



Weatherford[®]

Drilling Services

30-039 - 29983

Completion

Surface 5/N 1675/W
BHL 998/N 993/W



WILLIAMS PRODUCTION
ROSA UNIT #315-A
RIO ARRIBA COUNTY, NEW MEXICO

RCVD NOV 6 '07

OIL CONS. DIV.

DIST. 3

Submitted: October 16, 2007

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8



ROSA UNIT 315A
Section 30 T31N R 4W
5' FNL & 1675' FWL
RIO ARriba COUNTY, NM
PLAN VS. ACTUAL

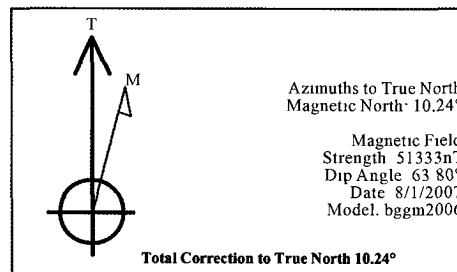


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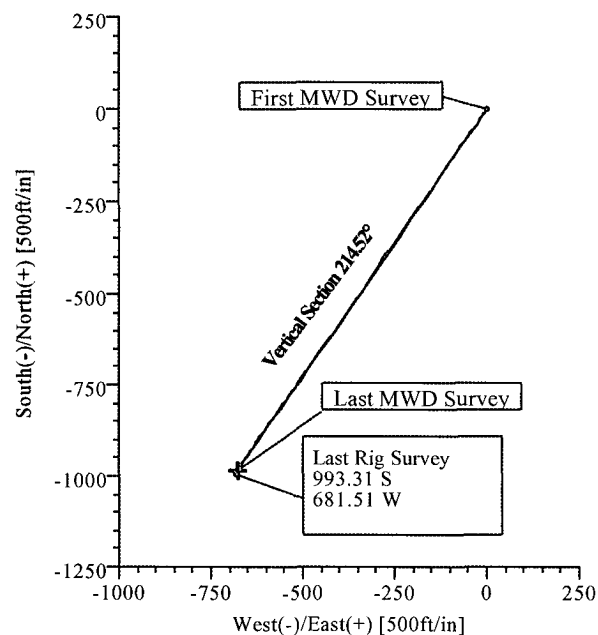
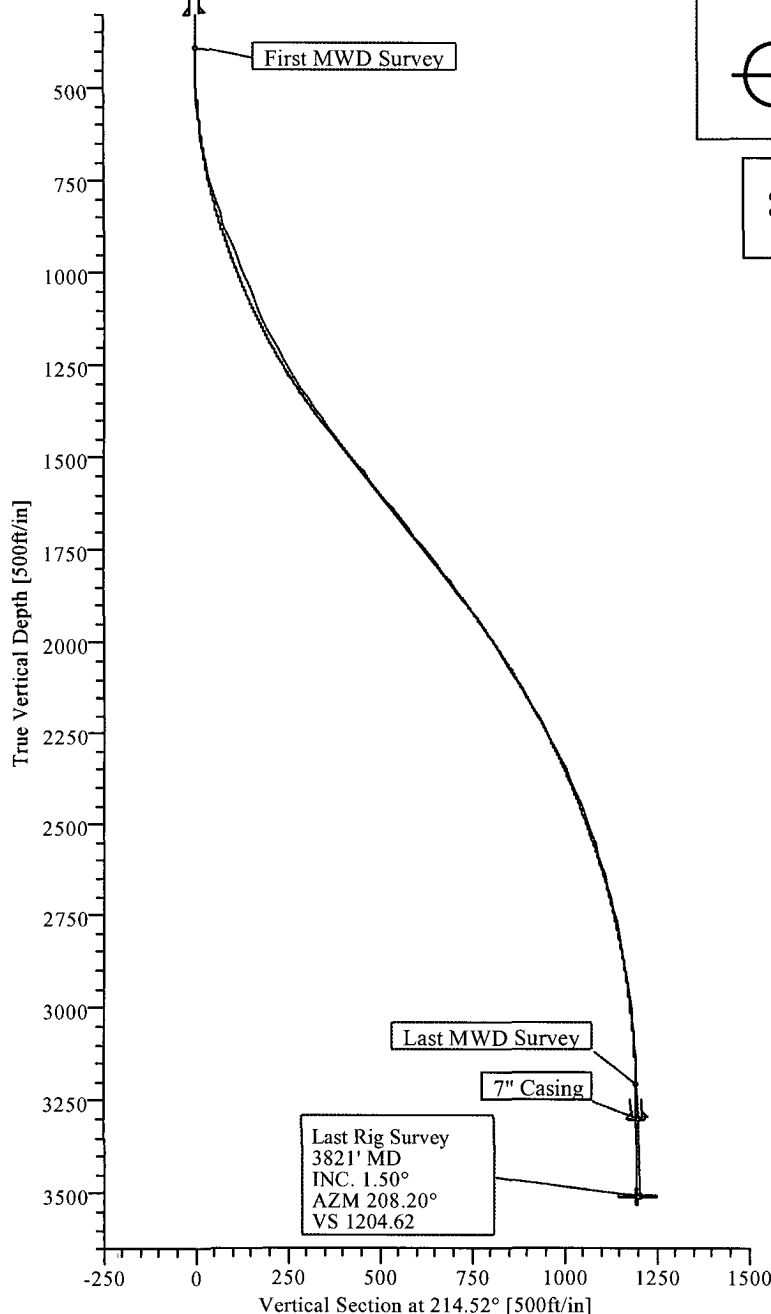
TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Int. Cs Pt	3302 00	-986.24	-678.33	36°52'30.258N	107°18'03.993W	Point
PBHL	3507 00	-986.24	-678.33	36°52'30.258N	107°18'03.993W	Circle (Radius 50)

WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Rosa Unit 315 A	0.00	0.00	2139278.99	2879438.54	36°52'40.010N	107°17'55.644W

KB ELEVATION: 6567'
GR ELEVATION: 6553'



LEGEND	
	Rosa Unit 315 A, Actual, Plan #1
	MWD Surveys





Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION	Date: 10/16/2007	Time: 16:01:07	Page: 1
Field: Rio Arriba County (NAD 83)	Co-ordinate(NE) Reference: Site: Rosa Unit 315 A, True North		
Site: Rosa Unit 315 A	Vertical (TVD) Reference: SITE 6567.0		
Well: Rosa Unit 315 A	Section (VS) Reference: Well (0 00N,0.00E,214.52Azi)		
Wellpath: Actual	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Field: Rio Arriba County (NAD 83)

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Western Zone
Coordinate System: Site Centre
Geomagnetic Model: bggm2006

Site: Rosa Unit 315 A
 5' FNL & 1675' FWL
 Rio Arriba, NM

Site Position:	Northing: 2139278.99 ft	Latitude: 36 52 40.010 N
From: Geographic	Easting: 2879438.54 ft	Longitude: 107 17 55.644 W
Position Uncertainty: 0.00 ft		North Reference: True
Ground Level: 6553.00 ft		Grid Convergence: 0.32 deg

Well: Rosa Unit 315 A
 S well

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 2139278.99 ft	Latitude: 36 52 40.010 N
+E/-W 0.00 ft	Easting: 2879438.54 ft	Longitude: 107 17 55.644 W
Position Uncertainty: 0.00 ft		

Wellpath: Actual

Current Datum: SITE
Magnetic Data: 8/1/2007
Field Strength: 51333 nT
Vertical Section: Depth From (TVD)
 ft

Height 6567.00 ft

+N/-S
ft

0.00 0.00 0.00 214.52

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 10.24 deg
Mag Dip Angle: 63.80 deg
+E/-W
 ft
Direction
 deg

Survey: MWD Surveys

Start Date: 8/4/2007

Company: Weatherford Drilling Services
Tool:

Engineer:
Tied-to: From Surface

Survey: MWD Surveys

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9 5/8" First MWD Survey
300.00	0.29	145.82	300.00	-0.64	0.43	0.28	0.10	0.10	0.00	
388.00	0.38	145.82	388.00	-1.06	0.72	0.47	0.10	0.10	0.00	
418.00	0.25	189.20	418.00	-1.21	0.77	0.56	0.87	-0.43	144.60	
449.00	0.69	244.45	449.00	-1.36	0.59	0.79	1.89	1.42	178.23	
479.00	1.94	231.95	478.99	-1.75	0.03	1.43	4.25	4.17	-41.67	
510.00	3.31	223.32	509.95	-2.72	-1.00	2.81	4.59	4.42	-27.84	
541.00	4.44	220.20	540.88	-4.29	-2.39	4.89	3.71	3.65	-10.06	
570.00	5.88	216.70	569.76	-6.34	-4.00	7.49	5.08	4.97	-12.07	
600.00	7.69	218.07	599.55	-9.15	-6.16	11.03	6.06	6.03	4.57	
631.00	8.69	216.20	630.24	-12.68	-8.82	15.44	3.34	3.23	-6.03	
662.00	10.06	214.70	660.82	-16.79	-11.74	20.49	4.49	4.42	-4.84	
692.00	11.75	211.95	690.28	-21.54	-14.85	26.16	5.89	5.63	-9.17	
723.00	13.31	213.82	720.54	-27.18	-18.51	32.88	5.20	5.03	6.03	
754.00	14.88	217.07	750.61	-33.32	-22.90	40.43	5.67	5.06	10.48	
784.00	16.50	216.82	779.49	-39.81	-27.77	48.54	5.40	5.40	-0.83	
815.00	18.31	215.82	809.07	-47.28	-33.26	57.80	5.92	5.84	-3.23	
847.00	19.38	215.82	839.35	-55.66	-39.31	68.14	3.34	3.34	0.00	
876.00	19.56	215.32	866.69	-63.52	-44.93	77.80	0.85	0.62	-1.72	
907.00	20.56	215.95	895.81	-72.16	-51.13	88.43	3.30	3.23	2.03	
937.00	21.25	214.70	923.84	-80.90	-57.32	99.13	2.74	2.30	-4.17	
966.00	22.25	215.20	950.77	-89.71	-63.47	109.88	3.51	3.45	1.72	
998.00	22.56	214.95	980.36	-99.69	-70.48	122.08	1.01	0.97	-0.78	
1028.00	22.25	214.82	1008.09	-109.07	-77.02	133.51	1.05	-1.03	-0.43	



Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION	Date: 10/16/2007	Time: 16:01:07	Page: 2
Field: Rio Arriba County (NAD 83)	Co-ordinate(NE) Reference:	Site: Rosa Unit 315 A, True North	
Site: Rosa Unit 315 A	Vertical (TVD) Reference:	SITE 6567.0	
Well: Rosa Unit 315 A	Section (VS) Reference:	Well (0.00N,0.00E,214 52Azi)	
Wellpath: Actual	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: MWD Surveys

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1061.00	22.13	213.45	1038.65	-119.38	-84.01	145.97	1.61	-0.36	-4.15	
1091.00	22.19	213.32	1066.43	-128.83	-90.24	157.29	0.26	0.20	-0.43	
1122.00	22.81	213.32	1095.07	-138.74	-96.76	169.15	2.00	2.00	0.00	
1154.00	24.50	213.07	1124.38	-149.49	-103.79	181.98	5.29	5.28	-0.78	
1186.00	26.31	213.70	1153.29	-160.95	-111.34	195.71	5.72	5.66	1.97	
1218.00	27.75	214.07	1181.79	-173.02	-119.45	210.25	4.53	4.50	1.16	
1249.00	28.81	214.07	1209.09	-185.19	-127.68	224.94	3.42	3.42	0.00	
1281.00	30.31	213.32	1236.92	-198.32	-136.43	240.72	4.83	4.69	-2.34	
1312.00	31.88	214.95	1263.47	-211.57	-145.42	256.73	5.75	5.06	5.26	
1344.00	32.56	215.87	1290.54	-225.47	-155.31	273.79	2.62	2.12	2.87	
1375.00	33.44	215.95	1316.54	-239.15	-165.21	290.67	2.84	2.84	0.26	
1406.00	33.69	214.95	1342.37	-253.11	-175.15	307.80	1.96	0.81	-3.23	
1438.00	35.13	214.82	1368.77	-267.94	-185.49	325.88	4.51	4.50	-0.41	
1469.00	35.94	214.57	1394.00	-282.76	-195.75	343.90	2.65	2.61	-0.81	
1500.00	37.19	215.45	1418.90	-297.88	-206.34	362.37	4.37	4.03	2.84	
1532.00	37.81	215.70	1444.28	-313.73	-217.68	381.84	2.00	1.94	0.78	
1563.00	38.50	215.82	1468.66	-329.27	-228.87	400.99	2.24	2.23	0.39	
1594.00	38.25	215.95	1492.96	-344.86	-240.15	420.23	0.85	-0.81	0.42	
1625.00	38.63	215.20	1517.24	-360.54	-251.36	439.50	1.94	1.23	-2.42	
1657.00	38.13	214.57	1542.33	-376.83	-262.72	459.37	1.98	-1.56	-1.97	
1688.00	38.44	214.95	1566.66	-392.61	-273.68	478.57	1.26	1.00	1.23	
1719.00	38.63	214.82	1590.91	-408.45	-284.72	497.89	0.67	0.61	-0.42	
1751.00	39.38	213.95	1615.78	-425.08	-296.09	518.03	2.90	2.34	-2.72	
1782.00	39.13	213.32	1639.78	-441.41	-306.96	537.64	1.52	-0.81	-2.03	
1814.00	39.63	213.32	1664.52	-458.37	-318.11	557.94	1.56	1.56	0.00	
1847.00	38.94	213.82	1690.06	-475.78	-329.66	578.83	2.30	-2.09	1.52	
1879.00	38.88	213.95	1714.96	-492.47	-340.87	598.93	0.32	-0.19	0.41	
1910.00	38.56	213.95	1739.15	-508.55	-351.70	618.32	1.03	-1.03	0.00	
1942.00	37.44	214.57	1764.36	-524.84	-362.79	638.02	3.70	-3.50	1.94	
1973.00	37.81	213.95	1788.92	-540.48	-373.44	656.94	1.71	1.19	-2.00	
2005.00	37.38	214.20	1814.27	-556.65	-384.38	676.46	1.43	-1.34	0.78	
2036.00	36.31	214.45	1839.08	-572.00	-394.86	695.05	3.49	-3.45	0.81	
2067.00	36.06	214.70	1864.10	-587.07	-405.25	713.36	0.94	-0.81	0.81	
2098.00	35.19	214.95	1889.30	-601.89	-415.56	731.41	2.85	-2.81	0.81	
2130.00	34.94	215.07	1915.49	-616.95	-426.11	749.80	0.81	-0.78	0.37	
2161.00	34.56	215.20	1940.96	-631.40	-436.28	767.46	1.25	-1.23	0.42	
2193.00	33.75	215.32	1967.44	-646.07	-446.65	785.43	2.54	-2.53	0.37	
2225.00	33.63	215.45	1994.07	-660.54	-456.93	803.18	0.44	-0.37	0.41	
2257.00	33.56	214.45	2020.72	-675.05	-467.07	820.88	1.74	-0.22	-3.12	
2286.00	32.63	214.32	2045.02	-688.12	-476.01	836.72	3.22	-3.21	-0.45	
2317.00	32.13	214.20	2071.20	-701.84	-485.36	853.32	1.63	-1.61	-0.39	
2348.00	31.56	213.70	2097.53	-715.41	-494.49	869.67	2.03	-1.84	-1.61	
2380.00	31.13	214.82	2124.86	-729.17	-503.86	886.32	2.26	-1.34	3.50	
2412.00	29.63	215.20	2152.46	-742.42	-513.15	902.50	4.73	-4.69	1.19	
2443.00	29.44	215.57	2179.44	-754.88	-521.99	917.78	0.85	-0.61	1.19	
2475.00	28.94	215.95	2207.37	-767.55	-531.11	933.38	1.67	-1.56	1.19	
2507.00	28.56	215.70	2235.43	-780.03	-540.12	948.77	1.25	-1.19	-0.78	
2538.00	27.50	215.20	2262.79	-791.89	-548.57	963.34	3.50	-3.42	-1.61	
2570.00	26.44	215.82	2291.31	-803.71	-557.00	977.85	3.43	-3.31	1.94	
2602.00	25.19	214.70	2320.12	-815.08	-565.05	991.78	4.19	-3.91	-3.50	
2634.00	24.50	214.82	2349.15	-826.13	-572.71	1005.22	2.16	-2.16	0.37	
2666.00	23.06	215.82	2378.44	-836.66	-580.17	1018.13	4.67	-4.50	3.12	
2697.00	22.19	215.20	2407.05	-846.37	-587.10	1030.05	2.91	-2.81	-2.00	



Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION	Date: 10/16/2007	Time: 16:01:07	Page: 3
Field: Rio Arriba County (NAD 83)	Co-ordinate(NE) Reference:	Site: Rosa Unit 315 A, True North	
Site: Rosa Unit 315 A	Vertical (TVD) Reference:	SITE: 6567.0	
Well: Rosa Unit 315 A	Section (VS) Reference:	Well: (0.00N,0.00E,214 52Azi)	
Wellpath: Actual	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: MWD Surveys

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2728.00	21.88	214.95	2435.79	-855.88	-593.78	1041.68	1.04	-1.00	-0.81	
2758.00	20.88	213.82	2463.72	-864.91	-599.96	1052.61	3.60	-3.33	-3.77	
2789.00	19.88	213.70	2492.78	-873.88	-605.96	1063.41	3.23	-3.23	-0.39	
2820.00	19.25	213.95	2521.99	-882.51	-611.74	1073.79	2.05	-2.03	0.81	
2851.00	18.38	213.45	2551.33	-890.82	-617.29	1083.79	2.85	-2.81	-1.61	
2883.00	17.50	212.95	2581.78	-899.07	-622.68	1093.64	2.79	-2.75	-1.56	
2914.00	16.63	212.57	2611.41	-906.72	-627.61	1102.73	2.83	-2.81	-1.23	
2945.00	15.50	211.45	2641.20	-913.99	-632.16	1111.30	3.78	-3.65	-3.61	
2977.00	14.50	211.20	2672.11	-921.07	-636.46	1119.57	3.13	-3.12	-0.78	
3009.00	13.88	210.57	2703.13	-927.80	-640.49	1127.40	2.00	-1.94	-1.97	
3040.00	13.13	211.57	2733.28	-934.00	-644.22	1134.63	2.53	-2.42	3.23	
3072.00	12.19	213.20	2764.50	-939.92	-647.98	1141.63	3.14	-2.94	5.09	
3104.00	11.69	214.82	2795.81	-945.41	-651.68	1148.25	1.88	-1.56	5.06	
3135.00	11.38	214.45	2826.18	-950.51	-655.20	1154.45	1.03	-1.00	-1.19	
3166.00	10.63	213.80	2856.61	-955.41	-658.52	1160.37	2.45	-2.42	-2.10	
3198.00	9.94	213.45	2888.10	-960.17	-661.69	1166.08	2.17	-2.16	-1.09	
3226.00	8.88	213.70	2915.72	-963.98	-664.22	1170.66	3.79	-3.79	0.89	
3256.00	7.81	213.07	2945.40	-967.62	-666.61	1175.01	3.58	-3.57	-2.10	
3288.00	7.50	210.82	2977.12	-971.23	-668.87	1179.27	1.35	-0.97	-7.03	
3319.00	6.50	212.82	3007.88	-974.44	-670.86	1183.04	3.32	-3.23	6.45	
3350.00	5.06	210.32	3038.73	-977.10	-672.50	1186.16	4.71	-4.65	-8.06	
3382.00	4.56	210.82	3070.61	-979.41	-673.86	1188.84	1.57	-1.56	1.56	
3414.00	4.38	210.57	3102.52	-981.55	-675.14	1191.33	0.57	-0.56	-0.78	
3444.00	3.88	209.57	3132.44	-983.42	-676.22	1193.48	1.68	-1.67	-3.33	
3476.00	3.13	208.82	3164.38	-985.13	-677.18	1195.43	2.35	-2.34	-2.34	
3507.00	1.94	203.95	3195.35	-986.35	-677.80	1196.79	3.90	-3.84	-15.71	
3519.00	1.38	208.20	3207.34	-986.66	-677.95	1197.13	4.77	-4.67	35.42	Last MWD Survey
3568.00	1.38	208.20	3256.33	-987.70	-678.51	1198.30	0.00	0.00	0.00	
3613.69	1.40	208.20	3302.00	-988.68	-679.03	1199.40	0.05	0.05	0.00	7" Casing
3821.00	1.50	208.20	3509.25	-993.31	-681.51	1204.62	0.05	0.05	0.00	Last Rig Survey

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
300.00	300.00	9.625	12.250	9 5/8"
3613.69	3302.00	0.000	0.000	7" Casing

Annotation

MD ft	TVD ft	
388.00	388.00	First MWD Survey
3519.00	3207.34	Last MWD Survey
3821.00	3509.25	Last Rig Survey