

Job Number: []	State/Country: West Virginia
Company: Stone	Declination: []
Lease/Well: Lantz Mills Unit 2 #2H	Grid: []
Location: []	File name: D:\WINSERVE\LMU2H.SVY
Rig Name: Saxon 141	Date/Time: 11-Feb-11 / 00:19
RKB: 18'	Curve Name: Lantz Mills Unit 2 #2H As Drilled
G.L. or M.S.L.: 764'	

Scientific Drilling

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 137.21
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>CLOSURE</i>		<i>Dogleg Severity Deg/100</i>
							<i>Distance FT</i>	<i>Direction Deg</i>	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.36	321.15	100.00	.24	-.20	-.31	.31	321.15	.36
200.00	.08	281.51	200.00	.50	-.46	-.68	.68	317.41	.30
300.00	.07	259.32	300.00	.51	-.59	-.77	.78	310.56	.03
400.00	.04	254.82	400.00	.49	-.68	-.82	.84	305.33	.03
500.00	.14	301.50	500.00	.54	-.82	-.96	.98	303.29	.12
600.00	.11	297.24	600.00	.65	-1.01	-1.16	1.20	302.62	.03
700.00	.23	232.84	700.00	.57	-1.26	-1.27	1.38	294.40	.21
800.00	.40	230.83	800.00	.23	-1.69	-1.31	1.70	277.72	.17
900.00	.55	251.37	899.99	-.15	-2.41	-1.53	2.42	266.56	.22
1000.00	.64	246.62	999.99	-.52	-3.38	-1.91	3.42	261.25	.10
1100.00	.54	248.58	1099.98	-.91	-4.33	-2.27	4.43	258.09	.10
1200.00	.54	251.36	1199.98	-1.24	-5.22	-2.64	5.36	256.67	.03
1300.00	.29	212.47	1299.98	-1.60	-5.80	-2.77	6.02	254.57	.36
1400.00	.26	337.94	1399.97	-1.60	-6.02	-2.91	6.23	255.08	.49
1500.00	.49	350.48	1499.97	-.97	-6.18	-3.48	6.25	261.06	.24
1600.00	.59	22.29	1599.97	-.07	-6.05	-4.06	6.05	269.30	.31
1700.00	.64	353.76	1699.96	.96	-5.92	-4.72	5.99	279.19	.31
1800.00	.63	307.99	1799.96	1.85	-6.41	-5.71	6.67	286.10	.49
1900.00	.89	284.56	1899.95	2.38	-7.60	-6.91	7.96	287.43	.40
2000.00	.75	273.99	1999.94	2.63	-9.00	-8.04	9.38	286.26	.21
2100.00	.56	275.55	2099.93	2.72	-10.14	-8.88	10.50	285.01	.19
2200.00	.76	271.50	2199.92	2.78	-11.29	-9.71	11.63	283.85	.21
2300.00	.29	291.15	2299.92	2.89	-12.19	-10.41	12.53	283.35	.49
2400.00	1.17	58.24	2399.91	3.52	-11.56	-10.44	12.09	286.95	1.37

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	
2499.99	2.49	68.38	2499.85	4.86	-8.68	-9.46	9.95	299.25	1.35
2599.99	3.25	82.65	2599.73	6.02	-3.85	-7.03	7.15	327.42	1.04
2699.99	3.37	104.57	2699.56	5.65	1.82	-2.91	5.93	17.83	1.26
2799.99	4.58	109.19	2799.32	3.59	8.43	3.09	9.17	66.92	1.24
2899.99	6.03	108.99	2898.89	.57	17.17	11.24	17.18	88.09	1.46
2999.99	6.40	107.63	2998.30	-2.83	27.45	20.72	27.60	95.88	.40
3099.99	6.54	108.47	3097.67	-6.32	38.16	30.56	38.68	99.40	.17
3199.99	6.60	104.47	3197.01	-9.56	49.13	40.39	50.05	101.01	.46
3299.99	6.69	97.65	3296.34	-11.77	60.46	49.71	61.60	101.01	.79
3399.99	6.89	96.62	3395.64	-13.23	72.19	58.75	73.39	100.39	.24
3499.99	7.00	96.35	3494.90	-14.60	84.20	67.91	85.46	99.84	.11
3599.99	6.30	99.57	3594.23	-16.18	95.67	76.86	97.03	99.60	.79
3699.99	5.01	102.25	3693.74	-18.02	105.34	84.78	106.87	99.71	1.32
3799.99	3.61	101.02	3793.46	-19.55	112.70	90.90	114.38	99.84	1.39
3818.99	3.35	100.58	3812.42	-19.77	113.83	91.83	115.54	99.85	1.40
3882.00	2.81	97.39	3875.34	-20.30	117.17	94.50	118.92	99.83	.90
3978.00	2.00	101.00	3971.26	-20.92	121.15	97.66	122.95	99.80	.86
4074.00	1.55	132.01	4067.21	-22.11	123.76	100.30	125.72	100.13	1.09
4169.00	1.16	142.90	4162.19	-23.74	125.30	102.54	127.53	100.73	.49
4265.00	.81	159.86	4258.17	-25.15	126.12	104.13	128.60	101.28	.47
4360.00	.71	154.86	4353.16	-26.32	126.60	105.31	129.30	101.74	.13
4455.00	.54	142.09	4448.16	-27.20	127.12	106.32	130.00	102.08	.23
4551.00	.37	168.23	4544.15	-27.86	127.46	107.03	130.47	102.33	.28
4583.00	.50	206.62	4576.15	-28.09	127.42	107.17	130.48	102.43	.97
4646.00	.43	209.39	4639.15	-28.54	127.18	107.34	130.35	102.65	.12
4710.00	.12	184.25	4703.15	-28.82	127.06	107.46	130.29	102.78	.51
4774.00	.19	199.45	4767.15	-28.98	127.02	107.55	130.28	102.85	.13
4837.00	.17	147.91	4830.15	-29.16	127.03	107.70	130.34	102.93	.25
4901.00	.29	56.46	4894.15	-29.15	127.22	107.81	130.52	102.91	.53
5028.00	.14	331.94	5021.15	-28.84	127.41	107.72	130.64	102.75	.24
5092.00	.46	351.28	5085.15	-28.51	127.34	107.43	130.49	102.62	.52
5155.00	.50	336.21	5148.15	-28.01	127.19	106.96	130.24	102.42	.21
5218.00	.57	327.01	5211.14	-27.50	126.91	106.39	129.85	102.23	.18
5282.00	.95	325.65	5275.14	-26.79	126.44	105.55	129.24	101.96	.59
5346.00	1.01	320.99	5339.13	-25.92	125.78	104.46	128.42	101.64	.16
5409.00	1.14	320.82	5402.12	-25.00	125.04	103.28	127.51	101.31	.21
5472.00	1.03	328.29	5465.11	-24.03	124.34	102.10	126.64	100.94	.28
5536.00	1.03	327.35	5529.10	-23.06	123.73	100.97	125.86	100.56	.03
5600.00	.98	334.40	5593.09	-22.08	123.18	99.88	125.15	100.16	.21
5664.00	.83	328.15	5657.08	-21.19	122.70	98.91	124.52	99.80	.28
5707.00	.67	329.95	5700.07	-20.71	122.41	98.35	124.15	99.60	.38
5769.00	.73	335.75	5762.07	-20.04	122.07	97.63	123.70	99.32	.15
5831.00	.57	331.05	5824.07	-19.41	121.76	96.95	123.29	99.06	.27
5893.00	.50	316.15	5886.06	-18.94	121.42	96.38	122.89	98.87	.25
5954.00	.54	322.94	5947.06	-18.52	121.06	95.83	122.47	98.70	.12

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth			Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
				N-S FT	E-W FT		Distance FT	Direction Deg	
6016.00	.52	300.33	6009.06	-18.15	120.64	95.27	122.00	98.55	.34
6047.00	.66	292.87	6040.06	-18.00	120.36	94.97	121.70	98.51	.51
6078.00	.95	163.38	6071.05	-18.18	120.27	95.04	121.63	98.60	4.71
6109.00	3.36	144.65	6102.03	-19.17	120.86	96.17	122.38	99.01	8.00
6139.00	5.94	147.61	6131.93	-21.20	122.21	98.57	124.03	99.84	8.63
6170.00	8.91	149.42	6162.67	-24.62	124.29	102.50	126.70	101.20	9.61
6201.00	11.61	148.36	6193.17	-29.34	127.14	107.90	130.49	103.00	8.73
6231.00	14.38	148.01	6222.40	-35.07	130.70	114.53	135.33	105.02	9.24
6263.00	16.35	146.67	6253.25	-42.21	135.28	122.87	141.71	107.33	6.26
6293.00	18.99	147.59	6281.83	-49.86	140.22	131.84	148.82	109.57	8.85
6324.00	21.23	146.35	6310.94	-58.79	146.03	142.35	157.42	111.93	7.36
6355.00	23.75	145.54	6339.58	-68.61	152.68	154.07	167.39	114.20	8.19
6386.00	25.99	145.35	6367.71	-79.35	160.07	166.97	178.66	116.37	7.23
6417.00	28.42	144.75	6395.27	-90.96	168.19	181.01	191.21	118.40	7.89
6448.00	30.72	143.84	6422.23	-103.38	177.12	196.19	205.09	120.27	7.56
6478.00	33.23	143.25	6447.68	-116.15	186.57	211.98	219.77	121.91	8.43
6508.00	35.52	141.71	6472.44	-129.58	196.89	228.84	235.70	123.35	8.16
6539.00	37.82	141.15	6497.30	-144.05	208.43	247.30	253.37	124.65	7.50
6571.00	40.34	141.00	6522.14	-159.75	221.10	267.43	272.77	125.85	7.88
6603.00	42.76	140.73	6546.09	-176.21	234.50	288.61	293.32	126.92	7.58
6635.00	45.02	140.37	6569.15	-193.34	248.60	310.75	314.93	127.87	7.11
6667.00	47.12	140.13	6591.35	-211.05	263.33	333.77	337.47	128.71	6.58
6699.00	49.89	139.71	6612.55	-229.39	278.76	357.71	361.01	129.45	8.71
6731.00	52.27	140.09	6632.65	-248.43	294.80	382.57	385.52	130.12	7.49
6763.00	53.52	140.17	6651.95	-268.02	311.16	408.06	410.68	130.74	3.91
6795.00	54.93	139.67	6670.66	-287.88	327.87	433.99	436.32	131.28	4.58
6826.00	57.08	139.18	6687.99	-307.40	344.59	459.67	461.78	131.74	7.06
6858.00	60.13	138.85	6704.66	-328.02	362.51	486.97	488.88	132.14	9.57
6890.00	63.07	139.20	6719.88	-349.27	380.96	515.10	516.84	132.52	9.24
6922.00	66.36	139.13	6733.55	-371.16	399.88	544.02	545.58	132.87	10.28
6954.00	69.20	139.81	6745.65	-393.67	419.12	573.61	575.02	133.21	9.09
6985.00	71.77	139.77	6756.00	-415.99	437.99	602.80	604.05	133.52	8.29
7017.00	74.12	140.62	6765.39	-439.49	457.57	633.35	634.44	133.85	7.77
7049.00	76.05	141.52	6773.62	-463.54	477.00	664.20	665.13	134.18	6.62
7081.00	76.98	141.62	6781.08	-487.92	496.34	695.23	696.00	134.51	2.92
7113.00	78.70	142.07	6787.82	-512.52	515.66	726.41	727.04	134.82	5.55
7144.00	80.71	142.06	6793.36	-536.57	534.41	756.80	757.30	135.12	6.48
7176.00	82.89	141.46	6797.93	-561.45	554.02	788.37	788.77	135.38	7.06
7207.00	84.92	140.93	6801.22	-585.46	573.33	819.11	819.44	135.60	6.77
7239.00	87.14	140.98	6803.43	-610.26	593.44	850.97	851.23	135.80	6.94
7271.00	87.88	140.79	6804.82	-635.06	613.61	882.87	883.07	135.98	2.39
7335.00	88.62	140.51	6806.78	-684.53	654.17	946.73	946.85	136.30	1.24
7398.00	89.06	139.93	6808.05	-732.93	694.47	1009.63	1009.69	136.54	1.16
7461.00	89.73	140.20	6808.72	-781.24	734.91	1072.54	1072.58	136.75	1.15
7524.00	90.61	139.80	6808.53	-829.50	775.40	1135.47	1135.48	136.93	1.53

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth			Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
				N-S FT	E-W FT		Distance FT	Direction Deg	
7587.00	89.60	138.32	6808.42	-877.09	816.68	1198.43	1198.44	137.04	2.84
7651.00	88.99	137.08	6809.21	-924.42	859.75	1262.42	1262.43	137.08	2.16
7715.00	89.46	137.25	6810.07	-971.34	903.26	1326.42	1326.42	137.08	.78
7779.00	87.31	137.61	6811.87	-1018.46	946.54	1390.39	1390.39	137.10	3.41
7842.00	87.98	137.39	6814.46	-1064.86	989.06	1453.33	1453.34	137.11	1.12
7906.00	88.96	138.48	6816.17	-1112.36	1031.93	1517.30	1517.30	137.15	2.29
7970.00	88.12	139.08	6817.80	-1160.48	1074.08	1581.26	1581.26	137.21	1.61
8033.00	88.05	139.13	6819.91	-1208.08	1115.31	1644.19	1644.19	137.29	.14
8096.00	89.06	138.34	6821.50	-1255.42	1156.84	1707.14	1707.15	137.34	2.04
8160.00	90.03	139.75	6822.00	-1303.75	1198.79	1771.11	1771.12	137.40	2.67
8223.00	89.93	140.22	6822.03	-1352.00	1239.30	1834.03	1834.06	137.49	.76
8286.00	88.99	139.26	6822.62	-1400.07	1280.01	1896.97	1897.00	137.57	2.13
8350.00	88.96	138.81	6823.77	-1448.39	1321.96	1960.93	1960.97	137.61	.70
8413.00	89.73	139.41	6824.49	-1496.01	1363.20	2023.89	2023.95	137.66	1.55
8477.00	89.73	139.36	6824.79	-1544.60	1404.86	2087.84	2087.92	137.71	.08
8540.00	88.35	137.09	6825.84	-1591.57	1446.82	2150.81	2150.90	137.73	4.22
8604.00	87.98	137.42	6827.89	-1638.54	1490.24	2214.78	2214.87	137.71	.77
8668.00	88.93	136.86	6829.62	-1685.44	1533.75	2278.76	2278.84	137.70	1.72
8732.00	89.33	136.69	6830.59	-1732.07	1577.58	2342.75	2342.82	137.67	.68
8795.00	89.56	136.40	6831.20	-1777.80	1620.91	2405.74	2405.81	137.64	.59
8858.00	89.70	135.72	6831.61	-1823.16	1664.62	2468.73	2468.78	137.60	1.10
8921.00	89.66	134.31	6831.96	-1867.72	1709.16	2531.68	2531.72	137.54	2.24
8985.00	89.46	135.89	6832.45	-1913.05	1754.33	2595.63	2595.66	137.48	2.49
9049.00	89.36	137.06	6833.11	-1959.45	1798.40	2659.62	2659.64	137.45	1.83
9112.00	90.27	138.27	6833.31	-2006.02	1840.83	2722.62	2722.64	137.46	2.40
9175.00	90.24	137.52	6833.03	-2052.76	1883.07	2785.61	2785.64	137.47	1.19
9239.00	89.02	136.83	6833.45	-2099.70	1926.57	2849.61	2849.63	137.46	2.19
9303.00	89.03	136.23	6834.53	-2146.14	1970.60	2913.59	2913.62	137.44	.94
9366.00	89.23	136.06	6835.49	-2191.56	2014.24	2976.58	2976.59	137.41	.42
9430.00	88.29	136.73	6836.88	-2237.89	2058.37	3040.55	3040.57	137.39	1.80
9494.00	88.82	136.75	6838.49	-2284.49	2102.21	3104.53	3104.54	137.38	.83
9557.00	88.99	136.74	6839.69	-2330.36	2145.38	3167.52	3167.53	137.37	.27
9621.00	88.15	134.39	6841.29	-2376.04	2190.17	3231.46	3231.47	137.33	3.90
9685.00	88.45	134.54	6843.19	-2420.85	2235.82	3295.36	3295.37	137.28	.52
9749.00	89.02	135.46	6844.60	-2466.10	2281.06	3359.30	3359.30	137.23	1.69
9812.00	89.60	136.14	6845.36	-2511.26	2324.98	3422.27	3422.27	137.21	1.42
9876.00	89.83	136.55	6845.68	-2557.56	2369.16	3486.27	3486.27	137.19	.73
9940.00	89.87	136.84	6845.85	-2604.14	2413.06	3550.26	3550.26	137.18	.46
10003.00	88.15	136.76	6846.94	-2650.05	2456.18	3613.25	3613.25	137.17	2.73
10067.00	87.64	136.82	6849.29	-2696.67	2499.97	3677.21	3677.21	137.17	.80
10131.00	88.22	136.75	6851.60	-2743.28	2543.76	3741.16	3741.16	137.16	.91
10194.00	88.82	135.77	6853.23	-2788.78	2587.30	3804.13	3804.13	137.15	1.82
10257.00	89.33	136.62	6854.24	-2834.24	2630.90	3867.11	3867.12	137.13	1.57
10320.00	89.70	136.12	6854.78	-2879.84	2674.37	3930.10	3930.11	137.12	.99
10384.00	89.63	137.09	6855.15	-2926.34	2718.34	3994.10	3994.10	137.11	1.52

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	
10447.00	89.36	137.53	6855.71	-2972.65	2761.06	4057.09	4057.10	137.11	.82
10511.00	89.06	138.59	6856.59	-3020.25	2803.83	4121.08	4121.08	137.13	1.72
10574.00	88.58	139.26	6857.89	-3067.73	2845.21	4184.04	4184.04	137.16	1.31
10638.00	88.89	140.16	6859.30	-3116.54	2886.59	4247.96	4247.96	137.19	1.49
10701.00	88.85	141.54	6860.54	-3165.38	2926.35	4310.82	4310.82	137.25	2.19
10764.00	89.16	142.42	6861.63	-3215.00	2965.15	4373.59	4373.60	137.32	1.48
10827.00	89.70	142.33	6862.26	-3264.90	3003.61	4436.33	4436.35	137.39	.87
10891.00	89.66	142.53	6862.62	-3315.63	3042.63	4500.07	4500.11	137.46	.32
10955.00	88.99	143.32	6863.37	-3366.68	3081.21	4563.74	4563.82	137.54	1.62
11019.00	88.75	142.69	6864.63	-3417.79	3119.71	4627.40	4627.52	137.61	1.05
11082.00	89.09	141.44	6865.82	-3467.47	3158.44	4690.16	4690.32	137.67	2.06
11146.00	89.36	141.83	6866.69	-3517.64	3198.16	4753.97	4754.16	137.72	.74
11209.00	89.36	141.20	6867.39	-3566.96	3237.36	4816.79	4817.02	137.77	1.00
11273.00	89.97	141.65	6867.77	-3616.99	3277.26	4880.61	4880.89	137.82	1.18
11337.00	90.47	141.81	6867.52	-3667.23	3316.90	4944.41	4944.74	137.87	.82
11400.00	91.01	141.47	6866.71	-3716.63	3356.00	5007.22	5007.60	137.92	1.01
11464.00	90.71	140.36	6865.75	-3766.30	3396.34	5071.08	5071.51	137.96	1.80
11528.00	90.40	141.18	6865.13	-3815.87	3436.82	5134.95	5135.43	137.99	1.37
11591.00	90.00	141.61	6864.91	-3865.11	3476.13	5197.78	5198.32	138.03	.93
11655.00	90.00	142.97	6864.91	-3915.74	3515.27	5261.53	5262.14	138.08	2.12
11687.00	89.83	143.44	6864.95	-3941.36	3534.44	5293.35	5294.01	138.12	1.56
Projection to Bit									
11755.00	89.83	143.44	6865.16	-3995.98	3574.94	5360.95	5361.72	138.18	.00