





FRU 197-31C8 R1 Geodetic Proposal

Report Date: October 1, 2009	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: ExxonMobil	Vertical Section Azimuth: 294.880°
Field: CO, Rio Blanco County (NAD 27 NZ) ExxonMobil 2008	Vertical Section Origin: N 0.000 ft, E 0.000 ft
Structure / Slot: ExxonMobil 31-1S-97W (FRU 197-31C Pad) / FRU 197-31C08	TVD Reference Datum:
Well: FRU 197-31C08	TVD Reference Elevation: 6562.0 ft relative to MSL
Borehole: Original Hole (Est RKB)	Sea Bed / Ground Level Elevation: 6562.000 ft relative to MSL
UWVAPI#:	Magnetic Declination: 10.774°
Survey Name / Date: FRU 197-31C8 R1 1vs 1-Oct-09 / October 1, 2009	Total Field Strength: 52623.967 nT
Tort / AHD / DDI / ERD ratio: 34.345° / 1321.68 ft / 4.663 / 0.105	Magnetic Dip: 66.109°
Grid Coordinate System: NAD27 Colorado State Planes, Northern Zone, US Feet	Declination Date: October 01, 2009
Location Lat/Long: N 39 55 33.446, W 108 19 31.683	Magnetic Declination Model: BGM 2008
Location Grid N/E Y/X: N 228495.000 ftUS, E 1207689.000 ftUS	North Reference: Grid North
Grid Convergence Angle: -1.82562916°	Total Corr Mag North -> Grid North: +12.600°
Grid Scale Factor: 0.99997282	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 / Surface	0.00	0.00	294.88	-6562.00	0.00	0.00	0.00	0.00	0.00	228495.00	1207689.00	N 39 55 33.446	W 108 19 31.683
	100.00	0.00	294.88	-6462.00	100.00	0.00	0.00	0.00	0.00	228495.00	1207689.00	N 39 55 33.446	W 108 19 31.683
	200.00	0.00	294.88	-6362.00	200.00	0.00	0.00	0.00	0.00	228495.00	1207689.00	N 39 55 33.446	W 108 19 31.683
KOP Build 2" DLS	300.00	0.00	294.88	-6262.00	300.00	0.00	0.00	0.00	0.00	228495.00	1207689.00	N 39 55 33.446	W 108 19 31.683
	400.00	2.00	294.88	-6162.02	399.98	1.75	0.73	-1.58	2.00	228495.73	1207687.42	N 39 55 33.453	W 108 19 31.704
	500.00	4.00	294.88	-6062.16	499.84	6.98	2.94	-6.33	2.00	228497.94	1207682.67	N 39 55 33.473	W 108 19 31.766
	600.00	6.00	294.88	-5962.55	599.45	15.69	6.60	-14.24	2.00	228501.60	1207674.76	N 39 55 33.507	W 108 19 31.869
	700.00	8.00	294.88	-5863.30	698.70	27.88	11.73	-25.29	2.00	228506.73	1207663.71	N 39 55 33.554	W 108 19 32.013
	800.00	10.00	294.88	-5764.53	797.47	43.52	18.31	-39.48	2.00	228513.31	1207649.52	N 39 55 33.615	W 108 19 32.197
	900.00	12.00	294.88	-5666.38	895.62	62.60	26.34	-56.79	2.00	228521.34	1207632.21	N 39 55 33.689	W 108 19 32.423
	1000.00	14.00	294.88	-5568.94	993.06	85.10	35.80	-77.20	2.00	228530.80	1207611.80	N 39 55 33.776	W 108 19 32.688
	1100.00	16.00	294.88	-5472.36	1089.64	110.98	46.69	-100.68	2.00	228541.69	1207588.32	N 39 55 33.876	W 108 19 32.994
Begin Target 17.17°	1158.63	17.17	294.88	-5416.16	1145.84	127.71	53.73	-115.86	2.00	228548.73	1207573.14	N 39 55 33.941	W 108 19 33.192
	1200.00	17.17	294.88	-5376.64	1185.36	139.93	58.87	-126.94	0.00	228553.86	1207562.06	N 39 55 33.988	W 108 19 33.336
A-groove	1259.28	17.17	294.88	-5320.00	1242.00	157.43	66.23	-142.82	0.00	228561.23	1207546.18	N 39 55 34.056	W 108 19 33.543
	1300.00	17.17	294.88	-5281.10	1280.90	169.45	71.29	-153.73	0.00	228566.28	1207535.28	N 39 55 34.102	W 108 19 33.685
	1400.00	17.17	294.88	-5185.56	1376.44	198.98	83.71	-180.51	0.00	228578.71	1207508.49	N 39 55 34.216	W 108 19 34.033
B-groove	1447.68	17.17	294.88	-5140.00	1422.00	213.06	89.63	-193.29	0.00	228584.63	1207495.72	N 39 55 34.271	W 108 19 34.200
	1500.00	17.17	294.88	-5090.02	1471.98	228.50	96.13	-207.30	0.00	228591.13	1207481.71	N 39 55 34.331	W 108 19 34.382
	1600.00	17.17	294.88	-4994.47	1567.53	258.03	108.55	-234.08	0.00	228603.55	1207454.92	N 39 55 34.445	W 108 19 34.731
	1700.00	17.17	294.88	-4898.93	1663.07	287.55	120.97	-260.87	0.00	228615.97	1207428.14	N 39 55 34.559	W 108 19 35.080
	1800.00	17.17	294.88	-4803.39	1758.61	317.08	133.39	-287.66	0.00	228628.39	1207401.35	N 39 55 34.673	W 108 19 35.428
	1900.00	17.17	294.88	-4707.85	1854.15	346.60	145.81	-314.44	0.00	228640.81	1207374.57	N 39 55 34.788	W 108 19 35.777
	2000.00	17.17	294.88	-4612.31	1949.69	376.13	158.23	-341.23	0.00	228653.23	1207347.78	N 39 55 34.902	W 108 19 36.126
	2100.00	17.17	294.88	-4516.76	2045.24	405.65	170.65	-368.01	0.00	228665.65	1207321.00	N 39 55 35.016	W 108 19 36.474
	2200.00	17.17	294.88	-4421.22	2140.78	435.18	183.08	-394.80	0.00	228678.07	1207294.21	N 39 55 35.130	W 108 19 36.823
	2300.00	17.17	294.88	-4325.68	2236.32	464.71	195.50	-421.58	0.00	228690.49	1207267.43	N 39 55 35.245	W 108 19 37.172
	2400.00	17.17	294.88	-4230.14	2331.86	494.23	207.92	-448.37	0.00	228702.91	1207240.64	N 39 55 35.359	W 108 19 37.521
	2500.00	17.17	294.88	-4134.60	2427.40	523.76	220.34	-475.15	0.00	228715.33	1207213.86	N 39 55 35.473	W 108 19 37.869
	2600.00	17.17	294.88	-4039.05	2522.95	553.28	232.76	-501.94	0.00	228727.75	1207187.08	N 39 55 35.587	W 108 19 38.218
	2700.00	17.17	294.88	-3943.51	2618.49	582.81	245.18	-528.72	0.00	228740.17	1207160.29	N 39 55 35.702	W 108 19 38.567
	2800.00	17.17	294.88	-3847.97	2714.03	612.33	257.60	-555.51	0.00	228752.59	1207133.51	N 39 55 35.816	W 108 19 38.915
	2900.00	17.17	294.88	-3752.43	2809.57	641.86	270.02	-582.30	0.00	228765.01	1207106.72	N 39 55 35.930	W 108 19 39.264
	3000.00	17.17	294.88	-3656.89	2905.11	671.38	282.44	-609.08	0.00	228777.43	1207079.94	N 39 55 36.044	W 108 19 39.613
Wasatch A	3007.21	17.17	294.88	-3650.00	2912.00	673.51	283.34	-611.01	0.00	228778.33	1207078.01	N 39 55 36.053	W 108 19 39.638
	3100.00	17.17	294.88	-3561.35	3000.65	700.91	294.86	-635.87	0.00	228789.86	1207053.15	N 39 55 36.159	W 108 19 39.962
	3200.00	17.17	294.88	-3465.80	3096.20	730.43	307.28	-662.65	0.00	228802.28	1207026.37	N 39 55 36.273	W 108 19 40.310
	3300.00	17.17	294.88	-3370.26	3191.74	759.96	319.71	-689.44	0.00	228814.70	1206999.58	N 39 55 36.387	W 108 19 40.659
	3400.00	17.17	294.88	-3274.72	3287.28	789.48	332.13	-716.22	0.00	228827.12	1206972.80	N 39 55 36.501	W 108 19 41.008
	3500.00	17.17	294.88	-3179.18	3382.82	819.01	344.55	-743.01	0.00	228839.54	1206946.01	N 39 55 36.616	W 108 19 41.356
	3600.00	17.17	294.88	-3083.64	3478.36	848.53	356.97	-769.79	0.00	228851.96	1206919.23	N 39 55 36.730	W 108 19 41.705
	3700.00	17.17	294.88	-2988.09	3573.91	878.06	369.39	-796.58	0.00	228864.38	1206892.44	N 39 55 36.844	W 108 19 42.054
	3800.00	17.17	294.88	-2892.55	3669.45	907.58	381.81	-823.36	0.00	228876.80	1206865.66	N 39 55 36.958	W 108 19 42.403
	3900.00	17.17	294.88	-2797.01	3764.99	937.11	394.23	-850.15	0.00	228889.22	1206838.87	N 39 55 37.073	W 108 19 42.751
	4000.00	17.17	294.88	-2701.47	3860.53	966.63	406.65	-876.94	0.00	228901.64	1206812.09	N 39 55 37.187	W 108 19 43.100
Wasatch C	4053.87	17.17	294.88	-2650.00	3912.00	982.54	413.34	-891.36	0.00	228908.33	1206797.66	N 39 55 37.249	W 108 19 43.288
	4100.00	17.17	294.88	-2605.93	3956.07	996.16	419.07	-903.72	0.00	228914.06	1206785.31	N 39 55 37.301	W 108 19 43.449

WellDesign Ver SP 2.1 Bld(doc40x_100 FRU 197-31C08\FRU 197-31C08\Original Hole (Est RKB)\FRU 197-31C8 R1 ivs 1-Oct-09-Generated 11/20/2009 10:17 AM Page 2 of 3

	10100.00	0.00	294.88	3351.41	9913.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10200.00	0.00	294.88	3451.41	10013.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10300.00	0.00	294.88	3551.41	10113.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10400.00	0.00	294.88	3651.41	10213.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10500.00	0.00	294.88	3751.41	10313.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10600.00	0.00	294.88	3851.41	10413.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10700.00	0.00	294.88	3951.41	10513.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10800.00	0.00	294.88	4051.41	10613.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	10900.00	0.00	294.88	4151.41	10713.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11000.00	0.00	294.88	4251.41	10813.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
WF 200	11028.59	0.00	294.88	4280.00	10842.00	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11100.00	0.00	294.88	4351.41	10913.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11200.00	0.00	294.88	4451.41	11013.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
Cameo	11300.00	0.00	294.88	4551.41	11113.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11318.59	0.00	294.88	4570.00	11132.00	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11400.00	0.00	294.88	4651.41	11213.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11500.00	0.00	294.88	4751.41	11313.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
Rollins	11568.59	0.00	294.88	4820.00	11382.00	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11600.00	0.00	294.88	4851.41	11413.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11700.00	0.00	294.88	4951.41	11513.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
Cozzette Coastal	11748.59	0.00	294.88	5000.00	11562.00	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11800.00	0.00	294.88	5051.41	11613.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	11900.00	0.00	294.88	5151.41	11713.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12000.00	0.00	294.88	5251.41	11813.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
Corcorran Coastal	12048.59	0.00	294.88	5300.00	11862.00	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12100.00	0.00	294.88	5351.41	11913.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12200.00	0.00	294.88	5451.41	12013.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12300.00	0.00	294.88	5551.41	12113.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12400.00	0.00	294.88	5651.41	12213.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12500.00	0.00	294.88	5751.41	12313.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
Corcorran Marine	12598.59	0.00	294.88	5850.00	12412.00	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12600.00	0.00	294.88	5851.41	12413.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
	12700.00	0.00	294.88	5951.41	12513.41	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293
PBHL / TD	12798.59	0.00	294.88	6050.00	12612.00	1321.68	556.02	-1199.04	0.00	229051.00	1206490.00	N 39 55 38.561	W 108 19 47.293

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

300.00

5628.59

MD To (ft)

300.00

5628.59

12798.59

EOU Freq

1/100.00

1/100.00

1/100.00

Survey Tool Type

SLB_NSG+SSHOT

SLB_MWD-STD

SLB_INC-ONLY

Borehole -> Survey

Original Hole (Est RKB) -> FRU 197-31C8 R1 ivs 1-Oct-09

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