

Schlumberger

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Greenwood Village, CO 80111
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SUB-SURFACE SURVEY CERTIFICATION REPORT

30-045-31045

BP America Inc.

Company

October 28, 2002

Date

E-28-30N-8W

Gartner A 1B

Well Name

San Juan County, New Mexico

County/State

Lease

Survey Depths

140

to

2774 ft

Type of Survey

Measurements While Drilling (MWD)

Survey Depths

ft

Type of Survey

Survey Depths

to

ft

Type of Survey

Site Supervisor

Greg Johnson

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

Account Manager

This document has been subscribed and affirmed, or sworn before me in the county of Arapahoe in the state of Colorado, this 28th day of October, 2002.

Christine J. Nelson

My commission expires:

12/12/05

Surface: 1450/N 1020/W
BHL 2394/N 754/W

Survey Report - Standard

Report Date: 29-Jul-2002 Client: BP, San Juan Performance Unit Field: NM, San Juan County (NAD 83 WZ) Structure / Slot: BP 28 30N 8W (Gartner A 1B) No Certified Plat / Gartner A 1B Well: Gartner A 1B Borehole: Original Hole UWI / API#: Survey Name / Date: Gartner A 1B Final Surveys / July 15, 2002 Tort / AHD / DDI / ERD ratio: 66.988° / 982.66 ft / 4.834 / 0.175 Grid Coordinate System: NAD83 New Mexico State Planes, Western Zone, US Feet Location Lat / Long: Location Grid N/E Y/X: Grid Convergence Angle: Grid Scale Factor:	Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 195.870° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 6210.000 ft relative to MSL Sea Bed / Ground Level Elevation: 6196.000 ft relative to MSL Magnetic Declination: Total Field Strength: Magnetic Dip: Declination Date: Magnetic Declination Model: North Reference: True North Total Corr Mag North -> True North: Local Coordinates Referenced To: Well Head
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Station ID	MD (ft)	Incl (°)	Azlm (°)	TVD (ft)	VSec (ft)	N-S (ft)	E-W (ft)	Closure (ft)	at Azlm (°)	DLS (°/100ft)	TF (°)
Tie-In	0.00	0.00	24.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.5 M
Begin SLB MWD	140.00	0.00	24.49	140.00	0.00	0.00	0.00	0.00	0.00	0.00	24.5 M
	206.00	0.35	24.49	206.00	-0.20	0.18	0.08	0.20	24.49	0.53	178.8 M
	237.00	0.24	178.85	237.00	-0.23	0.20	0.12	0.24	31.23	1.86	-164.7 M
	269.00	0.47	195.30	269.00	-0.04	0.01	0.09	0.09	83.03	0.78	-157.2 M
	299.00	0.91	202.78	299.00	0.32	-0.33	-0.03	0.33	185.91	1.49	-153.7 M
	331.00	1.51	206.30	330.99	0.99	-0.94	-0.32	0.99	198.76	1.89	-150.3 M
	362.00	1.94	209.67	361.98	1.90	-1.76	-0.76	1.92	203.33	1.42	-150.3 M
	393.00	2.50	209.69	392.95	3.07	-2.80	-1.35	3.11	205.77	1.81	-151.8 M
	428.00	3.34	208.22	427.91	4.81	-4.37	-2.21	4.90	206.89	2.41	-149.9 M
	459.00	4.19	210.05	458.84	6.79	-6.14	-3.21	6.93	207.58	2.77	-152.3 M

490.00	5.22	207.73	489.73	9.26	-8.37	-4.43	9.47	207.90	3.38	0.5 G
522.00	6.16	207.81	521.58	12.37	-11.18	-5.91	12.64	207.87	2.94	-4.6 G
554.00	7.17	207.16	553.36	16.01	-14.47	-7.62	16.36	207.78	3.16	-39.8 G
586.00	8.00	202.35	585.08	20.18	-18.31	-9.38	20.57	207.13	3.26	-18.1 G
618.00	9.27	199.79	616.72	24.96	-22.79	-11.10	25.35	205.97	4.15	-34.9 G
650.00	10.06	196.69	648.26	30.33	-27.90	-12.78	30.68	204.61	2.96	13.7 G
681.00	11.15	198.06	678.73	36.03	-33.34	-14.48	36.35	203.48	3.61	-4.8 G
712.00	12.21	197.64	709.09	42.30	-39.31	-16.41	42.60	202.65	3.43	-3.0 G
743.00	13.47	197.36	739.31	49.19	-45.88	-18.48	49.47	201.93	4.07	8.7 G
775.00	14.64	198.07	770.36	56.96	-53.29	-20.84	57.22	201.36	3.70	3.1 G
804.00	15.89	198.32	798.33	64.58	-60.54	-23.23	64.84	200.99	4.32	5.7 G
836.00	17.19	198.76	829.01	73.68	-69.18	-26.13	73.95	200.69	4.08	4.6 G
868.00	18.46	199.08	859.47	83.47	-78.44	-29.30	83.74	200.48	3.98	1.7 G
898.00	19.58	199.18	887.83	93.23	-87.68	-32.51	93.51	200.34	3.73	-41.5 G
930.00	20.42	197.08	917.90	104.16	-98.08	-35.91	104.45	200.11	3.45	-42.8 G
961.00	21.34	194.78	946.87	115.21	-108.70	-38.94	115.47	199.71	3.97	-18.6 G
993.00	22.41	193.84	976.56	127.12	-120.26	-41.88	127.34	199.20	3.52	1.4 G
1024.00	23.68	193.92	1005.09	139.25	-132.04	-44.79	139.43	198.74	4.10	-12.1 G
1088.00	25.36	193.08	1063.31	165.79	-157.86	-50.99	165.89	197.90	2.68	43.4 G
1183.00	25.41	193.19	1149.14	206.47	-197.52	-60.24	206.51	196.96	0.07	13.7 G
1279.00	26.34	193.70	1235.52	248.33	-238.27	-69.98	248.34	196.37	1.00	-6.1 G
1374.00	26.93	193.56	1320.43	290.88	-279.66	-80.02	290.88	195.97	0.62	-137.8 G
1468.00	26.24	192.13	1404.50	332.89	-320.67	-89.38	332.89	195.57	1.00	47.0 G
1563.00	26.44	192.61	1489.63	374.96	-361.84	-98.41	374.98	195.21	0.31	160.1 G
1657.00	25.03	193.82	1574.31	415.73	-401.58	-107.73	415.77	195.02	1.60	25.9 G
1752.00	25.62	194.48	1660.18	456.35	-440.98	-117.66	456.41	194.94	0.69	171.9 G
1847.00	24.62	194.82	1746.19	496.67	-480.00	-127.86	496.73	194.92	1.06	-58.1 G
1943.00	25.05	193.22	1833.31	536.96	-519.11	-137.62	537.05	194.85	0.83	-7.4 G
2038.00	25.99	192.94	1919.05	577.84	-558.98	-146.88	577.96	194.72	1.00	-24.0 G
2134.00	26.73	192.21	2005.06	620.39	-600.58	-156.16	620.55	194.58	0.84	135.3 G
2228.00	25.45	195.23	2089.49	661.69	-640.73	-165.94	661.87	194.52	1.96	18.7 G
2324.00	25.81	195.51	2176.04	703.21	-680.77	-176.95	703.39	194.57	0.40	-133.7 G

2418.00	25.56	194.90	2260.75	743.95	-720.09	-187.63	744.13	194.60	0.39	125.1 G
2482.00	25.36	195.57	2318.54	771.46	-746.63	-194.86	771.64	194.63	0.55	134.1 G
2577.00	24.04	199.01	2404.85	811.13	-784.53	-206.63	811.29	194.76	2.05	3.7 G
2674.00	24.68	199.11	2493.21	851.08	-822.35	-219.69	851.19	194.96	0.66	82.3 G
2774.00	24.80	201.02	2584.04	892.81	-861.65	-234.05	892.87	195.20	0.81	180.0 G
3187.33	0.00	201.02	2984.58	980.52	-943.86	-265.64	980.52	195.72	6.00	-159.0 M
5811.00	0.00	201.02	5608.25	980.52	-943.86	-265.64	980.52	195.72	0.00	---
Last SLB MWD										
End of Client Assumed Drop										
Projection to Client TD										

Survey Error Model: Topographic 3-D 95.00% Confidence 2.7957 sigma

Surveying Programme:

<u>MD From (ft)</u>
0.00
140.00
3187.33

<u>MD To (ft)</u>	<u>EOU Freq</u>	<u>Survey Tool Type</u>
140.00	Act-Stns	Zero Tool
3187.33	Act-Stns	MWD1
5811.00	Act-Stns	Zero Tool