



FRU 197-28A5 R0 Geodetic Proposal

Report Date: October 9, 2009	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: ExxonMobil	Vertical Section Azimuth: 218.88°
Field: CO, Rio Blanco County (NAD 27 NZ) ExxonMobil 2008	Vertical Section Origin: N 0.000 ft, E 0.000 ft
Structure / Slot: ExxonMobil 28-1S-97W (FRU 197-28A Pad) / FRU 197-28A5	TVD Reference Datum:
Well: FRU 197-28A5	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: FRU 197-28A5 R0 ivs 9-Oct-09 / October 9, 2009	Total Field Strength: 52633.161 nT
Tort / AHD / DDI / ERD ratio: 50.001° / 2273.66 ft / 5.072 / 0.187	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 4.114, W 108 17 42.920	Magnetic Declination Model: BGGM 2009
Location Grid N/E Y/X: N 231328.000 ftUS, E 1216256.000 ftUS	North Reference: Grid North
Grid Convergence Angle: -1.80610808°	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	218.88	-8112.00	0.00	0.00	0.00	0.00	0.00	231328.00	1216256.00	N 39 56 4.114	W 108 17 42.920
KOP, Build 2 deg/100ft	300.00	0.00	218.88	-5812.00	300.00	0.00	0.00	0.00	0.00	231328.00	1216256.00	N 39 56 4.114	W 108 17 42.920
	500.00	4.00	218.88	-5612.16	499.84	6.98	-5.43	-4.38	2.00	231322.57	1216251.62	N 39 56 4.059	W 108 17 42.974
A-groove	669.02	7.38	218.88	-5444.00	668.00	23.73	-18.48	-14.90	2.00	231309.52	1216241.10	N 39 56 3.926	W 108 17 43.103
B-groove	875.87	11.52	218.88	-5240.00	872.00	57.69	-44.91	-36.21	2.00	231283.09	1216219.80	N 39 56 3.659	W 108 17 43.366
	1000.00	14.00	218.88	-5118.94	993.06	85.10	-66.25	-53.41	2.00	231261.75	1216202.59	N 39 56 3.443	W 108 17 43.578
	1500.00	24.00	218.88	-4646.79	1465.21	247.67	-192.82	-155.45	2.00	231135.19	1216100.55	N 39 56 2.161	W 108 17 44.836
Hold 25 deg	1550.03	25.00	218.88	-4601.26	1510.74	268.42	-208.97	-168.47	2.00	231119.04	1216087.53	N 39 56 1.997	W 108 17 44.997
	2000.00	25.00	218.88	-4193.45	1918.55	458.59	-357.01	-287.83	0.00	230971.00	1215968.18	N 39 56 0.997	W 108 17 46.468
	2500.00	25.00	218.88	-3740.30	2371.70	669.90	-521.52	-420.46	0.00	230806.49	1215835.55	N 39 55 58.831	W 108 17 48.103
Wasatch A	2610.67	25.00	218.88	-3640.00	2472.00	716.68	-557.93	-449.82	0.00	230770.08	1215806.20	N 39 55 58.462	W 108 17 48.465
	3000.00	25.00	218.88	-3287.15	2824.85	881.22	-686.03	-553.09	0.00	230641.99	1215702.93	N 39 55 57.165	W 108 17 49.738
	3500.00	25.00	218.88	-2834.00	3278.00	1092.53	-850.54	-685.72	0.00	230477.49	1215570.30	N 39 55 55.499	W 108 17 51.373
Wasatch C	3869.63	25.00	218.88	-2499.00	3613.00	1248.75	-972.15	-783.76	0.00	230355.87	1215472.26	N 39 55 54.267	W 108 17 52.582
10-3/4" Casing Point	3924.80	25.00	218.88	-2449.00	3663.00	1272.06	-990.31	-798.40	0.00	230337.72	1215457.62	N 39 55 54.083	W 108 17 52.763
	4000.00	25.00	218.88	-2380.84	3731.16	1303.85	-1015.05	-818.35	0.00	230312.98	1215437.68	N 39 55 53.832	W 108 17 53.008
	4500.00	25.00	218.88	-1927.69	4184.31	1515.16	-1179.56	-950.98	0.00	230148.48	1215305.05	N 39 55 52.166	W 108 17 54.644
Wasatch G	5000.00	25.00	218.88	-1474.54	4637.46	1726.47	-1344.07	-1083.61	0.00	229983.97	1215172.43	N 39 55 50.500	W 108 17 56.279
	5490.50	25.00	218.88	-1030.00	5082.00	1933.77	-1505.45	-1213.71	0.00	229822.60	1215042.32	N 39 55 48.865	W 108 17 57.882
	5500.00	25.00	218.88	-1021.39	5090.61	1937.79	-1508.57	-1216.23	0.00	229819.47	1215039.93	N 39 55 48.833	W 108 17 57.913
KOP, Drop 2 deg/100ft	5659.60	25.00	218.88	-876.74	5235.26	2005.24	-1561.09	-1258.57	0.00	229766.96	1214997.47	N 39 55 48.301	W 108 17 58.435
Wasatch I	5889.19	20.41	218.88	-665.00	5447.00	2093.83	-1630.06	-1314.18	2.00	229697.99	1214941.86	N 39 55 47.603	W 108 17 59.121
	6000.00	18.19	218.88	-560.43	5551.57	2130.46	-1658.57	-1337.16	2.00	229669.48	1214918.88	N 39 55 47.314	W 108 17 59.404
	6500.00	8.19	218.88	-74.24	6037.76	2244.43	-1747.29	-1408.69	2.00	229580.76	1214847.35	N 39 55 46.415	W 108 18 0.286
Vertical Point	6909.63	0.00	218.88	334.00	6446.00	2273.66	-1770.05	-1427.04	2.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	7000.00	0.00	218.88	424.37	6536.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
Ohio Creek	7365.63	0.00	218.88	790.00	6902.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	7500.00	0.00	218.88	924.37	7036.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 850	7628.63	0.00	218.88	1053.00	7165.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 800	7859.63	0.00	218.88	1284.00	7396.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	8000.00	0.00	218.88	1424.37	7536.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 700	8086.63	0.00	218.88	1511.00	7623.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 600	8271.63	0.00	218.88	1696.00	7808.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	8500.00	0.00	218.88	1924.37	8036.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 500	8507.63	0.00	218.88	1932.00	8044.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
7" Casing Point	8657.63	0.00	218.88	2082.00	8194.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 400	8982.63	0.00	218.88	2407.00	8519.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	9000.00	0.00	218.88	2424.37	8536.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	9500.00	0.00	218.88	2924.37	9036.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 300	9680.63	0.00	218.88	3105.00	9217.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	10000.00	0.00	218.88	3424.37	9536.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
WF 200	10365.63	0.00	218.88	3790.00	9902.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	10500.00	0.00	218.88	3924.37	10036.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	11000.00	0.00	218.88	4424.37	10536.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
Cameo	11064.63	0.00	218.88	4489.00	10601.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	11350.63	0.00	218.88	4775.00	10887.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
Rollins	11500.00	0.00	218.88	4924.37	11036.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	11538.63	0.00	218.88	4963.00	11075.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
Cozzette Coastal	11841.63	0.00	218.88	5266.00	11378.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
Corcoran Coastal	12000.00	0.00	218.88	5424.37	11536.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
	12439.63	0.00	218.88	5864.00	11976.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
Corcoran Marine	12500.00	0.00	218.88	5924.37	12036.37	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512
BHL	12639.63	0.00	218.88	6064.00	12176.00	2273.66	-1770.05	-1427.04	0.00	229558.00	1214829.00	N 39 55 46.185	W 108 18 0.512

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)

0.00

30.40

300.00

6909.63

MD To (ft)

30.40

300.00

6909.63

12639.63

EOU Freq

1/100.00 SLB_NSG+SSHOT-Depth Only

1/100.00 SLB_NSG+SSHOT

1/100.00 SLB_MWD-STD

1/100.00 SLB_INC-ONLY

Borehole -> Survey

Original Hole -> FRU 197-28A5 R0 ivs 9-Oct-09

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