



Company: Source Energy
 Well: Moore 31-31-6-32H
 Location: Sumner County
 Rig: HWD 7

Job Number: 5671710
 Magnetic Decl.: 4.10
 Grid Corr.: 0.70
 Total Grid Corr.: 3.40

Calculation Method Minimum Curvature
 Proposed Azimuth 180
 Depth Reference Rotary Table
 Tie Into: Pilot Hole

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Direction	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
Tie In Coordinates														
Tie In	0	0.00	153.10	S 26.9 E	0	0	0	0 N	0 W					
MWD	15	0.00	153.10	S 26.9 E	15	15.00	0.00	0.00 N	0.00 E	0.00	0.00	0.00	0.00	0.00
MWD	149	0.02	153.10	S 26.9 E	134	149.00	0.02	0.02 S	0.01 E	0.02	153.10	0.01	0.01	0.00
MWD	325	0.02	153.10	S 26.9 E	176	325.00	0.08	0.08 S	0.04 E	0.08	153.10	0.00	0.00	0.00
MWD	337	0.22	153.10	S 26.9 E	12	337.00	0.10	0.10 S	0.05 E	0.11	153.10	1.67	1.67	0.00
MWD	424	0.22	146.39	S 33.6 E	87	424.00	0.39	0.39 S	0.22 E	0.44	150.58	0.03	0.00	-7.71
MWD	511	0.28	254.56	S 74.6 W	87	511.00	0.58	0.58 S	0.11 E	0.59	169.74	0.47	0.07	124.33
MWD	597	0.23	149.45	S 30.6 E	86	597.00	0.79	0.79 S	0.01 W	0.79	180.69	0.47	-0.06	-122.22
MWD	684	0.16	173.51	S 6.5 E	87	684.00	1.06	1.06 S	0.09 E	1.06	174.97	0.12	-0.08	27.66
MWD	771	0.13	157.12	S 22.9 E	87	771.00	1.27	1.27 S	0.15 E	1.28	173.48	0.06	-0.03	-18.84
MWD	857	0.20	157.09	S 22.9 E	86	857.00	1.50	1.50 S	0.24 E	1.52	170.84	0.08	0.08	-0.03
MWD	942	0.14	213.33	S 33.3 W	85	942.00	1.72	1.72 S	0.24 E	1.74	171.99	0.20	-0.07	66.16
MWD	1033	0.09	275.37	N 84.6 W	91	1033.00	1.81	1.81 S	0.11 E	1.81	176.52	0.14	-0.05	68.18
MWD	1123	0.11	171.83	S 8.2 E	90	1123.00	1.89	1.89 S	0.05 E	1.89	178.43	0.18	0.02	-115.04
MWD	1215	0.15	231.79	S 51.8 W	92	1215.00	2.05	2.05 S	0.03 W	2.05	180.85	0.15	0.04	65.17
MWD	1305	0.32	239.09	S 59.1 W	90	1305.00	2.25	2.25 S	0.34 W	2.27	188.56	0.19	0.19	8.11
MWD	1395	0.44	170.22	S 9.8 E	90	1394.99	2.72	2.72 S	0.50 W	2.76	190.32	0.49	0.13	-76.52
MWD	1487	0.13	181.73	S 1.7 W	92	1486.99	3.17	3.17 S	0.44 W	3.20	187.87	0.34	-0.34	12.51
MWD	1578	0.24	88.57	N 88.6 E	91	1577.99	3.27	3.27 S	0.25 W	3.28	184.39	0.31	0.12	-102.37
MWD	1669	0.19	39.72	N 39.7 E	91	1668.99	3.15	3.15 S	0.04 E	3.15	179.35	0.20	-0.05	-53.68
MWD	1760	0.09	27.23	N 27.2 E	91	1759.99	2.97	2.97 S	0.16 E	2.97	176.82	0.11	-0.11	-13.73
MWD	1849	0.17	74.43	N 74.4 E	89	1848.99	2.87	2.87 S	0.32 E	2.89	173.56	0.14	0.09	53.03
MWD	1936	0.09	29.27	N 29.3 E	87	1935.99	2.78	2.78 S	0.48 E	2.82	170.16	0.14	-0.09	-51.91
MWD	2022	0.35	96.90	S 83.1 E	86	2021.99	2.75	2.75 S	0.78 E	2.86	164.25	0.38	0.30	78.64
MWD	2109	0.26	277.27	N 82.7 W	87	2108.99	2.76	2.76 S	0.84 E	2.88	162.99	0.70	-0.10	207.32
MWD	2196	0.21	20.17	N 20.2 E	87	2195.99	2.58	2.58 S	0.70 E	2.68	164.78	0.42	-0.06	118.28
MWD	2282	0.17	55.59	N 55.6 E	86	2281.99	2.36	2.36 S	0.86 E	2.52	159.95	0.14	-0.05	41.19
MWD	2369	0.20	177.72	S 2.3 E	87	2368.99	2.44	2.44 S	0.97 E	2.63	158.23	0.37	0.03	140.38
MWD	2456	0.13	5.22	N 5.2 E	87	2455.99	2.50	2.50 S	0.99 E	2.68	158.36	0.38	-0.08	-198.28
MWD	2542	0.26	163.57	S 16.4 E	86	2541.99	2.59	2.59 S	1.05 E	2.79	157.82	0.45	0.15	184.13
MWD	2629	0.22	92.20	S 87.8 E	87	2628.99	2.78	2.78 S	1.28 E	3.06	155.34	0.32	-0.05	-82.03
MWD	2712	0.29	144.01	S 36.0 E	83	2711.99	2.96	2.96 S	1.56 E	3.34	152.19	0.28	0.08	62.42
MWD	2797	0.31	33.07	N 33.1 E	85	2796.99	2.94	2.94 S	1.81 E	3.45	148.35	0.58	0.02	-130.52
MWD	2883	0.70	69.40	N 69.4 E	86	2882.98	2.56	2.56 S	2.43 E	3.53	136.47	0.57	0.45	42.24
MWD	2970	1.18	1.55	N 1.6 E	87	2969.97	1.48	1.48 S	2.95 E	3.30	116.57	1.29	0.55	-77.99



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 Total Grid Corr.: 3.40

Calculation Method Minimum Curvature
 Proposed Azimuth 180
 Depth Reference Rotary Table
 Tie Into: Pilot Hole

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Direction	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
MWD	3057	0.28	306.81	N 53.2 W	87	3056.97	0.45	0.45 S	2.81 E	2.84	99.17	1.20	-1.03	-62.92
MWD	3144	0.11	122.26	S 57.7 E	87	3143.97	0.37	0.37 S	2.71 E	2.73	97.79	0.45	-0.20	-212.13
MWD	3230	0.37	99.50	S 80.5 E	86	3229.96	0.46	0.46 S	3.05 E	3.08	98.58	0.32	0.30	-26.47
MWD	3317	0.11	33.99	N 34.0 E	87	3316.96	0.44	0.44 S	3.37 E	3.40	97.39	0.39	-0.30	-75.30
MWD	3403	0.21	118.77	S 61.2 E	86	3402.96	0.44	0.44 S	3.56 E	3.59	97.12	0.27	0.12	98.58
MWD	3447	0.54	158.76	S 21.2 E	44	3446.96	0.68	0.68 S	3.70 E	3.76	100.35	0.91	0.75	90.89
MWD	3490	3.71	179.05	S 0.9 E	43	3489.93	2.26	2.26 S	3.80 E	4.42	120.71	7.46	7.37	47.19
MWD	3534	8.51	179.39	S 0.6 E	44	3533.67	6.94	6.94 S	3.86 E	7.94	150.92	10.91	10.91	0.77
MWD	3577	12.95	176.34	S 3.7 E	43	3575.90	14.93	14.93 S	4.20 E	15.51	164.29	10.41	10.33	-7.09
MWD	3620	16.63	176.58	S 3.4 E	43	3617.47	25.89	25.89 S	4.87 E	26.34	169.33	8.56	8.56	0.56
MWD	3664	19.31	176.85	S 3.2 E	44	3659.32	39.44	39.44 S	5.65 E	39.84	171.85	6.09	6.09	0.61
MWD	3707	21.65	177.42	S 2.6 E	43	3699.60	54.46	54.46 S	6.40 E	54.84	173.30	5.46	5.44	1.33
MWD	3750	24.48	179.43	S 0.6 E	43	3739.16	71.30	71.30 S	6.84 E	71.63	174.52	6.83	6.58	4.67
MWD	3793	28.42	181.17	S 1.2 W	43	3777.65	90.45	90.45 S	6.72 E	90.70	175.75	9.34	9.16	4.05
MWD	3837	33.17	181.33	S 1.3 W	44	3815.44	112.96	112.96 S	6.23 E	113.13	176.84	10.80	10.80	0.36
MWD	3880	37.42	180.34	S 0.3 W	43	3850.53	137.80	137.80 S	5.88 E	137.92	177.56	9.97	9.88	-2.30
MWD	3923	42.66	179.53	S 0.5 E	43	3883.43	165.45	165.45 S	5.92 E	165.56	177.95	12.25	12.19	-1.88
MWD	3966	47.59	178.14	S 1.9 E	43	3913.77	195.90	195.90 S	6.56 E	196.01	178.08	11.69	11.47	-3.23
MWD	4010	51.14	178.20	S 1.8 E	44	3942.42	229.27	229.27 S	7.62 E	229.40	178.10	8.07	8.07	0.14
MWD	4053	54.92	178.64	S 1.4 E	43	3968.27	263.61	263.61 S	8.57 E	263.75	178.14	8.83	8.79	1.02
MWD	4096	59.31	179.36	S 0.6 E	43	3991.61	299.70	299.70 S	9.19 E	299.84	178.24	10.31	10.21	1.67
MWD	4140	63.38	180.06	S 0.1 W	44	4012.71	338.30	338.30 S	9.38 E	338.43	178.41	9.35	9.25	1.59
MWD	4183	67.71	180.82	S 0.8 W	43	4030.50	377.44	377.44 S	9.08 E	377.55	178.62	10.20	10.07	1.77
MWD	4226	69.60	181.53	S 1.5 W	43	4046.16	417.48	417.48 S	8.25 E	417.56	178.87	4.66	4.40	1.65
MWD	4269	69.40	181.56	S 1.6 W	43	4061.21	457.74	457.74 S	7.17 E	457.79	179.10	0.47	-0.47	0.07
MWD	4313	70.96	180.74	S 0.7 W	44	4076.13	499.12	499.12 S	6.34 E	499.16	179.27	3.96	3.55	-1.86
MWD	4356	74.86	180.71	S 0.7 W	43	4088.77	540.21	540.21 S	5.82 E	540.24	179.38	9.07	9.07	-0.07
MWD	4399	79.10	181.20	S 1.2 W	43	4098.45	582.09	582.09 S	5.12 E	582.11	179.50	9.92	9.86	1.14
MWD	4443	82.44	180.69	S 0.7 W	44	4105.51	625.51	625.51 S	4.40 E	625.52	179.60	7.68	7.59	-1.16
MWD	4487	86.15	180.28	S 0.3 W	44	4109.88	669.28	669.28 S	4.03 E	669.29	179.65	8.48	8.43	-0.93
MWD	4506	87.60	180.02	S 0.0 W	19	4110.92	688.25	688.25 S	3.98 E	688.26	179.67	7.75	7.63	-1.37
MWD	4565	90.31	177.56	S 2.4 E	59	4111.99	747.22	747.22 S	5.23 E	747.24	179.60	6.20	4.59	-4.17
MWD	4652	90.34	175.44	S 4.6 E	87	4111.50	834.05	834.05 S	10.54 E	834.12	179.28	2.44	0.03	-2.44
MWD	4738	89.54	175.17	S 4.8 E	86	4111.59	919.76	919.76 S	17.58 E	919.93	178.91	0.98	-0.93	-0.31
MWD	4825	89.51	175.91	S 4.1 E	87	4112.31	1006.49	1006.49 S	24.35 E	1006.79	178.61	0.85	-0.03	0.85
MWD	4911	89.38	177.02	S 3.0 E	86	4113.14	1092.33	1092.33 S	29.65 E	1092.73	178.45	1.30	-0.15	1.29



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Calculation Method Minimum Curvature
 Proposed Azimuth 180
 Depth Reference Rotary Table
 Tie Into: Pilot Hole

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Direction	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
MWD	4998	88.74	177.76	S 2.2 E	87	4114.57	1179.22	1179.22 S	33.61 E	1179.70	178.37	1.12	-0.74	0.85
MWD	5085	88.55	180.83	S 0.8 W	87	4116.63	1266.18	1266.18 S	34.68 E	1266.66	178.43	3.53	-0.22	3.53
MWD	5171	88.77	181.29	S 1.3 W	86	4118.64	1352.14	1352.14 S	33.09 E	1352.55	178.60	0.59	0.26	0.53
MWD	5257	89.51	181.49	S 1.5 W	86	4119.93	1438.11	1438.11 S	31.00 E	1438.44	178.77	0.89	0.86	0.23
MWD	5344	90.12	181.07	S 1.1 W	87	4120.21	1525.08	1525.08 S	29.06 E	1525.36	178.91	0.85	0.70	-0.48
MWD	5430	90.12	180.80	S 0.8 W	86	4120.03	1611.07	1611.07 S	27.66 E	1611.31	179.02	0.31	0.00	-0.31
MWD	5517	89.57	180.59	S 0.6 W	87	4120.27	1698.07	1698.07 S	26.60 E	1698.27	179.10	0.68	-0.63	-0.24
MWD	5603	89.57	181.96	S 2.0 W	86	4120.91	1784.04	1784.04 S	24.69 E	1784.21	179.21	1.59	0.00	1.59
MWD	5690	89.54	181.57	S 1.6 W	87	4121.59	1871.00	1871.00 S	22.01 E	1871.13	179.33	0.45	-0.03	-0.45
MWD	5777	89.45	182.01	S 2.0 W	87	4122.36	1957.95	1957.95 S	19.29 E	1958.04	179.44	0.52	-0.10	0.51
MWD	5863	89.48	181.62	S 1.6 W	86	4123.16	2043.90	2043.90 S	16.57 E	2043.97	179.54	0.45	0.03	-0.45
MWD	5950	89.51	181.43	S 1.4 W	87	4123.93	2130.87	2130.87 S	14.25 E	2130.92	179.62	0.22	0.03	-0.22
MWD	6037	89.48	180.33	S 0.3 W	87	4124.69	2217.85	2217.85 S	12.91 E	2217.89	179.67	1.26	-0.03	-1.26
MWD	6123	89.32	180.09	S 0.1 W	86	4125.59	2303.85	2303.85 S	12.60 E	2303.88	179.69	0.34	-0.19	-0.28
MWD	6210	89.88	180.70	S 0.7 W	87	4126.20	2390.84	2390.84 S	12.00 E	2390.87	179.71	0.95	0.64	0.70
MWD	6296	89.63	180.93	S 0.9 W	86	4126.57	2476.83	2476.83 S	10.78 E	2476.86	179.75	0.40	-0.29	0.27
MWD	6383	89.45	181.90	S 1.9 W	87	4127.27	2563.80	2563.80 S	8.63 E	2563.82	179.81	1.13	-0.21	1.11
MWD	6469	89.91	181.60	S 1.6 W	86	4127.75	2649.76	2649.76 S	6.00 E	2649.77	179.87	0.64	0.53	-0.35
MWD	6554	89.45	180.33	S 0.3 W	85	4128.22	2734.75	2734.75 S	4.57 E	2734.75	179.90	1.59	-0.54	-1.49
MWD	6641	89.66	179.07	S 0.9 E	87	4128.90	2821.74	2821.74 S	5.03 E	2821.74	179.90	1.47	0.24	-1.45
MWD	6726	89.45	178.69	S 1.3 E	85	4129.56	2906.72	2906.72 S	6.69 E	2906.73	179.87	0.51	-0.25	-0.45
MWD	6798	89.42	178.31	S 1.7 E	72	4130.27	2978.69	2978.69 S	8.57 E	2978.71	179.84	0.53	-0.04	-0.53
MWD	6888	89.48	178.59	S 1.4 E	90	4131.13	3068.66	3068.66 S	11.01 E	3068.68	179.79	0.32	0.07	0.31
MWD	6979	89.63	179.77	S 0.2 E	91	4131.84	3159.64	3159.64 S	12.31 E	3159.67	179.78	1.31	0.16	1.30
MWD	7070	89.75	180.76	S 0.8 W	91	4132.33	3250.64	3250.64 S	11.89 E	3250.66	179.79	1.10	0.13	1.09
MWD	7160	90.03	180.84	S 0.8 W	90	4132.50	3340.63	3340.63 S	10.63 E	3340.65	179.82	0.32	0.31	0.09
MWD	7252	89.75	180.59	S 0.6 W	92	4132.68	3432.62	3432.62 S	9.48 E	3432.64	179.84	0.41	-0.30	-0.27
MWD	7343	89.41	181.39	S 1.4 W	91	4133.35	3523.61	3523.61 S	7.91 E	3523.61	179.87	0.96	-0.37	0.88
MWD	7433	89.72	181.17	S 1.2 W	90	4134.03	3613.58	3613.58 S	5.90 E	3613.58	179.91	0.42	0.34	-0.24
MWD	7523	89.69	181.21	S 1.2 W	90	4134.49	3703.56	3703.56 S	4.03 E	3703.56	179.94	0.06	-0.03	0.04
MWD	7613	89.72	180.52	S 0.5 W	90	4134.96	3793.55	3793.55 S	2.67 E	3793.55	179.96	0.77	0.03	-0.77
MWD	7704	89.32	179.94	S 0.1 E	91	4135.72	3884.54	3884.54 S	2.31 E	3884.54	179.97	0.77	-0.44	-0.64
MWD	7795	89.32	180.52	S 0.5 W	91	4136.80	3975.54	3975.54 S	1.94 E	3975.54	179.97	0.64	0.00	0.64
MWD	7875	87.81	179.88	S 0.1 E	80	4138.80	4055.51	4055.51 S	1.66 E	4055.51	179.98	2.05	-1.89	-0.80
MWD	7964	88.77	180.36	S 0.4 W	89	4141.46	4144.47	4144.47 S	1.48 E	4144.47	179.98	1.21	1.08	0.54
MWD	8055	89.54	180.24	S 0.2 W	91	4142.80	4235.45	4235.45 S	1.00 E	4235.45	179.99	0.86	0.85	-0.13

