



## FRU 197-28A7 R0 Geodetic Proposal

Report Date: October 9, 2009	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: ExxonMobil	Vertical Section Azimuth: 111.97°
Field: CO, Rio Blanco County (NAD 27 NZ) ExxonMobil 2008	Vertical Section Origin: N 0.000 ft, E 0.000 ft
Structure / Slot: ExxonMobil 28-IS-97W (FRU 197-28A Pad) / FRU 197-28A7	TVD Reference Datum:
Well: FRU 197-28A7	TVD Reference Elevation: 6112.0 ft relative to MSL
Borehole: Original Hole	Sea Bed / Ground Level Elevation: 6081.600 ft relative to MSL
UWI/API#:	Magnetic Declination: 10.772°
Survey Name / Date: FRI 197-28A7 R0 ivs 9-Oct-09 / October 9, 2009	Total Field Strength: 52633.207 nT
Tort / AHD / DDI / ERD ratio: 31.609° / 1071.87 ft / 4.535 / 0.088	Magnetic Dip: 66.112°
Grid Coordinate System: NAD27 Colorado State Planes, Northern Zone, US Feet	Declination Date: October 09, 2009
Location Lat/Long: N 39 56 4.411, W 108 17 42.880	Magnetic Declination Model: BGGM 2009
Location Grid N/E Y/X: N 231358.000 ftUS, E 1216260.000 ftUS	North Reference: Grid North
Grid Convergence Angle: -1.80610105°	Total Corr Mag North -> Grid North: +12.578°
Grid Scale Factor: 0.99997199	Local Coordinates Referenced To: Well Head

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Sub-Sea TVD (ft)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	DLS (deg/100 ft)	Northing (ftUS)	Easting (ftUS)	Latitude	Longitude
Tie-In	0.00	0.00	111.97	-6112.00	0.00	0.00	0.00	0.00	0.00	231358.00	1216260.00	N 39 56 4.411	W 108 17 42.880
KOP, Build 2 deg/100ft	300.00	0.00	111.97	-5812.00	300.00	0.00	0.00	0.00	0.00	231358.00	1216260.00	N 39 56 4.411	W 108 17 42.880
	500.00	4.00	111.97	-5612.16	499.84	6.98	-2.61	6.47	2.00	231355.39	1216266.47	N 39 56 4.387	W 108 17 42.796
A-groove	669.02	7.38	111.97	-5444.00	668.00	23.73	-8.88	22.01	2.00	231349.12	1216282.01	N 39 56 4.330	W 108 17 42.594
B-groove	875.87	11.52	111.97	-5240.00	872.00	57.69	-21.58	53.50	2.00	231336.42	1216313.49	N 39 56 4.215	W 108 17 42.185
	1000.00	14.00	111.97	-5118.94	993.06	85.10	-31.84	78.92	2.00	231326.16	1216338.91	N 39 56 4.121	W 108 17 41.855
Hold 15.8 deg	1090.24	15.80	111.97	-5031.75	1080.25	108.30	-40.52	100.44	2.00	231317.48	1216360.43	N 39 56 4.042	W 108 17 41.575
	1500.00	15.80	111.97	-4637.47	1474.53	219.90	-82.27	203.94	0.00	231275.73	1216463.93	N 39 56 3.662	W 108 17 40.231
	2000.00	15.80	111.97	-4156.38	1955.62	356.08	-133.22	330.23	0.00	231224.78	1216590.22	N 39 56 3.198	W 108 17 38.590
	2500.00	15.80	111.97	-3675.28	2436.72	492.26	-184.17	456.52	0.00	231173.84	1216716.50	N 39 56 2.734	W 108 17 36.949
Wasatch A	2536.67	15.80	111.97	-3640.00	2472.00	502.25	-187.90	465.78	0.00	231170.10	1216725.76	N 39 56 2.700	W 108 17 36.828
	3000.00	15.80	111.97	-3194.18	2917.82	628.44	-235.12	582.81	0.00	231122.89	1216842.79	N 39 56 2.270	W 108 17 35.308
	3500.00	15.80	111.97	-2713.08	3398.92	764.62	-286.06	709.10	0.00	231071.94	1216969.08	N 39 56 1.806	W 108 17 33.667
Wasatch C	3722.49	15.80	111.97	-2499.00	3613.00	825.22	-308.74	765.29	0.00	231049.27	1217025.27	N 39 56 1.600	W 108 17 32.936
10-3/4" Casing Point	3774.46	15.80	111.97	-2449.00	3663.00	839.38	-314.03	778.42	0.00	231043.98	1217038.40	N 39 56 1.552	W 108 17 32.766
	4000.00	15.80	111.97	-2231.99	3880.01	900.80	-337.01	835.39	0.00	231021.00	1217095.36	N 39 56 1.342	W 108 17 32.026
KOP, Drop 2 deg/100ft	4230.44	15.80	111.97	-2010.25	4101.75	963.57	-360.49	893.59	0.00	230997.52	1217153.57	N 39 56 1.128	W 108 17 31.269
	4500.00	10.41	111.97	-1747.82	4364.18	1024.68	-383.36	950.27	2.00	230974.65	1217210.24	N 39 56 0.920	W 108 17 30.533
	5000.00	0.41	111.97	-1250.68	4861.32	1071.80	-400.98	993.96	2.00	230957.03	1217253.93	N 39 56 0.760	W 108 17 29.965
Vertical Point	5020.68	0.00	111.97	-1230.00	4882.00	1071.87	-401.01	994.03	2.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
Wasatch G	5220.68	0.00	111.97	-1030.00	5082.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	5500.00	0.00	111.97	-750.68	5361.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
Wasatch I	5585.68	0.00	111.97	-665.00	5447.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	6000.00	0.00	111.97	-250.68	5861.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
Ohio Creek	6329.68	0.00	111.97	79.00	6191.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	6500.00	0.00	111.97	249.32	6361.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
WF 850	6592.68	0.00	111.97	342.00	6454.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
WF 800	6823.68	0.00	111.97	573.00	6685.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	7000.00	0.00	111.97	749.32	6861.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
WF 700	7050.68	0.00	111.97	800.00	6912.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	7235.68	0.00	111.97	985.00	7097.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
WF 600	7471.68	0.00	111.97	1221.00	7333.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	7500.00	0.00	111.97	1249.32	7361.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
7" Casing Point	7621.68	0.00	111.97	1371.00	7483.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	8000.00	0.00	111.97	1749.32	7861.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	8500.00	0.00	111.97	2249.32	8361.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
WF 400	8682.68	0.00	111.97	2432.00	8544.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	9000.00	0.00	111.97	2749.32	8861.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
WF 300	9380.68	0.00	111.97	3130.00	9242.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	9500.00	0.00	111.97	3249.32	9361.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	10000.00	0.00	111.97	3749.32	9861.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	10500.00	0.00	111.97	4249.32	10361.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
WF 200	10508.68	0.00	111.97	4258.00	10370.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
Carneo	10764.68	0.00	111.97	4514.00	10626.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	11000.00	0.00	111.97	4749.32	10861.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	11050.68	0.00	111.97	4800.00	10912.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
Cozzette Coastal	11238.68	0.00	111.97	4988.00	11100.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	11500.00	0.00	111.97	5249.32	11361.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
Corcoran Coastal	11541.68	0.00	111.97	5291.00	11403.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
	12000.00	0.00	111.97	5749.32	11861.32	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
Corcoran Marine	12139.68	0.00	111.97	5889.00	12001.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964
TD	12339.68	0.00	111.97	6089.00	12201.00	1071.87	-401.01	994.03	0.00	230957.00	1217254.00	N 39 56 0.760	W 108 17 29.964

Survey Type: Non-Def Proposal

Survey Error Model: SLB ISCWSA version 24 \*\*\* 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)

MD To (ft)

EOU Freq

Survey Tool Type

Borehole -&gt; Survey

0.00

30.40

1/100.00 SLB\_NSG+SSHOT-Depth Only

Original Hole -&gt; FRI 197-28A7 R0 ivs 9-Oct-09

30.40

300.00

1/100.00 SLB\_NSG+SSHOT

Original Hole -&gt; FRI 197-28A7 R0 ivs 9-Oct-09

300.00

5020.68

1/100.00 SLB\_MWD-STD

Original Hole -&gt; FRI 197-28A7 R0 ivs 9-Oct-09

5020.68

12339.68

1/100.00 SLB\_INC-ONLY

Original Hole -&gt; FRI 197-28A7 R0 ivs 9-Oct-09