



Company: NOBLE ENERGY  
 Lease/Well: DINNER/1-14  
 Location:  
 Rig Name: PRODUCTION  
 State/County: COLORADO/WELD  
 Latitude: 40.34  
 GRID North is 0.58 Degrees East of True North  
 VS-Azi: 0.00 Degrees

FIELD COPY ONLY (NOT DEFINITIVE)

DEPTH REFERENCE : GL = 0'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: dinner1-14raw.ut  
 Minimum Curvature Method  
 Report Date/Time: 4/11/2011 / 12:13

Vaughn Energy Services  
 Rifle, Colorado  
 970 456 2071  
 Surveyor: S.Anderson  
 Dinner 1-14 API# 05-123-19003

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	0.41	315.14	100.00	0.25	-0.25	0.25	0.35	315.14	0.41
200.00	0.33	304.91	200.00	0.67	-0.74	0.67	0.99	312.19	0.10
300.00	0.50	292.70	299.99	1.00	-1.38	1.00	1.70	306.05	0.19
400.00	0.81	279.24	399.99	1.28	-2.48	1.28	2.79	297.38	0.35
500.00	0.94	275.19	499.98	1.47	-3.99	1.47	4.25	290.24	0.14
600.00	0.96	263.92	599.96	1.46	-5.64	1.46	5.82	284.48	0.19
700.00	0.79	272.77	699.95	1.40	-7.16	1.40	7.29	281.07	0.22
800.00	0.91	267.27	799.94	1.40	-8.64	1.40	8.75	279.18	0.15
900.00	0.70	257.99	899.93	1.23	-10.02	1.23	10.10	277.00	0.25
1000.00	0.85	249.41	999.92	0.84	-11.32	0.84	11.35	274.26	0.20
1100.00	0.67	250.84	1099.91	0.39	-12.57	0.39	12.58	271.76	0.18
1200.00	0.73	249.12	1199.90	-0.03	-13.72	-0.03	13.72	269.87	0.06
1300.00	0.85	237.76	1299.90	-0.65	-14.94	-0.65	14.96	267.49	0.20
1400.00	0.59	243.39	1399.89	-1.28	-16.04	-1.28	16.09	265.42	0.27
1500.00	0.83	238.17	1499.88	-1.90	-17.11	-1.90	17.22	263.67	0.24
1600.00	0.55	220.20	1599.87	-2.65	-18.04	-2.65	18.23	261.65	0.35
1700.00	0.94	190.76	1699.86	-3.82	-18.50	-3.82	18.89	258.32	0.54
1800.00	0.93	194.18	1799.85	-5.42	-18.86	-5.42	19.62	253.96	0.06
1900.00	1.05	206.91	1899.84	-7.03	-19.47	-7.03	20.70	250.15	0.25
2000.00	1.29	242.77	1999.82	-8.36	-20.89	-8.36	22.50	248.18	0.76
2100.00	1.84	268.65	2099.78	-8.92	-23.49	-8.92	25.13	249.22	0.88
2200.00	1.61	277.26	2199.73	-8.78	-26.49	-8.78	27.90	251.67	0.35
2300.00	2.20	279.29	2299.68	-8.29	-29.77	-8.29	30.90	254.44	0.59
2400.00	2.04	283.06	2399.61	-7.58	-33.40	-7.58	34.25	257.22	0.21
2500.00	1.87	287.20	2499.55	-6.69	-36.70	-6.69	37.30	259.67	0.22
2600.00	1.41	286.87	2599.51	-5.85	-39.43	-5.85	39.87	261.56	0.47
2700.00	1.35	294.33	2699.48	-5.01	-41.69	-5.01	41.99	263.15	0.19
2800.00	1.31	286.34	2799.45	-4.20	-43.86	-4.20	44.06	264.53	0.19
2900.00	1.13	287.79	2899.43	-3.58	-45.90	-3.58	46.04	265.54	0.18
3000.00	0.98	293.75	2999.41	-2.93	-47.63	-2.93	47.72	266.48	0.18
3100.00	0.69	298.71	3099.40	-2.30	-48.94	-2.30	48.99	267.31	0.31

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	0.67	308.18	3199.40	-1.65	-49.92	-1.65	49.95	268.11	0.11
3300.00	0.70	313.53	3299.39	-0.87	-50.82	-0.87	50.83	269.02	0.07
3400.00	0.82	310.03	3399.38	0.01	-51.81	0.01	51.81	270.01	0.13
3500.00	0.91	316.68	3499.37	1.05	-52.91	1.05	52.92	271.14	0.13
3600.00	1.28	321.09	3599.35	2.50	-54.15	2.50	54.21	272.64	0.38
3700.00	1.85	320.60	3699.31	4.62	-55.88	4.62	56.07	274.72	0.58
3800.00	1.69	331.93	3799.27	7.16	-57.60	7.16	58.04	277.09	0.39
3900.00	1.64	325.25	3899.22	9.63	-59.10	9.63	59.88	279.26	0.20
4000.00	1.67	325.14	3999.18	12.00	-60.75	12.00	61.92	281.17	0.03
4100.00	1.24	326.22	4099.15	14.09	-62.18	14.09	63.75	282.77	0.43
4200.00	1.24	325.08	4199.13	15.87	-63.40	15.87	65.36	284.06	0.03
4300.00	1.38	331.01	4299.10	17.82	-64.61	17.82	67.02	285.42	0.19
4400.00	1.42	337.42	4399.07	20.02	-65.67	20.02	68.65	286.96	0.16
4500.00	1.28	336.98	4499.04	22.19	-66.58	22.19	70.18	288.43	0.14
4600.00	0.96	331.65	4599.02	23.95	-67.41	23.95	71.54	289.56	0.33
4700.00	0.90	352.98	4699.01	25.47	-67.91	25.47	72.53	290.56	0.35
4800.00	1.09	12.07	4799.00	27.19	-67.80	27.19	73.05	291.85	0.38
4900.00	1.41	26.22	4898.97	29.22	-67.06	29.22	73.15	293.54	0.44
5000.00	1.36	30.57	4998.94	31.34	-65.91	31.34	72.99	295.43	0.11
5100.00	1.12	55.44	5098.92	32.92	-64.51	32.92	72.42	297.04	0.58
5200.00	0.87	83.54	5198.91	33.56	-62.95	33.56	71.34	298.06	0.54
5300.00	1.58	105.51	5298.88	33.27	-60.87	33.27	69.37	298.66	0.84
5400.00	1.74	113.73	5398.84	32.29	-58.15	32.29	66.52	299.04	0.29
5500.00	1.31	115.14	5498.81	31.20	-55.73	31.20	63.87	299.24	0.43
5600.00	1.05	103.01	5598.78	30.51	-53.80	30.51	61.85	299.55	0.36
5700.00	2.59	95.05	5698.73	30.10	-50.65	30.10	58.92	300.72	1.55
5800.00	2.58	79.52	5798.63	30.31	-46.19	30.31	55.25	303.27	0.70
5900.00	1.82	77.37	5898.56	31.07	-42.43	31.07	52.59	306.21	0.76
6000.00	1.87	62.88	5998.51	32.16	-39.43	32.16	50.88	309.20	0.47
6100.00	2.37	56.53	6098.44	34.04	-36.25	34.04	49.73	313.20	0.56
6200.00	2.48	55.31	6198.35	36.42	-32.75	36.42	48.97	318.04	0.12
6300.00	2.52	58.16	6298.25	38.81	-29.10	38.81	48.50	323.14	0.13
6400.00	3.10	65.13	6398.13	41.10	-24.78	41.10	47.99	328.92	0.67
6500.00	3.20	62.79	6497.98	43.52	-19.84	43.52	47.83	335.49	0.16
6600.00	3.61	77.22	6597.81	45.49	-14.29	45.49	47.68	342.56	0.95
6700.00	4.57	76.15	6697.55	47.14	-7.35	47.14	47.71	351.14	0.96
6800.00	5.04	80.81	6797.20	48.79	0.85	48.79	48.80	1.00	0.61
6900.00	5.23	71.57	6896.80	50.94	9.51	50.94	51.82	10.58	0.85
7000.00	3.68	66.34	6996.49	53.67	16.77	53.67	56.23	17.36	1.60
HORIZONTAL DISPLACEMENT IS 56.23 FEET AT 17.36 DEGREES									