



Company: Exxon  
 Lease/Well: Fru/197-28A6  
 Location:  
 Rig Name: Production  
 State/County: Colorado/Rio Blanco  
 Latitude: 39.93  
 GRID North is 1.80 Degrees West of True North  
 VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : KB = 0 FEET

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: fru 197-28a6.ut  
 Minimum Curvature Method  
 Report Date/Time: 9/20/2010 / 10:24

Vaughn Energy Services  
 Rifle, Colorado  
 970-456-2071  
 Garry Fowler  
 Fru 197-28A6

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	****
200.00	0.75	140.22	199.99	-1.01	0.84	-1.01	1.31	140.22	0.38
400.00	2.24	221.43	399.93	-4.96	-0.91	-4.96	5.04	190.38	1.13
600.00	3.96	239.64	599.64	-11.38	-9.45	-11.38	14.80	219.72	0.98
800.00	3.31	255.39	799.24	-16.33	-21.00	-16.33	26.60	232.14	0.59
1000.00	0.94	257.38	999.09	-18.14	-28.19	-18.14	33.53	237.24	1.18
1200.00	0.43	257.63	1199.07	-18.66	-30.53	-18.66	35.78	238.57	0.26
1400.00	0.26	257.34	1399.07	-18.92	-31.71	-18.92	36.93	239.17	0.08
1600.00	0.16	255.27	1599.07	-19.09	-32.43	-19.09	37.63	239.51	0.05
1800.00	0.92	242.00	1799.06	-19.92	-34.11	-19.92	39.50	239.72	0.38
2000.00	1.57	260.84	1999.01	-21.11	-38.24	-21.11	43.68	241.10	0.38
2200.00	4.20	243.87	2198.74	-24.77	-47.51	-24.77	53.58	242.46	1.37
2400.00	7.82	243.81	2397.61	-34.00	-66.30	-34.00	74.51	242.85	1.81
2600.00	11.92	250.22	2594.61	-47.00	-97.96	-47.00	108.65	244.37	2.12
2800.00	15.13	252.52	2789.04	-61.84	-142.30	-61.84	155.15	246.51	1.63
3000.00	16.52	247.60	2981.47	-80.52	-193.50	-80.52	209.58	247.41	0.97
3200.00	16.55	244.01	3173.20	-103.84	-245.39	-103.84	266.46	247.06	0.51
3400.00	17.88	242.78	3364.24	-130.36	-298.29	-130.36	325.53	246.39	0.69
3600.00	18.32	241.84	3554.35	-159.23	-353.30	-159.23	387.52	245.74	0.26
3800.00	18.46	241.71	3744.13	-189.07	-408.89	-189.07	450.49	245.18	0.07
4000.00	18.53	241.57	3933.81	-219.21	-464.71	-219.21	513.82	244.75	0.04
4200.00	18.41	244.41	4123.51	-247.98	-521.14	-247.98	577.13	244.55	0.45
4400.00	18.34	243.40	4313.31	-275.71	-577.76	-275.71	640.17	244.49	0.16
4600.00	18.27	246.41	4503.19	-302.35	-634.63	-302.35	702.97	244.53	0.47
4800.00	18.21	246.28	4693.14	-327.46	-691.97	-327.46	765.55	244.67	0.04
5000.00	18.18	246.48	4883.14	-352.49	-749.19	-352.49	827.97	244.80	0.03
5200.00	18.12	245.50	5073.19	-377.84	-806.10	-377.84	890.26	244.89	0.15
5400.00	17.01	245.69	5263.86	-402.78	-861.07	-402.78	950.62	244.93	0.55
5600.00	13.51	244.15	5456.78	-425.01	-908.77	-425.01	1003.25	244.94	1.77
5800.00	10.06	240.85	5652.54	-443.71	-945.06	-443.71	1044.04	244.85	1.75
6000.00	8.82	236.63	5849.83	-460.66	-973.13	-460.66	1076.66	244.67	0.71
6200.00	7.54	242.64	6047.79	-475.12	-997.58	-475.12	1104.95	244.53	0.77
6400.00	4.99	238.62	6246.58	-485.68	-1016.66	-485.68	1126.72	244.47	1.29

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
6600.00	1.80	249.30	6446.21	-491.32	-1027.04	-491.32	1138.51	244.43	1.62
6800.00	0.30	190.12	6646.17	-492.94	-1030.06	-492.94	1141.94	244.43	0.83
7000.00	0.30	142.08	6846.17	-493.86	-1029.83	-493.86	1142.13	244.38	0.12
7200.00	0.35	171.36	7046.17	-494.88	-1029.42	-494.88	1142.20	244.32	0.09
7400.00	0.47	182.00	7246.16	-496.31	-1029.36	-496.31	1142.76	244.26	0.07
7600.00	0.58	200.79	7446.15	-498.07	-1029.74	-498.07	1143.87	244.19	0.10
7800.00	0.77	196.73	7646.14	-500.30	-1030.49	-500.30	1145.52	244.10	0.10
8000.00	0.90	184.24	7846.12	-503.16	-1030.99	-503.16	1147.22	243.99	0.11
8200.00	0.93	184.47	8046.09	-506.33	-1031.24	-506.33	1148.83	243.85	0.01
8400.00	0.96	186.86	8246.07	-509.61	-1031.56	-509.61	1150.57	243.71	0.03
8600.00	0.98	182.13	8446.04	-512.98	-1031.83	-512.98	1152.31	243.57	0.04
8800.00	1.06	155.21	8646.01	-516.37	-1031.11	-516.37	1153.18	243.40	0.24
9000.00	1.15	150.67	8845.97	-519.79	-1029.36	-519.79	1153.15	243.21	0.06
9200.00	1.23	146.60	9045.93	-523.33	-1027.19	-523.33	1152.82	243.00	0.06
9400.00	1.40	135.85	9245.87	-526.87	-1024.31	-526.87	1151.87	242.78	0.15
9600.00	1.51	146.09	9445.81	-530.81	-1021.14	-530.81	1150.86	242.53	0.14
9800.00	1.32	149.83	9645.75	-534.99	-1018.51	-534.99	1150.47	242.29	0.11
10000.00	1.00	156.78	9845.71	-538.57	-1016.67	-538.57	1150.52	242.09	0.17
10200.00	0.95	193.38	10045.68	-541.78	-1016.37	-541.78	1151.75	241.94	0.31
10400.00	0.88	208.64	10245.66	-544.73	-1017.49	-544.73	1154.13	241.84	0.13
10600.00	1.82	237.65	10445.60	-547.78	-1020.91	-547.78	1158.58	241.78	0.57
10800.00	2.35	243.21	10645.47	-551.33	-1027.25	-551.33	1165.85	241.78	0.29
11000.00	2.71	249.91	10845.27	-554.80	-1035.36	-554.80	1174.64	241.81	0.23
11200.00	2.54	246.38	11045.06	-558.20	-1043.85	-558.20	1183.73	241.86	0.12
11400.00	1.83	235.35	11244.92	-561.80	-1050.55	-561.80	1191.33	241.86	0.41
11600.00	1.69	226.10	11444.82	-565.66	-1055.30	-565.66	1197.34	241.81	0.16
11800.00	1.45	218.79	11644.75	-569.67	-1059.01	-569.67	1202.50	241.72	0.16
12000.00	2.32	211.86	11844.64	-575.07	-1062.72	-575.07	1208.34	241.58	0.45
12060.00	2.96	205.43	11904.57	-577.50	-1064.03	-577.50	1210.65	241.51	1.18

HORIZONTAL DISPLACEMENT IS  
1210.65 FEET AT 241.51 DEGREES