

Report Date: January 8, 2009 Client: ConocoPhillips Field: CO, Garfield County (NAD 27 NZ) Structure / Slot: N. Parachule G21 Pad - S21 T5S R96W / CP02D-21 G21 (FKA CP01B-21 G21) Well: CP02D-21 G21 (FKA CP01B-21 G21) Borehole: Original Hole UWI/API#: _____ Survey Name / Date: CP02D-21 G21 Final Surveys (Gyro+MWD) 0' to 10273' / December 13, 2008 Tort / AHD / ODI / ERD ratio: 86.852° / 1391.15 ft / 5.088 / 0.136 Grid Coordinate System: NAD27 Colorado State Planes, Northern Zone, US Feet Location Lat/Long: N 39 36.9.141, W 108 10 18.894 Location Grid NE Y/X: N 109404.697 ftUS, E 1247185.249 ftUS Grid Convergence Angle: -1.72641361° Grid Scale Factor: 1.00002038	Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 28.720° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 7987.0 ft relative to MSL Sea Bed / Ground Level Elevation: 7970.000 ft relative to MSL Magnetic Declination: 10.760° Total Field Strength: 52534.883 nT Magnetic Dip: 65.895° Declination Date: December 13, 2008 Magnetic Declination Model: BGM 2008 North Reference: Grid North Total Corr Mag North -> Grid North: +12.486° Local Coordinates Referenced To: Well Head
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Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	DLS (deg/100 ft)	Northing (ftUS)	Easting (ftUS)	Latitude	Longitude
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	109404.70	1247185.25	N 39 36.9.141	W 108 10 18.894
Begin Conductor Gyro	23.00	0.37	330.53	23.00	0.04	0.06	-0.04	1.61	109404.76	1247185.21	N 39 36.9.142	W 108 10 18.894
	33.00	0.33	351.50	33.00	0.08	0.12	-0.06	1.33	109404.82	1247185.19	N 39 36.9.143	W 108 10 18.894
	43.00	0.38	355.39	43.00	0.13	0.18	-0.06	0.55	109404.88	1247185.19	N 39 36.9.143	W 108 10 18.895
	53.00	0.46	357.70	53.00	0.19	0.26	-0.07	0.82	109404.95	1247185.18	N 39 36.9.144	W 108 10 18.895
	63.00	0.51	357.85	63.00	0.26	0.34	-0.07	0.50	109405.04	1247185.18	N 39 36.9.145	W 108 10 18.895
	73.00	0.52	352.22	73.00	0.34	0.43	-0.08	0.52	109405.13	1247185.17	N 39 36.9.146	W 108 10 18.895
	83.00	0.31	338.97	83.00	0.39	0.50	-0.09	2.30	109405.20	1247185.15	N 39 36.9.146	W 108 10 18.895
End Conductor Gyro	87.00	0.20	328.48	87.00	0.40	0.52	-0.10	2.98	109405.21	1247185.15	N 39 36.9.147	W 108 10 18.895
Begin Surface MWD (Out of FAC)	105.00	0.40	49.00	105.00	0.48	0.58	-0.07	2.32	109405.28	1247185.18	N 39 36.9.147	W 108 10 18.895
	137.00	0.60	49.60	137.00	0.74	0.77	0.14	0.63	109405.46	1247185.39	N 39 36.9.149	W 108 10 18.892
	168.00	0.70	39.50	167.99	1.08	1.02	0.38	0.49	109405.71	1247185.63	N 39 36.9.152	W 108 10 18.889
	200.00	1.00	37.80	199.99	1.54	1.39	0.68	0.94	109406.09	1247185.93	N 39 36.9.155	W 108 10 18.885
	231.00	1.10	30.20	230.99	2.11	1.86	1.00	0.55	109406.56	1247186.24	N 39 36.9.160	W 108 10 18.882
	262.00	0.80	30.80	261.98	2.62	2.30	1.26	0.97	109407.00	1247186.51	N 39 36.9.165	W 108 10 18.878
	293.00	1.00	28.00	292.98	3.11	2.73	1.49	0.66	109407.42	1247186.74	N 39 36.9.169	W 108 10 18.876
	322.00	1.40	23.80	321.97	3.72	3.28	1.76	1.41	109407.97	1247187.00	N 39 36.9.174	W 108 10 18.872
	382.00	1.80	29.40	381.95	5.39	4.77	2.51	0.72	109409.46	1247187.76	N 39 36.9.189	W 108 10 18.863
	443.00	2.80	25.40	442.90	7.83	6.95	3.62	1.66	109411.64	1247188.87	N 39 36.9.211	W 108 10 18.850
	503.00	3.10	22.10	502.82	10.91	9.77	4.86	0.57	109414.47	1247190.11	N 39 36.9.239	W 108 10 18.835
	562.00	3.70	32.00	561.71	14.39	12.87	6.47	1.42	109417.56	1247191.72	N 39 36.9.271	W 108 10 18.816
	623.00	4.40	38.20	622.56	18.67	16.38	8.96	1.35	109421.07	1247194.21	N 39 36.9.306	W 108 10 18.785
	682.00	4.70	46.70	681.38	23.20	19.81	12.12	1.25	109424.51	1247197.37	N 39 36.9.341	W 108 10 18.746
	741.00	4.60	47.20	740.18	27.74	23.08	15.62	0.18	109427.77	1247200.86	N 39 36.9.374	W 108 10 18.703
	802.00	4.90	46.00	800.97	32.55	26.55	19.28	0.52	109431.25	1247204.53	N 39 36.9.409	W 108 10 18.658
	862.00	5.50	46.70	860.73	37.73	30.30	23.22	1.01	109435.00	1247208.47	N 39 36.9.448	W 108 10 18.609
	922.00	5.60	47.90	920.44	43.23	34.24	27.48	0.26	109438.93	1247212.73	N 39 36.9.488	W 108 10 18.556
	983.00	5.80	43.80	981.14	49.02	38.46	31.83	0.74	109443.15	1247217.08	N 39 36.9.531	W 108 10 18.502
	1043.00	6.20	42.10	1040.81	55.10	43.05	36.10	0.73	109447.75	1247221.35	N 39 36.9.577	W 108 10 18.449
	1103.00	6.20	40.00	1100.46	61.43	47.93	40.35	0.38	109452.63	1247225.60	N 39 36.9.627	W 108 10 18.397
	1163.00	6.30	38.00	1160.11	67.85	53.01	44.46	0.40	109457.71	1247229.71	N 39 36.9.678	W 108 10 18.346
	1226.00	6.60	38.60	1222.71	74.83	58.56	48.85	0.49	109463.26	1247234.10	N 39 36.9.735	W 108 10 18.292
	1289.00	6.90	36.90	1285.27	82.14	64.42	53.38	0.57	109469.12	1247238.63	N 39 36.9.794	W 108 10 18.237
	1352.00	6.80	33.60	1347.82	89.61	70.55	57.72	0.64	109475.25	1247242.97	N 39 36.9.856	W 108 10 18.184
	1415.00	6.90	36.10	1410.37	97.08	76.72	62.01	0.50	109481.41	1247247.26	N 39 36.9.918	W 108 10 18.131
	1475.00	7.10	36.30	1469.93	104.33	82.62	66.33	0.34	109487.31	1247251.58	N 39 36.9.977	W 108 10 18.078
	1569.00	7.50	35.30	1563.16	116.18	92.30	73.31	0.45	109497.00	1247258.56	N 39 36.10.075	W 108 10 17.993
	1662.00	8.20	35.50	1655.29	128.79	102.66	80.67	0.75	109507.36	1247265.92	N 39 36.10.180	W 108 10 17.903
	1755.00	7.90	34.00	1747.37	141.74	113.36	88.10	0.39	109518.05	1247273.35	N 39 36.10.288	W 108 10 17.812
	1849.00	8.40	36.00	1840.43	154.99	124.27	95.74	0.61	109528.97	1247280.99	N 39 36.10.398	W 108 10 17.719
	1942.00	9.60	38.20	1932.28	169.37	135.86	104.53	1.34	109540.56	1247289.78	N 39 36.10.515	W 108 10 17.611
	1978.00	9.80	38.30	1967.76	175.36	140.62	108.29	0.56	109545.32	1247293.54	N 39 36.10.563	W 108 10 17.565
Last Surface Survey 9 5/8" Casing Point	2000.00	9.62	37.97	1989.45	179.02	143.54	110.58	0.85	109548.24	1247295.83	N 39 36.10.592	W 108 10 17.537
	2060.00	9.14	37.00	2048.65	188.68	151.30	116.53	0.85	109556.00	1247301.78	N 39 36.10.671	W 108 10 17.464
	2154.00	10.12	32.62	2141.32	204.31	164.22	125.48	1.30	109568.92	1247310.73	N 39 36.10.801	W 108 10 17.355
	2247.00	11.59	29.48	2232.66	221.80	179.23	134.48	1.70	109583.93	1247319.73	N 39 36.10.952	W 108 10 17.245
	2341.00	13.21	28.64	2324.46	241.99	196.88	144.28	1.73	109601.58	1247329.53	N 39 36.11.129	W 108 10 17.127
	2434.00	15.19	32.25	2414.62	264.78	216.51	155.87	2.33	109621.21	1247341.12	N 39 36.11.327	W 108 10 16.986
	2527.00	17.11	38.74	2503.95	290.41	237.49	170.94	2.83	109642.19	1247356.19	N 39 36.11.538	W 108 10 16.802
	2621.00	16.21	37.47	2594.00	317.00	258.69	187.57	1.03	109663.39	1247372.83	N 39 36.11.753	W 108 10 16.598
	2714.00	18.14	38.25	2682.85	344.11	280.36	204.43	2.09	109685.07	1247389.69	N 39 36.11.972	W 108 10 16.391
	2807.00	17.29	37.33	2771.44	372.05	302.72	221.78	0.96	109707.43	1247407.03	N 39 36.12.198	W 108 10 16.178
	2900.00	15.88	36.92	2860.57	398.31	323.89	237.80	1.52	109728.59	1247423.06	N 39 36.12.412	W 108 10 15.982
	2994.00	15.46	35.37	2951.08	423.49	344.38	252.78	0.63	109749.09	1247438.03	N 39 36.12.619	W 108 10 15.798
	3087.00	15.46	32.66	3040.71	448.16	364.93	266.64	0.78	109769.63	1247451.90	N 39 36.12.826	W 108 10 15.629
	3180.00	15.14	31.63	3130.42	472.66	385.70	279.70	0.45	109790.41	1247464.96	N 39 36.13.035	W 108 10 15.470
	3274.00	16.25	27.58	3220.91	498.07	407.81	292.23	1.66	109812.52	1247477.48	N 39 36.13.257	W 108 10 15.319
	3367.00	18.37	27.48	3309.70	525.73	432.35	305.02	2.28	109837.06	1247490.27	N 39 36.13.503	W 108 10 15.165
	3460.00	17.54	27.60	3398.17	554.40	457.77	318.27	0.89	109862.48	1247503.53	N 39 36.13.758	W 108 10 15.005
	3553.00	17.84	29.74	3486.77	582.65	482.56	331.83	0.77	109887.27	1247517.09	N 39 36.14.007	W 108 10 14.842
	3647.00	17.18	33.37	3576.42	610.89	506.66	346.61	1.36	109911.36	1247531.87	N 39 36.14.250	W 108 10 14.662
	3740.00	16.25	33.24	3665.49	637.55	529.01	361.30	1.00	109933.72	1247546.56	N 39 36.14.475	W 108 10 14.483
	3833.00	15.10	33.68	3755.03	662.59	549.98	375.15	1.24	109954.68	1247560.41	N 39 36.14.686	W 108 10 14.315
	3926.00	15.87	35.92	3844.65	687.27	570.35	389.33	1.05	109975.06	1247574.58	N 39 36.14.892	W 108 10 14.141
	4118.00	14.11	34.78	4030.11	736.59	610.84	418.08	0.93	110015.55	1247603.34	N 39 36.15.300	W 108 10 13.790

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	DLS (deg/100 ft)	Northing (ftUS)	Easting (ftUS)	Latitude	Longitude
	4206.00	14.99	34.85	4115.29	758.58	628.99	430.70	1.00	110033.70	1247615.96	N 39 36 15.483	W 108 10 13.636
	4393.00	13.31	32.42	4296.61	804.10	667.01	456.07	0.95	110071.71	1247641.33	N 39 36 15.866	W 108 10 13.326
	4486.00	13.42	32.28	4387.09	825.56	685.17	467.57	0.12	110089.88	1247652.83	N 39 36 16.049	W 108 10 13.186
	4579.00	13.89	31.43	4477.46	847.48	703.82	479.16	0.55	110108.53	1247664.42	N 39 36 16.237	W 108 10 13.046
	4673.00	13.01	30.44	4568.88	869.33	722.57	490.40	0.97	110127.28	1247675.66	N 39 36 16.425	W 108 10 12.909
	4766.00	12.82	30.71	4659.53	890.10	740.46	500.97	0.21	110145.17	1247686.23	N 39 36 16.605	W 108 10 12.781
	4860.00	13.23	31.92	4751.11	911.26	758.56	511.99	0.52	110163.27	1247697.25	N 39 36 16.787	W 108 10 12.647
	4953.00	11.92	34.46	4841.88	931.45	775.51	523.05	1.53	110180.22	1247708.31	N 39 36 16.958	W 108 10 12.513
	5046.00	13.12	32.19	4932.67	951.54	792.36	534.11	1.39	110197.07	1247719.37	N 39 36 17.128	W 108 10 12.378
	5140.00	13.63	34.53	5024.12	973.21	810.52	546.07	0.79	110215.23	1247731.33	N 39 36 17.311	W 108 10 12.232
	5233.00	13.63	33.97	5114.50	995.02	828.63	558.40	0.14	110233.34	1247743.66	N 39 36 17.493	W 108 10 12.082
	5326.00	11.39	26.15	5205.29	1015.11	845.97	568.58	3.01	110250.68	1247753.83	N 39 36 17.668	W 108 10 11.958
	5420.00	9.29	18.39	5297.76	1031.85	861.50	575.06	2.68	110266.21	1247760.32	N 39 36 17.823	W 108 10 11.882
	5513.00	7.59	27.93	5389.76	1045.38	874.05	580.31	2.36	110278.76	1247765.57	N 39 36 17.949	W 108 10 11.819
	5606.00	8.55	30.14	5481.83	1058.43	885.46	586.65	1.08	110290.17	1247771.91	N 39 36 18.063	W 108 10 11.743
	5700.00	9.16	34.35	5574.71	1072.86	897.68	594.38	0.95	110302.39	1247779.64	N 39 36 18.186	W 108 10 11.649
	5793.00	8.72	33.31	5666.58	1087.26	909.68	602.43	0.50	110314.39	1247787.69	N 39 36 18.307	W 108 10 11.551
	5887.00	8.44	31.10	5759.53	1101.25	921.54	609.91	0.46	110326.26	1247795.17	N 39 36 18.427	W 108 10 11.460
	5980.00	7.76	28.65	5851.60	1114.35	932.90	616.45	0.82	110337.61	1247801.71	N 39 36 18.541	W 108 10 11.381
	6073.00	7.36	28.42	5943.80	1126.58	943.64	622.29	0.43	110348.36	1247807.55	N 39 36 18.649	W 108 10 11.310
	6167.00	7.23	27.48	6037.04	1138.52	954.19	627.89	0.19	110358.90	1247813.15	N 39 36 18.754	W 108 10 11.243
	6260.00	6.84	35.06	6129.34	1149.87	963.91	633.77	1.08	110368.63	1247819.03	N 39 36 18.852	W 108 10 11.171
	6353.00	4.18	37.23	6221.90	1158.73	971.15	639.00	2.87	110375.86	1247824.26	N 39 36 18.925	W 108 10 11.107
	6447.00	1.93	64.65	6315.76	1163.40	974.55	642.50	2.79	110379.27	1247827.76	N 39 36 18.960	W 108 10 11.064
	6540.00	1.34	110.86	6408.73	1164.82	974.84	644.94	1.50	110379.55	1247830.20	N 39 36 18.964	W 108 10 11.033
	6634.00	1.17	101.85	6502.71	1165.25	974.25	646.90	0.28	110378.96	1247832.16	N 39 36 18.958	W 108 10 11.008
	6727.00	0.76	130.95	6595.69	1165.39	973.65	648.30	0.67	110378.36	1247833.56	N 39 36 18.953	W 108 10 10.989
	6820.00	0.76	146.26	6688.69	1164.98	972.73	649.11	0.22	110377.45	1247834.37	N 39 36 18.944	W 108 10 10.979
	6914.00	0.42	173.26	6782.68	1164.41	971.87	649.49	0.46	110376.58	1247834.75	N 39 36 18.936	W 108 10 10.974
	7007.00	0.41	183.00	6875.68	1163.83	971.20	649.51	0.08	110375.91	1247834.78	N 39 36 18.929	W 108 10 10.973
	7101.00	0.92	206.51	6969.67	1162.77	970.19	649.16	0.60	110374.90	1247834.42	N 39 36 18.919	W 108 10 10.977
	7194.00	1.85	212.49	7062.64	1160.53	968.25	648.02	1.01	110372.97	1247833.28	N 39 36 18.899	W 108 10 10.991
	7287.00	2.17	212.83	7155.59	1157.28	965.51	646.26	0.34	110370.22	1247831.52	N 39 36 18.872	W 108 10 11.012
	7381.00	2.56	214.58	7249.51	1153.41	962.28	644.10	0.42	110367.00	1247829.36	N 39 36 18.839	W 108 10 11.039
	7474.00	2.63	225.20	7342.41	1149.30	959.07	641.41	0.52	110363.78	1247826.67	N 39 36 18.807	W 108 10 11.072
	7568.00	2.90	236.26	7436.30	1145.12	956.23	637.90	0.63	110360.94	1247823.16	N 39 36 18.778	W 108 10 11.116
	7661.00	3.34	245.91	7529.17	1140.88	953.82	633.47	0.74	110358.53	1247818.73	N 39 36 18.753	W 108 10 11.171
	7754.00	3.60	247.69	7621.99	1136.45	951.60	628.30	0.30	110356.32	1247813.56	N 39 36 18.729	W 108 10 11.236
	7848.00	4.00	242.17	7715.79	1131.42	948.95	622.67	0.58	110353.67	1247807.93	N 39 36 18.701	W 108 10 11.307
	7941.00	3.74	244.30	7808.58	1126.25	946.12	617.07	0.32	110350.84	1247802.33	N 39 36 18.672	W 108 10 11.378
	8128.00	4.46	255.40	7995.10	1116.30	941.64	604.54	0.57	110346.36	1247789.80	N 39 36 18.624	W 108 10 11.536
	8221.00	3.29	259.61	8087.89	1112.14	940.25	598.41	1.29	110344.97	1247783.67	N 39 36 18.608	W 108 10 11.614
	8314.00	3.21	267.98	8180.74	1109.12	939.68	593.18	0.52	110344.29	1247778.44	N 39 36 18.601	W 108 10 11.680
	8408.00	3.47	267.52	8274.58	1106.30	939.46	587.71	0.28	110344.18	1247772.97	N 39 36 18.597	W 108 10 11.750
	8501.00	3.42	265.10	8367.41	1103.31	939.10	582.14	0.17	110343.82	1247767.40	N 39 36 18.592	W 108 10 11.821
	8594.00	3.59	266.56	8460.23	1100.22	938.69	576.47	0.21	110343.41	1247761.73	N 39 36 18.586	W 108 10 11.893
	8685.00	3.34	265.80	8551.07	1097.27	938.33	570.98	0.28	110343.04	1247756.24	N 39 36 18.581	W 108 10 11.963
	8779.00	3.63	265.91	8644.89	1094.16	937.91	565.28	0.31	110342.63	1247750.54	N 39 36 18.575	W 108 10 12.036
	8872.00	3.55	260.31	8737.71	1090.78	937.22	559.50	0.39	110341.93	1247744.76	N 39 36 18.567	W 108 10 12.109
	8966.00	3.54	253.65	8831.53	1086.92	935.91	553.85	0.44	110340.63	1247739.11	N 39 36 18.552	W 108 10 12.181
	9059.00	3.88	256.79	8924.34	1082.78	934.39	548.03	0.43	110339.10	1247733.29	N 39 36 18.535	W 108 10 12.255
	9152.00	3.66	253.51	9017.14	1078.57	932.82	542.12	0.33	110337.54	1247727.38	N 39 36 18.518	W 108 10 12.330
	9246.00	4.08	253.42	9110.92	1074.07	931.02	536.04	0.45	110335.73	1247721.30	N 39 36 18.498	W 108 10 12.407
	9339.00	4.24	250.29	9203.68	1069.14	928.92	529.63	0.30	110333.63	1247714.89	N 39 36 18.476	W 108 10 12.488
	9433.00	4.25	251.53	9297.42	1063.99	926.64	523.06	0.10	110331.35	1247708.32	N 39 36 18.451	W 108 10 12.571
	9526.00	4.08	255.90	9390.17	1059.21	924.74	516.58	0.39	110329.46	1247701.84	N 39 36 18.430	W 108 10 12.653
	9619.00	4.10	256.30	9482.94	1054.72	923.15	510.14	0.04	110327.86	1247695.40	N 39 36 18.413	W 108 10 12.734
	9713.00	4.29	253.02	9576.68	1049.94	921.33	503.52	0.33	110326.04	1247688.77	N 39 36 18.393	W 108 10 12.818
	9806.00	4.90	259.25	9669.39	1044.92	919.57	496.29	0.85	110324.28	1247681.54	N 39 36 18.373	W 108 10 12.910
	9899.00	4.98	261.24	9762.04	1039.94	918.21	488.39	0.20	110322.93	1247673.65	N 39 36 18.358	W 108 10 13.010
	9993.00	4.97	257.76	9855.69	1034.79	916.73	480.38	0.32	110321.44	1247665.64	N 39 36 18.341	W 108 10 13.112
	10091.00	4.51	259.15	9953.35	1029.55	915.10	472.45	0.48	110319.82	1247657.71	N 39 36 18.322	W 108 10 13.213
	10180.00	4.48	255.29	10042.08	1024.93	913.56	465.65	0.34	110318.28	1247650.91	N 39 36 18.305	W 108 10 13.299
	10273.00	4.57	255.38	10134.79	1019.89	911.71	458.55	0.10	110316.42	1247643.81	N 39 36 18.284	W 108 10 13.389
	10350.00	4.57	255.38	10211.54	1015.68	910.16	452.62	0.00	110314.87	1247637.87	N 39 36 18.267	W 108 10 13.464

Last SLB MWD Survey Projection to Bit

Survey Type: Definitive Survey

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

Surveying Prog:

MD From (ft)

0.00

17.00

87.00

2060.00

6353.00

6447.00

10273.00

10350.00

MD To (ft)

17.00

87.00

2060.00

6353.00

6447.00

10273.00

10350.00

EOU Freq

Act-Stns

Act-Stns

Act-Stns

Act-Stns

Act-Stns

Act-Stns

Act-Stns

Survey Tool Type

SLB_CNSG+CASING-Depth Only

SLB_CNSG+CASING

SLB_MWD+DMAG

SLB_MWD+DMAG

SLB_MWD+DMAG

SLB_MWD+DMAG