



Surface: 1930/S 2400/E
B/L: 1736/S 2021/E

Christine J. Wilson My commission expires: 12-12-05

Survey Report - Geodetic

Report Date: 04-Mar-2003 Client: BP America Inc. Field: NM, San Juan County (NAD 83 WZ) Structure / Slot: BP 23 30N 9W (Florance U 6M) / Florance U 6M Well: Florance U 6M Borehole: Original Hole UWI/API#: Survey Name / Date: Florance U6M Final Surveys / March 4, 2003 Tort / AHD / DDI / ERD ratio: 48.461° / 435.45 ft / 4.328 / 0.06C Grid Coordinate System: NAD83 New Mexico State Planes, Western Zone, US Feet Location Lat/Long: N 36 47 41.998, W 107 44 54.00E Location Grid N/E Y/X: N 2108711.114 ftUS, E 2747978.834 ftUS Grid Convergence Angle: +0.05091109° Grid Scale Factor: 0.99991738		Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 117.100° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 5997.000 ft relative to MSL Sea Bed / Ground Level Elevation: 5983.000 ft relative to MSL Magnetic Declination: +10.895° Total Field Strength: 51521.674 nT Magnetic Dip: 63.702° Declination Date: March 04, 2003 Magnetic Declination Model: BGGM 2002 North Reference: True North Total Corr Mag North -> True North: +10.895° Local Coordinates Referenced To: Well Head	
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Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N-S (ft)	E-W (ft)	DLS (°/100ft)	Grid Coordinates		Geographic Coordinates	
									Northing (ftUS)	Easting (ftUS)	Latitude	Longitude
Surface	0.00	0.00	199.73	0.00	0.00	0.00	0.00		2108711.11	2747978.83	N 36 47 41.998	W 107 44 54.006
Begin SLB MWD Surveys	547.00	0.10	199.73	547.00	0.06	-0.45	-0.16	0.02	2108710.66	2747978.67	N 36 47 41.994	W 107 44 54.008
	1052.00	0.73	226.52	1051.98	-0.95	-3.08	-2.64	0.13	2108708.03	2747976.19	N 36 47 41.968	W 107 44 54.039
	1629.00	0.89	145.98	1628.94	1.75	-9.32	-2.80	0.18	2108701.79	2747976.04	N 36 47 41.906	W 107 44 54.041
	1660.00	0.78	148.54	1659.94	2.14	-9.70	-2.56	0.37	2108701.41	2747976.28	N 36 47 41.902	W 107 44 54.038
	1692.00	1.70	128.39	1691.93	2.79	-10.18	-2.07	3.14	2108700.93	2747976.77	N 36 47 41.898	W 107 44 54.032
	1723.00	2.63	133.67	1722.91	3.92	-10.96	-1.20	3.07	2108700.16	2747977.65	N 36 47 41.890	W 107 44 54.021
	1755.00	3.82	122.90	1754.86	5.69	-12.04	0.23	4.16	2108699.07	2747979.07	N 36 47 41.879	W 107 44 54.004
	1786.00	4.93	122.20	1785.77	8.04	-13.31	2.22	3.58	2108697.80	2747981.07	N 36 47 41.867	W 107 44 53.979
	1817.00	6.35	118.00	1816.62	11.08	-14.83	4.86	4.77	2108696.29	2747983.71	N 36 47 41.852	W 107 44 53.947
	1849.00	7.32	115.89	1848.39	14.89	-16.55	8.26	3.13	2108694.57	2747987.11	N 36 47 41.835	W 107 44 53.905
	1881.00	7.92	114.26	1880.11	19.13	-18.35	12.10	1.99	2108692.78	2747990.95	N 36 47 41.817	W 107 44 53.858
	1913.00	8.84	117.48	1911.76	23.79	-20.39	16.29	3.23	2108690.74	2747995.15	N 36 47 41.797	W 107 44 53.806
	1944.00	9.72	114.92	1942.36	28.79	-22.59	20.78	3.13	2108688.55	2747999.63	N 36 47 41.775	W 107 44 53.751
	1976.00	10.72	114.92	1973.85	34.46	-24.98	25.93	3.12	2108686.16	2748004.78	N 36 47 41.751	W 107 44 53.688
	2008.00	11.36	114.86	2005.26	40.59	-27.56	31.49	2.00	2108683.58	2748010.34	N 36 47 41.726	W 107 44 53.619
	2040.00	12.29	114.62	2036.58	47.14	-30.30	37.44	2.91	2108680.85	2748016.30	N 36 47 41.699	W 107 44 53.546
	2072.00	12.83	116.57	2067.81	54.09	-33.31	43.72	2.15	2108677.84	2748022.58	N 36 47 41.669	W 107 44 53.469

2103.00	13.98	114.98	2097.97	61.28	-36.43	50.19	3.90	2108674.73	2748029.05	N 36 47 41.638	W 107 44 53.389
2135.00	15.04	113.49	2128.95	69.28	-39.72	57.50	3.51	2108671.45	2748036.37	N 36 47 41.606	W 107 44 53.299
2166.00	15.74	113.46	2158.83	77.50	-43.00	65.05	2.26	2108668.18	2748043.92	N 36 47 41.573	W 107 44 53.207
2196.00	16.29	112.63	2187.67	85.75	-46.24	72.67	1.99	2108664.95	2748051.53	N 36 47 41.541	W 107 44 53.113
2228.00	16.82	113.54	2218.34	94.85	-49.81	81.05	1.84	2108661.38	2748059.92	N 36 47 41.506	W 107 44 53.010
2258.00	17.57	113.18	2247.00	103.70	-53.33	89.19	2.53	2108657.87	2748068.07	N 36 47 41.471	W 107 44 52.910
2322.00	18.23	110.02	2307.91	123.27	-60.56	107.48	1.83	2108650.66	2748086.36	N 36 47 41.400	W 107 44 52.685
2384.00	18.27	110.97	2366.79	142.55	-67.36	125.67	0.48	2108643.88	2748104.55	N 36 47 41.332	W 107 44 52.461
2448.00	17.69	113.23	2427.66	162.23	-74.78	143.97	1.42	2108636.47	2748122.86	N 36 47 41.259	W 107 44 52.236
2511.00	16.83	114.19	2487.82	180.89	-82.29	161.09	1.44	2108628.97	2748139.98	N 36 47 41.185	W 107 44 52.026
2574.00	16.61	111.17	2548.16	198.96	-89.28	177.80	1.42	2108622.00	2748156.70	N 36 47 41.116	W 107 44 51.820
2605.00	16.43	112.26	2577.88	207.73	-92.54	185.99	1.16	2108618.74	2748164.89	N 36 47 41.083	W 107 44 51.720
2637.00	16.53	111.56	2608.57	216.77	-95.93	194.41	0.69	2108615.36	2748173.32	N 36 47 41.050	W 107 44 51.616
2667.00	16.65	114.07	2637.32	225.31	-99.25	202.31	2.42	2108612.05	2748181.21	N 36 47 41.017	W 107 44 51.519
2698.00	17.50	113.12	2666.95	234.40	-102.89	210.65	2.89	2108608.42	2748189.56	N 36 47 40.981	W 107 44 51.417
2730.00	18.15	114.41	2697.42	244.17	-106.84	219.61	2.38	2108604.47	2748198.52	N 36 47 40.942	W 107 44 51.306
2762.00	18.39	115.33	2727.80	254.20	-111.06	228.71	1.17	2108600.26	2748207.63	N 36 47 40.900	W 107 44 51.195
2825.00	19.44	117.94	2787.40	274.61	-120.23	246.96	2.14	2108591.12	2748225.88	N 36 47 40.810	W 107 44 50.970
2887.00	19.38	117.08	2845.88	295.22	-129.74	265.23	0.47	2108581.62	2748244.16	N 36 47 40.715	W 107 44 50.746
2948.00	18.69	118.60	2903.54	315.11	-139.03	282.83	1.39	2108572.35	2748261.76	N 36 47 40.624	W 107 44 50.529
3003.00	17.95	119.85	2955.76	332.38	-147.47	297.91	1.52	2108563.92	2748276.85	N 36 47 40.540	W 107 44 50.344
3601.33	0.00	119.85	3544.35	425.24	-193.74	378.54	3.00	2108517.73	2748357.52	N 36 47 40.083	W 107 44 49.352
7352.00	0.00	119.85	7295.02	425.24	-193.74	378.54	0.00	2108517.73	2748357.52	N 36 47 40.083	W 107 44 49.352

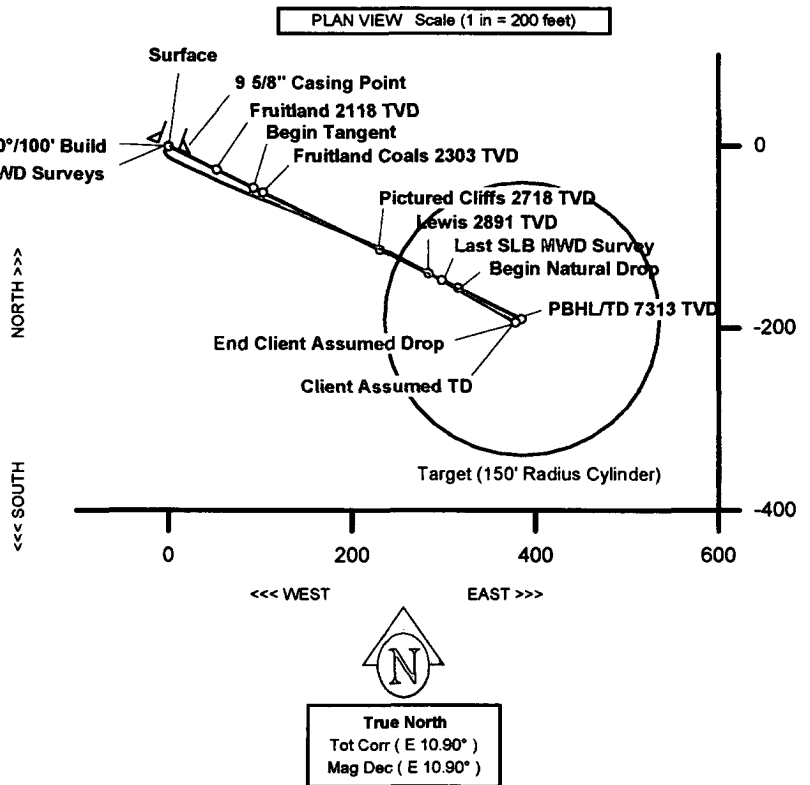
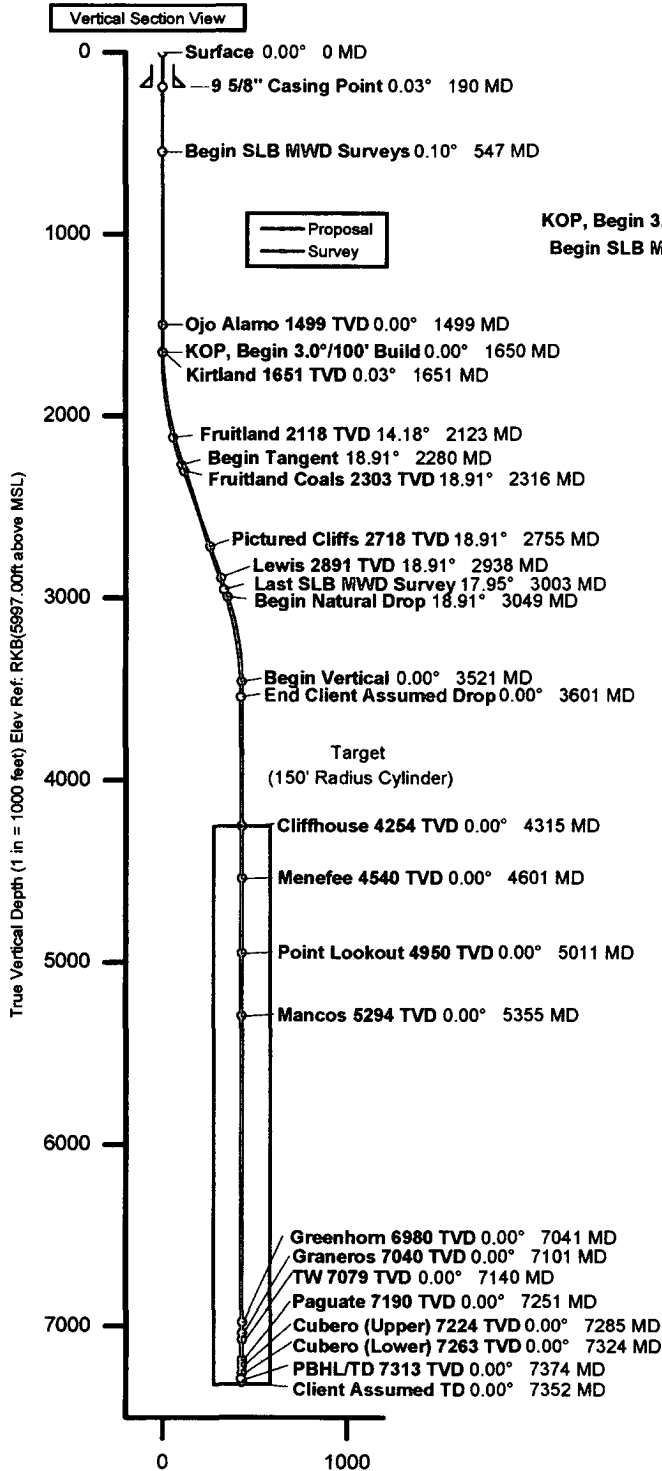
Survey Error Model: Topographic 3-D 95.00% Confidence 2.7955 sigma

Surveying Programme:

MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type
0.00	547.00	Act-Stns	Blind Drilling
547.00	3003.00	Act-Stns	MWD1
3003.00	7352.00	Act-Stns	Blind Drilling



WELL	FIELD	RIG
Fiorance U 6M	San Juan County, New Mexico	Aztec 184
Magnetic Parameters Model: BGGM 2002 Dip: 63.702° Mag Dec: 10.895° Date: March 04, 2003 FS: 51521.7 nT		
Surface Location Lat: N36 47 42.000 Lon: W107 44 54.000 North: 2108711.11 ftUS East: 2747978.83 ftUS Grid Conv: 0.0509° Scale Fact: 0.9999		
Plan#: Rev1 jok 05-Dec-02 Slot: Fiorance U 6M Elev Ref: RKB(5997.00ft above MSL) Date Drawn: 11:31:35AM 04-Mar-2003		



Quality Control
Date Drawn: 04-Mar-2003
Drawn by: James Wimberg
Checked by: John O'Keefe
Client OK: _____