

Job Number: 23D0213050
 Company: Stone Energy
 Lease/Well: Bowyers 6H
 Location: New Martinsville
 Rig Name: Saxon 141
 RKB: 18
 G.L. or M.S.L.: 1156

State/Country: West Virginia
 Declination: -9.43
 Grid: North
 File name: D:\WINSERVE\JOBS\BOWYER.SVY
 Date/Time: 20-Feb-13 / 04:04
 Curve Name: Bowyer 6H as drilled

Scientific Drilling

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 165.20
 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	Distance FT	CLOSURE Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
108.00	1.03	258.46	107.99	-.19	-.95	-.06	.97	258.46	.95
208.00	.70	263.84	207.98	-.44	-2.44	-.20	2.48	259.78	.34
308.00	.61	262.32	307.98	-.58	-3.57	-.36	3.62	260.84	.09
408.00	.60	268.75	407.97	-.66	-4.62	-.54	4.67	261.89	.07
508.00	.44	258.58	507.97	-.75	-5.52	-.69	5.57	262.31	.18
608.00	.19	231.27	607.96	-.93	-6.03	-.65	6.10	261.27	.28
708.00	.14	229.59	707.96	-1.11	-6.25	-.53	6.35	259.94	.05
808.00	.11	236.65	807.96	-1.24	-6.43	-.44	6.54	259.07	.03
908.00	.23	269.27	907.96	-1.30	-6.71	-.46	6.83	259.06	.15
1008.00	.31	286.15	1007.96	-1.22	-7.17	-.65	7.27	260.31	.11
1108.00	.43	300.69	1107.96	-.96	-7.75	-1.05	7.81	262.96	.15

103.02772

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	
1208.00	.47	322.24	1207.96	-.44	-8.32	-1.70	8.34	266.97	.17
1308.00	.51	330.41	1307.95	.27	-8.79	-2.51	8.80	271.76	.08
1408.00	.57	321.09	1407.95	1.04	-9.33	-3.39	9.39	276.39	.11
1508.00	.63	313.52	1507.94	1.81	-10.04	-4.31	10.20	280.22	.10
1608.00	.60	306.80	1607.94	2.50	-10.86	-5.19	11.14	282.98	.08
1708.00	.68	314.42	1707.93	3.23	-11.70	-6.11	12.14	285.44	.12
1808.00	.68	305.35	1807.93	3.99	-12.61	-7.08	13.22	287.56	.11
1908.00	.76	306.81	1907.92	4.73	-13.62	-8.05	14.42	289.15	.08
2008.00	.68	331.42	2007.91	5.65	-14.44	-9.15	15.50	291.37	.32
2108.00	.40	345.11	2107.90	6.51	-14.81	-10.07	16.18	293.72	.31
2208.00	.39	6.60	2207.90	7.18	-14.86	-10.74	16.51	295.80	.15
2308.00	.27	64.20	2307.90	7.62	-14.61	-11.10	16.48	297.56	.33
2408.00	1.27	169.05	2407.89	6.64	-14.19	-10.04	15.66	295.07	1.36
2508.00	3.02	171.85	2507.82	2.94	-13.60	-6.32	13.92	282.20	1.75
2608.00	4.44	162.33	2607.61	-3.35	-12.05	.16	12.51	254.45	1.54
2708.00	5.18	158.78	2707.25	-11.25	-9.25	8.52	14.56	219.41	.80
2808.00	5.95	158.63	2806.78	-20.29	-5.72	18.15	21.08	195.75	.77
2908.00	6.56	159.20	2906.19	-30.45	-1.81	28.98	30.51	183.39	.61
3008.00	6.87	158.58	3005.50	-41.36	2.41	40.60	41.43	176.67	.32
3108.00	7.18	158.00	3104.75	-52.72	6.93	52.74	53.18	172.51	.32
3208.00	7.11	158.26	3203.97	-64.26	11.57	65.09	65.30	169.80	.08
3308.00	6.57	156.10	3303.26	-75.24	16.18	76.88	76.96	167.87	.60
3408.00	6.91	146.81	3402.57	-85.51	21.79	88.24	88.24	165.71	1.14
3508.00	6.64	145.05	3501.87	-95.28	28.39	99.37	99.42	163.41	.34
3608.00	6.53	153.95	3601.22	-105.13	34.20	110.38	110.55	161.98	1.03
3708.00	6.51	155.11	3700.57	-115.38	39.08	121.54	121.82	161.29	.13
3808.00	6.51	160.00	3799.93	-125.85	43.41	132.76	133.13	160.97	.55
3908.00	6.52	160.58	3899.28	-136.53	47.24	144.07	144.47	160.92	.07
4008.00	6.16	157.99	3998.67	-146.86	51.13	155.05	155.51	160.80	.46
4108.00	6.08	160.10	4098.10	-156.81	54.95	165.65	166.16	160.69	.24
4208.00	5.62	153.95	4197.58	-166.19	58.90	175.72	176.32	160.49	.78
4308.00	5.04	159.36	4297.15	-174.70	62.60	184.90	185.58	160.29	.77

103.02772

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth				CLOSURE		Dogleg Severity Deg/100
				N-S FT	E-W FT	Vertical Section FT	Distance FT	Direction Deg	
4408.00	4.23	187.86	4396.82	-182.42	64.92	192.95	193.63	160.41	1.06
4508.00	2.30	155.33	4496.65	-187.85	66.54	198.61	199.28	160.50	2.05
4608.00	1.02	100.23	4596.61	-189.83	68.25	200.97	201.73	160.22	1.91
4708.00	1.28	47.98	4696.60	-189.24	69.96	200.83	201.76	159.71	1.04
4808.00	1.52	26.42	4796.57	-187.30	71.38	199.32	200.44	159.14	.57
4908.00	.68	17.07	4896.55	-185.55	72.14	197.82	199.08	158.75	.86
5008.00	.50	358.40	4996.54	-184.55	72.30	198.89	198.20	158.81	.26
5108.00	.50	339.77	5096.54	-183.70	72.14	196.03	197.36	158.56	.16
5183.01	1.18	39.94	5171.54	-182.80	72.52	195.28	196.66	158.36	1.37
5244.00	.95	32.64	5232.52	-181.89	73.20	194.56	196.07	158.08	.44
5276.00	1.11	39.45	5264.52	-181.43	73.54	194.20	195.77	157.94	.63
5308.00	2.66	18.61	5296.50	-180.49	73.97	193.40	195.06	157.71	5.22
5339.00	5.46	6.93	5327.42	-178.34	74.38	191.42	193.23	157.36	9.37
5370.00	7.60	3.36	5358.22	-174.83	74.68	188.11	190.11	156.87	7.02
5402.00	9.18	2.12	5389.87	-170.17	74.90	183.65	185.92	156.24	4.97
5434.00	10.02	359.63	5421.42	-164.83	74.97	178.52	181.08	155.54	2.93
5466.00	10.12	358.19	5452.93	-159.24	74.86	173.08	175.96	154.82	.85
5497.00	8.63	3.94	5483.52	-154.20	74.94	168.22	171.44	154.08	5.67
5529.00	6.42	19.72	5515.24	-150.12	75.71	164.47	168.13	153.24	9.39
5560.00	6.26	43.71	5546.06	-147.26	77.46	162.16	166.39	152.26	8.50
5592.00	7.20	59.81	5577.84	-144.99	80.40	160.72	165.79	150.99	6.56
5624.00	7.99	74.68	5609.56	-143.40	84.28	160.17	166.33	149.56	6.60
5655.00	8.22	90.71	5640.26	-142.85	88.57	160.74	168.08	148.20	7.30
5687.00	8.56	103.90	5671.92	-143.45	93.17	162.50	171.06	147.00	6.09
5719.00	8.91	119.47	5703.55	-145.25	97.64	165.37	175.02	146.09	7.45
5750.00	10.81	127.87	5734.09	-148.21	102.03	169.36	179.94	145.46	7.67
5782.00	13.35	133.38	5765.38	-152.59	107.08	174.88	186.42	144.94	8.71
5814.00	15.35	137.93	5796.38	-158.28	112.61	181.79	194.25	144.57	7.17
5846.00	17.14	142.48	5827.11	-165.16	118.32	189.90	203.17	144.38	6.86
5877.00	19.27	148.74	5856.56	-173.16	123.75	199.03	212.83	144.45	9.32
5909.00	21.36	153.19	5886.56	-182.87	129.12	209.79	223.87	144.77	8.12
5941.00	23.39	155.13	5916.15	-193.84	134.42	221.75	235.89	145.26	6.75

103.02772

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth			Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
				N-S FT	E-W FT		Distance FT	Direction Deg	
5972.00	25.04	155.13	5944.43	-205.37	139.77	234.27	248.42	145.76	5.32
6004.00	27.49	154.96	5973.12	-218.21	145.75	248.20	262.41	146.26	7.66
6035.00	30.26	156.86	6000.26	-231.88	151.85	262.98	277.17	146.78	9.41
6067.00	32.69	159.30	6027.55	-247.38	158.07	279.55	293.57	147.42	8.57
6099.00	35.21	160.93	6054.10	-264.19	164.14	297.35	311.02	148.15	8.37
6130.00	37.29	162.16	6079.10	-281.57	169.94	315.64	328.88	148.89	7.11
6162.00	39.31	163.75	6104.21	-300.53	175.74	335.46	348.15	149.68	7.02
6193.00	41.50	163.97	6127.81	-319.84	181.33	355.54	367.66	150.45	7.08
6225.00	44.43	163.48	6151.23	-340.77	187.44	377.34	388.92	151.19	9.22
6257.00	47.00	164.17	6173.57	-362.77	193.82	400.24	411.30	151.89	8.18
6288.00	49.30	165.39	6194.25	-385.05	199.88	423.33	433.84	152.57	7.98
6320.00	50.83	165.85	6214.79	-408.82	205.97	447.87	457.77	153.26	4.91
6351.00	53.89	165.73	6233.76	-432.58	211.99	472.38	481.73	153.89	9.23
6383.00	56.41	165.88	6252.09	-458.00	218.42	498.60	507.42	154.50	8.51
6415.00	59.05	165.30	6269.18	-484.21	225.15	525.66	534.00	155.06	8.39
6446.00	60.86	165.36	6284.70	-510.17	231.95	552.49	560.42	155.55	5.84
6478.00	63.04	165.99	6299.74	-537.53	238.93	580.73	588.24	156.03	7.03
6510.00	64.89	166.78	6313.79	-565.47	245.70	609.47	616.54	156.51	6.19
6541.00	67.29	167.56	6326.35	-593.10	251.99	637.79	644.41	156.98	8.08
6573.00	70.94	167.18	6337.76	-622.27	258.53	667.67	673.84	157.44	11.46
6605.00	73.28	167.56	6347.59	-651.98	265.19	698.09	703.85	157.87	7.40
6637.00	74.37	168.12	6356.50	-682.03	271.66	728.79	734.14	158.28	3.80
6668.00	75.96	168.12	6364.44	-711.35	277.83	758.72	763.68	158.67	5.13
6699.00	79.10	167.39	6371.13	-740.93	284.25	788.96	793.58	159.01	10.39
6730.00	83.09	166.89	6375.93	-770.78	291.06	819.56	823.90	159.31	12.97
6761.00	85.03	166.85	6379.14	-800.81	298.07	850.38	854.48	159.58	6.26
6791.00	85.53	166.77	6381.61	-829.91	304.89	880.26	884.15	159.83	1.69
6821.00	85.80	166.96	6383.87	-859.05	311.69	910.17	913.84	160.06	1.10
6852.00	87.32	166.64	6385.73	-889.17	318.75	941.10	944.58	160.28	5.01
6882.00	88.83	165.98	6386.74	-918.30	325.85	971.07	974.40	160.46	5.49
6943.00	89.26	165.80	6387.76	-977.45	340.72	1032.06	1035.13	160.78	.76
7004.00	89.77	165.97	6388.28	-1036.61	355.59	1093.05	1095.90	161.07	.88

103.02772

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	CLOSURE			Dogleg Severity Deg/100		
				N-S FT	E-W FT	Vertical Section FT		Distance FT	Direction Deg
7084.00	88.93	165.89	6388.96	-1094.80	370.18	1153.04	1155.69	161.32	1.41
7126.00	87.85	166.69	6390.70	-1155.01	384.87	1215.01	1217.45	161.57	2.17
7187.00	88.46	166.64	6392.66	-1214.34	398.93	1275.95	1278.19	161.81	1.00
7248.00	87.92	166.07	6394.59	-1273.59	413.31	1336.91	1338.97	162.02	1.29
7310.00	89.56	165.60	6395.95	-1333.68	428.48	1398.89	1400.82	162.19	2.75
7370.00	91.24	165.42	6395.53	-1391.77	443.49	1458.89	1460.72	162.33	2.82
7431.00	90.77	165.84	6394.46	-1450.85	458.63	1519.87	1521.62	162.46	1.03
7492.00	89.83	167.43	6394.14	-1510.20	472.73	1580.85	1582.46	162.62	3.03
7552.00	90.27	167.60	6394.09	-1568.78	485.70	1640.80	1642.25	162.80	.79
7613.00	90.54	167.38	6393.66	-1628.33	498.91	1701.75	1703.05	162.97	.57
7674.00	89.70	167.28	6393.53	-1687.84	512.29	1762.71	1763.88	163.12	1.39
7735.00	88.36	167.21	6394.57	-1747.33	525.78	1823.66	1824.71	163.25	2.20
7796.00	88.69	166.63	6396.14	-1806.73	539.56	1884.61	1885.57	163.37	1.09
7860.00	89.46	167.00	6397.17	-1869.03	554.15	1948.58	1949.45	163.49	1.33
7923.00	88.46	167.12	6398.31	-1930.42	568.26	2011.53	2012.32	163.60	1.60
7986.00	87.72	167.17	6400.41	-1991.81	582.27	2074.46	2075.17	163.70	1.18
8050.00	88.32	167.49	6402.62	-2054.21	596.30	2138.38	2139.01	163.81	1.06
8113.00	88.39	166.84	6404.43	-2115.61	610.29	2201.32	2201.88	163.91	1.04
8177.00	91.17	168.55	6404.68	-2178.13	623.92	2265.25	2265.73	164.02	5.10
8240.00	92.35	168.23	6402.74	-2239.81	636.60	2328.12	2328.52	164.13	1.94
8304.00	91.71	167.96	6400.48	-2302.39	649.79	2392.00	2392.33	164.24	1.09
8367.00	90.10	167.37	6399.48	-2363.93	663.25	2454.93	2455.21	164.33	2.72
8430.00	89.30	166.59	6399.81	-2425.31	677.44	2517.89	2518.14	164.39	1.77
Bottom Line Check									
8493.00	89.73	165.61	6400.34	-2486.46	692.57	2580.88	2581.11	164.44	1.70
8557.00	89.26	165.28	6400.91	-2548.40	708.66	2644.88	2645.10	164.46	.90
8620.00	88.76	165.19	6402.00	-2609.32	724.71	2707.87	2708.09	164.48	.81
8684.00	89.46	165.12	6402.99	-2671.17	741.10	2771.86	2772.07	164.49	1.10
8748.00	90.10	167.16	6403.24	-2733.30	756.44	2835.85	2836.04	164.53	3.34
8811.00	89.20	167.42	6403.62	-2794.76	770.30	2898.81	2898.97	164.59	1.49
8874.00	88.53	167.19	6404.87	-2856.21	784.14	2961.75	2961.89	164.65	1.12
8938.00	88.83	166.25	6406.34	-2918.48	798.84	3025.71	3025.83	164.69	1.54

103.02772

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth				CLOSURE		Dogleg Severity Deg/100
				N-S FT	E-W FT	Vertical Section FT	Distance FT	Direction Deg	
9001.00	89.23	166.91	6407.41	-2979.75	813.45	3088.68	3088.79	164.73	1.22
9065.00	89.60	168.09	6408.06	-3042.23	827.31	3152.63	3152.71	164.79	1.93
9128.00	90.03	169.61	6408.27	-3104.03	839.49	3215.50	3215.55	164.87	2.51
9191.00	89.70	168.01	6408.42	-3165.83	851.71	3278.37	3278.40	164.94	2.59
9255.00	88.99	167.79	6409.15	-3228.41	865.13	3342.29	3342.31	165.00	1.16
9318.00	89.66	167.88	6409.89	-3289.97	878.51	3405.23	3405.24	165.05	1.08
9381.00	90.03	168.22	6410.06	-3351.58	891.66	3468.15	3468.16	165.10	1.04
9445.00	90.03	168.05	6410.03	-3414.21	904.82	3532.07	3532.07	165.16	.27
9509.00	89.97	166.69	6410.03	-3476.66	918.81	3596.02	3596.02	165.20	2.13
9572.00	90.10	164.50	6409.99	-3537.67	934.49	3659.02	3659.02	165.20	3.48
9636.00	90.70	164.59	6409.54	-3599.36	951.54	3723.01	3723.01	165.19	.95
9700.00	90.20	164.33	6409.04	-3661.02	968.69	3787.00	3787.00	165.18	.88
9763.00	89.46	163.34	6409.22	-3721.52	986.23	3849.98	3849.99	165.16	1.96
9827.00	89.70	163.37	6409.69	-3782.84	1004.56	3913.95	3913.95	165.13	.38
9890.00	88.66	162.98	6410.60	-3843.14	1022.79	3976.90	3976.91	165.10	1.76
9953.00	87.89	162.51	6412.49	-3903.27	1041.47	4039.82	4039.83	165.06	1.43
10017.00	88.66	162.44	6414.42	-3964.28	1060.73	4103.71	4103.73	165.02	1.21
10080.00	88.93	162.59	6415.74	-4024.35	1079.66	4166.63	4166.66	164.98	.49
10144.00	89.16	161.32	6416.81	-4085.19	1099.48	4230.52	4230.56	164.94	2.02
10207.00	89.26	161.46	6417.68	-4144.89	1119.58	4293.37	4293.44	164.88	.27
10270.00	89.26	161.68	6418.49	-4204.66	1139.50	4356.24	4356.33	164.84	.35
10333.00	89.46	162.05	6419.20	-4264.52	1159.10	4419.13	4419.24	164.79	.67
10397.00	90.30	162.86	6419.33	-4325.55	1178.40	4483.06	4483.19	164.76	1.82
10461.00	90.60	163.16	6418.83	-4386.75	1197.10	4547.01	4547.16	164.74	.66
10524.00	90.37	162.39	6418.29	-4446.92	1215.75	4609.95	4610.12	164.71	1.28
10588.00	90.10	161.93	6418.03	-4507.84	1235.36	4673.86	4674.05	164.67	.83
10652.00	89.87	163.65	6418.05	-4568.98	1254.30	4737.80	4738.02	164.65	2.71
10715.00	90.37	164.80	6417.92	-4629.60	1271.42	4800.79	4801.01	164.64	1.99
10779.00	89.90	165.26	6417.77	-4691.43	1287.95	4864.79	4865.01	164.65	1.03
10842.00	89.03	165.02	6418.35	-4752.32	1304.11	4927.78	4928.01	164.65	1.43
10906.00	88.66	166.69	6419.64	-4814.36	1319.75	4991.76	4991.98	164.67	2.67
10969.00	88.09	167.99	6421.43	-4875.81	1333.55	5054.69	5054.88	164.70	2.25

103.02772

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	CLOSURE			Dogleg Severity Deg/100		
				N-S FT	E-W FT	Vertical Section FT		Distance FT	Direction Deg
11033.00	88.16	168.36	6423.52	-4938.41	1346.66	5118.57	5118.73	164.75	.59
11096.00	87.75	168.70	6425.77	-5000.12	1359.18	5181.43	5181.56	164.79	.85
11160.00	88.73	167.80	6427.74	-5062.74	1372.20	5245.30	5245.41	164.83	2.08
11223.00	88.86	167.85	6429.01	-5124.31	1385.49	5308.22	5308.31	164.87	.37
11287.00	89.16	167.29	6430.06	-5186.81	1399.26	5372.16	5372.23	164.90	.93
11351.00	89.50	167.42	6430.81	-5249.25	1413.27	5436.11	5436.17	164.93	.57
11414.00	89.87	166.79	6431.15	-5310.66	1427.33	5499.07	5499.12	164.96	1.16
11478.00	89.93	167.04	6431.26	-5373.00	1441.82	5563.05	5563.09	164.98	.40
Bottom Line Check									
11542.00	90.34	166.76	6431.11	-5435.33	1456.32	5627.02	5627.05	165.00	.78
11605.00	90.74	166.96	6430.52	-5496.68	1470.64	5689.99	5689.02	165.02	.71
11669.00	90.47	168.05	6429.84	-5559.16	1484.49	5753.93	5753.95	165.05	1.75
11733.00	89.63	168.11	6429.79	-5621.78	1497.71	5817.85	5817.86	165.08	1.32
11796.00	88.56	167.83	6430.78	-5683.36	1510.95	5880.77	5880.78	165.11	1.86
11860.00	88.96	167.97	6432.17	-5745.90	1524.47	5944.69	5944.69	165.14	.82
11924.00	89.09	168.12	6433.26	-5808.51	1537.72	6008.60	6008.60	165.17	.31
11988.00	89.06	168.23	6434.29	-5871.14	1550.84	6072.51	6072.51	165.20	.18
12051.00	88.36	168.65	6435.71	-5932.84	1563.46	6135.39	6135.39	165.24	1.30
12115.00	88.32	167.82	6437.56	-5995.47	1576.50	6199.27	6199.28	165.27	1.30
12178.00	88.86	167.35	6439.11	-6056.98	1590.04	6262.20	6262.21	165.29	1.14
12242.00	88.96	167.19	6440.33	-6119.40	1604.14	6326.15	6326.16	165.31	.29
12306.00	89.13	166.29	6441.40	-6181.68	1618.82	6390.11	6390.13	165.33	1.43
12369.00	89.23	166.28	6442.30	-6242.88	1633.75	6453.10	6453.11	165.33	.16
12433.00	89.97	165.97	6442.75	-6305.01	1649.10	6517.09	6517.11	165.34	1.25
12497.00	89.29	165.93	6443.16	-6367.23	1664.10	6581.07	6581.09	165.35	1.84
12561.00	89.56	167.10	6443.80	-6429.59	1678.48	6645.03	6645.06	165.37	.50
12624.00	89.87	167.20	6444.11	-6491.01	1692.49	6708.00	6708.03	165.39	.52
12662.00	90.00	167.46	6444.16	-6528.08	1700.82	6745.97	6746.01	165.40	.76
12722.00	90.00	167.46	6444.16	-6586.65	1713.85	6805.92	6805.97	165.42	.00

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