



Weatherford®

SURVEY REPORT

Report Date: **1/2/2013**
 Customer: **Anadarko**
 Job Name: **4028261**
 Well Name: **Nichols 29N-5HZ**

Field: **Wattenberg**
 Rig: **H&P 307**
 Rig Loc: **Platteville**

Survey Calculation Method: Minimum Curvature						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
True North	352.02 deg	52765 nT	66.79 deg	8.65 deg	0.00 deg	8.65 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	790.00 ft	0.17 deg	358.43 deg	789.99 ft	-1.17 ft	-3.18 ft

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head			
				NS (ft)	EW (ft)	Vsect (ft)	Dogleg (deg/100ft)
952.00	0.10	292.84	951.99	-0.87	-3.32	-0.41	0.10
1043.00	2.60	279.27	1042.96	-0.51	-5.43	0.25	2.75
1135.00	4.60	276.12	1134.77	0.22	-11.16	1.76	2.18
1227.00	6.29	278.65	1226.35	1.37	-19.81	4.11	1.85
1318.00	8.28	278.21	1316.61	3.05	-31.22	7.36	2.19
1410.00	9.77	271.97	1407.47	4.27	-45.58	10.56	1.94
1503.00	10.83	272.91	1498.97	4.98	-62.19	13.57	1.15
1594.00	11.94	273.59	1588.18	6.01	-80.13	17.07	1.23
1686.00	14.05	271.76	1677.82	6.95	-100.79	20.87	2.34
1778.00	14.39	269.89	1767.00	7.27	-123.38	24.33	0.62
1870.00	12.84	266.89	1856.42	6.69	-145.02	26.76	1.85
1965.00	12.57	268.17	1949.09	5.79	-165.90	28.76	0.41
2060.00	12.63	270.01	2041.80	5.46	-186.62	31.31	0.43
2154.00	12.59	268.76	2133.54	5.24	-207.13	33.95	0.29
2249.00	12.10	268.01	2226.34	4.67	-227.44	36.20	0.54
2344.00	11.23	269.46	2319.38	4.24	-246.64	38.44	0.97
2439.00	11.50	274.26	2412.51	4.85	-265.33	41.64	1.04
2534.00	10.54	273.89	2505.76	6.15	-283.45	45.44	1.01
2628.00	9.13	274.07	2598.38	7.26	-299.46	48.76	1.50
2723.00	10.35	270.26	2692.01	7.83	-315.52	51.56	1.45
2818.00	10.73	267.01	2785.41	7.41	-332.88	53.55	0.74
2914.00	11.46	266.12	2879.61	6.30	-351.32	55.01	0.78
3008.00	12.55	268.20	2971.55	5.35	-370.85	56.78	1.25
3104.00	13.89	270.30	3065.01	5.08	-392.79	59.56	1.48
3198.00	15.16	272.04	3156.00	5.58	-416.36	63.32	1.43
3293.00	13.80	267.03	3247.99	5.43	-440.09	66.48	1.95
3388.00	13.15	267.58	3340.37	4.39	-462.21	68.51	0.70
3483.00	13.23	268.85	3432.87	3.71	-483.87	70.85	0.32
3578.00	13.88	269.52	3525.22	3.40	-506.13	73.63	0.70
3673.00	14.92	269.67	3617.23	3.23	-529.76	76.75	1.10
3768.00	15.52	272.08	3708.90	3.62	-554.69	80.60	0.92
3864.00	13.64	271.08	3801.81	4.30	-578.84	84.62	1.98
3959.00	13.78	277.20	3894.10	5.93	-601.27	89.35	1.53
4054.00	14.42	276.53	3986.24	8.70	-624.25	95.27	0.70
4149.00	15.90	275.69	4077.93	11.33	-648.95	101.31	1.57

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
4244.00	15.92	273.52	4169.29	13.42	-674.90	106.99	0.63
4339.00	14.92	271.64	4260.87	14.57	-700.13	111.63	1.18
4434.00	14.09	270.26	4352.85	14.97	-723.92	115.33	0.95
4529.00	14.71	269.41	4444.86	14.90	-747.55	118.54	0.69
4624.00	14.18	272.51	4536.86	15.29	-771.23	122.21	0.99
4718.00	14.58	271.84	4627.91	16.17	-794.56	126.32	0.46
4813.00	15.61	270.92	4719.63	16.76	-819.29	130.34	1.11
4908.00	15.56	271.14	4811.14	17.22	-844.81	134.34	0.08
5003.00	15.99	269.82	4902.56	17.43	-870.64	138.13	0.59
5098.00	14.50	269.88	4994.22	17.37	-895.62	141.53	1.57
5195.00	12.76	265.30	5088.49	16.46	-918.44	143.81	2.11
5289.00	12.94	268.69	5180.13	15.37	-939.31	145.62	0.82
5384.00	13.11	269.38	5272.69	15.01	-960.71	148.24	0.24
5480.00	11.44	270.06	5366.49	14.90	-981.12	150.97	1.75
5575.00	11.82	270.68	5459.54	15.03	-1000.27	153.75	0.42
5670.00	11.14	271.38	5552.64	15.37	-1019.18	156.71	0.73
5765.00	11.21	272.62	5645.84	16.01	-1037.58	159.90	0.26
5860.00	11.99	271.07	5738.90	16.62	-1056.67	163.15	0.88
5955.00	13.24	268.77	5831.60	16.57	-1077.41	165.98	1.42
6049.00	9.18	265.26	5923.79	15.72	-1095.65	167.67	4.38
6144.00	7.05	263.13	6017.83	14.39	-1108.99	168.21	2.26
6239.00	4.96	262.58	6112.31	13.16	-1118.86	168.36	2.20
6334.00	2.26	261.88	6207.11	12.37	-1124.78	168.40	2.84
6428.00	0.14	217.80	6301.08	12.02	-1126.69	168.32	2.30
6524.00	0.22	43.88	6397.08	12.06	-1126.63	168.35	0.37
6619.00	0.16	47.43	6492.08	12.28	-1126.41	168.54	0.06
6651.00	0.16	32.71	6524.08	12.35	-1126.35	168.59	0.13
6682.00	0.10	240.12	6555.08	12.37	-1126.35	168.62	0.82
6714.00	1.62	327.56	6587.08	12.74	-1126.62	169.02	5.06
6746.00	5.76	336.25	6619.01	14.59	-1127.51	170.98	13.02
6777.00	9.37	339.91	6649.73	18.38	-1129.00	174.94	11.74
6809.00	12.74	340.90	6681.13	24.17	-1131.05	180.95	10.55
6841.00	16.24	340.14	6712.11	31.71	-1133.73	188.80	10.95
6873.00	19.45	340.80	6742.57	40.95	-1137.00	198.40	10.05
6904.00	21.52	339.56	6771.61	51.16	-1140.68	209.02	6.82
6936.00	26.83	340.69	6800.79	63.48	-1145.13	221.84	16.66
6967.00	30.14	342.91	6828.03	77.53	-1149.73	236.39	11.21
6999.00	32.78	346.56	6855.33	93.63	-1154.10	252.95	10.17
7031.00	35.19	349.25	6881.86	111.12	-1157.84	270.79	8.88
7062.00	38.13	352.71	6906.73	129.40	-1160.72	289.28	11.59
7094.00	40.00	355.82	6931.58	149.46	-1162.72	309.43	8.46
7126.00	40.16	358.88	6956.06	170.03	-1163.67	329.94	6.18
7157.00	42.30	359.52	6979.38	190.46	-1163.96	350.21	7.04
7189.00	46.22	359.69	7002.29	212.79	-1164.11	372.34	12.26
7221.00	50.92	359.00	7023.46	236.77	-1164.39	396.13	14.78
7253.00	55.91	358.44	7042.53	262.45	-1164.97	421.64	15.66
7285.00	60.29	358.50	7059.43	289.61	-1165.69	448.63	13.69
7317.00	61.45	358.43	7075.01	317.55	-1166.44	476.41	3.63
7348.00	63.32	358.49	7089.38	345.00	-1167.18	503.70	6.03
7379.00	65.78	359.21	7102.70	372.99	-1167.74	531.49	8.21

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
7411.00	69.07	359.51	7114.98	402.53	-1168.07	560.79	10.32
7443.00	72.45	0.79	7125.52	432.74	-1167.98	590.70	11.22
7474.00	75.66	1.36	7134.04	462.54	-1167.42	620.13	10.50
7505.00	78.95	2.21	7140.85	492.76	-1166.48	649.93	10.94
7536.00	81.94	1.29	7146.00	523.31	-1165.55	680.05	10.08
7556.00	83.91	1.15	7148.46	543.15	-1165.13	699.65	9.87
7654.00	87.78	0.18	7155.56	640.87	-1163.99	796.26	4.07
7746.00	87.47	359.73	7159.37	732.79	-1164.07	887.30	0.59
7837.00	89.45	0.56	7161.82	823.75	-1163.84	977.35	2.36
7928.00	91.54	1.32	7161.03	914.73	-1162.34	1067.24	2.44
8020.00	92.04	1.69	7158.16	1006.65	-1159.93	1157.94	0.68
8112.00	92.16	1.69	7154.79	1098.55	-1157.22	1248.57	0.13
8204.00	90.43	1.60	7152.71	1190.49	-1154.58	1339.25	1.88
8295.00	89.51	0.67	7152.76	1281.47	-1152.77	1429.09	1.44
8387.00	89.57	0.40	7153.49	1373.46	-1151.91	1520.08	0.30
8479.00	89.81	0.31	7153.99	1465.46	-1151.34	1611.10	0.28
8571.00	90.74	0.71	7153.55	1557.45	-1150.53	1702.09	1.10
8662.00	88.68	359.48	7154.01	1648.44	-1150.38	1792.18	2.64
8754.00	88.28	359.30	7156.45	1740.40	-1151.35	1883.39	0.48
8846.00	87.65	358.70	7159.72	1832.33	-1152.96	1974.65	0.95
8938.00	89.29	359.13	7162.17	1924.28	-1154.70	2065.95	1.84
9033.00	90.44	0.54	7162.40	2019.27	-1154.97	2160.06	1.92
9128.00	89.03	0.54	7162.84	2114.27	-1154.08	2254.01	1.48
9223.00	90.00	1.03	7163.64	2209.25	-1152.78	2347.90	1.14
9317.00	89.38	0.31	7164.15	2303.24	-1151.68	2440.83	1.01
9412.00	89.63	1.11	7164.97	2398.23	-1150.50	2534.73	0.88
9508.00	89.38	0.02	7165.80	2494.22	-1149.55	2629.66	1.16
9603.00	90.12	0.92	7166.21	2589.22	-1148.77	2723.63	1.23
9698.00	90.49	1.95	7165.71	2684.18	-1146.40	2817.34	1.15
9794.00	89.51	1.09	7165.71	2780.15	-1143.85	2912.02	1.36
9888.00	90.18	1.83	7165.96	2874.12	-1141.45	3004.75	1.06
9984.00	89.82	1.42	7165.96	2970.08	-1138.73	3099.40	0.57
10078.00	90.74	2.66	7165.50	3064.01	-1135.39	3191.97	1.64
10173.00	91.50	2.13	7163.65	3158.91	-1131.42	3285.39	0.98
10269.00	90.99	1.72	7161.56	3254.83	-1128.19	3379.94	0.68
10364.00	90.37	1.09	7160.43	3349.80	-1125.86	3473.66	0.93
10458.00	90.56	1.54	7159.67	3443.77	-1123.71	3566.42	0.52
10553.00	90.12	1.45	7159.11	3538.74	-1121.23	3660.13	0.47
10648.00	90.37	1.61	7158.70	3633.70	-1118.69	3753.82	0.31
10743.00	89.32	0.46	7158.96	3728.68	-1116.98	3847.64	1.64
10838.00	91.97	2.42	7157.89	3823.63	-1114.59	3941.34	3.47
10933.00	92.41	2.16	7154.26	3918.49	-1110.80	4034.75	0.54
11029.00	92.47	1.86	7150.17	4014.34	-1107.43	4129.21	0.32
11124.00	91.48	2.58	7146.90	4109.21	-1103.75	4222.65	1.29
11219.00	89.51	3.64	7146.08	4204.06	-1098.60	4315.87	2.35
11315.00	89.26	2.76	7147.11	4299.91	-1093.24	4410.04	0.95
11410.00	90.86	2.68	7147.01	4394.80	-1088.73	4503.39	1.69
11505.00	90.93	3.75	7145.52	4489.63	-1083.41	4596.57	1.13
11600.00	91.05	5.00	7143.88	4584.34	-1076.16	4689.35	1.32
11695.00	90.06	5.81	7142.96	4678.91	-1067.21	4781.76	1.35

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
11789.00	88.64	7.04	7144.03	4772.31	-1056.70	4872.80	2.00
11884.00	88.58	6.39	7146.33	4866.63	-1045.59	4964.66	0.69
11978.00	88.40	6.00	7148.81	4960.05	-1035.45	5055.77	0.46
12073.00	87.88	6.01	7151.89	5054.48	-1025.52	5147.90	0.55
12168.00	88.52	3.52	7154.88	5149.10	-1017.63	5240.51	2.70
12262.00	90.37	3.33	7155.79	5242.92	-1012.01	5332.65	1.98
12358.00	90.31	2.85	7155.22	5338.78	-1006.84	5426.86	0.50
12453.00	90.00	2.90	7154.96	5433.66	-1002.08	5520.16	0.33
12548.00	90.53	2.83	7154.52	5528.54	-997.33	5613.46	0.56
12643.00	90.00	1.88	7154.08	5623.45	-993.42	5706.91	1.15
12738.00	90.19	1.05	7153.93	5718.42	-990.99	5800.63	0.90
12833.00	89.75	0.86	7153.97	5813.41	-989.41	5894.47	0.50
12928.00	89.57	0.61	7154.54	5908.40	-988.19	5988.37	0.32
13023.00	88.71	359.57	7155.96	6003.39	-988.04	6082.42	1.42
13119.00	89.32	1.67	7157.62	6099.36	-987.00	6177.32	2.28
13214.00	89.14	1.39	7158.89	6194.32	-984.47	6271.01	0.35
13308.00	90.06	1.14	7159.55	6288.29	-982.39	6363.78	1.01
13402.00	89.75	1.29	7159.70	6382.27	-980.40	6456.57	0.37
13498.00	89.51	1.16	7160.32	6478.25	-978.35	6551.34	0.28
13593.00	90.55	359.64	7160.27	6573.24	-977.68	6645.32	1.94
13688.00	90.31	359.49	7159.56	6668.23	-978.41	6739.49	0.30
13783.00	89.69	358.35	7159.56	6763.22	-980.20	6833.80	1.37
13878.00	89.38	359.73	7160.33	6858.20	-981.79	6928.09	1.49
13928.00	88.95	359.38	7161.06	6908.19	-982.18	6977.65	1.11
Projected to Total Depth:							
13982.00	88.95	359.38	7162.05	6962.18	-982.76	7031.19	0.00

Weatherford M/LWD surveys from 952.00 MD to 13928.00 MD.

TD at 13982.00 MD.

The total correction is 8.65 deg relative to True North.