

# ADVANTAGE Final Survey Listing



INTEQ

**Operator** Gastar Exploration USA      **Fields** Marshall      **API No** 47051017310100  
**Well** Simms 5H      **Wellbore** ST01      **Rig** Nomac 323      **Job** 6272852

## Well Origin

<b>Latitude</b>	39.75 deg	<b>Longitude</b>	-80.77 deg
<b>North Reference</b>	Grid	<b>Drill Depth Zero</b>	Rig Floor
<b>Vertical Datum is</b>	Ground Level	<b>Vertical Datum to DDZ</b>	29.40 ft
<b>Vertical Section North</b>	0.00 ft	<b>Vertical Section East</b>	0.00 ft
<b>Vertical Section Azimuth</b>	109.20 deg	<b>Vertical Section Depth</b>	0.00 ft
<b>Grid Convergence</b>	-0.15 deg	<b>Magnetic Declination</b>	-7.48 deg
<b>Total Correction</b>	-7.63 deg	<b>TVD Calculation Method</b>	Minimum Curvature
<b>D-Row Calculation</b>	None	<b>Local Magnetic Field</b>	52575 nT
<b>Local Magnetic Dip Angle</b>	67.19 deg	<b>Local Gravity Field</b>	9.806 m/s^2

Tie In	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Temperature degF	CRS LEN ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	29.40	0.00	136.53	0.00	0.00	29.40	0.00		29.40	0.00	0.00	464.39
	119.40	0.59	136.53	-0.34	0.32	119.40	0.41		90.00	0.66	0.66	0.00
	219.40	0.73	139.90	-1.20	1.08	219.39	1.42		100.00	0.15	0.14	3.37
	319.40	0.88	148.43	-2.34	1.90	319.38	2.56		100.00	0.19	0.15	8.53
	419.40	0.41	145.93	-3.29	2.50	419.38	3.44		100.00	0.47	-0.47	-2.50
	519.40	0.62	136.07	-3.98	3.07	519.37	4.21		100.00	0.23	0.21	-9.86
	619.40	0.32	138.99	-4.58	3.63	619.37	4.94		100.00	0.30	-0.30	2.92
	719.40	0.43	135.56	-5.05	4.08	719.37	5.51		100.00	0.11	0.11	-3.43
	819.40	0.32	131.19	-5.51	4.55	819.36	6.11		100.00	0.11	-0.11	-4.37
	919.40	0.39	122.41	-5.87	5.05	919.36	6.70		100.00	0.09	0.07	-8.78
	1019.40	0.21	109.97	-6.12	5.51	1019.36	7.21		100.00	0.19	-0.18	-12.44
	1119.40	0.25	84.64	-6.16	5.90	1119.36	7.60		100.00	0.11	0.04	-25.33
	1219.40	0.26	71.92	-6.07	6.33	1219.36	7.97		100.00	0.06	0.01	-12.72
	1319.40	0.43	45.12	-5.73	6.81	1319.36	8.32		100.00	0.23	0.17	-26.80
	1419.40	0.42	57.60	-5.27	7.39	1419.35	8.71		100.00	0.09	-0.01	12.48
	1519.40	0.31	68.33	-4.98	7.95	1519.35	9.14		100.00	0.13	-0.11	10.73
	1619.40	0.39	61.67	-4.71	8.50	1619.35	9.58		100.00	0.09	0.08	-6.66
	1719.40	0.38	67.39	-4.43	9.11	1719.35	10.05		100.00	0.04	-0.01	5.72
	1819.40	0.29	75.46	-4.23	9.66	1819.35	10.51		100.00	0.10	-0.09	8.07
	1919.40	0.42	85.20	-4.14	10.27	1919.34	11.06		100.00	0.14	0.13	9.74
	2019.40	0.44	97.99	-4.16	11.01	2019.34	11.77		100.00	0.10	0.02	12.79
	2119.40	0.38	99.09	-4.27	11.72	2119.34	12.47		100.00	0.06	-0.06	1.10
	2219.40	0.40	108.18	-4.43	12.38	2219.34	13.15		100.00	0.06	0.02	9.09
	2319.40	0.31	115.02	-4.65	12.96	2319.33	13.77		100.00	0.10	-0.09	6.84
	2419.40	0.32	143.42	-4.99	13.37	2419.33	14.27		100.00	0.15	0.01	28.40
	2519.40	0.17	224.20	-5.32	13.43	2519.33	14.43		100.00	0.34	-0.15	80.78
	2619.40	0.24	273.85	-5.42	13.12	2619.33	14.17		100.00	0.18	0.07	49.65
	2719.40	0.09	253.64	-5.42	12.83	2719.33	13.90		100.00	0.16	-0.15	-20.21
	2819.40	0.43	244.21	-5.61	12.42	2819.33	13.57		100.00	0.34	0.34	-9.43
	2859.40	0.58	225.74	-5.82	12.14	2859.33	13.38		40.00	0.55	0.37	-46.18
	2918.40	2.76	13.58	-4.64	12.26	2918.31	13.10		59.00	5.53	3.69	250.58
	2949.40	4.77	20.61	-2.71	12.89	2949.24	13.06		31.00	6.64	6.48	22.68
	2981.40	6.46	23.82	0.18	14.08	2981.09	13.24		32.00	5.37	5.28	10.03
	3012.40	7.64	26.97	3.61	15.72	3011.85	13.66		31.00	4.00	3.81	10.16
	3076.40	8.57	28.09	11.61	19.90	3075.21	14.97		64.00	1.47	1.45	1.75
	3139.40	7.01	35.35	18.89	24.33	3137.63	16.77		63.00	2.92	-2.48	11.52
	3171.40	5.63	43.54	21.62	26.54	3169.43	17.96		32.00	5.14	-4.31	25.59
	3202.40	4.37	48.83	23.50	28.48	3200.32	19.17		31.00	4.32	-4.06	17.06
	3234.40	3.40	55.34	24.84	30.18	3232.24	20.33		32.00	3.33	-3.03	20.34
	3266.40	2.78	52.89	25.85	31.58	3264.20	21.32		32.00	1.98	-1.94	-7.66
	3297.40	2.10	50.50	26.67	32.62	3295.17	22.03		31.00	2.22	-2.19	-7.71
	3329.40	1.94	45.33	27.42	33.45	3327.15	22.58		32.00	0.76	-0.50	-16.16
	3361.40	1.82	39.42	28.19	34.16	3359.13	22.99		32.00	0.71	-0.38	-18.47
	3391.40	2.00	34.71	28.99	34.76	3389.11	23.29		30.00	0.80	0.60	-15.70
	3454.40	1.82	36.72	30.70	35.99	3452.08	23.89		63.00	0.30	-0.29	3.19
	3517.40	1.16	30.79	32.05	36.91	3515.06	24.32		63.00	1.07	-1.05	-9.41
	3581.40	0.88	24.44	33.05	37.45	3579.05	24.49		64.00	0.47	-0.44	-9.92
	3644.40	0.71	33.59	33.82	37.86	3642.04	24.64		63.00	0.34	-0.27	14.52
	3708.40	0.67	3.07	34.52	38.10	3706.04	24.63		64.00	0.57	-0.06	-47.69
	3771.40	0.55	333.14	35.16	37.98	3769.03	24.31		63.00	0.53	-0.19	-47.51

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	3834.40	0.95	11.65	35.94	37.95	3832.03	24.02		63.00	0.99	0.63	61.13
	3898.40	1.67	36.28	37.21	38.61	3896.01	24.23		64.00	1.40	1.12	38.48
	3961.40	2.06	40.61	38.81	39.89	3958.98	24.91		63.00	0.66	0.62	6.87
	4024.40	1.95	31.69	40.58	41.19	4021.94	25.56		63.00	0.52	-0.17	-14.16
	4087.40	2.00	38.54	42.35	42.44	4084.90	26.15		63.00	0.38	0.08	10.87
	4150.40	2.07	34.53	44.15	43.77	4147.86	26.82		63.00	0.25	0.11	-6.37
	4213.40	1.71	28.21	45.92	44.86	4210.83	27.26		63.00	0.66	-0.57	-10.03
	4276.40	1.49	21.48	47.51	45.60	4273.80	27.44		63.00	0.46	-0.35	-10.68
	4339.40	1.15	21.09	48.86	46.13	4336.79	27.50		63.00	0.54	-0.54	-0.62
	4402.40	1.13	16.93	50.04	46.54	4399.77	27.49		63.00	0.14	-0.03	-6.60
	4464.40	1.17	0.35	51.26	46.72	4461.76	27.27		62.00	0.54	0.06	-26.74
	4526.40	1.27	356.83	52.58	46.69	4523.75	26.80		62.00	0.20	0.16	-5.68
	4589.40	1.45	348.49	54.06	46.49	4586.73	26.13		63.00	0.42	0.29	-13.24
	4652.40	0.99	352.10	55.38	46.26	4649.72	25.47		63.00	0.74	-0.73	5.73
	4715.40	0.80	358.46	56.36	46.17	4712.71	25.07		63.00	0.34	-0.30	10.10
	4778.40	0.99	1.15	57.34	46.17	4775.70	24.74		63.00	0.31	0.30	4.27
	4841.40	1.06	351.80	58.46	46.10	4838.69	24.31		63.00	0.29	0.11	-14.84
	4903.40	0.67	9.46	59.39	46.07	4900.68	23.98		62.00	0.75	-0.63	28.48
	4966.40	0.69	89.96	59.75	46.51	4963.68	24.28		63.00	1.39	0.03	127.78
	5029.40	1.05	100.03	59.65	47.46	5026.67	25.21		63.00	0.62	0.57	15.98
	5092.40	0.98	114.96	59.32	48.52	5089.66	26.31		63.00	0.43	-0.11	23.70
	5155.40	0.79	119.97	58.88	49.38	5152.66	27.27		63.00	0.33	-0.30	7.95
	5216.40	0.88	130.58	58.36	50.10	5213.65	28.12		61.00	0.29	0.15	17.39
	5279.40	0.77	111.42	57.89	50.87	5276.64	29.00		63.00	0.47	-0.17	-30.41
	5342.40	0.93	54.48	58.04	51.68	5339.64	29.71		63.00	1.31	0.25	-90.38
	5405.40	1.24	48.23	58.79	52.60	5402.63	30.34		63.00	0.53	0.49	-9.92
	5468.40	1.20	38.09	59.76	53.52	5465.61	30.89		63.00	0.35	-0.06	-16.10
	5531.40	0.85	45.62	60.61	54.26	5528.60	31.31		63.00	0.59	-0.56	11.95
	5594.40	0.28	309.86	61.03	54.47	5591.60	31.37		63.00	1.46	-0.90	-152.00
	5657.40	0.09	312.53	61.16	54.32	5654.60	31.18		63.00	0.30	-0.30	4.24
	5720.40	0.41	267.48	61.19	54.06	5717.60	30.93		63.00	0.56	0.51	-71.51
	5783.40	0.20	221.23	61.10	53.76	5780.60	30.68		63.00	0.49	-0.33	-73.41
	5845.40	0.12	237.12	60.98	53.63	5842.60	30.60		62.00	0.15	-0.13	25.63
	5907.40	0.19	210.88	60.86	53.52	5904.60	30.53		62.00	0.16	0.11	-42.32
	5970.40	0.24	231.24	60.68	53.37	5967.60	30.44		63.00	0.14	0.08	32.32
	6031.40	0.40	196.83	60.40	53.21	6028.59	30.38		61.00	0.40	0.26	-56.41
	6094.40	0.44	227.73	60.03	52.96	6091.59	30.28		63.00	0.36	0.06	49.05
	6129.00	0.47	212.63	59.82	52.79	6126.19	30.18		34.60	0.36	0.09	-43.64
	6198.00	0.37	177.03	59.36	52.65	6195.19	30.20		69.00	0.40	-0.14	-51.59
	6293.00	0.60	187.85	58.56	52.60	6290.19	30.41		95.00	0.26	0.24	11.39
	6389.00	0.70	187.68	57.48	52.45	6386.18	30.63		96.00	0.10	0.10	-0.18
	6484.00	0.99	189.00	56.09	52.24	6481.17	30.89		95.00	0.31	0.31	1.39
	6579.00	1.22	198.03	54.32	51.80	6576.15	31.06		95.00	0.30	0.24	9.51
	6675.00	1.44	196.00	52.19	51.15	6672.13	31.14		96.00	0.23	0.23	-2.11
	6770.00	1.74	193.75	49.64	50.48	6767.09	31.35		95.00	0.32	0.32	-2.37
	6865.00	2.31	191.84	46.37	49.75	6862.03	31.73		95.00	0.60	0.60	-2.01
	6958.00	2.88	192.64	42.25	48.85	6954.93	32.24		93.00	0.61	0.61	0.86
	7053.00	3.28	187.88	37.23	47.96	7049.80	33.04		95.00	0.50	0.42	-5.01
	7147.00	3.56	187.49	31.67	47.21	7143.63	34.16		94.00	0.30	0.30	-0.41
	7242.00	3.25	187.33	26.08	46.48	7238.46	35.32		95.00	0.33	-0.33	-0.17
	7338.00	2.99	184.59	20.88	45.93	7334.32	36.51		96.00	0.31	-0.27	-2.85
	7433.00	2.53	180.56	16.32	45.71	7429.21	37.80		95.00	0.53	-0.48	-4.24
	7525.00	2.26	171.42	12.49	45.96	7521.13	39.30		92.00	0.51	-0.29	-9.93
	7620.00	2.78	172.92	8.35	46.53	7616.04	41.19		95.00	0.55	0.55	1.58
	7715.00	3.10	179.63	3.50	46.83	7710.91	43.07		95.00	0.49	0.34	7.06
	7810.00	2.76	181.17	-1.36	46.80	7805.79	44.64		95.00	0.37	-0.36	1.62
	7904.00	2.85	176.90	-5.95	46.88	7899.68	46.23		94.00	0.24	0.10	-4.54
	7998.00	2.99	173.58	-10.72	47.28	7993.55	48.17		94.00	0.23	0.15	-3.53
	8094.00	2.66	178.89	-15.44	47.60	8089.44	50.03		96.00	0.44	-0.34	5.53
	8189.00	2.80	176.86	-19.96	47.77	8184.33	51.68		95.00	0.18	0.15	-2.14

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	8284.00	2.73	179.40	-24.54	47.92	8279.22	53.32		95.00	0.15	-0.07	2.67
	8379.00	2.84	182.16	-29.15	47.86	8374.11	54.78		95.00	0.18	0.12	2.91
	8474.00	3.15	182.91	-34.11	47.63	8468.98	56.20		95.00	0.33	0.33	0.79
	8570.00	3.04	180.71	-39.29	47.47	8564.84	57.75		96.00	0.17	-0.11	-2.29
	8664.00	3.19	182.21	-44.40	47.34	8658.70	59.30		94.00	0.18	0.16	1.60
	8758.00	2.65	186.48	-49.17	46.99	8752.57	60.55		94.00	0.62	-0.57	4.54
	8854.00	2.36	190.34	-53.32	46.39	8848.48	61.34		96.00	0.35	-0.30	4.02
	8947.00	2.34	178.81	-57.10	46.08	8941.41	62.30		93.00	0.51	-0.02	-12.40
	9042.00	1.68	196.08	-60.38	45.74	9036.35	63.05		95.00	0.94	-0.69	18.18
	9136.00	1.40	188.02	-62.84	45.19	9130.31	63.35		94.00	0.38	-0.30	-8.57
	9245.00	1.00	192.53	-65.08	44.80	9239.29	63.71		109.00	0.38	-0.37	4.14
	9322.00	1.23	172.54	-66.56	44.76	9316.27	64.16		77.00	0.58	0.30	-25.96
	9417.00	1.33	174.07	-68.67	45.01	9411.25	65.09		95.00	0.11	0.11	1.61
	9511.00	1.18	165.65	-70.69	45.36	9505.23	66.09		94.00	0.25	-0.16	-8.96
	9605.00	1.24	157.54	-72.57	45.99	9599.21	67.30		94.00	0.19	0.06	-8.63
	9700.00	1.13	147.12	-74.31	46.89	9694.19	68.72		95.00	0.25	-0.12	-10.97
	9795.00	0.90	137.19	-75.64	47.91	9789.17	70.12		95.00	0.30	-0.24	-10.45
	9890.00	0.93	119.07	-76.56	49.09	9884.16	71.54		95.00	0.30	0.03	-19.07
	9984.00	0.77	120.24	-77.25	50.30	9978.15	72.91		94.00	0.17	-0.17	1.24
	10078.00	0.50	123.29	-77.79	51.19	10072.14	73.93		94.00	0.29	-0.29	3.24
	10173.00	0.18	214.57	-78.14	51.45	10167.14	74.29		95.00	0.56	-0.34	96.08
	10266.00	0.62	272.68	-78.24	50.87	10260.14	73.77		93.00	0.59	0.47	62.48
U	10337.00	0.79	278.47	-78.15	50.00	10331.14	72.92		71.00	0.26	0.24	8.15
	10446.00	1.84	325.65	-76.59	48.27	10440.11	70.77	144.6	109.00	1.31	0.96	43.28
	10498.00	6.81	2.24	-72.82	47.92	10491.95	69.20	150.0	52.00	10.47	9.56	70.37
	10541.00	11.49	5.03	-66.00	48.39	10534.39	67.41	152.7	43.00	10.93	10.88	6.49
	10590.00	13.12	5.29	-55.60	49.33	10582.26	64.88	150.0	49.00	3.33	3.33	0.53
	10636.00	15.55	15.09	-44.45	51.42	10626.84	63.18	152.7	46.00	7.45	5.28	21.30
	10688.00	18.36	18.02	-29.93	55.77	10676.57	62.51	158.1	52.00	5.65	5.40	5.63
	10731.00	19.20	17.05	-16.73	59.94	10717.28	62.10	158.1	43.00	2.08	1.95	-2.26
	10782.00	19.83	17.14	-0.44	64.95	10765.35	61.48	163.5	51.00	1.24	1.24	0.18
	10826.00	21.27	18.88	14.24	69.73	10806.55	61.17	160.8	44.00	3.55	3.27	3.95
	10875.00	25.84	20.21	32.68	76.30	10851.46	61.30	163.5	49.00	9.39	9.33	2.71
	10921.00	30.95	20.74	53.16	83.95	10891.91	61.80	166.2	46.00	11.12	11.11	1.15
	10970.00	35.68	17.41	78.60	92.70	10932.85	61.69	166.2	49.00	10.35	9.65	-6.80
	11017.00	39.73	14.06	106.26	100.45	10970.03	59.92	168.9	47.00	9.65	8.62	-7.13
	11065.00	45.17	14.22	137.67	108.36	11005.43	57.06	171.6	48.00	11.34	11.33	0.33
	11112.00	50.71	16.55	171.28	117.65	11036.91	54.77	168.9	47.00	12.35	11.79	4.96
	11160.00	56.57	19.01	208.06	129.47	11065.36	53.85	171.6	48.00	12.89	12.21	5.13
	11207.00	61.94	20.09	246.11	143.00	11089.38	54.10	174.3	47.00	11.59	11.43	2.30
	11255.00	66.85	20.70	286.67	158.08	11110.11	55.01	174.3	48.00	10.29	10.23	1.27
	11302.00	67.43	20.08	327.26	173.17	11128.37	55.91	179.7	47.00	1.73	1.23	-1.32
	11350.00	67.39	20.57	368.82	188.56	11146.81	56.78	177.0	48.00	0.95	-0.08	1.02
	11397.00	71.88	20.91	410.02	204.16	11163.16	57.97	177.0	47.00	9.58	9.55	0.72
	11446.00	75.80	20.84	453.98	220.93	11176.80	59.34	179.7	49.00	8.00	8.00	-0.14
	11492.00	75.76	24.34	495.14	238.06	11188.10	61.98	179.7	46.00	7.38	-0.09	7.61
	11540.00	75.83	29.99	536.53	259.29	11199.89	68.42	177.0	48.00	11.41	0.15	11.77
	11587.00	75.75	35.25	574.89	283.84	11211.43	78.99	179.7	47.00	10.85	-0.17	11.19
	11635.00	75.70	38.63	612.06	311.79	11223.27	93.16	179.7	48.00	6.82	-0.10	7.04
	11682.00	75.79	41.43	646.94	341.09	11234.85	109.36	179.7	47.00	5.78	0.19	5.96
	11729.00	75.73	45.77	679.92	372.50	11246.41	128.18	174.3	47.00	8.95	-0.13	9.23
	11777.00	76.56	50.14	711.12	407.10	11257.91	150.59	179.7	48.00	9.01	1.73	9.10
	11825.00	76.39	53.54	739.95	443.79	11269.14	175.76	182.5	48.00	6.90	-0.35	7.08
	11872.00	76.62	56.12	766.27	481.14	11280.11	202.38	182.5	47.00	5.36	0.49	5.49
	11920.00	78.57	59.37	791.28	520.78	11290.43	231.59	179.7	48.00	7.76	4.06	6.77
	11967.00	78.60	62.30	813.73	561.01	11299.73	262.19	182.5	47.00	6.11	0.06	6.23
	12015.00	79.80	65.21	834.57	603.29	11308.73	295.27	182.5	48.00	6.46	2.50	6.06
	12062.00	80.17	67.42	853.16	645.68	11316.90	329.18	185.2	47.00	4.70	0.79	4.70
	12110.00	80.66	69.81	870.42	689.74	11324.89	365.13	185.2	48.00	5.01	1.02	4.98
	12157.00	82.41	75.32	884.34	734.08	11331.82	402.42	182.5	47.00	12.18	3.72	11.72

# ADVANTAGE Final Survey Listing



INTEQ

**Operator** Gastar Exploration USA      **Fields** Marshall      **API No** 47051017310100  
**Well** Simms 5H      **Wellbore** ST01      **Rig** Nomac 323      **Job** 6272852

Tie In	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Temperature degF	CRS LEN ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	12204.00	83.49	81.85	893.56	779.77	11337.59	442.54	182.5	47.00	13.98	2.30	13.89
	12253.00	84.82	88.50	897.66	828.32	11342.59	487.03	182.5	49.00	13.77	2.71	13.57
	12298.00	84.67	94.70	896.41	873.09	11346.71	529.73	182.5	45.00	13.72	-0.33	13.78
	12347.00	84.73	99.09	890.55	921.51	11351.24	577.38	182.5	49.00	8.92	0.12	8.96
	12442.00	86.43	102.79	872.57	1014.49	11358.56	671.10	185.2	95.00	4.28	1.79	3.89
	12496.00	88.65	105.94	859.19	1066.74	11360.88	724.85	185.2	54.00	7.13	4.11	5.83
	12537.00	88.28	107.26	847.48	1106.02	11361.98	765.79	185.2	41.00	3.34	-0.90	3.22
	12629.00	88.21	108.09	819.56	1193.63	11364.80	857.71	190.6	92.00	0.90	-0.08	0.90
	12724.00	89.29	111.29	787.57	1283.05	11366.87	952.67	196.0	95.00	3.55	1.14	3.37
	12819.00	88.31	112.25	752.34	1371.25	11368.86	1047.56	198.7	95.00	1.44	-1.03	1.01
	12914.00	87.91	113.54	715.40	1458.72	11371.99	1142.30	190.6	95.00	1.42	-0.42	1.36
	13009.00	87.91	110.39	679.90	1546.75	11375.46	1237.12	193.3	95.00	3.31	0.00	-3.32
	13103.00	87.94	105.37	651.06	1636.12	11378.87	1331.00	190.6	94.00	5.34	0.03	-5.34
	13197.00	87.94	106.51	625.27	1726.45	11382.25	1424.79	147.3	94.00	1.21	0.00	1.21
	13292.00	88.58	107.36	597.61	1817.29	11385.13	1519.67	198.7	95.00	1.12	0.67	0.89
	13387.00	88.95	108.52	568.35	1907.64	11387.18	1614.62	198.7	95.00	1.28	0.39	1.22
	13483.00	88.92	110.93	535.96	1997.99	11388.96	1710.59	196.0	96.00	2.51	-0.03	2.51
	13577.00	89.42	110.20	502.94	2085.99	11390.32	1804.56	198.7	94.00	0.94	0.53	-0.78
	13672.00	89.57	110.81	469.67	2174.97	11391.16	1899.53	182.5	95.00	0.66	0.16	0.64
	13767.00	89.42	110.71	436.00	2263.79	11392.00	1994.49	190.6	95.00	0.19	-0.16	-0.11
	13862.00	88.89	114.62	399.40	2351.43	11393.40	2089.29	190.6	95.00	4.15	-0.56	4.12
	13956.00	87.85	111.39	362.68	2437.91	11396.07	2183.03	193.3	94.00	3.61	-1.11	-3.44
	14051.00	87.84	109.84	329.26	2526.76	11399.65	2277.93	196.0	95.00	1.63	-0.01	-1.63
	14147.00	87.91	109.54	296.94	2617.08	11403.21	2373.86	196.0	96.00	0.32	0.07	-0.31
	14242.00	88.31	107.74	266.59	2707.05	11406.34	2468.80	260.8	95.00	1.94	0.42	-1.89
	14336.00	88.37	108.08	237.70	2796.45	11409.06	2562.73	198.7	94.00	0.37	0.06	0.36
	14431.00	88.37	107.86	208.40	2886.78	11411.77	2657.67	201.4	95.00	0.23	0.00	-0.23
	14526.00	88.86	109.77	177.77	2976.68	11414.06	2752.64	201.4	95.00	2.08	0.52	2.01
	14621.00	88.92	108.99	146.25	3066.28	11415.90	2847.62	204.1	95.00	0.82	0.06	-0.82
	14716.00	88.92	107.43	116.57	3156.50	11417.69	2942.59	204.1	95.00	1.64	0.00	-1.64
	14811.00	88.89	109.36	86.60	3246.62	11419.51	3037.56	206.8	95.00	2.03	-0.03	2.03
	14907.00	88.89	108.20	55.70	3337.49	11421.37	3133.53	209.5	96.00	1.21	0.00	-1.21
	15001.00	88.89	106.07	28.01	3427.30	11423.19	3227.45	206.8	94.00	2.27	0.00	-2.27
	15092.00	88.92	108.38	1.07	3514.20	11424.93	3318.37	206.8	91.00	2.54	0.03	2.54
	15187.00	88.46	109.56	-29.80	3604.01	11427.10	3413.34	212.2	95.00	1.33	-0.48	1.24
	15282.00	88.40	108.78	-60.99	3693.71	11429.70	3508.31	206.8	95.00	0.82	-0.06	-0.82
	15377.00	88.37	108.90	-91.65	3783.58	11432.38	3603.27	206.8	95.00	0.13	-0.03	0.13
	15472.00	89.11	109.40	-122.81	3873.30	11434.47	3698.24	209.5	95.00	0.94	0.78	0.53
	15567.00	89.20	107.16	-152.60	3963.49	11435.87	3793.22	206.8	95.00	2.36	0.09	-2.36
	15663.00	89.14	108.58	-182.05	4054.85	11437.26	3889.18	209.5	96.00	1.48	-0.06	1.48
	15758.00	89.14	106.95	-211.04	4145.31	11438.69	3984.13	212.2	95.00	1.72	0.00	-1.72
	15852.00	89.11	108.18	-239.40	4234.91	11440.12	4078.08	212.2	94.00	1.31	-0.03	1.31
	15948.00	88.52	110.69	-271.33	4325.42	11442.11	4174.05	212.2	96.00	2.69	-0.61	2.61
	16042.00	87.97	111.12	-304.86	4413.19	11444.99	4267.97	212.2	94.00	0.74	-0.59	0.46
	16138.00	88.40	111.59	-339.80	4502.55	11448.03	4363.85	214.9	96.00	0.66	0.45	0.49
	16232.00	88.43	107.73	-371.41	4591.02	11450.63	4457.79	214.9	94.00	4.10	0.03	-4.11
	16328.00	88.37	106.53	-399.67	4682.72	11453.31	4553.69	212.2	96.00	1.25	-0.06	-1.25
	16422.00	88.34	110.48	-429.49	4771.81	11456.01	4647.63	212.2	94.00	4.20	-0.03	4.20
	16517.00	88.98	110.30	-462.58	4860.83	11458.23	4742.58	214.9	95.00	0.70	0.67	-0.19
	16612.00	89.05	109.14	-494.63	4950.25	11459.86	4837.56	214.9	95.00	1.22	0.07	-1.22
	16707.00	89.02	111.42	-527.55	5039.34	11461.46	4932.52	214.9	95.00	2.40	-0.03	2.40
	16779.00	89.02	109.73	-552.85	5106.73	11462.70	5004.49	214.9	72.00	2.35	0.00	-2.35

Projection to TD

16804.00	89.02	109.73	-561.28	5130.26	11463.12	5029.49			25.00	0.00	0.00	0.00
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**Tie Column Legend: I - interpolated tie-point, S - survey station, U - user-defined, T - Surface**

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