



GASTAR EXPLORATION USA, INC.

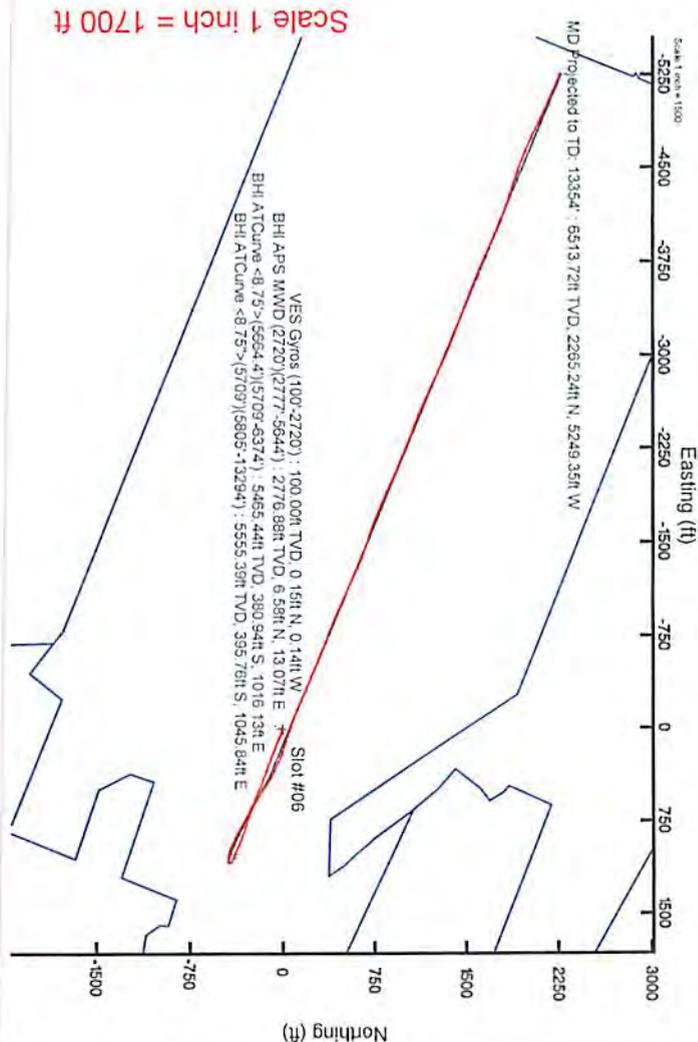
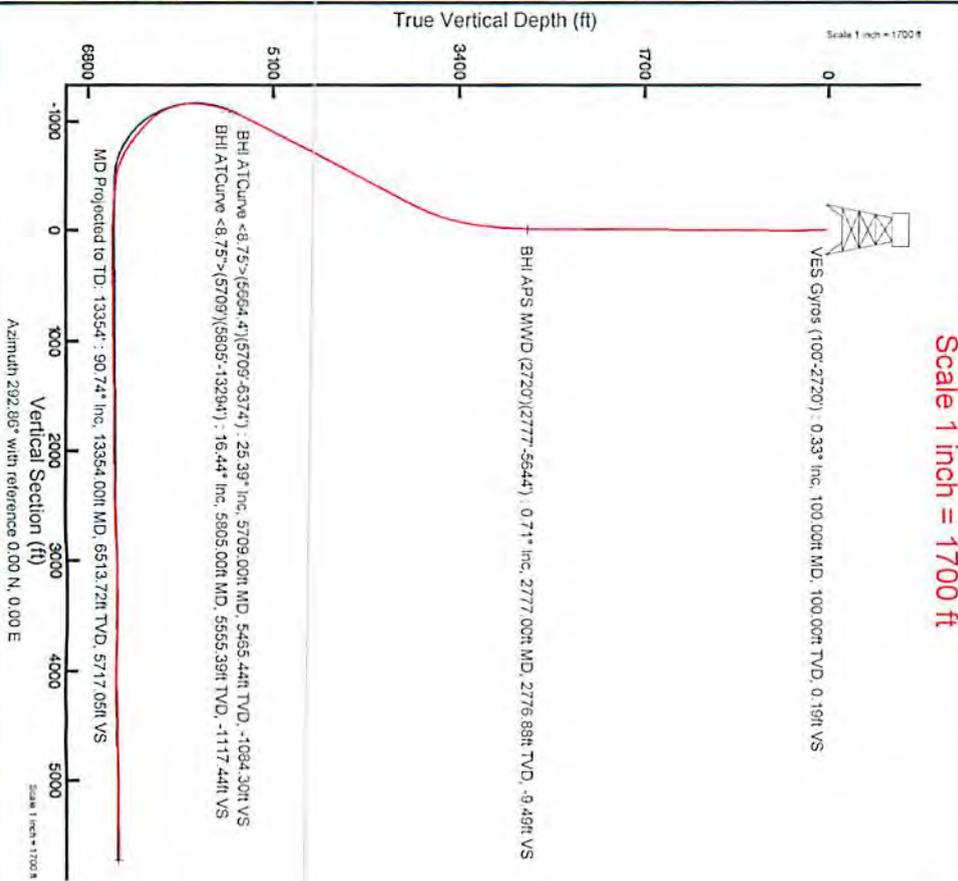
Location: Marshall County, WV
 Field: Marshall
 Facility: Blake Unit



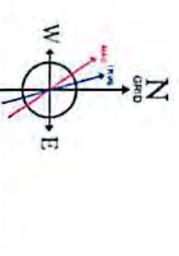
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10/30/2015

Plot reference wellpath is Blake 6H ST01 PWB Rev:8.0		Grid System: NAD83 / UTM Zone 17 North, US feet	
True vertical depths are referenced to Normac 323 (RT)		North Reference: Grid north	
Measured depths are referenced to Normac 323 (RT)		Scale: True distance	
Normac 323 (RT) to Mean Sea Level: 1355.4 feet		Depth: are in feet	
Mean Sea Level to Mudline (At Slot, Slot #06): -1326 feet		Coordinates are in feet	
Coordinates are in feet referenced to Slot		Created by: Almapa on 10/30/2014	
Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude
Blake Unit	1695207.000	14440981.700	39°45'50.736"N
Slot	Local N (ft)	Local E (ft)	Grid North (US ft)
Slot #06	93.04	36.61	1695243.600
			39°45'51.655"N
			80°48'17.619"W
			29.4ft
			-1326ft
			1355.4ft



API: 47-051-01701-0100
 BHI Job #: Blake 6H ST01
 Rig: Normac 323
 Duration: 10.25.2014 - 10.29.2014



BGGM (1/4/05) 0.10 2016 (0) Op: 67.21° Flnt: 53451.9 FT
 Magnetic North is 8.55 degrees West of True North (at 10/16/2014)
 Grid North is 0.12 degrees East of True North
 To correct azimuth from True to Grid subtract 0.12 degrees
 To correct azimuth from Magnetic to Grid subtract 8.67 degrees

51-01701

REFERENCE WELLPATH IDENTIFICATION

Operator	GASTAR EXPLORATION INC.	Slot	Slot #06
Area	Marshall County, WV	Well	Blake 6H ST01
Field	Marshall	Wellbore	Blake 6H ST01 (AWB)
Facility	Blake	Wellpath	Blake 6H ST01 (AWP) Proj: 13.354'
		Sidetrack	Blake 6H (AWB) at 5709.00 MD

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]
0.00	0.00	316.65	0.00	0.00	0.00	0.00	516711.3	4401620.9	39°45'51.655"N	80°48'17.619"W	0.00	0.00	0.00
29.40	0.00	316.65	29.40	0.00	0.00	0.00	516711.3	4401620.9	39°45'51.655"N	80°48'17.619"W	0.00	0.00	0.00
120.40	0.43	316.65	120.40	0.31	0.25	-0.23	516711.2	4401621.0	39°45'51.657"N	80°48'17.622"W	0.34	316.65	0.47
220.40	0.31	316.38	220.40	0.90	0.72	-0.68	516711.1	4401621.2	39°45'51.662"N	80°48'17.628"W	0.99	316.58	0.12
320.40	0.08	344.25	320.40	1.20	0.98	-0.88	516711.0	4401621.2	39°45'51.664"N	80°48'17.631"W	1.32	317.94	0.24
420.40	0.18	357.05	420.40	1.31	1.20	-0.91	516711.0	4401621.3	39°45'51.667"N	80°48'17.631"W	1.51	322.88	0.10
520.40	0.39	85.52	520.40	1.07	1.39	-0.58	516711.1	4401621.4	39°45'51.668"N	80°48'17.627"W	1.50	337.32	0.43
620.40	0.57	117.83	620.39	0.28	1.18	0.20	516711.3	4401621.3	39°45'51.666"N	80°48'17.617"W	1.20	9.57	0.32
720.40	0.53	154.42	720.39	-0.57	0.53	0.84	516711.5	4401621.1	39°45'51.660"N	80°48'17.609"W	0.99	57.59	0.35
820.40	0.38	154.94	820.38	-1.16	-0.19	1.18	516711.6	4401620.9	39°45'51.653"N	80°48'17.604"W	1.19	98.92	0.15
920.40	0.09	132.31	920.38	-1.48	-0.54	1.38	516711.7	4401620.8	39°45'51.649"N	80°48'17.602"W	1.48	111.35	0.30
1020.40	0.33	118.67	1020.38	-1.84	-0.73	1.69	516711.8	4401620.7	39°45'51.647"N	80°48'17.598"W	1.84	113.37	0.24
1120.40	0.14	101.56	1120.38	-2.25	-0.89	2.06	516711.9	4401620.7	39°45'51.646"N	80°48'17.593"W	2.25	113.41	0.20
1220.40	0.41	86.76	1220.38	-2.69	-0.90	2.54	516712.1	4401620.7	39°45'51.646"N	80°48'17.587"W	2.69	109.45	0.28
1320.40	0.30	70.86	1320.38	-3.20	-0.79	3.14	516712.2	4401620.7	39°45'51.647"N	80°48'17.579"W	3.24	104.12	0.15
1420.40	0.90	88.96	1420.37	-4.11	-0.69	4.17	516712.6	4401620.7	39°45'51.648"N	80°48'17.566"W	4.23	99.39	0.62
1520.40	0.93	91.18	1520.36	-5.59	-0.69	5.77	516713.0	4401620.7	39°45'51.648"N	80°48'17.545"W	5.81	96.84	0.05
1620.40	1.03	100.76	1620.35	-7.22	-0.88	7.47	516713.6	4401620.7	39°45'51.646"N	80°48'17.524"W	7.52	96.70	0.19
1720.40	0.50	61.95	1720.34	-8.37	-0.84	8.73	516713.9	4401620.7	39°45'51.646"N	80°48'17.507"W	8.77	95.49	0.71
1820.40	0.83	57.94	1820.33	-9.07	-0.25	9.73	516714.2	4401620.9	39°45'51.652"N	80°48'17.495"W	9.74	91.47	0.33
1920.40	0.63	41.17	1920.32	-9.65	0.55	10.71	516714.5	4401621.1	39°45'51.660"N	80°48'17.482"W	10.72	87.07	0.29
2020.40	0.79	30.42	2020.31	-9.92	1.56	11.42	516714.8	4401621.4	39°45'51.670"N	80°48'17.473"W	11.52	82.24	0.21
2120.40	0.50	31.48	2120.31	-10.07	2.52	12.00	516714.9	4401621.7	39°45'51.679"N	80°48'17.466"W	12.26	78.12	0.29
2220.40	0.59	22.85	2220.30	-10.14	3.37	12.42	516715.1	4401622.0	39°45'51.688"N	80°48'17.460"W	12.87	74.83	0.12
2320.40	0.61	30.94	2320.30	-10.21	4.30	12.90	516715.2	4401622.3	39°45'51.697"N	80°48'17.454"W	13.60	71.56	0.09

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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 Error [ft]	Gas SOL [°FOOT]
2420.40	0.53	41.26	2420.29	-10.43	5.11	13.48	516715.4	4401622.5	39°45'51.705"N	80°48'17.447"W	14.41	69.25	0.13
2520.40	0.02	288.42	2520.29	-10.56	5.46	13.76	516715.5	4401622.6	39°45'51.708"N	80°48'17.443"W	14.81	68.97	0.54
2620.40	0.69	322.40	2620.29	-10.02	5.94	13.38	516715.4	4401622.8	39°45'51.713"N	80°48'17.448"W	14.64	66.65	0.67
2720.40	0.20	330.47	2720.29	-9.36	6.57	12.93	516715.2	4401622.9	39°45'51.719"N	80°48'17.454"W	14.50	63.06	0.49
2740.40	0.20	337.98	2740.29	-9.31	6.63	12.90	516715.2	4401623.0	39°45'51.720"N	80°48'17.454"W	14.50	62.79	0.13
2797.40	1.20	122.69	2797.28	-9.83	6.40	13.36	516715.4	4401622.9	39°45'51.718"N	80°48'17.448"W	14.82	64.40	2.40
2828.40	1.82	118.31	2828.27	-10.64	5.99	14.07	516715.6	4401622.8	39°45'51.714"N	80°48'17.439"W	15.29	66.93	2.03
2859.40	2.30	119.95	2859.25	-11.74	5.45	15.04	516715.9	4401622.6	39°45'51.708"N	80°48'17.426"W	16.00	70.08	1.56
2890.40	2.88	118.82	2890.22	-13.13	4.76	16.26	516716.2	4401622.4	39°45'51.701"N	80°48'17.411"W	16.95	73.67	1.88
2922.40	3.48	116.04	2922.17	-14.90	3.95	17.84	516716.7	4401622.1	39°45'51.693"N	80°48'17.391"W	18.27	77.52	1.94
2954.40	3.98	117.22	2954.10	-16.98	3.02	19.70	516717.3	4401621.9	39°45'51.684"N	80°48'17.367"W	19.93	81.30	1.58
2986.40	4.07	116.68	2986.02	-19.22	2.00	21.70	516717.9	4401621.5	39°45'51.674"N	80°48'17.341"W	21.79	84.74	0.31
3017.40	4.01	114.38	3016.95	-21.40	1.06	23.67	516718.5	4401621.3	39°45'51.665"N	80°48'17.316"W	23.70	87.45	0.56
3049.40	5.04	112.13	3048.85	-23.93	0.06	25.99	516719.2	4401621.0	39°45'51.655"N	80°48'17.286"W	25.99	89.86	3.27
3081.40	5.77	110.95	3080.70	-26.94	-1.04	28.80	516720.1	4401620.6	39°45'51.644"N	80°48'17.251"W	28.82	92.07	2.31
3112.40	5.97	110.30	3111.54	-30.11	-2.16	31.76	516721.0	4401620.3	39°45'51.633"N	80°48'17.213"W	31.84	93.88	0.68
3143.40	6.23	109.37	3142.36	-33.40	-3.27	34.86	516721.9	4401619.9	39°45'51.622"N	80°48'17.173"W	35.02	95.36	0.90
3175.40	6.38	109.28	3174.17	-36.90	-4.44	38.18	516722.9	4401619.6	39°45'51.610"N	80°48'17.130"W	38.44	96.63	0.47
3207.40	7.39	110.72	3205.94	-40.74	-5.75	41.78	516724.0	4401619.2	39°45'51.597"N	80°48'17.084"W	42.18	97.84	3.20
3238.40	8.33	111.26	3236.65	-44.97	-7.27	45.74	516725.2	4401618.7	39°45'51.582"N	80°48'17.034"W	46.32	99.03	3.04
3269.40	9.07	111.21	3267.29	-49.66	-8.97	50.11	516726.6	4401618.2	39°45'51.565"N	80°48'16.978"W	50.91	100.15	2.39
3301.40	9.80	110.82	3298.86	-54.90	-10.85	55.01	516728.0	4401617.6	39°45'51.546"N	80°48'16.915"W	56.07	101.16	2.29
3333.40	10.29	115.65	3330.37	-60.48	-13.06	60.13	516729.6	4401617.0	39°45'51.524"N	80°48'16.850"W	61.53	102.25	3.04
3364.40	11.02	116.12	3360.83	-66.20	-15.56	65.29	516731.2	4401616.2	39°45'51.499"N	80°48'16.784"W	67.12	103.40	2.37
3396.40	11.83	117.05	3392.20	-72.53	-18.40	70.95	516732.9	4401615.3	39°45'51.471"N	80°48'16.711"W	73.30	104.54	2.60
3427.40	12.72	116.02	3422.49	-79.10	-21.34	76.85	516734.7	4401614.4	39°45'51.442"N	80°48'16.636"W	79.76	105.52	2.96
3459.40	13.39	114.73	3453.66	-86.33	-24.43	83.38	516736.7	4401613.5	39°45'51.411"N	80°48'16.552"W	86.89	106.33	2.28
3490.40	14.67	113.67	3483.74	-93.84	-27.51	90.24	516738.8	4401612.6	39°45'51.381"N	80°48'16.464"W	94.34	106.96	4.21
3522.40	15.95	112.79	3514.60	-102.29	-30.84	98.00	516741.1	4401611.5	39°45'51.348"N	80°48'16.365"W	102.74	107.47	4.07
3553.40	17.50	112.53	3544.29	-111.21	-34.28	106.24	516743.6	4401610.5	39°45'51.314"N	80°48'16.260"W	111.63	107.88	5.01
3585.40	18.50	112.56	3574.72	-121.10	-38.07	115.37	516746.4	4401609.3	39°45'51.276"N	80°48'16.143"W	121.49	108.26	3.13

51.01701

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 (°)	GIS DLS (°/100ft)
3617.40	19.48	112.18	3604.98	-131.51	-42.03	125.00	516749.4	4401608.1	39°45'51.237"N	80°48'16.020"W	131.88	108.59	3.09
3648.40	20.60	111.07	3634.10	-142.13	-45.94	134.87	516752.4	4401606.9	39°45'51.198"N	80°48'15.893"W	142.48	108.81	3.82
3679.40	21.77	111.75	3663.01	-153.33	-50.03	145.30	516755.6	4401605.7	39°45'51.157"N	80°48'15.760"W	153.68	109.00	3.86
3711.40	23.12	110.19	3692.58	-165.54	-54.40	156.71	516759.0	4401604.4	39°45'51.114"N	80°48'15.614"W	165.89	109.14	4.61
3742.40	24.10	108.57	3720.99	-177.93	-58.52	168.42	516762.6	4401603.1	39°45'51.073"N	80°48'15.464"W	178.30	109.16	3.79
3774.40	25.16	109.37	3750.08	-191.23	-62.86	181.03	516766.4	4401601.8	39°45'51.030"N	80°48'15.303"W	191.64	109.15	3.47
3806.40	26.18	110.01	3778.92	-205.07	-67.53	194.09	516770.4	4401600.4	39°45'50.983"N	80°48'15.136"W	205.50	109.18	3.30
3836.40	27.03	111.41	3805.74	-218.50	-72.28	206.65	516774.2	4401598.9	39°45'50.936"N	80°48'14.975"W	218.93	109.28	3.52
3868.40	27.19	112.22	3834.23	-233.08	-77.70	220.19	516778.4	4401597.3	39°45'50.882"N	80°48'14.802"W	233.50	109.44	1.26
3899.40	27.01	111.26	3861.82	-247.20	-82.93	233.31	516782.4	4401595.7	39°45'50.830"N	80°48'14.634"W	247.61	109.57	1.53
3962.40	28.54	111.84	3917.56	-276.55	-93.72	260.61	516790.7	4401592.4	39°45'50.723"N	80°48'14.285"W	276.95	109.78	2.47
4025.40	28.02	110.65	3973.04	-306.38	-104.53	288.43	516799.2	4401589.1	39°45'50.615"N	80°48'13.929"W	306.78	109.92	1.22
4088.40	29.01	110.54	4028.40	-336.43	-115.11	316.58	516807.7	4401585.9	39°45'50.510"N	80°48'13.568"W	336.86	109.98	1.57
4152.40	27.61	109.41	4084.74	-366.74	-125.49	345.10	516816.4	4401582.7	39°45'50.407"N	80°48'13.204"W	367.21	109.98	2.34
4214.40	28.17	109.61	4139.54	-395.70	-135.17	372.44	516824.8	4401579.8	39°45'50.311"N	80°48'12.854"W	396.21	109.95	0.92
4277.40	28.01	111.15	4195.12	-425.33	-145.50	400.24	516833.2	4401576.6	39°45'50.208"N	80°48'12.498"W	425.87	109.98	1.18
4341.40	28.05	111.66	4251.62	-455.40	-156.48	428.24	516841.8	4401573.3	39°45'50.099"N	80°48'12.140"W	455.94	110.07	0.38
4404.40	26.91	110.78	4307.51	-484.45	-167.00	455.34	516850.0	4401570.1	39°45'49.994"N	80°48'11.793"W	485.00	110.14	1.92
4466.40	28.35	113.19	4362.44	-513.20	-177.78	481.99	516858.1	4401566.8	39°45'49.887"N	80°48'11.452"W	513.73	110.25	2.94
4529.40	28.85	113.77	4417.75	-543.35	-189.80	509.65	516866.6	4401563.1	39°45'49.768"N	80°48'11.098"W	543.84	110.43	0.91
4593.40	28.01	113.42	4474.03	-573.82	-201.99	537.57	516875.1	4401559.4	39°45'49.647"N	80°48'10.741"W	574.27	110.59	1.34
4656.40	27.26	113.37	4529.84	-603.04	-213.60	564.39	516883.2	4401555.9	39°45'49.531"N	80°48'10.398"W	603.46	110.73	1.19
4719.40	27.60	114.09	4585.76	-632.06	-225.28	590.96	516891.3	4401552.3	39°45'49.415"N	80°48'10.058"W	632.44	110.87	0.75
4783.40	28.60	113.01	4642.22	-662.20	-237.32	618.59	516899.8	4401548.6	39°45'49.296"N	80°48'09.704"W	662.55	110.99	1.75
4846.40	28.31	109.18	4697.61	-692.19	-248.12	646.58	516908.3	4401545.3	39°45'49.189"N	80°48'09.346"W	692.56	110.99	2.93
4908.40	27.07	104.61	4752.51	-720.83	-256.51	674.12	516916.7	4401542.8	39°45'49.105"N	80°48'08.994"W	721.28	110.83	3.97
4971.40	27.46	106.38	4808.52	-749.45	-264.22	701.93	516925.1	4401540.4	39°45'49.028"N	80°48'08.638"W	750.01	110.63	1.43
5034.40	27.85	108.55	4864.32	-778.55	-273.00	729.82	516933.6	4401537.8	39°45'48.941"N	80°48'08.281"W	779.21	110.51	1.71
5097.40	27.02	108.03	4920.23	-807.49	-282.11	757.38	516942.0	4401535.0	39°45'48.850"N	80°48'07.928"W	808.21	110.43	1.37
5161.40	27.18	109.34	4977.21	-836.56	-291.45	785.00	516950.5	4401532.1	39°45'48.757"N	80°48'07.575"W	837.35	110.37	0.97
5224.40	27.51	109.17	5033.17	-865.44	-300.99	812.32	516958.8	4401529.2	39°45'48.662"N	80°48'07.226"W	866.29	110.33	0.54

SI-01701

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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 Dif [ft]	DLS [100ft]
5287.40	27.67	110.39	5089.01	-894.58	-310.87	839.77	516967.1	4401526.2	39°45'48.564"N	80°48'06.874"W	895.46	510.31	0.93
5351.40	27.21	109.55	5145.80	-924.03	-320.94	867.49	516975.6	4401523.2	39°45'48.464"N	80°48'06.520"W	924.95	010.30	0.94
5412.40	27.17	110.12	5200.06	-951.87	-330.40	893.71	516983.6	4401520.3	39°45'48.370"N	80°48'06.184"W	952.83	010.29	0.43
5475.40	26.92	112.27	5256.18	-980.50	-340.75	920.41	516991.7	4401517.1	39°45'48.267"N	80°48'05.842"W	981.46	110.32	1.60
5537.40	26.49	112.95	5311.56	-1008.36	-351.46	946.13	516999.6	4401513.9	39°45'48.161"N	80°48'05.513"W	1009.30	110.38	0.85
5601.40	26.54	112.91	5368.83	-1036.93	-362.59	972.45	517007.6	4401510.5	39°45'48.050"N	80°48'05.177"W	1037.85	110.45	0.08
5664.40	26.18	112.92	5425.28	-1064.90	-373.49	998.21	517015.4	4401507.1	39°45'47.942"N	80°48'04.847"W	1065.80	110.51	0.57
5709.00	25.39	112.24	5465.44	-1084.30	-380.94	1016.13	517020.9	4401504.9	39°45'47.868"N	80°48'04.618"W	1085.18	110.55	1.89
5761.00	19.29	118.13	5513.52	-1104.02	-389.21	1034.04	517026.3	4401502.4	39°45'47.786"N	80°48'04.389"W	1104.86	110.63	12.48
5805.00	16.44	120.04	5555.39	-1117.44	-395.76	1045.84	517029.9	4401500.4	39°45'47.721"N	80°48'04.238"W	1118.22	110.73	6.61
5900.00	11.85	123.25	5647.49	-1140.39	-407.84	1065.65	517036.0	4401496.7	39°45'47.601"N	80°48'03.985"W	1141.02	110.94	4.90
5995.00	8.22	134.75	5741.03	-1156.29	-417.98	1078.63	517039.9	4401493.6	39°45'47.500"N	80°48'03.819"W	1156.78	111.18	4.35
6089.00	8.89	193.49	5834.15	-1163.72	-429.79	1081.72	517040.9	4401490.0	39°45'47.384"N	80°48'03.779"W	1163.97	111.67	8.92
6184.00	11.58	259.75	5927.92	-1156.91	-438.66	1070.58	517037.5	4401487.3	39°45'47.296"N	80°48'03.922"W	1156.96	112.28	11.97
6279.00	19.50	277.78	6019.43	-1133.56	-438.21	1045.44	517029.8	4401487.4	39°45'47.301"N	80°48'04.244"W	1133.56	112.74	9.67
6374.00	28.51	285.32	6106.14	-1095.69	-430.05	1007.77	517018.3	4401489.9	39°45'47.383"N	80°48'04.726"W	1095.70	113.11	10.00
6469.00	40.01	292.63	6184.56	-1042.47	-412.24	957.53	517003.0	4401495.3	39°45'47.560"N	80°48'05.369"W	1042.50	113.29	12.84
6564.00	47.38	297.38	6253.22	-976.98	-384.37	898.21	516984.9	4401503.8	39°45'47.836"N	80°48'06.128"W	976.99	113.17	8.49
6658.00	50.56	298.48	6314.92	-906.36	-351.15	835.57	516965.9	4401514.0	39°45'48.166"N	80°48'06.929"W	906.36	112.79	3.50
6753.00	52.77	298.35	6373.84	-832.20	-315.69	770.04	516945.9	4401524.8	39°45'48.518"N	80°48'07.767"W	832.24	112.29	2.33
6849.00	56.79	299.44	6429.19	-754.22	-277.79	701.40	516925.0	4401536.3	39°45'48.894"N	80°48'08.645"W	754.40	111.61	4.29
6943.00	63.23	300.98	6476.16	-673.53	-236.81	631.10	516903.6	4401548.8	39°45'49.301"N	80°48'09.544"W	674.07	110.57	7.00
7038.00	71.72	302.91	6512.52	-586.97	-190.39	556.73	516880.9	4401562.9	39°45'49.761"N	80°48'10.495"W	588.39	108.88	9.13
7133.00	80.48	304.69	6535.32	-496.52	-139.12	480.19	516857.6	4401578.6	39°45'50.269"N	80°48'11.474"W	499.94	106.16	9.40
7228.00	85.81	299.44	6546.66	-403.48	-89.10	400.31	516833.2	4401593.8	39°45'50.765"N	80°48'12.496"W	410.10	102.55	7.85
7323.00	85.81	294.54	6553.61	-309.01	-46.12	315.91	516807.5	4401606.9	39°45'51.192"N	80°48'13.575"W	319.25	98.31	5.14
7418.00	86.89	291.48	6559.66	-214.22	-9.06	228.65	516780.9	4401618.2	39°45'51.560"N	80°48'14.691"W	228.83	92.27	3.41
7513.00	86.86	287.31	6564.84	-119.55	22.43	139.20	516753.7	4401627.8	39°45'51.873"N	80°48'15.836"W	140.99	80.85	4.38
7609.00	87.88	288.17	6569.24	-24.04	51.65	47.86	516725.9	4401636.7	39°45'52.164"N	80°48'17.005"W	70.41	42.82	1.39
7704.00	88.92	289.24	6571.90	70.67	82.10	-42.08	516698.5	4401646.0	39°45'52.467"N	80°48'18.156"W	92.26	332.86	1.57
7799.00	90.34	292.03	6572.51	165.59	115.58	-130.98	516671.4	4401656.2	39°45'52.800"N	80°48'19.293"W	174.68	311.43	3.30

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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 Angle [°]	DIS [ft]
7892.00	90.74	294.23	6571.63	258.58	152.11	-216.49	516645.3	4401667.3	39°45'53.162"N	80°48'20.387"W	264.58	295.09	2.40
7986.00	90.95	293.24	6570.25	352.56	189.94	-302.53	516619.1	4401678.8	39°45'53.538"N	80°48'21.488"W	357.21	302.92	1.08
8081.00	90.74	293.19	6568.84	447.54	227.38	-389.83	516592.5	4401690.2	39°45'53.910"N	80°48'22.605"W	451.30	300.25	0.23
8176.00	90.80	292.99	6567.57	542.53	264.63	-477.21	516565.9	4401701.6	39°45'54.280"N	80°48'23.723"W	545.67	299.01	0.22
8271.00	90.34	292.51	6566.62	637.53	301.37	-564.81	516539.2	4401712.8	39°45'54.645"N	80°48'24.844"W	640.19	298.08	0.70
8366.00	90.46	291.73	6565.96	732.52	337.14	-652.82	516512.4	4401723.7	39°45'55.000"N	80°48'25.970"W	734.74	297.31	0.83
8461.00	90.86	290.04	6564.87	827.45	371.00	-741.57	516485.3	4401734.0	39°45'55.337"N	80°48'27.105"W	829.20	296.58	1.83
8555.00	91.11	292.36	6563.25	921.39	404.99	-829.19	516458.6	4401744.3	39°45'55.675"N	80°48'28.226"W	922.80	296.03	2.48
8650.00	91.23	293.84	6561.31	1016.37	442.25	-916.55	516432.0	4401755.7	39°45'56.045"N	80°48'29.344"W	1017.67	295.76	1.56
8745.00	90.74	293.93	6559.68	1111.34	480.71	-1003.40	516405.6	4401767.4	39°45'56.427"N	80°48'30.455"W	1112.61	295.60	0.52
8839.00	90.62	294.20	6558.56	1205.31	519.04	-1089.23	516379.4	4401779.1	39°45'56.807"N	80°48'31.553"W	1206.57	295.48	0.31
8933.00	90.55	295.39	6557.60	1299.25	558.46	-1174.55	516353.4	4401791.1	39°45'57.199"N	80°48'32.645"W	1300.56	295.43	1.27
9027.00	90.62	294.92	6556.64	1393.17	598.41	-1259.63	516327.5	4401803.3	39°45'57.595"N	80°48'33.733"W	1394.55	295.41	0.51
9121.00	90.65	291.77	6555.60	1487.15	635.65	-1345.92	516301.2	4401814.6	39°45'57.965"N	80°48'34.837"W	1488.48	295.28	3.35
9216.00	90.09	290.70	6554.99	1582.11	670.06	-1434.47	516274.2	4401825.1	39°45'58.307"N	80°48'35.970"W	1583.25	295.04	1.27
9311.00	90.09	288.90	6554.84	1676.97	702.24	-1523.85	516247.0	4401834.9	39°45'58.627"N	80°48'37.114"W	1677.87	294.74	1.89
9406.00	90.52	289.66	6554.33	1771.78	733.61	-1613.52	516219.7	4401844.5	39°45'58.939"N	80°48'38.262"W	1772.46	294.45	0.92
9501.00	90.52	292.07	6553.47	1866.71	767.44	-1702.28	516192.6	4401854.8	39°45'59.275"N	80°48'39.397"W	1867.27	294.27	2.54
9596.00	90.58	293.04	6552.56	1961.70	803.88	-1790.01	516165.9	4401865.9	39°45'59.637"N	80°48'40.520"W	1962.23	294.18	1.02
9691.00	90.43	294.78	6551.72	2056.68	842.38	-1876.85	516139.4	4401877.6	39°46'00.019"N	80°48'41.631"W	2057.22	294.17	1.84
9786.00	90.62	294.87	6550.85	2151.62	882.26	-1963.07	516113.2	4401889.7	39°46'00.415"N	80°48'42.734"W	2152.21	294.20	0.22
9882.00	90.49	294.67	6549.92	2247.56	922.48	-2050.23	516086.6	4401902.0	39°46'00.815"N	80°48'43.849"W	2248.20	294.23	0.25
9974.00	91.11	292.21	6548.63	2339.54	959.07	-2134.62	516060.9	4401913.1	39°46'01.178"N	80°48'44.929"W	2340.18	294.19	2.76
10069.00	91.63	292.83	6546.36	2434.51	995.44	-2222.35	516034.2	4401924.2	39°46'01.539"N	80°48'46.051"W	2435.11	294.13	0.85
10164.00	91.08	291.99	6544.12	2529.48	1031.65	-2310.15	516007.4	4401935.3	39°46'01.899"N	80°48'47.175"W	2530.04	294.06	1.06
10259.00	90.83	291.28	6542.53	2624.45	1066.67	-2398.45	515980.5	4401945.9	39°46'02.247"N	80°48'48.305"W	2624.94	293.98	0.79
10355.00	90.92	291.59	6541.07	2720.41	1101.75	-2487.80	515953.3	4401956.6	39°46'02.595"N	80°48'49.448"W	2720.84	293.89	0.34
10449.00	90.89	293.15	6539.58	2814.39	1137.52	-2574.71	515926.8	4401967.5	39°46'02.950"N	80°48'50.560"W	2814.80	293.84	1.66
10544.00	90.83	294.20	6538.16	2909.37	1175.66	-2661.70	515900.3	4401979.1	39°46'03.329"N	80°48'51.673"W	2909.78	293.83	1.11
10639.00	90.62	294.98	6536.95	3004.31	1215.19	-2748.08	515874.0	4401991.2	39°46'03.722"N	80°48'52.778"W	3004.77	293.86	0.85
10735.00	90.62	295.88	6535.92	3100.21	1256.41	-2834.77	515847.6	4402003.7	39°46'04.131"N	80°48'53.887"W	3100.72	293.90	0.94

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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)
10830.00	90.58	294.94	6534.92	3195.11	1297.17	-2920.58	515821.4	4402016.2	39°46'04.535"N	80°48'54.985"W	3195.69	293.95	0.99
10924.00	90.68	293.64	6533.89	3289.07	1335.84	-3006.25	515795.3	4402027.9	39°46'04.919"N	80°48'56.081"W	3289.68	293.96	1.39
11020.00	90.65	292.62	6532.77	3385.06	1373.54	-3094.52	515768.4	4402039.4	39°46'05.294"N	80°48'57.211"W	3385.66	293.94	1.06
11115.00	90.71	291.71	6531.64	3480.05	1409.38	-3182.50	515741.6	4402050.3	39°46'05.650"N	80°48'58.336"W	3480.61	293.89	0.96
11209.00	90.52	290.27	6530.64	3573.99	1443.05	-3270.25	515714.9	4402060.6	39°46'05.984"N	80°48'59.459"W	3574.48	293.81	1.55
11305.00	90.09	290.65	6530.12	3669.91	1476.61	-3360.19	515687.5	4402070.8	39°46'06.318"N	80°49'00.610"W	3670.32	293.72	0.60
11400.00	90.09	291.49	6529.98	3764.86	1510.76	-3448.84	515660.5	4402081.2	39°46'06.657"N	80°49'01.745"W	3765.22	293.66	0.88
11495.00	90.12	291.79	6529.80	3859.84	1545.79	-3537.14	515633.6	4402091.9	39°46'07.005"N	80°49'02.875"W	3860.16	293.61	0.32
11590.00	90.15	292.35	6529.58	3954.83	1581.49	-3625.18	515606.8	4402102.8	39°46'07.359"N	80°49'04.001"W	3955.13	293.57	0.59
11685.00	90.06	294.82	6529.40	4049.81	1619.50	-3712.24	515580.2	4402114.4	39°46'07.737"N	80°49'05.115"W	4050.12	293.57	2.60
11780.00	90.83	294.92	6528.67	4144.75	1659.45	-3798.43	515554.0	4402126.5	39°46'08.133"N	80°49'06.218"W	4145.10	293.60	0.82
11875.00	90.83	295.23	6527.29	4239.67	1699.70	-3884.46	515527.8	4402138.8	39°46'08.533"N	80°49'07.318"W	4240.05	293.63	0.33
11970.00	90.46	294.43	6526.22	4334.61	1739.59	-3970.68	515501.5	4402151.0	39°46'08.929"N	80°49'08.422"W	4335.03	293.66	0.93
12064.00	90.34	292.77	6525.56	4428.59	1777.22	-4056.81	515475.3	4402162.4	39°46'09.302"N	80°49'09.524"W	4429.02	293.66	1.77
12159.00	90.40	290.04	6524.95	4523.55	1811.89	-4145.25	515448.3	4402173.0	39°46'09.647"N	80°49'10.655"W	4523.94	293.61	2.87
12254.00	90.37	288.23	6524.31	4618.34	1843.03	-4234.99	515421.0	4402182.5	39°46'09.956"N	80°49'11.804"W	4618.65	293.52	1.91
12349.00	90.43	287.28	6523.65	4712.96	1872.00	-4325.46	515393.4	4402191.3	39°46'10.244"N	80°49'12.962"W	4713.17	293.40	1.00
12444.00	90.43	288.27	6522.94	4807.59	1901.00	-4415.92	515365.8	4402200.1	39°46'10.533"N	80°49'14.120"W	4807.72	293.29	1.04
12540.00	90.34	292.33	6522.29	4903.47	1934.30	-4505.94	515338.4	4402210.3	39°46'10.864"N	80°49'15.271"W	4903.57	293.23	4.23
12635.00	90.28	291.65	6521.78	4998.45	1969.87	-4594.03	515311.6	4402221.1	39°46'11.217"N	80°49'16.399"W	4998.55	293.21	0.72
12729.00	90.37	293.91	6521.24	5092.45	2006.26	-4680.69	515285.2	4402232.2	39°46'11.578"N	80°49'17.508"W	5092.54	293.20	2.41
12822.00	90.43	296.06	6520.59	5185.38	2045.54	-4764.98	515259.5	4402244.2	39°46'11.968"N	80°49'18.586"W	5185.49	293.23	2.31
12916.00	91.02	295.72	6519.40	5279.24	2086.58	-4849.54	515233.7	4402256.7	39°46'12.375"N	80°49'19.668"W	5279.38	293.28	0.72
13010.00	90.74	294.54	6517.96	5373.15	2126.50	-4934.63	515207.8	4402268.8	39°46'12.772"N	80°49'20.757"W	5373.32	293.31	1.29
13105.00	90.71	293.91	6516.76	5468.11	2165.47	-5021.26	515181.4	4402280.7	39°46'13.158"N	80°49'21.865"W	5468.30	293.33	0.66
13200.00	90.65	294.72	6515.63	5563.08	2204.59	-5107.82	515155.0	4402292.6	39°46'13.547"N	80°49'22.973"W	5563.28	293.35	0.85
13294.00	90.74	292.53	6514.49	5657.06	2242.25	-5193.93	515128.8	4402304.1	39°46'13.921"N	80°49'24.075"W	5657.26	293.35	2.33
13354.00	90.74	292.53	6513.72	5717.05	2265.24	-5249.35	515111.9	4402311.1	39°46'14.149"N	80°49'24.784"W	5717.25	293.34	0.00

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