

Schlumberger

6501 S. Fiddler's Green Circle, Suite 400
Greenwood Village, CO 80111
(303) 486-3200



SUB-SURFACE SURVEY CERTIFICATION REPORT

BP America Inc.

Company

30-045-31189

November 18, 2002

Date

JA
D-13-29N-8W

Lease

Vandewart Com 3M

Well Name

San Juan Co., NM

County/State

Survey Depths

553

to

3422

ft

Type of Survey

Measurements While Drilling (MWD)

Survey Depths

ft

Type of Survey

Survey Depths

to

ft

Type of Survey

Site Supervisor

Burley Glasscock

NSL

The data submitted in this report conforms to the standards and procedures as set forth by Schlumberger. This report represents a true and correct directional wellbore survey based on original survey data obtained at the well site.

A. Allen Starkey
A. Allen Starkey
Account Manager

This document has been subscribed and affirmed, or sworn before me in the county of Arapahoe in the state of Colorado, this 20th day of November 2002.

Christine J. Nelson My commission expires: 12/12/05

Surface 580/S 1255/E

BHL 604/S 698/E

NSL

Survey Report - Geodetic

<p>Report Date: 18-Nov-2002 Client: BP Field: NM, San Juan County (NAD 83 WZ) Structure / Slot: BP 13 29N 8W (Vandewart Com 3M) No Certified Plat - Have Lat. - Long. / Vandewart Com 3M Well: Vandewart Com 3M Borehole: Original Hole UWI/API#: Survey Name / Date: SurveyEditor / November 18, 2002 Tort / AHD / DDI / ERD ratio: 45.254° / 596.65 ft / 4.427 / 0.073 Grid Coordinate System: NAD83 New Mexico State Planes, Western Zone, US Feet Location Lat/Long: N 36 43 12.000, W 107 37 24.000 Location Grid NE YTX: N 2081463.450 ftUS, E 2784637.531 ftUS Grid Convergence Angle: +0.12556041° Grid Scale Factor: 0.99992100</p>	<p>Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 82.340° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 6930.000 ft relative to MSL Sea Bed / Ground Level Elevation: 6916.000 ft relative to MSL Magnetic Declination: +10.858° Total Field Strength: 51498.444 nT Magnetic Dip: 63.667° Declination Date: November 18, 2002 Magnetic Declination Model: BGGM 2002 North Reference: True North Total Corr Mag North -> True North: +10.858° Local Coordinates Referenced To: Well Head</p>
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Station ID	Grid Coordinates										Geographic Coordinates	
	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Northing (ftUS)	Eastng (ftUS)	Latitude	Longitude
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2081463.45	2784637.53	N 36 43 12.000	W 107 37 24.000
Begin SLB MWD Surveys	553.00	1.17	334.27	552.96	-1.75	5.09	-2.45	0.21	2081468.53	2784635.07	N 36 43 12.050	W 107 37 24.030
	584.00	1.17	344.29	583.96	-1.89	5.68	-2.67	0.66	2081469.12	2784634.84	N 36 43 12.056	W 107 37 24.033
	616.00	1.27	348.79	615.95	-1.96	6.34	-2.83	0.43	2081469.78	2784634.69	N 36 43 12.063	W 107 37 24.035
	648.00	1.58	0.32	647.94	-1.92	7.13	-2.90	1.31	2081470.57	2784634.62	N 36 43 12.070	W 107 37 24.036
	680.00	1.70	13.32	679.93	-1.69	8.03	-2.79	1.22	2081471.47	2784634.73	N 36 43 12.079	W 107 37 24.034
	712.00	1.85	13.50	711.91	-1.33	8.99	-2.56	0.47	2081472.44	2784634.96	N 36 43 12.089	W 107 37 24.031
	743.00	2.22	27.87	742.89	-0.81	10.01	-2.16	2.02	2081473.46	2784635.35	N 36 43 12.099	W 107 37 24.027
	775.00	2.70	33.17	774.86	0.05	11.19	-1.46	1.66	2081474.64	2784636.05	N 36 43 12.111	W 107 37 24.018
	807.00	3.28	38.62	806.82	1.20	12.54	-0.47	2.02	2081475.98	2784637.03	N 36 43 12.124	W 107 37 24.006
	838.00	3.72	45.34	837.76	2.65	13.94	0.80	1.94	2081477.39	2784638.30	N 36 43 12.138	W 107 37 23.990
	870.00	4.18	48.52	869.68	4.44	15.44	2.41	1.59	2081478.89	2784639.90	N 36 43 12.153	W 107 37 23.970
	900.00	4.82	51.74	899.59	6.44	16.94	4.22	2.29	2081480.40	2784641.71	N 36 43 12.168	W 107 37 23.948
	932.00	5.70	53.92	931.46	8.99	18.71	6.56	2.82	2081482.17	2784644.05	N 36 43 12.185	W 107 37 23.919
	964.00	6.45	55.90	963.28	12.00	20.66	9.33	2.43	2081484.12	2784646.81	N 36 43 12.204	W 107 37 23.885
	994.00	7.10	58.49	993.07	15.20	22.57	12.31	2.39	2081486.04	2784649.79	N 36 43 12.223	W 107 37 23.849
	1025.00	7.57	60.45	1023.81	18.85	24.58	15.72	1.72	2081488.06	2784653.19	N 36 43 12.243	W 107 37 23.807
	1057.00	8.57	63.30	1055.50	23.06	26.69	19.68	3.36	2081490.18	2784657.15	N 36 43 12.264	W 107 37 23.758

1089.00	9.23	65.04	1087.11	27.76	28.84	24.14	2.23	2081492.34	2784661.60	N 36 43 12.285	W 107 37 23.704
1120.00	9.73	67.14	1117.69	32.67	30.91	28.80	1.96	2081494.42	2784666.26	N 36 43 12.306	W 107 37 23.646
1152.00	10.32	69.54	1149.20	38.07	32.96	33.98	2.26	2081496.48	2784671.44	N 36 43 12.326	W 107 37 23.583
1183.00	10.63	72.49	1179.68	43.60	34.79	39.31	2.00	2081498.33	2784676.76	N 36 43 12.344	W 107 37 23.517
1215.00	10.57	75.74	1211.14	49.42	36.40	44.97	1.88	2081499.95	2784682.42	N 36 43 12.360	W 107 37 23.448
1247.00	10.43	77.42	1242.60	55.22	37.76	50.64	1.05	2081501.32	2784688.08	N 36 43 12.373	W 107 37 23.378
1341.00	10.40	79.74	1335.05	72.17	41.12	67.29	0.45	2081504.72	2784704.73	N 36 43 12.407	W 107 37 23.173
1435.00	10.23	79.02	1427.53	86.98	44.22	83.84	0.23	2081507.85	2784721.26	N 36 43 12.437	W 107 37 22.970
1530.00	10.80	79.29	1520.94	106.29	47.48	100.86	0.60	2081511.15	2784738.28	N 36 43 12.470	W 107 37 22.761
1623.00	11.00	78.29	1612.26	123.84	50.90	118.11	0.30	2081514.61	2784755.52	N 36 43 12.503	W 107 37 22.549
1716.00	11.18	81.29	1703.52	141.71	54.07	135.71	0.65	2081517.81	2784773.11	N 36 43 12.535	W 107 37 22.333
1811.00	10.90	81.29	1796.76	159.90	56.83	153.70	0.29	2081520.61	2784791.09	N 36 43 12.562	W 107 37 22.112
1907.00	11.20	80.97	1890.98	178.29	59.86	171.88	0.32	2081523.48	2784809.26	N 36 43 12.590	W 107 37 21.889
2002.00	10.93	81.87	1984.22	196.52	62.38	189.90	0.34	2081526.25	2784827.28	N 36 43 12.617	W 107 37 21.668
2097.00	11.43	79.97	2077.42	214.94	65.30	208.09	0.65	2081529.20	2784845.46	N 36 43 12.646	W 107 37 21.444
2192.00	11.18	78.49	2170.57	233.53	68.77	226.38	0.40	2081532.72	2784863.74	N 36 43 12.680	W 107 37 21.219
2287.00	11.38	77.49	2263.74	252.06	72.64	244.56	0.29	2081536.62	2784881.91	N 36 43 12.718	W 107 37 20.996
2382.00	11.07	78.09	2356.92	270.49	76.56	262.63	0.35	2081540.57	2784899.97	N 36 43 12.757	W 107 37 20.774
2476.00	11.15	77.72	2449.16	288.55	80.35	280.34	0.11	2081544.41	2784917.67	N 36 43 12.794	W 107 37 20.557
2573.00	10.60	81.07	2544.42	306.82	83.73	298.32	0.86	2081547.83	2784935.64	N 36 43 12.828	W 107 37 20.336
2666.00	11.00	81.79	2635.77	324.24	86.33	315.55	0.45	2081550.46	2784952.87	N 36 43 12.854	W 107 37 20.124
2760.00	11.75	79.64	2727.92	342.77	89.33	333.84	0.92	2081553.50	2784971.15	N 36 43 12.883	W 107 37 19.900
2855.00	11.25	79.64	2821.02	361.69	92.73	352.47	0.53	2081556.95	2784989.77	N 36 43 12.917	W 107 37 19.671
2947.00	10.85	80.37	2911.31	379.31	95.80	369.84	0.46	2081560.05	2785007.13	N 36 43 12.947	W 107 37 19.457
3043.00	10.50	78.99	3005.65	397.07	98.98	387.33	0.45	2081563.27	2785024.62	N 36 43 12.979	W 107 37 19.243
3138.00	10.07	80.17	3099.12	414.01	102.05	404.01	0.50	2081566.38	2785041.29	N 36 43 13.009	W 107 37 19.038
3232.00	9.48	83.29	3191.76	429.96	104.36	419.80	0.84	2081568.72	2785057.07	N 36 43 13.032	W 107 37 18.844
3326.00	9.88	80.67	3284.42	445.77	106.57	435.45	0.63	2081570.96	2785072.71	N 36 43 13.054	W 107 37 18.652
3422.00	9.40	81.97	3379.06	461.84	109.00	451.34	0.55	2081573.43	2785088.59	N 36 43 13.078	W 107 37 18.456
3450.00	9.31	81.97	3406.69	466.39	109.63	455.84	0.34	2081574.07	2785093.09	N 36 43 13.084	W 107 37 18.401
3480.00	9.38	81.97	3436.29	471.26	110.31	460.66	0.25	2081574.76	2785097.91	N 36 43 13.091	W 107 37 18.342
3510.00	9.45	81.97	3465.89	476.16	111.00	465.52	0.22	2081575.46	2785102.77	N 36 43 13.098	W 107 37 18.282
3540.00	9.21	81.97	3495.49	481.03	111.68	470.34	0.79	2081576.15	2785107.58	N 36 43 13.104	W 107 37 18.223
3570.00	8.72	81.97	3525.13	485.70	112.33	474.97	1.61	2081576.81	2785112.21	N 36 43 13.111	W 107 37 18.166
3600.00	8.04	81.97	3554.81	490.07	112.94	479.30	2.30	2081577.43	2785116.54	N 36 43 13.117	W 107 37 18.113
3630.00	7.81	81.97	3584.52	494.21	113.52	483.39	0.75	2081578.02	2785120.63	N 36 43 13.122	W 107 37 18.063
3660.00	7.63	81.97	3614.25	498.24	114.08	487.38	0.61	2081578.59	2785124.62	N 36 43 13.128	W 107 37 18.014

Last SLB MWD Survey
Begin Wireline Surveys

3690.00	7.65	81.97	3643.98	502.22	114.64	491.33	0.07	2081579.16	2785128.57	N 36 43 13.134	W 107 37 17.965
3720.00	7.55	81.97	3673.72	506.19	115.19	495.26	0.32	2081579.72	2785132.49	N 36 43 13.139	W 107 37 17.917
3750.00	7.50	81.97	3703.46	510.12	115.74	499.15	0.18	2081580.28	2785136.38	N 36 43 13.144	W 107 37 17.869
3780.00	7.16	81.97	3733.21	513.95	116.28	502.94	1.11	2081580.82	2785140.17	N 36 43 13.150	W 107 37 17.823
3810.00	6.91	81.97	3762.99	517.62	116.79	506.57	0.86	2081581.34	2785143.81	N 36 43 13.155	W 107 37 17.778
3840.00	6.91	81.97	3792.77	521.23	117.30	510.15	0.00	2081581.85	2785147.38	N 36 43 13.160	W 107 37 17.734
3870.00	6.79	81.97	3822.56	524.80	117.79	513.69	0.39	2081582.36	2785150.92	N 36 43 13.165	W 107 37 17.691
3900.00	6.35	81.97	3852.36	528.23	118.27	517.08	1.47	2081582.85	2785154.31	N 36 43 13.169	W 107 37 17.649
3930.00	5.68	81.97	3882.20	531.38	118.71	520.19	2.22	2081583.29	2785157.42	N 36 43 13.174	W 107 37 17.611
3960.00	5.00	81.97	3912.06	534.17	119.10	522.96	2.26	2081583.69	2785160.19	N 36 43 13.178	W 107 37 17.577
3990.00	4.42	81.97	3941.96	536.63	119.45	525.40	1.94	2081584.04	2785162.62	N 36 43 13.181	W 107 37 17.547
4020.00	3.72	81.97	3971.89	538.76	119.74	527.51	2.33	2081584.34	2785164.73	N 36 43 13.184	W 107 37 17.521
4050.00	3.34	81.97	4001.83	540.61	120.00	529.34	1.26	2081584.60	2785166.56	N 36 43 13.187	W 107 37 17.498
4080.00	3.07	81.97	4031.78	542.29	120.24	531.00	0.90	2081584.84	2785168.22	N 36 43 13.189	W 107 37 17.478
4110.00	2.69	81.97	4061.75	543.79	120.45	532.49	1.29	2081585.05	2785169.71	N 36 43 13.191	W 107 37 17.460
4140.00	2.36	81.97	4091.72	545.12	120.63	533.80	1.08	2081585.24	2785171.02	N 36 43 13.193	W 107 37 17.444
4170.00	2.20	81.97	4121.69	546.31	120.80	534.98	0.54	2081585.41	2785172.21	N 36 43 13.194	W 107 37 17.429
4200.00	1.79	81.97	4151.67	547.36	120.95	536.02	1.36	2081585.56	2785173.24	N 36 43 13.196	W 107 37 17.416
4230.00	1.44	81.97	4181.66	548.20	121.06	536.86	1.18	2081585.68	2785174.08	N 36 43 13.197	W 107 37 17.406
4260.00	1.22	81.97	4211.65	548.90	121.16	537.55	0.72	2081585.78	2785174.77	N 36 43 13.198	W 107 37 17.398
4290.00	1.06	81.97	4241.65	549.50	121.24	538.14	0.54	2081585.86	2785175.36	N 36 43 13.199	W 107 37 17.390
4320.00	0.86	81.97	4271.64	550.00	121.31	538.64	0.68	2081585.93	2785175.86	N 36 43 13.199	W 107 37 17.384
4350.00	0.76	81.97	4301.64	550.42	121.37	539.06	0.32	2081585.99	2785176.28	N 36 43 13.200	W 107 37 17.379
4380.00	0.71	81.97	4331.64	550.81	121.43	539.44	0.18	2081586.05	2785176.66	N 36 43 13.201	W 107 37 17.374
4410.00	0.64	81.97	4361.64	551.16	121.48	539.79	0.22	2081586.10	2785177.01	N 36 43 13.201	W 107 37 17.370
4440.00	0.50	81.97	4391.63	551.46	121.52	540.08	0.47	2081586.14	2785177.30	N 36 43 13.202	W 107 37 17.366
4470.00	0.45	81.97	4421.63	551.71	121.55	540.33	0.18	2081586.18	2785177.55	N 36 43 13.202	W 107 37 17.363
4500.00	0.62	81.97	4451.63	551.99	121.59	540.61	0.57	2081586.22	2785177.82	N 36 43 13.202	W 107 37 17.360
4530.00	0.51	81.97	4481.63	552.29	121.63	540.90	0.36	2081586.26	2785178.12	N 36 43 13.203	W 107 37 17.356
4560.00	0.41	81.97	4511.63	552.53	121.67	541.14	0.36	2081586.29	2785178.36	N 36 43 13.203	W 107 37 17.353
4590.00	0.31	81.97	4541.63	552.71	121.69	541.32	0.32	2081586.32	2785178.54	N 36 43 13.203	W 107 37 17.351
4620.00	0.27	81.97	4571.63	552.86	121.71	541.47	0.14	2081586.34	2785178.69	N 36 43 13.203	W 107 37 17.349
4650.00	0.20	81.97	4601.63	552.98	121.73	541.59	0.22	2081586.36	2785178.81	N 36 43 13.204	W 107 37 17.348
4680.00	0.20	81.97	4631.63	553.09	121.75	541.70	0.00	2081586.37	2785178.91	N 36 43 13.204	W 107 37 17.347
4710.00	0.31	81.97	4661.63	553.22	121.76	541.83	0.36	2081586.39	2785179.05	N 36 43 13.204	W 107 37 17.345
4740.00	0.30	81.97	4691.63	553.38	121.79	541.98	0.04	2081586.41	2785179.20	N 36 43 13.204	W 107 37 17.343
4770.00	0.27	81.97	4721.63	553.53	121.81	542.13	0.11	2081586.44	2785179.35	N 36 43 13.204	W 107 37 17.341
4800.00	0.25	81.97	4751.63	553.66	121.83	542.26	0.04	2081586.45	2785179.48	N 36 43 13.205	W 107 37 17.340

4830.00	0.06	81.97	4781.63	553.75	121.84	542.35	0.65	2081586.47	2785179.57	N 36 43 13.205	W 107 37 17.339
4860.00	0.43	81.97	4811.63	553.87	121.86	542.47	1.22	2081586.48	2785179.69	N 36 43 13.205	W 107 37 17.337
4890.00	0.35	81.97	4841.63	554.08	121.88	542.67	0.25	2081586.51	2785179.89	N 36 43 13.205	W 107 37 17.335
4920.00	0.19	81.97	4871.63	554.22	121.90	542.81	0.54	2081586.53	2785180.03	N 36 43 13.205	W 107 37 17.333
4950.00	0.19	81.97	4901.63	554.32	121.92	542.91	0.00	2081586.55	2785180.13	N 36 43 13.205	W 107 37 17.332
4980.00	0.28	81.97	4931.63	554.44	121.93	543.03	0.29	2081586.56	2785180.25	N 36 43 13.206	W 107 37 17.330
5010.00	0.34	81.97	4961.63	554.60	121.96	543.19	0.22	2081586.59	2785180.41	N 36 43 13.206	W 107 37 17.328
5040.00	0.25	81.97	4991.62	554.76	121.98	543.35	0.29	2081586.61	2785180.57	N 36 43 13.206	W 107 37 17.326
5070.00	0.33	81.97	5021.62	554.91	122.00	543.50	0.25	2081586.63	2785180.72	N 36 43 13.206	W 107 37 17.324
5100.00	0.30	81.97	5051.62	555.08	122.02	543.66	0.11	2081586.65	2785180.88	N 36 43 13.207	W 107 37 17.322
5130.00	0.33	81.97	5081.62	555.24	122.05	543.82	0.11	2081586.68	2785181.04	N 36 43 13.207	W 107 37 17.320
5160.00	0.29	81.97	5111.62	555.40	122.07	543.98	0.14	2081586.70	2785181.20	N 36 43 13.207	W 107 37 17.318
5190.00	0.33	81.97	5141.62	555.56	122.09	544.14	0.14	2081586.72	2785181.36	N 36 43 13.207	W 107 37 17.317
5220.00	0.38	81.97	5171.62	555.75	122.12	544.33	0.18	2081586.75	2785181.55	N 36 43 13.207	W 107 37 17.314
5250.00	0.41	81.97	5201.62	555.96	122.15	544.53	0.07	2081586.78	2785181.75	N 36 43 13.208	W 107 37 17.312
5280.00	0.44	81.97	5231.62	556.18	122.18	544.75	0.11	2081586.81	2785181.97	N 36 43 13.208	W 107 37 17.309
5310.00	0.33	81.97	5261.62	556.38	122.21	544.95	0.36	2081586.84	2785182.17	N 36 43 13.208	W 107 37 17.307
5340.00	0.39	81.97	5291.62	556.57	122.23	545.14	0.22	2081586.87	2785182.36	N 36 43 13.209	W 107 37 17.304
5370.00	0.29	81.97	5321.62	556.75	122.26	545.32	0.36	2081586.89	2785182.53	N 36 43 13.209	W 107 37 17.302
5400.00	0.19	81.97	5351.62	556.87	122.27	545.44	0.32	2081586.91	2785182.66	N 36 43 13.209	W 107 37 17.301
5430.00	0.13	81.97	5381.62	556.95	122.29	545.52	0.22	2081586.92	2785182.74	N 36 43 13.209	W 107 37 17.300
5460.00	0.19	81.97	5411.62	557.04	122.30	545.60	0.22	2081586.93	2785182.82	N 36 43 13.209	W 107 37 17.299
5490.00	0.29	81.97	5441.62	557.16	122.31	545.73	0.32	2081586.95	2785182.94	N 36 43 13.209	W 107 37 17.297
5520.00	0.24	81.97	5471.62	557.30	122.33	545.86	0.14	2081586.97	2785183.08	N 36 43 13.210	W 107 37 17.295
5550.00	0.22	81.97	5501.62	557.42	122.35	545.98	0.07	2081586.99	2785183.20	N 36 43 13.210	W 107 37 17.294
5580.00	0.33	81.97	5531.62	557.57	122.37	546.13	0.36	2081587.01	2785183.34	N 36 43 13.210	W 107 37 17.292
5610.00	-0.05	81.97	5561.62	557.64	122.38	546.20	1.26	2081587.02	2785183.42	N 36 43 13.210	W 107 37 17.291
5640.00	0.01	81.97	5591.62	557.63	122.38	546.19	0.18	2081587.02	2785183.41	N 36 43 13.210	W 107 37 17.291
5670.00	0.05	81.97	5621.62	557.64	122.38	546.21	0.14	2081587.02	2785183.42	N 36 43 13.210	W 107 37 17.291
5700.00	-0.06	81.97	5651.62	557.64	122.38	546.20	0.36	2081587.02	2785183.42	N 36 43 13.210	W 107 37 17.291
5730.00	-0.05	81.97	5681.62	557.61	122.38	546.18	0.04	2081587.01	2785183.39	N 36 43 13.210	W 107 37 17.292
5760.00	0.14	81.97	5711.62	557.64	122.38	546.20	0.61	2081587.02	2785183.42	N 36 43 13.210	W 107 37 17.291
5790.00	-0.18	81.97	5741.62	557.63	122.38	546.19	1.04	2081587.02	2785183.41	N 36 43 13.210	W 107 37 17.291
5820.00	0.14	81.97	5771.62	557.62	122.38	546.18	1.04	2081587.02	2785183.40	N 36 43 13.210	W 107 37 17.292
5850.00	0.20	81.97	5801.62	557.71	122.39	546.27	0.22	2081587.03	2785183.48	N 36 43 13.210	W 107 37 17.290
5880.00	0.21	81.97	5831.62	557.81	122.41	546.37	0.04	2081587.04	2785183.59	N 36 43 13.210	W 107 37 17.289
5910.00	0.13	81.97	5861.62	557.90	122.42	546.46	0.29	2081587.06	2785183.68	N 36 43 13.210	W 107 37 17.288

5940.00	0.24	81.97	5891.62	558.00	122.43	546.56	0.39	2081587.07	2785183.77	N 36 43 13.211	W 107 37 17.287
5970.00	0.14	81.97	5921.62	558.10	122.45	546.65	0.36	2081587.08	2785183.87	N 36 43 13.211	W 107 37 17.286
6000.00	0.07	81.97	5951.62	558.15	122.45	546.71	0.22	2081587.09	2785183.92	N 36 43 13.211	W 107 37 17.285
6030.00	0.08	81.97	5981.62	558.19	122.46	546.75	0.04	2081587.10	2785183.96	N 36 43 13.211	W 107 37 17.285
6060.00	-0.06	81.97	6011.62	558.20	122.46	546.75	0.47	2081587.10	2785183.97	N 36 43 13.211	W 107 37 17.284
6090.00	-0.32	81.97	6041.62	558.10	122.45	546.66	0.86	2081587.08	2785183.87	N 36 43 13.211	W 107 37 17.286
6120.00	-0.24	81.97	6071.62	557.95	122.43	546.51	0.25	2081587.06	2785183.73	N 36 43 13.210	W 107 37 17.287
6150.00	-0.24	81.97	6101.61	557.83	122.41	546.39	0.00	2081587.05	2785183.61	N 36 43 13.210	W 107 37 17.289
6180.00	-0.23	81.97	6131.61	557.71	122.39	546.27	0.04	2081587.03	2785183.48	N 36 43 13.210	W 107 37 17.290
6210.00	-0.19	81.97	6161.61	557.60	122.38	546.16	0.14	2081587.01	2785183.38	N 36 43 13.210	W 107 37 17.292
6240.00	-0.15	81.97	6191.61	557.51	122.36	546.07	0.11	2081587.00	2785183.29	N 36 43 13.210	W 107 37 17.293
6270.00	-0.03	81.97	6221.61	557.46	122.36	546.02	0.43	2081586.99	2785183.24	N 36 43 13.210	W 107 37 17.293
6300.00	0.19	81.97	6251.61	557.50	122.36	546.07	0.72	2081587.00	2785183.28	N 36 43 13.210	W 107 37 17.293
6330.00	0.15	81.97	6281.61	557.59	122.37	546.15	0.14	2081587.01	2785183.37	N 36 43 13.210	W 107 37 17.292
6360.00	0.27	81.97	6311.61	557.70	122.39	546.26	0.39	2081587.03	2785183.48	N 36 43 13.210	W 107 37 17.291
6390.00	0.25	81.97	6341.61	557.84	122.41	546.39	0.04	2081587.05	2785183.61	N 36 43 13.210	W 107 37 17.289
6420.00	0.27	81.97	6371.61	557.97	122.43	546.53	0.04	2081587.07	2785183.75	N 36 43 13.210	W 107 37 17.287
6450.00	0.13	81.97	6401.61	558.07	122.44	546.63	0.47	2081587.08	2785183.85	N 36 43 13.211	W 107 37 17.286
6480.00	0.21	81.97	6431.61	558.16	122.45	546.72	0.29	2081587.09	2785183.94	N 36 43 13.211	W 107 37 17.285
6510.00	0.20	81.97	6461.61	558.27	122.47	546.82	0.04	2081587.11	2785184.04	N 36 43 13.211	W 107 37 17.284
6540.00	0.14	81.97	6491.61	558.36	122.48	546.91	0.22	2081587.12	2785184.13	N 36 43 13.211	W 107 37 17.283
6570.00	0.16	81.97	6521.61	558.43	122.49	546.99	0.07	2081587.13	2785184.21	N 36 43 13.211	W 107 37 17.282
6600.00	0.31	81.97	6551.61	558.56	122.51	547.11	0.50	2081587.15	2785184.33	N 36 43 13.211	W 107 37 17.280
6630.00	0.35	81.97	6581.61	558.73	122.53	547.28	0.14	2081587.17	2785184.50	N 36 43 13.212	W 107 37 17.278
6660.00	0.45	81.97	6611.61	558.94	122.56	547.49	0.32	2081587.20	2785184.70	N 36 43 13.212	W 107 37 17.275
6690.00	0.48	81.97	6641.61	559.18	122.60	547.73	0.11	2081587.24	2785184.94	N 36 43 13.212	W 107 37 17.273
6720.00	0.31	81.97	6671.61	559.39	122.63	547.93	0.57	2081587.27	2785185.15	N 36 43 13.212	W 107 37 17.270
6750.00	0.28	81.97	6701.61	559.54	122.65	548.08	0.11	2081587.29	2785185.30	N 36 43 13.213	W 107 37 17.268
6780.00	0.27	81.97	6731.61	559.68	122.67	548.22	0.04	2081587.31	2785185.44	N 36 43 13.213	W 107 37 17.266
6810.00	0.32	81.97	6761.61	559.84	122.69	548.38	0.18	2081587.33	2785185.59	N 36 43 13.213	W 107 37 17.265
6840.00	0.33	81.97	6791.61	560.01	122.71	548.54	0.04	2081587.35	2785185.76	N 36 43 13.213	W 107 37 17.262
6870.00	0.25	81.97	6821.61	560.16	122.73	548.70	0.25	2081587.38	2785185.91	N 36 43 13.214	W 107 37 17.261
6900.00	0.39	81.97	6851.61	560.33	122.76	548.86	0.47	2081587.40	2785186.08	N 36 43 13.214	W 107 37 17.259
6930.00	0.22	81.97	6881.61	560.49	122.78	549.02	0.57	2081587.42	2785186.24	N 36 43 13.214	W 107 37 17.257
6960.00	0.19	81.97	6911.61	560.60	122.79	549.13	0.11	2081587.44	2785186.35	N 36 43 13.214	W 107 37 17.255
6990.00	0.13	81.97	6941.61	560.68	122.81	549.21	0.22	2081587.45	2785186.43	N 36 43 13.214	W 107 37 17.254
7020.00	0.07	81.97	6971.61	560.73	122.81	549.26	0.18	2081587.46	2785186.48	N 36 43 13.214	W 107 37 17.254
7050.00	0.15	81.97	7001.61	560.79	122.82	549.32	0.25	2081587.47	2785186.54	N 36 43 13.214	W 107 37 17.253

7080.00	0.13	81.97	7031.61	560.86	122.83	549.39	0.07	2081587.48	2785186.61	N 36 43 13.214	W 107 37 17.252
7110.00	0.19	81.97	7061.61	560.94	122.84	549.47	0.22	2081587.49	2785186.69	N 36 43 13.215	W 107 37 17.251
7140.00	0.14	81.97	7091.61	561.03	122.86	549.56	0.18	2081587.50	2785186.77	N 36 43 13.215	W 107 37 17.250
7170.00	0.20	81.97	7121.61	561.12	122.87	549.64	0.22	2081587.51	2785186.86	N 36 43 13.215	W 107 37 17.249
7200.00	0.14	81.97	7151.61	561.20	122.88	549.73	0.22	2081587.52	2785186.95	N 36 43 13.215	W 107 37 17.248
7230.00	0.14	81.97	7181.61	561.28	122.89	549.80	0.00	2081587.53	2785187.02	N 36 43 13.215	W 107 37 17.247
7260.00	0.17	81.97	7211.61	561.36	122.90	549.88	0.11	2081587.55	2785187.10	N 36 43 13.215	W 107 37 17.246
7290.00	0.17	81.97	7241.61	561.44	122.91	549.97	0.00	2081587.56	2785187.18	N 36 43 13.215	W 107 37 17.245
7320.00	0.10	81.97	7271.61	561.51	122.92	550.04	0.22	2081587.57	2785187.25	N 36 43 13.215	W 107 37 17.244
7350.00	0.25	81.97	7301.60	561.61	122.94	550.13	0.50	2081587.58	2785187.35	N 36 43 13.216	W 107 37 17.243
7380.00	0.18	81.97	7331.60	561.72	122.95	550.24	0.25	2081587.60	2785187.46	N 36 43 13.216	W 107 37 17.242
7410.00	0.23	81.97	7361.60	561.83	122.97	550.35	0.18	2081587.61	2785187.57	N 36 43 13.216	W 107 37 17.240
7440.00	0.33	81.97	7391.60	561.98	122.99	550.50	0.32	2081587.63	2785187.71	N 36 43 13.216	W 107 37 17.239
7470.00	0.39	81.97	7421.60	562.17	123.01	550.68	0.22	2081587.66	2785187.90	N 36 43 13.216	W 107 37 17.236
7500.00	0.45	81.97	7451.60	562.39	123.04	550.90	0.18	2081587.69	2785188.12	N 36 43 13.217	W 107 37 17.234
7530.00	0.32	81.97	7481.60	562.59	123.07	551.10	0.43	2081587.72	2785188.32	N 36 43 13.217	W 107 37 17.231
7560.00	0.46	81.97	7511.60	562.79	123.10	551.30	0.47	2081587.75	2785188.52	N 36 43 13.217	W 107 37 17.229
7590.00	0.63	81.97	7541.60	563.08	123.14	551.59	0.57	2081587.79	2785188.80	N 36 43 13.218	W 107 37 17.225
7620.00	0.64	81.97	7571.60	563.41	123.19	551.92	0.04	2081587.84	2785189.13	N 36 43 13.218	W 107 37 17.221
7650.00	0.76	81.97	7601.60	563.78	123.24	552.28	0.39	2081587.89	2785189.49	N 36 43 13.219	W 107 37 17.217
7680.00	0.37	81.97	7631.59	564.07	123.28	552.57	1.29	2081587.93	2785189.79	N 36 43 13.219	W 107 37 17.213
7710.00	0.57	81.97	7661.59	564.32	123.31	552.82	0.65	2081587.97	2785190.03	N 36 43 13.219	W 107 37 17.210
7740.00	0.47	81.97	7691.59	564.59	123.35	553.08	0.32	2081588.00	2785190.30	N 36 43 13.220	W 107 37 17.207
7770.00	0.76	81.97	7721.59	564.91	123.40	553.40	0.97	2081588.05	2785190.62	N 36 43 13.220	W 107 37 17.203
7800.00	0.41	81.97	7751.59	565.22	123.44	553.71	1.18	2081588.09	2785190.92	N 36 43 13.221	W 107 37 17.199
7830.00	0.48	81.97	7781.59	565.45	123.47	553.94	0.25	2081588.13	2785191.15	N 36 43 13.221	W 107 37 17.196
7860.00	0.76	81.97	7811.59	565.78	123.52	554.26	0.93	2081588.17	2785191.47	N 36 43 13.221	W 107 37 17.192
7890.00	0.76	81.97	7841.58	566.17	123.57	554.65	0.00	2081588.23	2785191.87	N 36 43 13.222	W 107 37 17.187
7920.00	0.57	81.97	7871.58	566.52	123.62	555.00	0.65	2081588.28	2785192.21	N 36 43 13.222	W 107 37 17.183
7950.00	0.70	81.97	7901.58	566.85	123.67	555.32	0.43	2081588.33	2785192.54	N 36 43 13.223	W 107 37 17.179
7980.00	0.43	81.97	7931.58	567.15	123.71	555.61	0.90	2081588.37	2785192.83	N 36 43 13.223	W 107 37 17.176
8010.00	0.63	81.97	7961.58	567.42	123.75	555.89	0.68	2081588.41	2785193.10	N 36 43 13.224	W 107 37 17.172
8040.00	0.57	81.97	7991.58	567.74	123.79	556.20	0.22	2081588.45	2785193.41	N 36 43 13.224	W 107 37 17.168
8070.00	0.27	81.97	8021.57	567.95	123.82	556.41	1.00	2081588.48	2785193.63	N 36 43 13.224	W 107 37 17.166
8100.00	0.32	81.97	8051.57	568.11	123.84	556.56	0.18	2081588.50	2785193.78	N 36 43 13.224	W 107 37 17.164
8130.00	0.32	81.97	8081.57	568.27	123.87	556.73	0.00	2081588.53	2785193.94	N 36 43 13.225	W 107 37 17.162

Last Wireline Survey

Survey Error Model: Topographic 3-D 19.87% Confidence 1.0000 sigma

Surveying Programme:

MD From (ft)
0.00
553.00
3422.00

MD To (ft) **EQU Freq** **Survey Tool Type**
553.00 Act-Sins Blind Drilling
3422.00 Act-Sins MWD1
8130.00 Act-Sins GPIT