11.259"N	80°48'43.885"W	1076.78	257.09	0.71
7613.00	90.43	292.44	6502.88	975.36	-203.92	-1137.13	516062.3	4400385.4	39°45'11.624"N	80°48'45.006"W	1155.27	259.83	1.02
7709.00	89.94	293.21	6502.57	1071.35	-166.68	-1225.61	516035.3	4400396.8	39°45'11.993"N	80°48'46.138"W	1236.90	262.26	0.95

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
7804.00	89.57	294.39	6502.98	1166.31	-128.35	-1312.53	516008.8	4400408.4	39°45'12.374"N	80°48'47.249"W	1318.79	264.42	1.30
7899.00	89.48	292.86	6503.76	1261.28	-90.28	-1399.57	515982.3	4400420.0	39°45'12.752"N	80°48'48.363"W	1402.47	266.31	1.61
7995.00	89.23	292.77	6504.84	1357.27	-53.06	-1488.05	515955.4	4400431.4	39°45'13.122"N	80°48'49.495"W	1488.99	267.96	0.28
8090.00	89.14	292.70	6506.20	1452.25	-16.35	-1575.66	515928.7	4400442.6	39°45'13.486"N	80°48'50.615"W	1575.74	269.41	0.12
8184.00	89.78	291.32	6507.08	1546.25	18.88	-1662.80	515902.1	4400453.3	39°45'13.836"N	80°48'51.730"W	1662.91	270.65	1.62
8279.00	90.15	290.68	6507.14	1641.22	52.92	-1751.49	515875.1	4400463.7	39°45'14.175"N	80°48'52.865"W	1752.29	271.73	0.78
8373.00	90.68	287.60	6506.46	1735.07	83.74	-1840.28	515848.0	4400473.1	39°45'14.481"N	80°48'54.001"W	1842.19	272.61	3.32
8468.00	91.11	287.34	6504.98	1829.73	112.26	-1930.89	515820.4	4400481.8	39°45'14.765"N	80°48'55.160"W	1934.15	273.33	0.53
8562.00	90.43	288.66	6503.71	1923.46	141.30	-2020.28	515793.2	4400490.6	39°45'15.053"N	80°48'56.304"W	2025.21	274.00	1.58
8657.00	90.43	289.27	6503.00	2018.30	172.17	-2110.12	515765.8	4400500.0	39°45'15.360"N	80°48'57.454"W	2117.13	274.67	0.64
8751.00	90.46	290.66	6502.27	2112.22	204.27	-2198.46	515738.9	4400509.8	39°45'15.679"N	80°48'58.584"W	2207.93	275.31	1.48
8846.00	90.52	293.53	6501.46	2207.21	240.00	-2286.47	515712.1	4400520.7	39°45'16.034"N	80°48'59.710"W	2299.03	275.99	3.02
8941.00	90.68	293.55	6500.46	2302.18	277.94	-2373.56	515685.6	4400532.2	39°45'16.411"N	80°49'00.824"W	2389.78	276.68	0.17
9036.00	90.52	293.29	6499.47	2397.16	315.69	-2460.73	515659.0	4400543.7	39°45'16.786"N	80°49'01.939"W	2480.90	277.31	0.32
9130.00	90.49	294.62	6498.64	2491.11	353.86	-2546.63	515632.8	4400555.4	39°45'17.165"N	80°49'03.038"W	2571.10	277.91	1.42
9225.00	90.68	294.11	6497.67	2586.04	393.05	-2633.16	515606.5	4400567.3	39°45'17.554"N	80°49'04.145"W	2662.34	278.49	0.57
9320.00	90.62	293.72	6496.59	2680.99	431.56	-2720.00	515580.0	4400579.0	39°45'17.936"N	80°49'05.256"W	2754.02	279.02	0.42
9414.00	90.68	293.55	6495.52	2774.96	469.24	-2806.11	515553.8	4400590.5	39°45'18.310"N	80°49'06.357"W	2845.07	279.49	0.19
9509.00	90.62	294.00	6494.45	2869.92	507.54	-2893.04	515527.3	4400602.2	39°45'18.690"N	80°49'07.469"W	2937.23	279.95	0.48
9603.00	90.25	293.24	6493.73	2963.88	545.20	-2979.17	515501.0	4400613.7	39°45'19.064"N	80°49'08.571"W	3028.64	280.37	0.90
9699.00	90.49	294.58	6493.11	3059.84	584.10	-3066.92	515474.3	4400625.5	39°45'19.451"N	80°49'09.694"W	3122.05	280.78	1.42
9794.00	90.49	291.84	6492.30	3154.81	621.54	-3154.22	515447.7	4400636.9	39°45'19.822"N	80°49'10.811"W	3214.88	281.15	2.88
9889.00	90.31	291.61	6491.64	3249.81	656.70	-3242.47	515420.8	4400647.6	39°45'20.172"N	80°49'11.940"W	3308.31	281.45	0.31
9984.00	90.43	292.93	6491.02	3344.80	692.70	-3330.38	515394.0	4400658.6	39°45'20.529"N	80°49'13.064"W	3401.66	281.75	1.40
10079.00	90.49	294.57	6490.26	3439.76	730.96	-3417.33	515367.5	4400670.3	39°45'20.909"N	80°49'14.177"W	3494.63	282.07	1.73
10172.00	90.68	291.22	6489.31	3532.74	767.14	-3502.99	515341.5	4400681.3	39°45'21.268"N	80°49'15.272"W	3586.00	282.35	3.61
10265.00	90.58	290.52	6488.29	3625.71	800.26	-3589.88	515315.0	4400691.4	39°45'21.597"N	80°49'16.384"W	3678.00	282.57	0.76
10360.00	90.74	292.06	6487.19	3720.68	834.75	-3678.39	515288.0	4400701.9	39°45'21.940"N	80°49'17.517"W	3771.92	282.79	1.63
10455.00	90.68	293.58	6486.02	3815.67	871.60	-3765.94	515261.3	4400713.1	39°45'22.306"N	80°49'18.637"W	3865.49	283.03	1.60
10549.00	90.55	292.84	6485.01	3909.65	908.64	-3852.33	515235.0	4400724.4	39°45'22.673"N	80°49'19.742"W	3958.04	283.27	0.80
10645.00	90.59	293.20	6484.05	4005.64	946.18	-3940.68	515208.1	4400735.8	39°45'23.046"N	80°49'20.872"W	4052.68	283.50	0.38

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10740.00	90.71	294.15	6482.97	4100.60	984.32	-4027.68	515181.6	4400747.5	39°45'23.425"N	80°49'21.985"W	4146.21	283.73	1.01
10835.00	90.22	295.21	6482.20	4195.51	1023.99	-4114.00	515155.3	4400759.5	39°45'23.819"N	80°49'23.089"W	4239.52	283.98	1.23
10930.00	90.25	292.93	6481.81	4290.45	1062.73	-4200.73	515128.9	4400771.3	39°45'24.203"N	80°49'24.199"W	4333.07	284.20	2.40
11025.00	90.68	290.42	6481.04	4385.44	1097.81	-4289.00	515102.0	4400782.0	39°45'24.552"N	80°49'25.328"W	4427.27	284.36	2.68
11120.00	90.59	289.37	6479.99	4480.35	1130.14	-4378.33	515074.8	4400791.9	39°45'24.873"N	80°49'26.471"W	4521.83	284.47	1.11
11215.00	90.65	289.06	6478.96	4575.21	1161.40	-4468.03	515047.4	4400801.4	39°45'25.183"N	80°49'27.619"W	4616.51	284.57	0.33
11308.00	90.49	290.84	6478.04	4668.13	1193.13	-4555.44	515020.8	4400811.1	39°45'25.499"N	80°49'28.738"W	4709.10	284.68	1.92
11404.00	91.20	293.54	6476.62	4764.11	1229.38	-4644.31	514993.7	4400822.1	39°45'25.859"N	80°49'29.875"W	4804.27	284.83	2.91
11498.00	90.40	292.88	6475.31	4858.09	1266.42	-4730.69	514967.4	4400833.4	39°45'26.226"N	80°49'30.980"W	4897.27	284.99	1.10
11592.00	90.43	291.78	6474.63	4952.08	1302.14	-4817.64	514940.9	4400844.3	39°45'26.581"N	80°49'32.092"W	4990.51	285.13	1.17
11687.00	90.83	292.34	6473.58	5047.08	1337.81	-4905.68	514914.1	4400855.2	39°45'26.935"N	80°49'33.219"W	5084.83	285.25	0.72
11782.00	90.92	291.32	6472.13	5142.06	1373.13	-4993.86	514887.2	4400865.9	39°45'27.286"N	80°49'34.347"W	5179.20	285.37	1.08
11877.00	91.02	290.99	6470.52	5237.03	1407.41	-5082.44	514860.2	4400876.4	39°45'27.627"N	80°49'35.480"W	5273.71	285.48	0.36
11972.00	90.18	292.59	6469.53	5332.02	1442.68	-5170.65	514833.4	4400887.1	39°45'27.977"N	80°49'36.609"W	5368.14	285.59	1.90
12068.00	90.22	293.55	6469.19	5428.01	1480.29	-5258.97	514806.4	4400898.6	39°45'28.350"N	80°49'37.739"W	5463.33	285.72	1.00
12163.00	90.58	294.98	6468.53	5522.94	1519.33	-5345.57	514780.1	4400910.5	39°45'28.738"N	80°49'38.847"W	5557.29	285.87	1.55
12257.00	90.52	294.37	6467.63	5616.85	1558.57	-5430.98	514754.0	4400922.4	39°45'29.127"N	80°49'39.939"W	5650.20	286.01	0.65
12352.00	90.58	293.42	6466.72	5711.81	1597.05	-5517.83	514727.6	4400934.1	39°45'29.509"N	80°49'41.050"W	5744.31	286.14	1.00
12446.00	90.58	294.05	6465.76	5805.77	1634.88	-5603.88	514701.4	4400945.7	39°45'29.884"N	80°49'42.151"W	5837.49	286.26	0.67
12541.00	90.18	292.74	6465.13	5900.75	1672.60	-5691.06	514674.8	4400957.2	39°45'30.259"N	80°49'43.267"W	5931.76	286.38	1.44
12636.00	90.18	292.67	6464.84	5995.74	1709.27	-5778.70	514648.1	4400968.3	39°45'30.623"N	80°49'44.388"W	6026.19	286.48	0.07
12729.00	90.25	292.13	6464.49	6088.74	1744.71	-5864.68	514621.9	4400979.1	39°45'30.975"N	80°49'45.488"W	6118.70	286.57	0.59
12845.00	90.31	289.42	6463.92	6204.69	1785.85	-5973.13	514588.8	4400991.7	39°45'31.383"N	80°49'46.876"W	6234.39	286.65	2.34
12868.00	90.31	289.42	6463.80	6227.66	1793.50	-5994.82	514582.2	4400994.0	39°45'31.459"N	80°49'47.153"W	6257.36	286.66	0.00

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