

30-045-32295

Schlumberger**Vandewart B 3S Final Surveys Report**

Report Date: September 20, 2004 Client: BP America Inc. Field: NM, San Juan County (NAD 83 WZ) Structure / Slot: BP 11-29N-8W (Vandewart B 3S) HZ Well Proposal / Vandewart B 3S Well: Vandewart B 3S Borehole: Original Hole UWI/API#: Survey Name / Date: Vandewart B 3S Final Surveys / July 24, 2004 Tort / AHD / DDI / ERD ratio: 151.971° / 3773.18 ft / 6.057 / 1.257 Grid Coordinate System: NAD83 New Mexico State Planes, Western Zone, US Feet Location Lat/Long: N 36 44 5.000, W 107 38 50.000 Location Grid N/E Y/X: N 2086808.643 RUS, E 2777625.864 RUS Grid Convergence Angle: +0.11131534° Grid Scale Factor: 0.99992007	Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 341.950° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 6354.0 ft relative to MSL Sea Bed / Ground Level Elevation: 6343.000 ft relative to MSL Magnetic Declination: 10.676° Total Field Strength: 5144.172 nT Magnetic Dip: 63.677° Declination Date: September 03, 2004 Magnetic Declination Model: BGGM 2003 North Reference: Grid North Total Corr Mag North -> Grid North: +10.565° Local Coordinates Referenced To: Well Head
---	---

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	DLS (deg/100 ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2086808.64	2777625.86	N 36 44 5.000	W 107 38 50.000
Begin SLB MWD Surveys	583.00	3.20	311.47	582.70	14.03	10.78	-12.20	0.55	2086819.42	2777613.67	N 36 44 5.107	W 107 38 50.150
	1156.00	2.62	307.56	1154.96	38.62	29.35	-34.56	0.11	2086837.99	2777591.31	N 36 44 5.291	W 107 38 50.424
	1251.00	2.72	301.17	1249.85	42.12	31.84	-38.21	0.33	2086840.48	2777587.66	N 36 44 5.316	W 107 38 50.469
	1346.00	3.36	3.77	1344.74	46.41	35.79	-39.96	3.37	2086844.43	2777585.91	N 36 44 5.355	W 107 38 50.490
	1442.00	7.39	27.38	1440.31	53.36	44.08	-36.93	4.70	2086852.72	2777588.94	N 36 44 5.437	W 107 38 50.453
	1537.00	10.00	29.33	1534.21	63.23	56.70	-30.08	2.76	2086865.34	2777595.79	N 36 44 5.561	W 107 38 50.368
	1633.00	13.01	29.12	1628.27	76.22	73.41	-20.74	3.14	2086882.05	2777605.13	N 36 44 5.726	W 107 38 50.253
	1728.00	16.04	28.69	1720.22	92.49	94.27	-9.23	3.19	2086902.91	2777616.64	N 36 44 5.932	W 107 38 50.111
	1823.00	20.10	25.73	1810.52	113.28	120.50	4.16	4.38	2086929.13	2777630.03	N 36 44 6.191	W 107 38 49.946
	1918.00	23.90	23.49	1898.59	139.48	152.87	18.93	4.10	2086961.50	2777644.79	N 36 44 6.511	W 107 38 49.764
	2012.00	27.22	21.03	1983.38	170.43	190.41	34.24	3.71	2086999.04	2777660.10	N 36 44 6.882	W 107 38 49.575
	2107.00	30.42	20.42	2066.60	206.14	233.24	50.43	3.38	2087041.86	2777676.29	N 36 44 7.305	W 107 38 49.375
	2202.00	33.60	17.95	2147.15	246.25	280.80	66.93	3.62	2087089.42	2777692.78	N 36 44 7.775	W 107 38 49.171
	2297.00	36.26	14.08	2225.04	291.32	333.07	81.87	3.64	2087141.69	2777707.72	N 36 44 8.292	W 107 38 48.986
	2393.00	39.60	9.91	2300.76	342.41	390.78	94.04	4.38	2087199.39	2777719.90	N 36 44 8.862	W 107 38 48.835
	2488.00	42.02	6.38	2372.67	398.11	452.22	102.79	3.52	2087260.82	2777728.65	N 36 44 9.469	W 107 38 48.726
	2583.00	43.49	3.40	2442.43	457.50	516.46	108.26	2.63	2087325.06	2777734.12	N 36 44 10.105	W 107 38 48.658
	2678.00	45.54	1.37	2510.17	519.91	583.00	111.01	2.63	2087391.59	2777736.87	N 36 44 10.762	W 107 38 48.622
	2771.00	48.38	358.87	2573.65	584.49	650.95	111.12	3.63	2087459.54	2777736.98	N 36 44 11.434	W 107 38 48.619
	2867.00	51.17	355.45	2635.65	655.20	724.13	107.45	3.98	2087532.71	2777733.30	N 36 44 12.158	W 107 38 48.663
	2962.00	53.79	354.95	2693.50	728.54	799.21	101.14	2.79	2087607.78	2777726.99	N 36 44 12.900	W 107 38 48.738
	3057.00	56.67	355.37	2747.67	804.50	876.96	94.56	3.05	2087685.53	2777720.41	N 36 44 13.669	W 107 38 48.817
	3152.00	58.48	354.09	2798.61	882.70	956.80	87.18	2.22	2087765.37	2777713.04	N 36 44 14.459	W 107 38 48.906
	3247.00	60.43	354.76	2846.89	962.58	1038.23	79.24	2.14	2087846.78	2777705.10	N 36 44 15.264	W 107 38 49.002
	3342.00	60.60	354.95	2893.65	1043.19	1120.59	71.82	0.25	2087929.14	2777697.68	N 36 44 16.079	W 107 38 49.091
	3373.00	61.19	355.90	2908.73	1069.53	1147.59	69.66	3.28	2087956.14	2777695.52	N 36 44 16.346	W 107 38 49.117
	3405.00	63.60	354.57	2923.55	1097.12	1175.84	67.31	8.38	2087984.39	2777693.16	N 36 44 16.625	W 107 38 49.145
	3437.00	66.59	352.73	2937.03	1125.54	1204.68	64.09	10.70	2088013.23	2777689.95	N 36 44 16.910	W 107 38 49.184
	3468.00	69.96	353.01	2948.50	1153.81	1233.26	60.52	10.90	2088041.80	2777686.38	N 36 44 17.193	W 107 38 49.227
	3500.00	73.64	351.08	2958.50	1183.74	1263.36	56.31	12.85	2088071.89	2777682.17	N 36 44 17.491	W 107 38 49.278
	3532.00	75.47	348.56	2967.02	1214.29	1293.71	50.85	9.50	2088102.25	2777676.71	N 36 44 17.791	W 107 38 49.344
	3564.00	77.48	346.78	2974.50	1245.24	1324.10	44.21	8.29	2088132.64	2777670.07	N 36 44 18.092	W 107 38 49.435
	3595.00	79.27	345.14	2980.75	1275.53	1353.56	36.84	7.76	2088162.09	2777662.70	N 36 44 18.383	W 107 38 49.515
	3627.00	80.43	344.09	2986.39	1306.99	1383.92	28.48	4.86	2088192.45	2777654.34	N 36 44 18.683	W 107 38 49.617
	3659.00	81.68	343.51	2991.36	1338.59	1414.28	19.66	4.30	2088222.81	2777645.53	N 36 44 18.984	W 107 38 49.725
	3691.00	83.62	343.12	2995.46	1370.31	1444.68	10.55	6.18	2088253.20	2777636.41	N 36 44 19.285	W 107 38 49.836
	3723.00	85.90	342.66	2998.38	1402.17	1475.13	1.18	7.27	2088283.65	2777627.04	N 36 44 19.586	W 107 38 49.950
	3754.00	87.01	342.00	3000.30	1433.11	1504.61	-8.21	4.16	2088313.13	2777617.65	N 36 44 19.877	W 107 38 50.065
	3786.00	87.56	341.64	3001.81	1465.07	1534.98	-18.19	2.05	2088343.50	2777607.68	N 36 44 20.178	W 107 38 50.187
	3818.00	89.11	341.98	3002.74	1497.06	1565.37	-28.17	4.96	2088373.88	2777597.69	N 36 44 20.479	W 107 38 50.309
	3850.00	90.52	341.89	3002.85	1529.06	1595.79	-38.10	4.42	2088404.30	2777587.77	N 36 44 20.780	W 107 38 50.430
	3882.00	90.93	341.93	3002.44	1561.06	1626.21	-48.03	1.29	2088434.72	2777577.84	N 36 44 21.081	W 107 38 50.551
	3913.00	91.03	341.69	3001.91	1592.05	1655.65	-57.71	0.84	2088464.16	2777568.16	N 36 44 21.372	W 107 38 50.669
	3945.00	90.83	341.31	3001.39	1624.05	1685.99	-67.86	1.34	2088494.50	2777558.01	N 36 44 21.672	W 107 38 50.793
	3977.00	91.07	341.29	3000.86	1656.04	1716.30	-78.12	0.75	2088524.80	2777547.75	N 36 44 21.972	W 107 38 50.919
	4008.00	91.41	341.34	3000.19	1687.03	1745.66	-88.05	1.11	2088554.16	2777537.83	N 36 44 22.262	W 107 38 51.040
	4040.00	91.48	341.38	2999.38	1719.02	1775.97	-98.27	0.25	2088584.47	2777527.60	N 36 44 22.562	W 107 38 51.165
	4072.00	91.72	341.41	2998.49	1751.01	1806.29	-108.48	0.76	2088614.78	2777517.40	N 36 44 22.862	W 107 38 51.290
	4134.00	91.82	338.19	2996.57	1812.92	1864.44	-129.87	5.19	2088672.93	2777496.00	N 36 44 23.438	W 107 38 51.551
	4166.00	92.27	337.45	2995.43	1844.82	1894.05	-141.94	2.71	2088702.54	2777483.93	N 36 44 23.731	W 107 38 51.699
	4199.00	92.31	337.65	2994.11	1877.70	1924.53	-154.54	0.62	2088733.01	2777471.34	N 36 44 24.032	W 107 38 51.853
	4230.00	92.20	337.46	2992.89	1908.58	1953.16	-166.36	0.71	2088761.64	2777459.52	N 36 44 24.316	W 107 38 51.997
	4262.00	93.20	337.83	2991.39	1940.46	1982.72	-178.52	3.33	2088791.20	2777447.36	N 36 44 24.608	W 107 38 52.146
	4294.00	93.17	337.69	2989.61	1972.32	2012.29	-190.61	0.45	2088820.77	2777435.27	N 36 44 24.901	W 107 38 52.294

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
	4326.00	93.54	337.35	2987.74	2004.17	2041.81	-202.83	1.57	2088850.28	2777423.05	N 36 44 25.193	W 107 38 52.443
	4357.00	93.47	336.61	2985.84	2035.00	2070.29	-214.93	2.39	2088878.76	2777410.95	N 36 44 25.475	W 107 38 52.591
	4389.00	93.61	335.95	2983.86	2066.78	2099.53	-227.78	2.10	2088908.00	2777398.11	N 36 44 25.764	W 107 38 52.748
	4421.00	93.99	336.40	2981.74	2098.55	2128.74	-240.67	1.84	2088937.20	2777385.21	N 36 44 26.053	W 107 38 52.906
	4453.00	92.38	335.77	2979.97	2130.33	2157.94	-253.62	5.40	2088966.41	2777372.26	N 36 44 26.342	W 107 38 53.064
	4483.00	92.17	335.83	2978.77	2160.13	2185.28	-265.91	0.73	2088993.75	2777359.97	N 36 44 26.613	W 107 38 53.215
	4515.00	91.86	335.60	2977.65	2191.92	2214.43	-279.07	1.21	2089022.90	2777346.82	N 36 44 26.901	W 107 38 53.376
	4546.00	92.10	336.00	2976.58	2222.73	2242.69	-291.77	1.50	2089051.15	2777334.12	N 36 44 27.181	W 107 38 53.531
	4608.00	90.96	336.55	2974.92	2284.40	2299.43	-316.70	2.04	2089107.89	2777309.19	N 36 44 27.742	W 107 38 53.836
	4672.00	88.42	335.63	2975.27	2348.06	2357.93	-342.64	4.22	2089166.38	2777283.25	N 36 44 28.321	W 107 38 54.153
	4735.00	89.52	336.12	2976.40	2410.69	2415.42	-368.38	1.91	2089223.87	2777257.51	N 36 44 28.890	W 107 38 54.468
	4798.00	89.59	336.23	2976.89	2473.37	2473.05	-393.83	0.21	2089281.49	2777232.07	N 36 44 29.461	W 107 38 54.780
	4893.00	88.69	336.28	2978.32	2567.89	2560.00	-432.08	0.95	2089368.43	2777193.82	N 36 44 30.321	W 107 38 55.247
	4958.00	90.55	336.13	2978.75	2632.56	2619.47	-458.30	2.87	2089427.90	2777167.60	N 36 44 30.910	W 107 38 55.568
	5022.00	91.48	335.54	2977.61	2696.18	2677.85	-484.50	1.72	2089486.27	2777141.41	N 36 44 31.487	W 107 38 55.889
	5084.00	91.93	334.92	2975.77	2757.73	2734.12	-510.46	1.24	2089542.54	2777115.44	N 36 44 32.044	W 107 38 56.206
	5148.00	91.65	334.27	2973.77	2821.17	2791.90	-537.91	1.11	2089600.32	2777088.00	N 36 44 32.616	W 107 38 56.542
	5212.00	92.48	332.91	2971.46	2884.45	2849.18	-566.35	2.49	2089657.59	2777059.56	N 36 44 33.183	W 107 38 56.890
	5275.00	91.18	330.37	2969.45	2946.39	2904.59	-596.26	4.53	2089712.99	2777029.65	N 36 44 33.731	W 107 38 57.256
	5339.00	90.17	331.98	2968.70	3009.26	2960.65	-627.11	2.97	2089769.05	2776998.80	N 36 44 34.286	W 107 38 57.634
	5403.00	91.92	331.44	2967.53	3072.23	3017.00	-657.44	2.86	2089825.39	2776968.48	N 36 44 34.844	W 107 38 58.005
	5466.00	92.03	330.20	2965.36	3134.00	3071.97	-688.14	1.97	2089880.36	2776937.78	N 36 44 35.388	W 107 38 58.381
	5530.00	92.20	328.78	2963.00	3196.45	3127.07	-720.61	2.23	2089935.45	2776905.32	N 36 44 35.934	W 107 38 58.779
	5561.00	92.10	327.90	2961.83	3226.56	3153.44	-736.86	2.86	2089961.82	2776889.06	N 36 44 36.195	W 107 38 58.978
	5592.00	92.54	327.30	2960.58	3256.57	3179.59	-753.46	2.40	2089987.97	2776872.46	N 36 44 36.454	W 107 38 59.181
	5624.00	92.78	327.40	2959.09	3287.50	3206.50	-770.71	0.81	2090014.88	2776855.22	N 36 44 36.720	W 107 38 59.393
	5655.00	92.89	327.38	2957.56	3317.47	3232.58	-787.39	0.36	2090040.96	2776838.54	N 36 44 36.978	W 107 38 59.597
	5686.00	93.55	327.40	2955.82	3347.42	3258.66	-804.07	2.13	2090067.03	2776821.86	N 36 44 37.236	W 107 38 59.801
	5716.00	93.96	326.20	2953.86	3376.32	3283.70	-820.46	4.22	2090092.08	2776805.47	N 36 44 37.484	W 107 39 0.002
	5747.00	94.19	325.47	2951.65	3406.03	3309.29	-837.83	2.46	2090117.66	2776788.10	N 36 44 37.738	W 107 39 0.215
	5779.00	93.99	324.71	2949.37	3436.57	3335.46	-856.10	2.45	2090143.83	2776769.84	N 36 44 37.997	W 107 39 0.439
	5811.00	93.51	323.39	2947.28	3466.96	3361.31	-874.84	4.38	2090169.68	2776751.09	N 36 44 38.253	W 107 39 0.668
	5843.00	93.17	323.02	2945.41	3497.21	3386.89	-893.98	1.57	2090195.26	2776731.96	N 36 44 38.506	W 107 39 0.903
	5875.00	92.31	322.77	2943.88	3527.42	3412.39	-913.26	2.80	2090220.75	2776712.68	N 36 44 38.758	W 107 39 1.139
Last SLB MWD Survey	5907.00	89.97	322.08	2943.25	3557.57	3437.74	-932.77	7.62	2090246.10	2776693.17	N 36 44 39.009	W 107 39 1.378
Projection to TD	5967.00	89.97	322.08	2943.28	3614.00	3485.07	-969.64	0.00	2090293.43	2776656.30	N 36 44 39.478	W 107 39 1.830

Survey Type: Definitive Survey

Survey Error Model: SLB ISCWSA version 16 *** 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)

0.00

583.00

5907.00

MD To (ft)

583.00

5907.00

5967.00

EOU Freq Survey Tool Type

Act-Stns SLB_BLIND

Act-Stns SLB_MWD-STD

Act-Stns SLB_BLIND+TREND



Quality Control
Date Drawn: Mon 03:44 PM September 20, 2004
Drawn by: Richard Sanders
Checked by: Frank Brzysniak
Client: OK

Weld		Field		Rig	
Vandewart B 3S		San Juan County, New Mexico		Aztec 507	
Magnetic Parameters		Surface Location		Magnetic	
Model	BGM 2003	Dip	63.67°	Date	September 20, 2004
Mag Dec	+10.671°	Field Strength	51437.2 nT	Grid Convergence	+0.111534°
Longitude		Latitude		Northing	
W 107 38 50.000		N 38 44 5.000		208608.04 ftUS	
Easting		Scale Factor		0.999200000	
2777625.86 ftUS		Grid Convergence		+0.111534°	
Plan		Original Hole		Vandewart B 3S R10 Field Plan 02-Aug-04	
Survey Date		TVD Reference		RKB 6354.00 ft above MSL	
September 20, 2004		Survey Date		September 20, 2004	

