



Company: Noble Energy  
Lease/Well: Wells Ranch USX AA / 25-8  
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 / 10:32

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	0.48	21.12	100.00	0.39	0.15	0.39	0.42	21.12	0.48
200.00	0.53	12.01	200.00	1.23	0.40	1.23	1.29	17.88	0.09
300.00	1.01	337.03	299.99	2.49	0.15	2.49	2.50	3.38	0.65
400.00	1.18	318.20	399.97	4.07	-0.88	4.07	4.17	347.75	0.40
500.00	0.88	321.22	499.95	5.44	-2.05	5.44	5.82	339.32	0.30
600.00	0.23	267.92	599.95	6.03	-2.73	6.03	6.62	335.63	0.77
700.00	0.28	238.94	699.95	5.90	-3.14	5.90	6.68	331.97	0.14
800.00	0.08	186.91	799.95	5.70	-3.36	5.70	6.62	329.48	0.24
900.00	0.08	213.08	899.95	5.57	-3.41	5.57	6.53	328.52	0.04
1000.00	0.11	49.30	999.95	5.57	-3.37	5.57	6.51	328.79	0.19
1100.00	0.11	78.85	1099.95	5.65	-3.21	5.65	6.50	330.42	0.06
1200.00	0.12	257.67	1199.95	5.65	-3.21	5.65	6.50	330.37	0.23
1300.00	0.20	126.17	1299.94	5.52	-3.17	5.52	6.37	330.13	0.29
1400.00	0.29	44.43	1399.94	5.61	-2.86	5.61	6.29	333.01	0.33
1500.00	0.13	132.14	1499.94	5.71	-2.59	5.71	6.27	335.60	0.32
1600.00	0.21	212.77	1599.94	5.48	-2.61	5.48	6.06	334.54	0.23
1700.00	0.47	195.59	1699.94	4.92	-2.82	4.92	5.67	330.22	0.27
1800.00	0.30	172.79	1799.94	4.27	-2.89	4.27	5.16	325.85	0.22
1900.00	0.22	213.94	1899.94	3.84	-2.97	3.84	4.86	322.29	0.20
2000.00	0.15	188.07	1999.94	3.55	-3.10	3.55	4.71	318.89	0.11
2100.00	0.10	109.71	2099.94	3.39	-3.03	3.39	4.55	318.20	0.16
2200.00	0.04	136.32	2199.94	3.33	-2.92	3.33	4.43	318.77	0.07
2300.00	0.02	175.71	2299.94	3.28	-2.89	3.28	4.38	318.63	0.03
2400.00	0.02	73.36	2399.94	3.27	-2.87	3.27	4.35	318.72	0.04
2500.00	0.05	243.01	2499.94	3.26	-2.89	3.26	4.35	318.40	0.07
2600.00	0.04	110.19	2599.94	3.22	-2.90	3.22	4.33	318.05	0.08
2700.00	0.05	250.02	2699.94	3.20	-2.91	3.20	4.32	317.70	0.09
2800.00	0.07	159.40	2799.94	3.12	-2.93	3.12	4.28	316.83	0.09
2900.00	0.21	328.39	2899.94	3.23	-3.01	3.23	4.41	317.01	0.28
3000.00	0.37	319.82	2999.94	3.63	-3.31	3.63	4.92	317.62	0.17
3100.00	0.25	340.84	3099.93	4.09	-3.60	4.09	5.45	318.67	0.17
3200.00	0.29	14.86	3199.93	4.54	-3.61	4.54	5.80	321.57	0.16
3300.00	0.44	31.89	3299.93	5.11	-3.34	5.11	6.10	326.83	0.18
3400.00	0.89	10.80	3399.92	6.20	-2.99	6.20	6.88	334.22	0.51

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	0.63	4.44	3499.92	7.51	-2.81	7.51	8.02	339.52	0.28
3600.00	0.16	254.31	3599.91	8.02	-2.90	8.02	8.52	340.15	0.70
3700.00	0.18	43.85	3699.91	8.10	-2.92	8.10	8.61	340.19	0.33
3800.00	0.15	324.28	3799.91	8.32	-2.88	8.32	8.80	340.90	0.21
3900.00	0.16	214.95	3899.91	8.31	-3.04	8.31	8.85	339.92	0.25
4000.00	0.17	225.14	3999.91	8.09	-3.22	8.09	8.71	338.29	0.03
4100.00	0.20	168.15	4099.91	7.82	-3.29	7.82	8.48	337.18	0.18
4200.00	0.08	230.81	4199.91	7.60	-3.31	7.60	8.29	336.48	0.18
4300.00	0.11	108.93	4299.91	7.53	-3.27	7.53	8.21	336.49	0.17
4400.00	0.13	254.30	4399.91	7.47	-3.29	7.47	8.16	336.20	0.23
4500.00	0.11	348.87	4499.91	7.53	-3.42	7.53	8.27	335.57	0.18
4600.00	0.09	203.56	4599.91	7.55	-3.47	7.55	8.31	335.33	0.19
4700.00	0.07	237.49	4699.91	7.45	-3.56	7.45	8.25	334.48	0.05
4800.00	0.03	164.48	4799.91	7.38	-3.60	7.38	8.22	334.00	0.07
4900.00	0.10	42.32	4899.91	7.42	-3.54	7.42	8.22	334.51	0.12
5000.00	0.08	117.59	4999.91	7.45	-3.42	7.45	8.19	335.35	0.11
5100.00	0.22	340.74	5099.91	7.60	-3.42	7.60	8.33	335.77	0.29
5200.00	0.19	131.89	5199.91	7.67	-3.36	7.67	8.37	336.35	0.40
5300.00	0.19	32.08	5299.91	7.70	-3.14	7.70	8.32	337.79	0.30
5400.00	0.19	334.95	5399.91	8.00	-3.13	8.00	8.59	338.66	0.19
5500.00	0.16	343.23	5499.91	8.29	-3.24	8.29	8.90	338.66	0.04
5600.00	0.17	195.69	5599.91	8.28	-3.32	8.28	8.92	338.16	0.32
5700.00	0.19	334.97	5699.91	8.29	-3.43	8.29	8.97	337.52	0.34
5800.00	0.17	241.61	5799.91	8.37	-3.63	8.37	9.13	336.54	0.27
5900.00	0.22	9.03	5899.91	8.49	-3.73	8.49	9.28	336.27	0.35
6000.00	0.20	80.84	5999.91	8.71	-3.53	8.71	9.40	337.94	0.25
6100.00	0.23	67.23	6099.91	8.82	-3.17	8.82	9.37	340.21	0.06
6200.00	0.20	159.71	6199.91	8.73	-2.93	8.73	9.21	341.46	0.31
6300.00	0.07	210.04	6299.91	8.52	-2.90	8.52	9.00	341.20	0.16
6400.00	0.30	154.67	6399.91	8.23	-2.82	8.23	8.70	341.09	0.26
6500.00	0.51	113.66	6499.90	7.82	-2.30	7.82	8.15	343.60	0.34
6600.00	0.34	81.76	6599.90	7.68	-1.60	7.68	7.84	348.26	0.28

HORIZONTAL DISPLACEMENT IS 7.84 FEET AT 348.26 DEGREES									
---	--	--	--	--	--	--	--	--	--