



Company: Noble Energy  
Lease/Well: Wells Ranch USX AA / 25-7  
Location: S-25 T-6N R-63W  
Rig Name: Production  
State/County: Colorado / Weld County  
Latitude: 40.46, Longitude: -104.38  
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 / 15:54

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	0.01	149.18	100.00	-0.01	0.00	-0.01	0.01	149.18	0.01
200.00	0.25	70.96	200.00	0.06	0.22	0.06	0.23	75.43	0.25
300.00	0.11	0.40	300.00	0.23	0.43	0.23	0.48	61.97	0.24
400.00	0.23	10.91	400.00	0.53	0.47	0.53	0.70	41.62	0.12
500.00	0.42	6.61	500.00	1.09	0.55	1.09	1.22	26.66	0.19
600.00	0.47	18.06	599.99	1.85	0.72	1.85	1.98	21.21	0.10
700.00	0.47	18.87	699.99	2.63	0.98	2.63	2.80	20.41	0.01
800.00	0.49	16.69	799.99	3.43	1.23	3.43	3.64	19.80	0.03
900.00	0.49	9.13	899.98	4.26	1.42	4.26	4.49	18.50	0.07
1000.00	0.35	338.36	999.98	4.96	1.38	4.96	5.15	15.52	0.26
1100.00	0.56	333.92	1099.98	5.69	1.05	5.69	5.78	10.48	0.21
1200.00	0.42	0.59	1199.97	6.49	0.84	6.49	6.54	7.39	0.26
1300.00	0.58	349.51	1299.97	7.35	0.75	7.35	7.38	5.85	0.19
1400.00	0.45	338.73	1399.97	8.21	0.52	8.21	8.22	3.62	0.16
1500.00	0.33	356.32	1499.96	8.86	0.36	8.86	8.87	2.32	0.17
1600.00	0.47	358.48	1599.96	9.56	0.33	9.56	9.57	1.97	0.14
1700.00	0.34	57.27	1699.96	10.14	0.57	10.14	10.15	3.23	0.42
1800.00	0.49	52.58	1799.96	10.56	1.16	10.56	10.62	6.28	0.15
1900.00	0.53	47.39	1899.95	11.13	1.84	11.13	11.28	9.40	0.07
2000.00	0.58	34.97	1999.95	11.86	2.47	11.86	12.11	11.78	0.13
2100.00	0.70	24.78	2099.94	12.82	3.02	12.82	13.17	13.24	0.17
2200.00	0.89	354.49	2199.93	14.14	3.20	14.14	14.50	12.74	0.45
2300.00	0.52	309.86	2299.93	15.21	2.77	15.21	15.46	10.34	0.63
2400.00	0.56	308.75	2399.92	15.80	2.04	15.80	15.93	7.37	0.04
2500.00	0.52	295.28	2499.92	16.30	1.25	16.30	16.35	4.39	0.13
2600.00	0.73	295.58	2599.91	16.77	0.27	16.77	16.77	0.91	0.21
2700.00	0.75	291.56	2699.90	17.28	-0.91	17.28	17.31	356.98	0.06
2800.00	0.49	298.54	2799.90	17.73	-1.90	17.73	17.83	353.89	0.27
2900.00	0.77	317.70	2899.89	18.43	-2.72	18.43	18.63	351.60	0.34
3000.00	0.74	343.66	2999.88	19.54	-3.35	19.54	19.82	350.26	0.34
3100.00	0.61	337.58	3099.88	20.65	-3.74	20.65	20.98	349.74	0.14
3200.00	0.80	329.34	3199.87	21.74	-4.30	21.74	22.17	348.82	0.21
3300.00	0.94	330.59	3299.86	23.06	-5.06	23.06	23.61	347.63	0.14
3400.00	0.67	334.62	3399.85	24.30	-5.71	24.30	24.97	346.78	0.28

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	0.12	7.74	3499.84	24.93	-5.95	24.93	25.63	346.58	0.57
3600.00	0.46	342.34	3599.84	25.41	-6.05	25.41	26.12	346.60	0.35
3700.00	0.46	7.23	3699.84	26.19	-6.12	26.19	26.90	346.84	0.20
3800.00	0.75	325.58	3799.83	27.14	-6.44	27.14	27.89	346.64	0.51
3900.00	0.48	250.98	3899.83	27.54	-7.21	27.54	28.47	345.33	0.78
4000.00	0.88	256.25	3999.82	27.22	-8.35	27.22	28.48	342.94	0.41
4100.00	0.64	266.47	4099.81	27.01	-9.66	27.01	28.68	340.31	0.28
4200.00	0.93	286.19	4199.80	27.20	-11.00	27.20	29.34	337.98	0.39
4300.00	1.26	305.15	4299.79	28.05	-12.67	28.05	30.78	335.69	0.49
4400.00	1.99	317.41	4399.75	29.97	-14.75	29.97	33.40	333.80	0.81
4500.00	2.70	333.79	4499.66	33.37	-16.97	33.37	37.43	333.05	0.97
4600.00	2.76	344.13	4599.55	37.80	-18.67	37.80	42.16	333.72	0.50
4700.00	2.61	355.08	4699.44	42.38	-19.52	42.38	46.66	335.27	0.53
4800.00	2.24	356.90	4799.35	46.59	-19.82	46.59	50.64	336.95	0.37
4900.00	2.00	353.58	4899.28	50.28	-20.12	50.28	54.15	338.19	0.27
5000.00	1.89	345.92	4999.22	53.61	-20.72	53.61	57.48	338.87	0.28
5100.00	1.04	340.05	5099.19	56.07	-21.43	56.07	60.02	339.08	0.87
5200.00	0.49	348.29	5199.18	57.34	-21.83	57.34	61.35	339.16	0.55
5300.00	0.52	68.40	5299.18	57.93	-21.50	57.93	61.79	339.64	0.65
5400.00	0.80	82.13	5399.17	58.19	-20.39	58.19	61.66	340.69	0.32
5500.00	0.69	79.46	5499.16	58.39	-19.10	58.39	61.44	341.88	0.12
5600.00	0.58	104.09	5599.16	58.38	-18.02	58.38	61.10	342.84	0.29
5700.00	0.89	104.53	5699.15	58.06	-16.79	58.06	60.44	343.87	0.31
5800.00	0.51	128.78	5799.14	57.59	-15.69	57.59	59.69	344.76	0.47
5900.00	0.81	110.11	5899.14	57.07	-14.69	57.07	58.93	345.57	0.37
6000.00	0.72	136.95	5999.13	56.37	-13.59	56.37	57.99	346.44	0.37
6100.00	0.56	155.28	6099.12	55.46	-12.96	55.46	56.96	346.85	0.26
6200.00	0.95	142.24	6199.11	54.36	-12.25	54.36	55.73	347.31	0.42
6300.00	0.74	171.27	6299.10	53.07	-11.64	53.07	54.33	347.63	0.47
6400.00	0.75	166.83	6399.09	51.79	-11.39	51.79	53.03	347.59	0.06
6500.00	0.77	160.37	6499.08	50.52	-11.02	50.52	51.70	347.70	0.09
6600.00	0.74	142.03	6599.08	49.38	-10.40	49.38	50.47	348.11	0.24
HORIZONTAL DISPLACEMENT IS 50.47 FEET AT 348.11 DEGREES									