



Company: NOBLE
 Lease/Well: WELLS RANCH USX BB 15-03/# 15-03
 Location:
 Rig Name: PRODUCTION
 State/County: COLORADO/WELD COUNTY
 Latitude: 40.40
 GRID North is 0.70 Degrees East of True North
 VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : GL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run1-01.ut
 Minimum Curvature Method
 Report Date/Time: 4/12/2011 / 11:44

Vaughn Energy Services
 Rifle, Colorado
 970-456-2071
 Garry Fowler
 Wells Ranch USX BB 15-03/05-123-26502

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	0.28	218.58	100.00	-0.19	-0.15	-0.19	0.24	218.58	0.28
200.00	0.41	247.79	200.00	-0.51	-0.63	-0.51	0.82	230.95	0.22
300.00	0.35	203.48	300.00	-0.93	-1.09	-0.93	1.43	229.42	0.29
400.00	0.34	192.59	399.99	-1.50	-1.28	-1.50	1.97	220.32	0.07
500.00	0.35	200.41	499.99	-2.08	-1.45	-2.08	2.53	214.86	0.05
600.00	0.28	189.18	599.99	-2.60	-1.59	-2.60	3.05	211.45	0.09
700.00	0.23	210.07	699.99	-3.01	-1.73	-3.01	3.48	209.85	0.10
800.00	0.30	187.05	799.99	-3.45	-1.86	-3.45	3.92	208.37	0.13
900.00	0.22	194.68	899.99	-3.90	-1.94	-3.90	4.36	206.51	0.08
1000.00	0.25	193.50	999.99	-4.30	-2.05	-4.30	4.76	205.43	0.03
1100.00	0.23	193.59	1099.99	-4.71	-2.14	-4.71	5.17	204.48	0.02
1200.00	0.45	127.51	1199.98	-5.14	-1.88	-5.14	5.47	200.11	0.41
1300.00	0.27	100.97	1299.98	-5.42	-1.34	-5.42	5.58	193.90	0.24
1400.00	0.61	138.19	1399.98	-5.86	-0.75	-5.86	5.91	187.32	0.43
1500.00	0.41	124.75	1499.98	-6.47	-0.10	-6.47	6.47	180.88	0.23
1600.00	0.38	226.41	1599.97	-6.90	-0.05	-6.90	6.90	180.38	0.62
1700.00	0.19	123.25	1699.97	-7.22	-0.15	-7.22	7.23	181.21	0.46
1800.00	0.30	273.13	1799.97	-7.30	-0.28	-7.30	7.30	182.18	0.47
1900.00	0.66	199.58	1899.97	-7.83	-0.73	-7.83	7.86	185.35	0.65
2000.00	1.01	226.05	1999.96	-8.99	-1.56	-8.99	9.12	189.86	0.51
2100.00	1.15	233.28	2099.94	-10.20	-3.00	-10.20	10.63	196.40	0.19
2200.00	1.46	273.96	2199.92	-10.71	-5.08	-10.71	11.85	205.37	0.95
2300.00	1.58	284.79	2299.88	-10.27	-7.69	-10.27	12.83	216.81	0.31
2400.00	1.57	289.62	2399.84	-9.46	-10.31	-9.46	13.99	227.46	0.13
2500.00	1.24	286.99	2499.81	-8.68	-12.63	-8.68	15.33	235.49	0.33
2600.00	1.20	288.99	2599.79	-8.03	-14.65	-8.03	16.71	241.29	0.06
2700.00	1.21	294.15	2699.77	-7.25	-16.61	-7.25	18.12	246.41	0.11
2800.00	1.15	302.45	2799.75	-6.28	-18.42	-6.28	19.46	251.16	0.18
2900.00	0.83	303.05	2899.73	-5.35	-19.87	-5.35	20.58	254.93	0.31
3000.00	0.58	286.57	2999.73	-4.81	-20.96	-4.81	21.51	257.07	0.33
3100.00	0.65	260.83	3099.72	-4.76	-22.00	-4.76	22.51	257.80	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
3200.00	1.07	226.90	3199.71	-5.49	-23.24	-5.49	23.88	256.72	0.64
3300.00	1.87	216.09	3299.68	-7.44	-24.89	-7.44	25.98	253.35	0.85
3400.00	2.11	195.99	3399.62	-10.54	-26.36	-10.54	28.39	248.21	0.74
3500.00	2.64	184.76	3499.53	-14.60	-27.06	-14.60	30.75	241.64	0.70
3600.00	2.84	181.72	3599.42	-19.37	-27.32	-19.37	33.49	234.66	0.25
3700.00	2.75	174.12	3699.30	-24.24	-27.15	-24.24	36.40	228.24	0.38
3800.00	2.98	164.31	3799.17	-29.14	-26.20	-29.14	39.18	221.96	0.54
3900.00	2.81	162.73	3899.05	-33.98	-24.77	-33.98	42.05	216.09	0.19
4000.00	2.79	160.02	3998.93	-38.61	-23.21	-38.61	45.05	211.01	0.13
4100.00	2.20	144.48	4098.83	-42.47	-21.26	-42.47	47.49	206.60	0.90
4200.00	1.82	120.71	4198.77	-44.84	-18.78	-44.84	48.61	202.72	0.91
4300.00	1.52	89.13	4298.73	-45.63	-16.09	-45.63	48.38	199.42	0.95
4400.00	1.61	72.84	4398.69	-45.19	-13.41	-45.19	47.14	196.53	0.45
4500.00	1.40	70.34	4498.66	-44.37	-10.92	-44.37	45.69	193.82	0.23
4600.00	1.08	87.22	4598.64	-43.91	-8.83	-43.91	44.79	191.37	0.48
4700.00	0.58	113.11	4698.63	-44.07	-7.43	-44.07	44.69	189.56	0.61
4800.00	0.23	137.19	4798.62	-44.41	-6.82	-44.41	44.93	188.73	0.38
4900.00	0.19	167.47	4898.62	-44.72	-6.65	-44.72	45.21	188.46	0.12
5000.00	0.25	251.42	4998.62	-44.95	-6.82	-44.95	45.46	188.63	0.29
5100.00	0.47	253.57	5098.62	-45.13	-7.42	-45.13	45.74	189.33	0.22
5200.00	0.62	228.38	5198.62	-45.61	-8.22	-45.61	46.34	190.21	0.28
5300.00	0.85	247.75	5298.61	-46.25	-9.30	-46.25	47.17	191.37	0.33
5400.00	0.53	276.58	5398.60	-46.47	-10.44	-46.47	47.63	192.67	0.46
5500.00	0.85	272.24	5498.59	-46.39	-11.64	-46.39	47.83	194.09	0.32
5600.00	1.27	287.61	5598.58	-46.03	-13.44	-46.03	47.95	196.28	0.51
5700.00	1.29	303.52	5698.55	-45.07	-15.44	-45.07	47.64	198.91	0.36
5800.00	1.14	339.74	5798.53	-43.51	-16.72	-43.51	46.62	201.02	0.77
5900.00	1.04	9.57	5898.51	-41.69	-16.91	-41.69	44.99	202.08	0.57
6000.00	1.14	61.12	5998.50	-40.32	-15.89	-40.32	43.34	201.51	0.95
6100.00	1.73	92.39	6098.47	-39.90	-13.51	-39.90	42.12	198.71	0.95
6200.00	2.59	101.72	6198.40	-40.42	-9.80	-40.42	41.59	193.62	0.93
6300.00	3.22	105.69	6298.27	-41.64	-4.88	-41.64	41.92	186.68	0.66
6400.00	3.79	117.47	6398.08	-43.92	0.76	-43.92	43.93	179.01	0.92
6500.00	3.38	130.08	6497.89	-47.35	5.95	-47.35	47.72	172.84	0.89
6600.00	2.88	127.66	6597.74	-50.78	10.20	-50.78	51.80	168.65	0.52
6650.00	2.59	119.98	6647.68	-52.11	12.17	-52.11	53.52	166.86	0.93
<div> <div>HORIZONTAL DISPLACEMENT IS</div> <div>53.52 FEET AT 166.86 DEGREES</div> </div>									