



Company: NOBLE ENERGY
 Well: RYDGEN 8-1
 Location: NWSW SEC.08-T4N-R64W
 Rig Name: LIGHTNING WIRE
 State/County: COLORADO/WELD
 Latitude: 40.33
 GRID North is 0.59 Degrees East of True North
 VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Service Company : VAUGHN ENERGY SERVICES

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: rydgen8-1-01.ut
 Minimum Curvature Method
 Report Date/Time: 2/23/2011 / 16:19

VAUGHN ENERGY SERVICES
 CORPUS CHRISTI, TX
 800-606-4976
 SURVEYOR: CORY ALBERT

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	261.43	100.00	-0.04	-0.28	-0.04	0.28	261.43	0.32
200.00	0.06	247.46	200.00	-0.10	-0.60	-0.10	0.61	260.24	0.26
300.00	0.13	224.65	300.00	-0.20	-0.73	-0.20	0.76	254.30	0.08
400.00	0.27	222.29	400.00	-0.46	-0.97	-0.46	1.07	244.53	0.14
500.00	0.27	219.92	500.00	-0.81	-1.27	-0.81	1.51	237.48	0.01
600.00	0.28	224.23	600.00	-1.16	-1.59	-1.16	1.97	233.82	0.03
700.00	0.34	219.32	699.99	-1.57	-1.95	-1.57	2.51	231.18	0.07
800.00	0.27	222.64	799.99	-1.98	-2.30	-1.98	3.03	229.36	0.08
900.00	0.28	224.43	899.99	-2.33	-2.64	-2.33	3.51	228.56	0.02
1000.00	0.31	221.40	999.99	-2.71	-2.99	-2.71	4.03	227.82	0.03
1100.00	0.34	216.94	1099.99	-3.15	-3.35	-3.15	4.60	226.74	0.04
1200.00	0.29	200.65	1199.99	-3.62	-3.62	-3.62	5.12	224.95	0.10
1300.00	0.31	207.57	1299.99	-4.09	-3.83	-4.09	5.61	223.08	0.04
1400.00	0.41	215.40	1399.98	-4.63	-4.16	-4.63	6.22	221.97	0.11
1500.00	0.38	221.02	1499.98	-5.17	-4.59	-5.17	6.91	221.58	0.05
1600.00	0.34	233.17	1599.98	-5.59	-5.04	-5.59	7.53	222.01	0.09
1700.00	0.31	232.20	1699.98	-5.93	-5.48	-5.93	8.08	222.75	0.03
1800.00	0.37	226.37	1799.98	-6.32	-5.93	-6.32	8.67	223.17	0.07
1900.00	0.13	222.13	1899.98	-6.63	-6.24	-6.63	9.10	223.27	0.24
2000.00	0.06	217.33	1999.98	-6.76	-6.35	-6.76	9.27	223.22	0.07
2100.00	0.27	80.57	2099.97	-6.76	-6.15	-6.76	9.14	222.29	0.32
2200.00	0.35	108.52	2199.97	-6.82	-5.63	-6.82	8.84	219.56	0.17
2300.00	0.29	81.32	2299.97	-6.87	-5.09	-6.87	8.56	216.54	0.16
2400.00	0.33	114.33	2399.97	-6.95	-4.58	-6.95	8.33	213.39	0.18
2500.00	0.24	121.61	2499.97	-7.18	-4.15	-7.18	8.29	210.00	0.10
2600.00	0.20	159.67	2599.97	-7.46	-3.91	-7.46	8.42	207.65	0.15
2700.00	0.17	131.81	2699.97	-7.72	-3.74	-7.72	8.58	205.83	0.10
2800.00	0.13	141.23	2799.97	-7.91	-3.56	-7.91	8.67	204.21	0.04
2900.00	0.12	265.87	2899.97	-8.00	-3.59	-8.00	8.77	204.16	0.23
3000.00	0.18	288.28	2999.97	-7.96	-3.84	-7.96	8.84	205.76	0.08
3100.00	0.27	291.22	3099.97	-7.83	-4.21	-7.83	8.89	208.28	0.10
3200.00	0.38	283.02	3199.96	-7.67	-4.76	-7.67	9.03	211.83	0.12
3300.00	0.47	290.10	3299.96	-7.45	-5.47	-7.45	9.24	216.28	0.10
3400.00	0.56	294.92	3399.96	-7.10	-6.30	-7.10	9.50	221.58	0.10
3500.00	0.69	300.54	3499.95	-6.59	-7.27	-6.59	9.81	227.82	0.14
3600.00	0.67	302.89	3599.95	-5.97	-8.28	-5.97	10.20	234.22	0.04

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
3700.00	0.70	305.19	3699.94	-5.30	-9.26	-5.30	10.67	240.23	0.04
3800.00	0.79	302.05	3799.93	-4.58	-10.34	-4.58	11.31	246.10	0.10
3900.00	0.84	306.41	3899.92	-3.78	-11.52	-3.78	12.12	251.81	0.08
4000.00	0.84	293.41	3999.91	-3.06	-12.78	-3.06	13.14	256.55	0.19
4100.00	0.88	284.32	4099.90	-2.58	-14.19	-2.58	14.42	259.71	0.14
4200.00	0.93	288.83	4199.89	-2.12	-15.70	-2.12	15.85	262.29	0.09
4300.00	0.91	302.45	4299.87	-1.44	-17.15	-1.44	17.21	265.21	0.22
4400.00	1.04	295.84	4399.86	-0.62	-18.63	-0.62	18.64	268.11	0.17
4500.00	1.02	294.51	4499.84	0.15	-20.26	0.15	20.26	270.42	0.03
4600.00	1.20	297.12	4599.82	1.00	-22.00	1.00	22.02	272.59	0.18
4700.00	1.12	292.81	4699.80	1.85	-23.83	1.85	23.90	274.44	0.12
4800.00	1.36	288.58	4799.78	2.61	-25.86	2.61	25.99	275.76	0.26
4900.00	1.50	279.22	4899.75	3.20	-28.27	3.20	28.45	276.45	0.27
5000.00	1.43	279.23	4999.72	3.61	-30.79	3.61	31.00	276.68	0.07
5100.00	1.41	276.42	5099.68	3.94	-33.25	3.94	33.48	276.76	0.07
5200.00	1.22	284.30	5199.66	4.34	-35.51	4.34	35.77	276.98	0.26
5300.00	0.94	292.75	5299.64	4.93	-37.30	4.93	37.62	277.52	0.32
5400.00	0.74	283.72	5399.63	5.40	-38.69	5.40	39.06	277.94	0.24
5500.00	0.92	281.55	5499.62	5.71	-40.10	5.71	40.51	278.11	0.18
5600.00	0.84	349.85	5599.61	6.60	-41.02	6.60	41.55	279.14	0.99
5700.00	0.98	4.46	5699.60	8.18	-41.08	8.18	41.89	281.26	0.27
5800.00	0.68	2.25	5799.59	9.62	-40.99	9.62	42.11	283.20	0.30
5900.00	0.85	9.77	5899.58	10.94	-40.84	10.94	42.28	285.00	0.20
6000.00	0.53	15.38	5999.57	12.12	-40.60	12.12	42.37	286.63	0.33
6100.00	0.19	62.86	6099.57	12.64	-40.33	12.64	42.26	287.41	0.42
6200.00	0.77	46.96	6199.56	13.17	-39.69	13.17	41.82	288.36	0.59
6300.00	0.48	93.62	6299.56	13.60	-38.78	13.60	41.10	289.33	0.56
6400.00	0.18	133.41	6399.56	13.47	-38.25	13.47	40.55	289.40	0.36
6500.00	0.55	130.31	6499.56	13.05	-37.77	13.05	39.96	289.07	0.37
6600.00	0.50	101.02	6599.55	12.66	-36.98	12.66	39.09	288.90	0.27
6700.00	0.39	108.76	6699.55	12.47	-36.23	12.47	38.31	288.99	0.12
6800.00	0.48	121.87	6799.55	12.13	-35.54	12.13	37.55	288.85	0.13
6900.00	0.46	124.73	6899.54	11.68	-34.85	11.68	36.76	288.53	0.03
6930.00	0.50	132.43	6929.54	11.52	-34.66	11.52	36.52	288.39	0.25

HORIZONTAL DISPLACEMENT IS
36.52 FEET AT 288.39 DEGREES