

Job Number: 23D0512108
 Company: Stone Energy
 Lease/Well: Mills Wetzel 4H
 Location: Jacksonburg
 Rig Name: Saxon 141
 RKB: 18
 G.L. or M.S.L.: 1331

State/Country: West Virginia 103-02720
 Declination: -8.52
 Grid: -7.77
 File name: D:\WINSERVE\STONEJ~1\MW#4H.SVY
 Date/Time: 29-May-12 / 04:14
 Curve Name: MW#4H As Drilled

Scientific Drilling

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 154.40
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
108.00	.54	164.32	108.00	-.49	.14	.50	.51	164.32	.50
208.00	.47	187.11	207.99	-1.35	.21	1.31	1.37	170.99	.21
308.00	.45	172.06	307.99	-2.15	.22	2.03	2.16	174.21	.12
408.00	.35	183.60	407.99	-2.84	.25	2.67	2.85	174.92	.13
508.00	.24	185.82	507.99	-3.35	.21	3.12	3.36	176.38	.11
608.00	.22	211.96	607.99	-3.72	.09	3.40	3.73	178.62	.11
708.00	.18	153.25	707.99	-4.03	.06	3.66	4.03	179.17	.20
808.00	.23	144.24	807.99	-4.33	.25	4.01	4.34	176.74	.06
908.00	.23	153.35	907.98	-4.67	.45	4.41	4.70	174.45	.04
1008.00	.18	152.91	1007.98	-4.99	.62	4.77	5.03	172.97	.05
1108.00	.09	131.95	1107.98	-5.18	.75	5.00	5.24	171.82	.10
1208.00	.10	157.26	1207.98	-5.32	.84	5.16	5.38	171.05	.04
1308.00	.22	166.50	1307.98	-5.59	.92	5.43	5.66	170.69	.12
1408.00	.23	198.04	1407.98	-5.96	.90	5.77	6.03	171.43	.12
1508.00	.35	226.84	1507.98	-6.36	.61	6.00	6.39	174.49	.19
1608.00	.30	204.33	1607.98	-6.81	.28	6.26	6.82	177.62	.14
1708.00	.34	208.38	1707.98	-7.31	.03	6.61	7.31	179.73	.05
1808.00	.21	173.71	1807.98	-7.75	-.09	6.95	7.75	180.64	.21
1908.00	.36	176.41	1907.98	-8.25	-.05	7.42	8.25	180.33	.15
2008.00	.54	163.50	2007.97	-9.01	.11	8.17	9.01	179.82	.21
2108.00	.71	134.60	2107.97	-9.90	.68	9.22	9.92	176.06	.35
2208.00	.80	126.93	2207.96	-10.76	1.68	10.43	10.89	174.92	.14
2308.00	1.03	132.02	2307.95	-11.78	2.91	11.88	12.13	166.14	.24
2408.00	.97	128.91	2407.93	-12.91	4.23	13.47	13.59	161.85	.24
2508.00	.86	120.37	2507.92	-13.82	5.54	14.86	14.89	158.16	.29
2608.00	.85	110.62	2607.91	-14.46	6.88	16.01	16.01	154.56	.29
2708.00	.87	91.12	2707.90	-14.74	8.33	16.89	16.93	150.51	.29
2808.00	.27	72.67	2807.89	-14.68	9.32	17.27	17.39	147.60	.62
2908.00	1.68	113.38	2907.87	-15.19	10.80	18.44	18.88	144.88	.62

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3008.00	3.74	127.66	3007.76	-17.77	14.82	22.43	23.14	140.18	2.15
3108.00	4.59	138.90	3107.49	-22.78	20.03	29.19	30.33	138.67	1.17
3208.00	5.11	158.49	3207.14	-29.94	24.29	37.49	38.55	140.94	1.73
3308.00	5.90	175.93	3306.69	-39.21	26.29	46.72	47.20	146.16	1.84
3408.00	6.98	191.39	3406.06	-50.29	25.45	56.35	56.37	153.15	2.03
3508.00	9.09	198.92	3505.08	-63.72	21.69	66.84	67.31	161.20	2.35
3608.00	9.62	198.77	3603.75	-79.10	16.44	78.44	80.80	168.26	.53
3708.00	9.91	196.98	3702.30	-95.25	11.24	90.75	95.91	173.27	.42
3808.00	9.67	194.78	3800.84	-111.60	6.59	103.49	111.79	176.62	.44
3908.00	9.37	195.59	3899.47	-127.56	2.26	116.01	127.58	178.99	.33
4008.00	9.68	197.18	3998.09	-143.43	-2.42	128.31	143.45	180.96	.41
4108.00	9.65	196.94	4096.67	-159.48	-7.34	140.65	159.65	182.64	.05
4208.00	9.51	197.53	4195.27	-175.38	-12.27	152.86	175.81	184.00	.17
4308.00	9.50	197.47	4293.90	-191.13	-17.24	164.92	191.90	185.15	.01
4408.00	9.35	196.55	4392.55	-206.78	-22.03	176.97	207.95	186.08	.21
4508.00	9.63	194.48	4491.18	-222.67	-26.43	189.39	224.23	186.77	.44
4608.00	9.30	192.69	4589.82	-238.65	-30.30	202.13	240.57	187.24	.44
4708.00	7.33	192.09	4688.76	-252.77	-33.41	213.52	254.97	187.53	1.97
4808.00	5.71	197.38	4788.12	-263.76	-36.23	222.21	266.24	187.82	1.73
4908.00	3.82	203.33	4887.77	-271.57	-39.04	228.04	274.36	188.18	1.95
5008.00	1.76	204.72	4987.64	-276.02	-41.00	231.21	279.05	188.45	2.06
5108.00	.55	248.47	5087.62	-277.59	-42.09	232.15	280.76	188.62	1.41
5208.00	.61	252.71	5187.62	-277.93	-43.04	232.04	281.24	188.80	.07
5308.00	.53	202.60	5287.61	-278.51	-43.73	232.28	281.92	188.92	.49
5408.00	.63	216.65	5387.61	-279.38	-44.24	232.84	282.86	189.00	.17
5508.00	.53	251.90	5487.60	-279.96	-45.00	233.04	283.56	189.13	.36
5608.00	.59	212.39	5587.60	-280.54	-45.72	233.25	284.24	189.26	.38
5708.00	1.19	176.92	5687.59	-282.01	-45.94	234.48	285.73	189.25	.79
5808.00	1.67	159.01	5787.55	-284.41	-45.36	236.89	288.01	189.06	.65
5908.00	2.03	166.81	5887.50	-287.50	-44.44	240.07	290.91	188.79	.44
6008.00	2.34	156.21	5987.43	-291.09	-43.21	243.84	294.28	188.44	.51
6075.54	1.63	149.40	6054.93	-293.18	-42.16	246.18	296.19	188.18	1.11
6112.00	.86	136.37	6091.38	-293.82	-41.71	246.96	296.77	188.08	2.24
6175.00	.74	136.24	6154.37	-294.46	-41.10	247.79	297.31	187.95	.19
6239.00	.50	126.52	6218.37	-294.92	-40.59	248.43	297.70	187.84	.41
6271.00	.45	113.09	6250.37	-295.05	-40.36	248.65	297.80	187.79	.38
6302.00	1.37	169.95	6281.37	-295.47	-40.19	249.10	298.19	187.75	3.82
6334.00	3.64	187.98	6313.33	-296.85	-40.26	250.31	299.57	187.72	7.42
6366.00	5.99	195.50	6345.22	-299.47	-40.85	252.42	302.24	187.77	7.59
6398.00	8.16	196.87	6376.97	-303.25	-41.95	255.35	306.14	187.88	6.80
6429.00	9.71	196.96	6407.60	-307.85	-43.36	258.90	310.89	188.02	5.00
6461.00	11.02	197.64	6439.07	-313.35	-45.07	263.12	316.58	188.18	4.41
6493.00	12.43	197.65	6470.40	-319.55	-47.04	267.85	322.99	188.37	4.41
6525.00	14.34	198.61	6501.53	-326.59	-49.35	273.20	330.29	188.59	6.01
6556.00	15.99	200.80	6531.45	-334.22	-52.09	278.90	338.25	188.86	5.63
6588.00	17.30	200.86	6562.11	-342.78	-55.35	285.22	347.22	189.17	4.09
6620.00	17.34	199.87	6592.66	-351.71	-58.67	291.84	356.57	189.47	3.20
6652.00	18.96	201.07	6623.07	-361.05	-62.16	298.75	366.36	189.77	2.20
6684.00	21.88	202.50	6653.05	-371.41	-66.31	306.30	377.28	190.12	9.26
6716.00	24.12	202.92	6682.51	-382.94	-71.14	314.61	389.50	190.52	7.02

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
6747.00	25.91	202.32	6710.60	-395.04	-76.18	323.35	402.32	190.91	5.83
6779.00	28.48	202.66	6739.06	-408.56	-81.77	333.12	416.66	191.32	8.05
BOTTOM LINE CHECK									
6811.00	30.73	202.01	6766.88	-423.18	-87.78	343.71	432.19	191.72	7.10
6842.00	32.25	201.62	6793.31	-438.21	-93.79	354.67	448.14	192.08	4.95
6874.00	34.02	200.59	6820.11	-454.53	-100.09	366.66	465.42	192.42	5.80
6906.00	36.00	199.91	6846.32	-471.75	-106.44	379.45	483.61	192.71	6.31
6938.00	38.15	199.73	6871.85	-489.90	-112.98	392.99	502.76	192.99	6.73
6970.00	39.64	199.27	6896.75	-508.84	-119.68	407.18	522.73	193.24	4.74
7002.00	40.64	197.66	6921.22	-528.41	-126.21	422.00	543.27	193.43	4.50
7033.00	42.14	195.34	6944.47	-548.06	-132.03	437.21	563.74	193.54	6.92
7065.00	44.52	192.71	6967.75	-569.36	-137.34	454.13	585.69	193.56	9.33
7097.00	46.68	191.04	6990.14	-591.73	-142.04	472.27	608.54	193.50	7.71
7129.00	48.49	189.55	7011.72	-614.98	-146.25	491.41	632.13	193.38	6.62
7161.00	50.50	187.95	7032.51	-639.02	-149.95	511.50	656.38	193.21	7.34
7192.00	52.56	186.61	7051.79	-663.09	-153.02	531.88	680.52	192.99	7.46
7224.00	54.09	185.49	7070.91	-688.62	-155.72	553.73	706.00	192.74	5.54
7256.00	55.72	183.96	7089.30	-714.71	-157.88	576.33	731.94	192.46	6.42
7288.00	57.49	181.65	7106.92	-741.39	-159.18	599.83	758.28	192.12	8.18
7320.00	58.61	179.34	7123.85	-768.54	-159.41	624.21	784.89	191.72	7.05
7351.00	59.37	176.68	7139.83	-795.09	-158.48	648.56	810.73	191.27	7.75
7383.00	60.13	175.09	7155.95	-822.66	-156.50	674.28	837.41	190.77	4.91
7415.00	60.91	174.09	7171.69	-850.39	-153.87	700.42	864.20	190.26	3.65
7446.00	61.82	173.54	7186.55	-877.44	-150.94	726.08	890.32	189.76	3.32
7478.00	62.72	171.88	7201.44	-905.53	-147.34	752.97	917.44	189.24	5.38
7510.00	64.47	170.73	7215.67	-933.86	-143.01	780.39	944.75	188.71	6.35
7542.00	68.28	167.74	7228.50	-962.65	-137.52	808.73	972.43	188.13	14.66
Bottom Line Check									
7574.00	72.32	165.73	7239.28	-991.97	-130.61	838.15	1000.53	187.50	13.94
7606.00	76.16	162.77	7247.97	-1021.59	-122.24	868.49	1028.88	186.82	14.94
7638.00	77.71	160.38	7255.21	-1051.16	-112.39	899.41	1057.16	186.10	8.74
7670.00	78.23	158.23	7261.88	-1080.44	-101.33	930.59	1085.18	185.36	6.77
7701.00	78.34	156.16	7268.17	-1108.42	-89.56	960.91	1112.03	184.62	6.55
7733.00	79.26	154.49	7274.39	-1136.94	-76.46	992.29	1139.51	183.85	5.87
7765.00	80.83	153.11	7279.92	-1165.22	-62.54	1023.81	1166.90	183.07	6.49
7797.00	82.76	152.45	7284.49	-1193.38	-48.06	1055.47	1194.35	182.31	6.37
7828.00	84.41	151.38	7287.95	-1220.56	-33.56	1086.24	1221.02	181.57	6.33
7860.00	85.86	150.18	7290.67	-1248.39	-17.99	1118.06	1248.52	180.83	5.87
7892.00	87.04	150.01	7292.65	-1276.07	-2.07	1149.91	1276.07	180.09	3.73
7924.00	86.64	149.46	7294.41	-1303.67	14.04	1181.76	1303.74	179.38	2.12
7956.00	86.27	148.61	7296.39	-1331.06	30.47	1213.55	1331.40	178.69	2.89
7987.00	86.54	148.58	7298.33	-1357.46	46.59	1244.33	1358.26	178.03	88
8019.00	86.97	147.94	7300.14	-1384.63	63.40	1276.10	1386.08	177.88	2.11
8051.00	86.67	146.69	7301.92	-1411.52	80.65	1307.81	1413.83	176.73	4.01
8082.00	86.67	145.71	7303.72	-1437.24	97.87	1338.44	1440.57	176.10	3.16
8146.00	86.64	144.81	7307.45	-1489.74	134.28	1401.52	1495.78	174.85	1.40
8209.00	86.64	144.47	7311.15	-1541.03	170.67	1463.50	1550.45	173.68	54
8273.00	87.58	144.86	7314.37	-1593.17	207.64	1526.49	1606.65	172.51	1.59
8337.00	88.79	145.74	7316.40	-1645.76	244.05	1589.66	1663.76	171.56	2.34
8400.00	89.76	146.86	7317.20	-1698.17	279.00	1652.02	1720.94	170.67	2.25

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
8463.00	90.00	146.44	7317.33	-1750.80	313.64	1714.44	1778.67	169.84	.77
8527.00	89.93	145.50	7317.37	-1803.84	349.45	1777.75	1837.37	169.04	1.47
8590.00	90.13	145.78	7317.34	-1855.84	385.01	1840.02	1895.36	168.28	.55
8654.00	89.09	144.29	7317.77	-1908.29	421.69	1903.16	1954.32	167.54	2.84
8717.00	87.95	143.51	7319.40	-1959.17	458.79	1965.08	2012.17	166.82	2.19
8781.00	88.39	143.87	7321.44	-2010.72	496.67	2027.94	2071.15	166.13	.89
8844.00	88.93	143.97	7322.92	-2061.62	533.76	2089.87	2129.60	165.48	.87
8908.00	89.43	143.20	7323.83	-2113.12	571.75	2152.72	2189.10	164.86	1.43
8971.00	88.19	142.93	7325.14	-2163.46	609.60	2214.48	2247.71	164.26	2.01
9035.00	89.80	145.11	7326.26	-2215.24	647.19	2277.42	2307.84	163.71	4.23
9099.00	91.04	145.46	7325.79	-2267.85	683.63	2340.61	2368.65	163.22	2.01
9162.00	92.05	145.61	7324.10	-2319.77	719.27	2402.83	2428.72	162.77	1.62
9226.00	90.91	144.79	7322.44	-2372.30	755.78	2465.98	2489.79	162.33	2.19
9290.00	90.37	144.77	7321.73	-2424.58	792.69	2529.08	2550.88	161.90	.84
Bottom Line Check									
9353.00	90.24	145.08	7321.39	-2476.14	828.89	2591.22	2611.20	161.49	.53
9416.00	89.36	144.82	7321.61	-2527.72	865.07	2653.36	2671.65	161.11	1.46
9480.00	90.00	144.71	7321.97	-2579.99	902.00	2716.46	2733.12	160.73	1.01
9544.00	90.40	144.22	7321.75	-2632.07	939.19	2779.50	2794.62	160.36	.99
9607.00	89.46	143.20	7321.82	-2682.85	976.48	2841.40	2855.03	160.00	2.20
9671.00	88.96	142.09	7322.71	-2733.72	1015.31	2904.05	2916.17	159.62	1.90
9734.00	89.50	142.15	7323.55	-2783.44	1053.99	2965.61	2976.31	159.26	.86
9798.00	89.36	142.87	7324.19	-2834.22	1092.94	3028.23	3037.65	158.91	1.15
9862.00	88.08	142.64	7325.62	-2885.15	1131.66	3090.90	3099.15	158.58	2.03
9925.00	88.62	142.98	7327.43	-2935.32	1169.73	3152.59	3159.80	158.27	1.01
9989.00	89.50	142.89	7328.48	-2986.38	1208.29	3215.30	3221.56	157.97	1.38
10053.00	89.87	142.35	7328.83	-3037.23	1247.15	3277.95	3283.32	157.68	1.02
10116.00	89.56	143.15	7329.15	-3087.38	1285.28	3339.65	3344.23	157.40	1.36
10180.00	89.06	143.83	7329.92	-3138.82	1323.36	3402.49	3406.38	157.14	1.32
10244.00	89.70	144.54	7330.61	-3190.71	1360.80	3465.47	3468.78	156.90	1.49
10307.00	90.40	144.51	7330.56	-3242.02	1397.36	3527.54	3530.34	156.68	1.11
10371.00	90.77	143.51	7329.90	-3293.80	1434.97	3590.48	3592.80	156.46	1.67
10434.00	90.60	143.19	7329.15	-3344.34	1472.58	3652.31	3654.19	156.24	.58
10498.00	89.40	143.24	7329.15	-3395.59	1510.90	3715.09	3716.57	156.01	1.88
10562.00	89.26	144.05	7329.90	-3447.13	1548.83	3777.97	3779.10	155.81	1.28
10625.00	90.27	144.43	7330.16	-3498.25	1585.65	3839.98	3840.84	155.62	1.71
10689.00	90.44	145.01	7329.76	-3550.50	1622.61	3903.06	3903.71	155.44	.94
10752.00	89.63	145.49	7329.72	-3602.26	1658.52	3965.26	3965.73	155.28	1.49
10816.00	89.53	145.70	7330.19	-3655.06	1694.68	4028.50	4028.83	155.13	.36
10880.00	88.69	144.94	7331.18	-3707.69	1731.09	4091.69	4091.90	154.97	1.77
10943.00	89.43	145.32	7332.22	-3759.37	1767.11	4153.86	4153.98	154.82	1.32
11007.00	90.00	144.94	7332.54	-3811.88	1803.70	4217.03	4217.07	154.68	1.07
11071.00	90.40	144.74	7332.31	-3864.20	1840.55	4280.14	4280.15	154.53	1.70
11134.00	90.03	144.75	7332.08	-3915.64	1876.92	4342.24	4342.24	154.39	.59
11198.00	90.27	145.31	7331.91	-3968.09	1913.60	4405.39	4405.40	154.25	.95
11261.00	88.99	146.16	7332.32	-4020.15	1949.07	4467.67	4467.71	154.13	2.24
11325.00	89.83	146.00	7332.97	-4073.26	1984.78	4530.99	4531.09	154.05	1.07
11388.00	90.50	146.08	7332.79	-4125.51	2019.97	4593.32	4593.49	153.91	1.21
Strait Line Projection To TD									
11465.00	90.50	146.08	7332.12	-4189.40	2062.94	4669.51	4669.78	153.78	nn

RECEIVED
 154.05
 154.53
 154.39
 154.25
 154.13
 154.05
 153.91
 Environmental Protection
 01/10/2014