



Company: NOBLE ENERGY
Lease/Well: API # 05-123-13382/TREBOR B 10-15
Location: SW/4 SE/4 SEC.10-T5N-R64W
Rig Name: LIGHTNING WIRE
State/County: COLORADO/WELD
Latitude: 40.41
GRID North is 0.62 Degrees East of True North
VS-Azi: 0.00 Degrees



DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: test-01.ut

Minimum Curvature Method

Report Date/Time: 2/18/2013 / 16:37

Vaughn Energy Services
Corpus Christi , Texas
1-361-384-0602

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	0.32	55.22	100.00	0.16	0.23	0.16	0.28	55.22	0.32
200.00	0.03	57.44	200.00	0.33	0.48	0.33	0.59	55.33	0.29
300.00	0.26	32.00	300.00	0.54	0.63	0.54	0.83	49.20	0.23
400.00	0.22	357.36	400.00	0.92	0.74	0.92	1.18	38.70	0.15
500.00	0.20	340.17	500.00	1.28	0.67	1.28	1.44	27.67	0.06
600.00	0.16	319.39	600.00	1.55	0.52	1.55	1.63	18.36	0.08
700.00	0.24	343.82	700.00	1.86	0.36	1.86	1.90	11.00	0.11
800.00	0.22	343.92	800.00	2.25	0.25	2.25	2.27	6.32	0.02
900.00	0.08	355.57	899.99	2.51	0.19	2.51	2.51	4.34	0.15
1000.00	0.18	348.05	999.99	2.72	0.15	2.72	2.73	3.22	0.10
1100.00	0.24	6.10	1099.99	3.09	0.14	3.09	3.09	2.67	0.09
1200.00	0.47	8.50	1199.99	3.70	0.23	3.70	3.71	3.51	0.22
1300.00	0.42	7.09	1299.99	4.47	0.33	4.47	4.49	4.25	0.04
1400.00	0.37	14.75	1399.99	5.15	0.46	5.15	5.17	5.11	0.08
1500.00	0.41	22.73	1499.98	5.79	0.68	5.79	5.83	6.70	0.07
1600.00	0.49	18.91	1599.98	6.52	0.96	6.52	6.59	8.34	0.08
1700.00	0.53	21.04	1699.98	7.36	1.26	7.36	7.46	9.71	0.05
1800.00	0.61	19.19	1799.97	8.29	1.60	8.29	8.44	10.93	0.08
1900.00	0.61	10.87	1899.97	9.32	1.88	9.32	9.50	11.38	0.09
2000.00	0.47	15.82	1999.96	10.24	2.09	10.24	10.45	11.53	0.14
2100.00	0.27	17.30	2099.96	10.86	2.27	10.86	11.10	11.82	0.20
2200.00	0.24	16.76	2199.96	11.29	2.40	11.29	11.54	12.02	0.03
2300.00	0.23	347.79	2299.96	11.68	2.42	11.68	11.92	11.71	0.12
2400.00	0.36	335.14	2399.96	12.15	2.25	12.15	12.36	10.49	0.14
2500.00	0.24	345.60	2499.96	12.63	2.07	12.63	12.80	9.29	0.13

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
2600.00	0.34	343.27	2599.95	13.12	1.93	13.12	13.26	8.36	0.11
2700.00	0.40	330.91	2699.95	13.72	1.67	13.72	13.82	6.94	0.10
2800.00	0.24	309.32	2799.95	14.16	1.34	14.16	14.22	5.40	0.20
2900.00	0.27	251.31	2899.95	14.21	0.95	14.21	14.25	3.83	0.25
3000.00	0.37	253.80	2999.95	14.05	0.42	14.05	14.05	1.70	0.10
3100.00	0.67	253.39	3099.94	13.79	-0.45	13.79	13.80	358.12	0.30
3200.00	0.86	268.34	3199.93	13.60	-1.76	13.60	13.72	352.63	0.27
3300.00	0.76	279.80	3299.93	13.69	-3.16	13.69	14.05	346.99	0.19
3400.00	0.77	276.26	3399.92	13.88	-4.49	13.88	14.59	342.08	0.05
3500.00	0.89	281.17	3499.91	14.10	-5.92	14.10	15.30	337.23	0.14
3600.00	0.69	284.94	3599.90	14.41	-7.27	14.41	16.14	333.24	0.22
3700.00	0.67	274.73	3699.89	14.61	-8.42	14.61	16.87	330.03	0.12
3800.00	0.48	262.17	3799.88	14.60	-9.42	14.60	17.38	327.17	0.22
3900.00	0.50	262.61	3899.88	14.49	-10.27	14.49	17.76	324.68	0.02
4000.00	0.39	247.48	3999.88	14.31	-11.01	14.31	18.05	322.42	0.16
4100.00	0.38	239.67	4099.88	14.01	-11.61	14.01	18.19	320.36	0.05
4200.00	0.50	219.39	4199.87	13.51	-12.17	13.51	18.18	317.99	0.19
4300.00	0.62	199.09	4299.87	12.66	-12.62	12.66	17.87	315.08	0.23
4400.00	0.80	184.32	4399.86	11.45	-12.85	11.45	17.21	311.69	0.25
4500.00	1.19	172.24	4499.84	9.73	-12.76	9.73	16.05	307.31	0.44
4600.00	1.72	174.40	4599.81	7.20	-12.48	7.20	14.41	300.00	0.54
4700.00	2.40	163.81	4699.75	3.69	-11.75	3.69	12.31	287.45	0.77
4800.00	2.21	170.63	4799.67	-0.22	-10.85	-0.22	10.85	268.81	0.33
4900.00	1.86	162.89	4899.60	-3.68	-10.06	-3.68	10.71	249.92	0.45
5000.00	1.12	162.95	4999.57	-6.16	-9.29	-6.16	11.15	236.45	0.73
5100.00	0.74	167.38	5099.56	-7.73	-8.86	-7.73	11.76	228.91	0.39
5200.00	0.48	203.42	5199.55	-8.75	-8.89	-8.75	12.47	225.46	0.45
5300.00	0.64	207.65	5299.55	-9.63	-9.32	-9.63	13.40	224.05	0.17
5400.00	0.66	212.60	5399.54	-10.61	-9.89	-10.61	14.50	222.98	0.06
5500.00	0.46	198.98	5499.53	-11.48	-10.33	-11.48	15.44	221.98	0.24
5600.00	0.67	196.17	5599.53	-12.43	-10.62	-12.43	16.35	220.53	0.21
5700.00	0.61	190.29	5699.52	-13.51	-10.88	-13.51	17.35	218.85	0.09
5800.00	0.42	184.90	5799.52	-14.40	-11.01	-14.40	18.13	217.39	0.19
5900.00	0.56	176.29	5899.51	-15.26	-11.01	-15.26	18.82	215.80	0.16
6000.00	0.65	175.43	5999.51	-16.32	-10.93	-16.32	19.64	213.81	0.09
6100.00	0.69	175.68	6099.50	-17.49	-10.84	-17.49	20.57	211.80	0.04
6200.00	0.55	185.15	6199.50	-18.57	-10.84	-18.57	21.50	210.27	0.17
6300.00	0.40	178.72	6299.49	-19.39	-10.87	-19.39	22.24	209.28	0.16
6400.00	0.30	179.73	6399.49	-20.01	-10.87	-20.01	22.77	208.51	0.10
6500.00	0.31	176.86	6499.49	-20.54	-10.85	-20.54	23.23	207.84	0.02
6600.00	0.30	171.59	6599.49	-21.07	-10.80	-21.07	23.67	207.13	0.03
6700.00	0.58	272.92	6699.49	-21.30	-11.26	-21.30	24.09	207.87	0.70