



Company: Noble Energy
 Lease/Well: Wells Ranch USX AA / 25-11
 Location: S-25 T-6N R-63W
 Rig Name: Production
 State/County: Colorado/ Weld County
 Latitude: 40.46, Longitude: -104.39
 GRID North is 0.72 Degrees East of True North
 VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: inrun_ed.ut
 Minimum Curvature Method
 Report Date/Time: 6/24/2011 / 21:52

Vaughn Energy Services
 Denver, CO
 720-215-1841
 Robert Davis

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.24	115.33	100.00	-0.09	0.19	-0.09	0.21	115.33	0.24
200.00	0.32	185.85	200.00	-0.46	0.36	-0.46	0.58	142.33	0.33
300.00	0.15	154.15	300.00	-0.86	0.38	-0.86	0.94	155.87	0.21
400.00	0.20	118.90	400.00	-1.06	0.59	-1.06	1.21	150.74	0.12
500.00	0.63	185.28	499.99	-1.69	0.69	-1.69	1.83	157.69	0.58
600.00	0.69	172.07	599.99	-2.84	0.73	-2.84	2.93	165.65	0.16
700.00	0.21	179.86	699.98	-3.63	0.81	-3.63	3.72	167.40	0.48
800.00	0.34	118.94	799.98	-3.96	1.07	-3.96	4.10	164.90	0.30
900.00	0.60	199.35	899.98	-4.59	1.15	-4.59	4.74	165.94	0.64
1000.00	0.50	139.65	999.98	-5.42	1.26	-5.42	5.57	166.91	0.56
1100.00	0.62	187.91	1099.97	-6.29	1.47	-6.29	6.46	166.84	0.47
1200.00	0.77	153.90	1199.97	-7.42	1.69	-7.42	7.61	167.17	0.43
1300.00	0.45	183.48	1299.96	-8.41	1.96	-8.41	8.64	166.87	0.44
1400.00	0.94	167.94	1399.95	-9.61	2.11	-9.61	9.84	167.61	0.53
1500.00	0.56	181.66	1499.94	-10.90	2.27	-10.90	11.13	168.25	0.42
1600.00	1.05	176.39	1599.93	-12.30	2.31	-12.30	12.52	169.36	0.49
1700.00	1.01	160.02	1699.92	-14.04	2.67	-14.04	14.30	169.23	0.30
1800.00	0.99	153.72	1799.90	-15.65	3.35	-15.65	16.00	167.90	0.11
1900.00	1.13	173.52	1899.89	-17.40	3.85	-17.40	17.82	167.53	0.39
2000.00	0.83	174.31	1999.87	-19.11	4.03	-19.11	19.53	168.09	0.30
2100.00	1.04	157.28	2099.86	-20.67	4.46	-20.67	21.15	167.84	0.35
2200.00	1.23	167.29	2199.84	-22.56	5.04	-22.56	23.12	167.40	0.27
2300.00	1.17	155.57	2299.82	-24.54	5.70	-24.54	25.19	166.92	0.25
2400.00	0.76	144.07	2399.80	-26.00	6.51	-26.00	26.81	165.94	0.45
2500.00	1.27	168.16	2499.79	-27.62	7.13	-27.62	28.53	165.53	0.65
2600.00	1.00	192.24	2599.77	-29.55	7.17	-29.55	30.41	166.36	0.54
2700.00	1.02	151.87	2699.75	-31.18	7.41	-31.18	32.05	166.64	0.69
2800.00	1.47	189.43	2799.73	-33.23	7.61	-33.23	34.09	167.10	0.91
2900.00	1.33	149.79	2899.70	-35.50	7.98	-35.50	36.39	167.32	0.96
3000.00	1.51	171.95	2999.67	-37.80	8.75	-37.80	38.80	166.97	0.57
3100.00	1.67	157.04	3099.64	-40.44	9.50	-40.44	41.55	166.78	0.44
3200.00	1.31	191.65	3199.60	-42.90	9.84	-42.90	44.02	167.08	0.95
3300.00	1.35	187.93	3299.58	-45.19	9.44	-45.19	46.17	168.20	0.09
3400.00	1.43	179.08	3399.55	-47.61	9.30	-47.61	48.51	168.94	0.23

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3500.00	1.63	177.53	3499.51	-50.28	9.38	-50.28	51.14	169.43	0.20
3600.00	1.59	174.34	3599.47	-53.08	9.58	-53.08	53.94	169.77	0.10
3700.00	2.08	171.75	3699.42	-56.25	9.98	-56.25	57.13	169.94	0.50
3800.00	2.37	168.29	3799.35	-60.07	10.66	-60.07	61.01	169.94	0.32
3900.00	2.98	164.76	3899.24	-64.61	11.76	-64.61	65.67	169.68	0.63
4000.00	2.78	173.13	3999.11	-69.52	12.74	-69.52	70.68	169.62	0.47
4100.00	3.14	162.27	4098.98	-74.54	13.86	-74.54	75.82	169.47	0.67
4200.00	3.07	152.46	4198.83	-79.53	15.93	-79.53	81.11	168.67	0.54
4300.00	3.16	164.85	4298.68	-84.56	17.89	-84.56	86.44	168.05	0.68
4400.00	3.01	180.73	4398.54	-89.84	18.58	-89.84	91.74	168.32	0.86
4500.00	3.60	174.84	4498.38	-95.59	18.83	-95.59	97.43	168.86	0.68
4600.00	3.42	175.68	4598.19	-101.69	19.33	-101.69	103.51	169.24	0.19
4700.00	3.85	182.37	4697.99	-108.02	19.42	-108.02	109.75	169.81	0.61
4800.00	4.23	177.65	4797.74	-115.06	19.43	-115.06	116.69	170.41	0.51
4900.00	3.86	173.80	4897.49	-122.09	19.95	-122.09	123.71	170.72	0.46
5000.00	4.06	173.17	4997.25	-128.95	20.73	-128.95	130.61	170.87	0.21
5100.00	4.53	162.39	5096.97	-136.23	22.35	-136.23	138.05	170.68	0.93
5200.00	4.17	167.45	5196.68	-143.55	24.33	-143.55	145.59	170.38	0.53
5300.00	3.83	160.07	5296.44	-150.23	26.26	-150.23	152.51	170.09	0.62
5400.00	3.35	160.04	5396.24	-156.12	28.39	-156.12	158.68	169.69	0.47
5500.00	3.33	158.58	5496.07	-161.57	30.45	-161.57	164.42	169.33	0.09
5600.00	2.94	164.30	5595.92	-166.74	32.21	-166.74	169.83	169.07	0.51
5700.00	3.21	155.45	5695.78	-171.76	34.07	-171.76	175.10	168.78	0.55
5800.00	2.77	162.04	5795.64	-176.60	35.98	-176.60	180.23	168.49	0.56
5900.00	3.06	148.86	5895.52	-181.18	38.10	-181.18	185.15	168.12	0.73
6000.00	2.67	152.32	5995.39	-185.53	40.56	-185.53	189.91	167.67	0.43
6100.00	2.90	154.62	6095.27	-189.87	42.72	-189.87	194.62	167.32	0.26
6200.00	1.96	147.02	6195.18	-193.59	44.74	-193.59	198.70	166.99	0.98
6300.00	2.01	147.50	6295.12	-196.51	46.61	-196.51	201.96	166.66	0.05
6400.00	2.61	144.01	6395.04	-199.82	48.89	-199.82	205.72	166.25	0.62
6500.00	2.86	154.55	6494.93	-203.91	51.30	-203.91	210.27	165.88	0.56
6600.00	3.17	159.55	6594.79	-208.76	53.34	-208.76	215.46	165.67	0.41

HORIZONTAL DISPLACEMENT IS 215.46 FEET AT 165.67 DEGREES									
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