

RCVD NOV 2 06

OIL CONS. DIV.

DIST. 3

API # 30-039-29782

Williams Production Company

Rio Arriba County, NM.

Sec. 11-T31N-R4W

Rosa Unit #347A

Plan #2

Design: MWD Survey

Surface 2370/N 2595/W
Horiz BHL1 2066/N 2280/W 4100 Md 3889Tvd
BHL2 1286/N 1284/W 5378 Md 3425Tvd

Not NSL

Sperry Drilling Services

Standard Report

23 October, 2006

Well Coordinates: 2,152,855.24 N, 2,901,253.89 E (36° 54' 53.00" N, 107° 13' 26.00" W)
Ground Level: 7,018.00 ft

Local Coordinate Origin:

Centered on Well Rosa Unit #347A

Viewing Datum:

RKB @ 7032.00ft (Original Well Elev)

TVDs to System:

North Reference:

Unit System:

County, NM.

API - US Survey Feet

Geodetic Scale Factor Applied: W

Version: 2003.14 Build: 57

Survey

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11/16/06

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Design Report for Rosa Unit #347A - Plan #2 - MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
962.00	0.28	258.88	962.00	-0.45	-2.31	1.44	0.03
First MWD Survey							
2,089.00	1.33	168.31	2,088.89	-13.79	-2.36	-7.31	0.12
3,227.00	0.35	115.78	3,226.77	-28.24	3.45	-21.20	0.10
3,257.00	0.35	77.99	3,256.76	-28.26	3.62	-21.34	0.76
3,289.00	0.35	16.64	3,288.76	-28.15	3.74	-21.36	1.12
3,320.00	2.02	319.16	3,319.76	-27.64	3.41	-20.78	5.99
3,352.00	5.10	313.88	3,351.69	-26.23	2.02	-18.80	9.67
3,383.00	8.26	313.88	3,382.48	-23.73	-0.58	-15.20	10.19
3,414.00	11.93	317.03	3,412.99	-19.84	-4.37	-9.78	11.97
3,444.00	15.82	319.06	3,442.11	-14.48	-9.17	-2.64	13.07
3,476.00	18.72	323.02	3,472.67	-7.08	-15.11	6.71	9.77
3,507.00	20.74	327.95	3,501.85	1.55	-21.02	16.83	8.44
3,539.00	23.29	330.41	3,531.51	11.85	-27.15	28.24	8.47
3,571.00	26.10	330.41	3,560.58	23.48	-33.75	40.86	8.78
3,602.00	29.18	328.30	3,588.04	35.84	-41.09	54.53	10.42
3,634.00	32.22	324.19	3,615.56	49.40	-50.19	70.30	11.54
3,665.00	34.98	321.17	3,641.38	63.03	-60.60	87.11	10.41
3,696.00	37.31	317.73	3,666.41	76.91	-72.49	105.20	9.96
3,728.00	40.21	316.13	3,691.36	91.53	-86.18	125.13	9.59
3,759.00	43.81	316.23	3,714.39	106.50	-100.54	145.80	11.61
3,790.00	47.12	316.66	3,736.13	122.51	-115.76	167.80	10.72
3,821.00	50.36	315.11	3,756.57	139.23	-131.98	191.02	11.11
3,852.00	52.29	312.65	3,775.95	156.00	-149.43	215.19	8.78
3,882.00	53.96	310.54	3,793.95	171.93	-167.38	239.19	7.91
3,914.00	56.86	311.25	3,812.11	189.17	-187.29	265.53	9.24
3,945.00	59.68	312.30	3,828.42	206.74	-206.95	291.89	9.54
3,977.00	63.46	313.18	3,843.65	225.84	-227.61	320.02	12.06
4,008.00	65.83	312.13	3,856.92	244.82	-248.21	348.02	8.23
4,040.00	69.17	311.60	3,869.17	264.54	-270.22	377.58	10.55
4,071.00	71.81	311.25	3,879.52	283.87	-292.13	406.79	8.58
4,103.00	75.41	311.07	3,888.55	304.08	-315.24	437.49	11.26
4,135.00	78.40	311.25	3,895.80	324.59	-338.70	468.65	9.36
4,165.00	80.07	311.07	3,901.40	343.98	-360.89	498.12	5.60
4,197.00	80.95	311.07	3,906.67	364.72	-384.69	529.68	2.75
4,228.00	82.88	310.90	3,911.03	384.85	-407.86	560.37	6.25
4,259.00	84.57	310.85	3,914.42	405.01	-431.15	591.19	5.45
4,291.00	85.92	310.94	3,917.08	425.89	-455.26	623.08	4.23
4,309.00	87.20	311.00	3,918.16	437.87	-468.83	641.04	7.12
4,384.00	91.17	310.30	3,919.22	486.51	-525.71	716.02	5.37
4,416.00	89.35	310.62	3,919.08	507.28	-550.06	748.01	5.77
4,448.00	86.92	311.07	3,920.12	528.18	-574.25	779.99	7.72
4,480.00	84.54	310.20	3,922.50	548.97	-598.46	811.90	7.92
4,512.00	84.66	309.40	3,925.51	569.36	-622.94	843.75	2.52
4,543.00	87.87	309.84	3,927.53	589.09	-646.77	874.67	10.45
4,575.00	90.18	310.67	3,928.08	609.76	-671.18	906.65	7.67
4,606.00	89.54	311.52	3,928.15	630.44	-694.54	937.65	3.43
4,638.00	86.18	309.75	3,929.35	650.96	-718.81	969.62	11.87

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
962.00	962.00	-0.45	-2.31	First MWD Survey
5,310.00	3,925.19	1,051.90	-1,257.55	Final MWD Survey
5,378.00	3,925.18	1,093.59	-1,311.27	Survey Projection to TD

DATA - Plot A2 - MWD Survey

Vertical Section Information

Angle Type	Target	Origin		Start TVD (ft)
		+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	0.00	0.00	0.00

Survey tool program

[illegible]

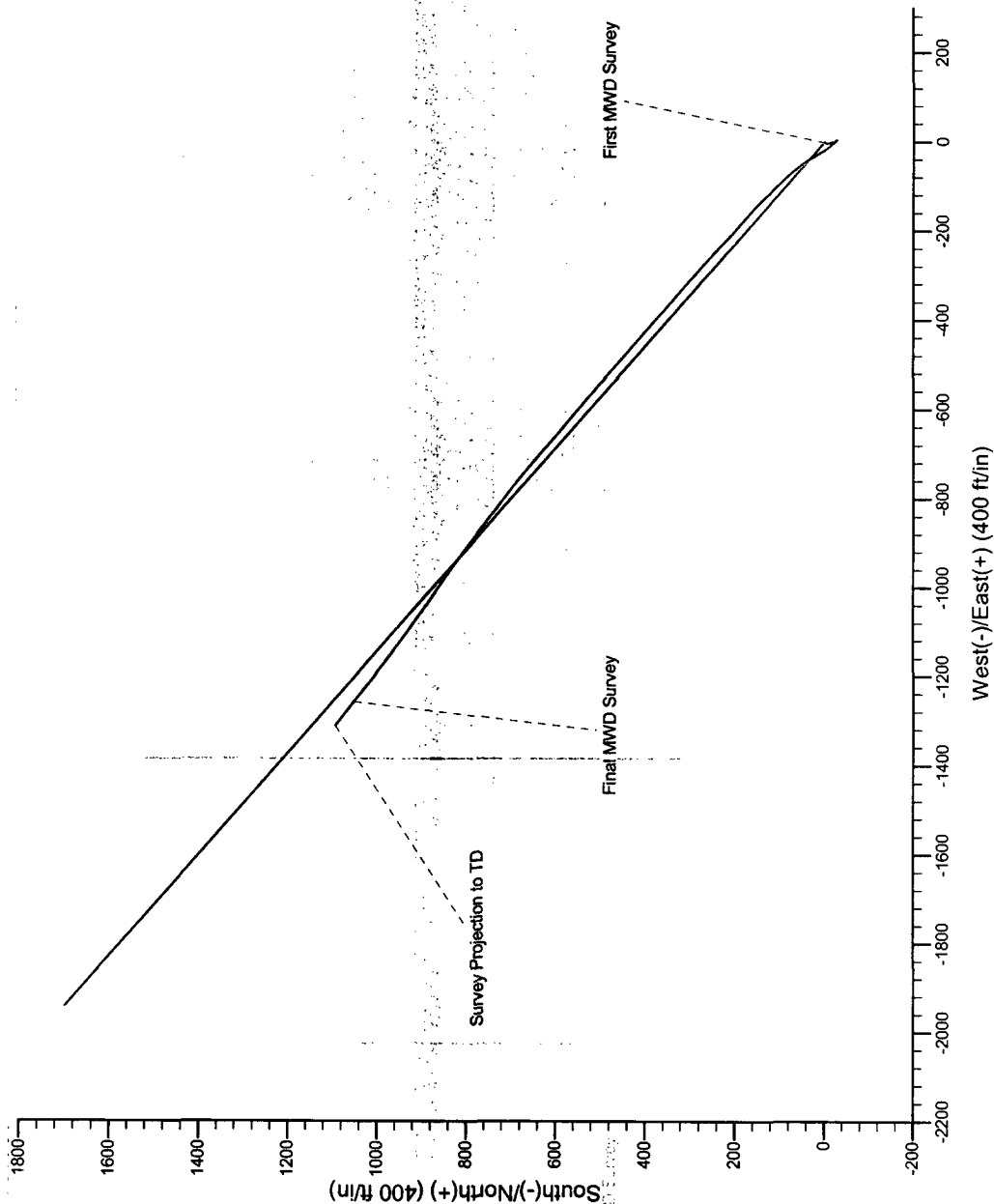
Project: Rio Arriba County, NM.
Site: Sec. 11-T31N-R4W
Well: Rosa Unit #347A

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LEGEND

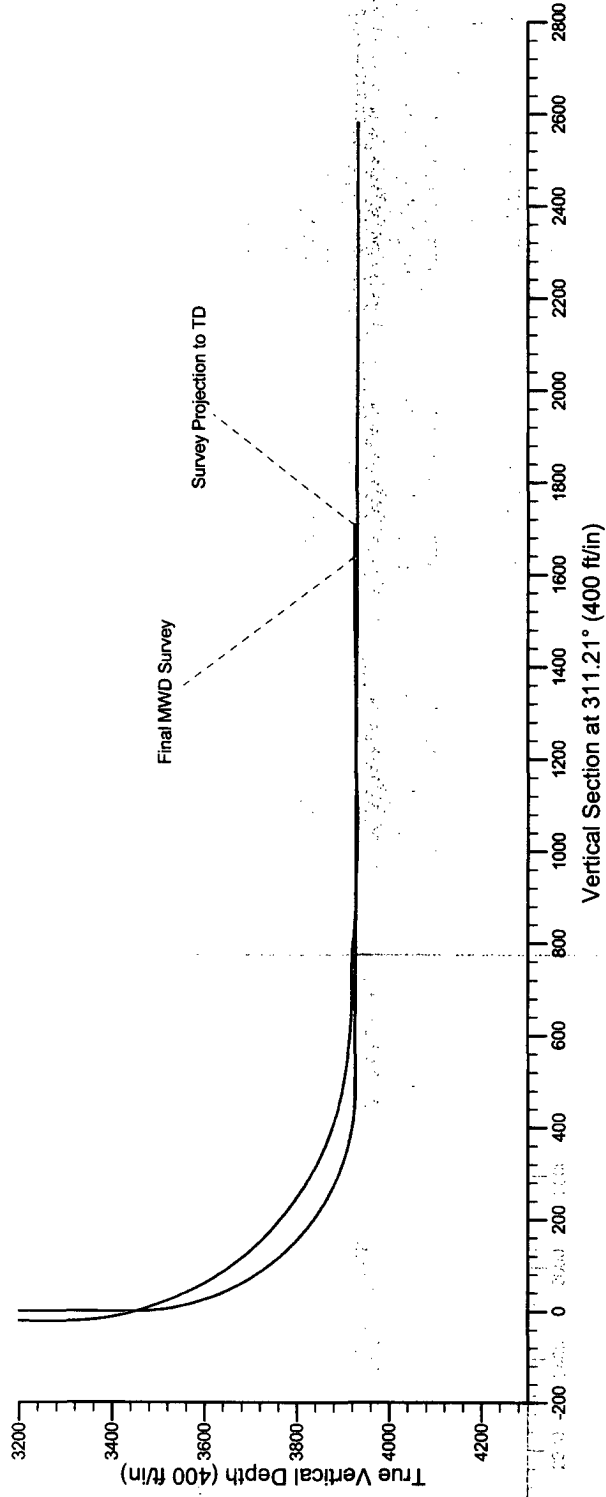
- Rosa Unit #347A, Plan #2, Plan #1 Proposal V0
- MWD Survey



Project: Rio Arriba County, NM.
Site: Sec. 11-T31N-R4W
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LEGEND

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