



**Scientific
Drilling**

Directional Survey Certification

RE: Williams Production Co. Operator
Rosa Unit #371 Well Name & No.
Rio Arriba County, NM Location
41DEF0802198 SDI Job No.

Srf: 970/S 1640/W
 BHL 2001/N 682/W

N-13-31N-5W 30-039-27239

I, Judi Moore, having personal knowledge of all the facts, hereby
 certify that the attached directional survey run from a measured depth of 697 feet to a
 measured depth of 5621 feet is true and correct as determined from all available records.

Judi Moore

Signature

Well Planner

Title

SDI

Company

State of : Wyoming }

County of : Natrona }

ss



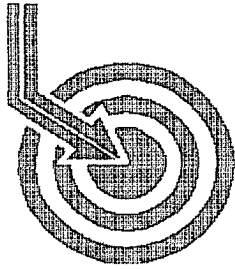
On this 10th day of September, 2002, before me personally appeared
Judi Moore to me known as the person described in and who executed the foregoing
 instrument and acknowledged that (s)he executed the same as his/her free act and deed.

Seal

Summer J. Whitehouse
 Notary Public

Aug 18, 2004
 My Commission Expires





**Scientific
Drilling**

DIRECTIONAL SURVEY REPORT

Prepared For

WILLIAMS PRODUCTION CO.

Rosa Unit #371

Rio Arriba County, NM

Prepared By:

Judi Moore - Well Planner

Scientific Drilling International

Rocky Mountain District

Scientific Drilling International
7237 W. Barton Rd., Casper, WY 82604
P.O. Box 1600, Mills, WY 82644
(307) 472-6621
judimoore_sdi@attbi.com



Scientific Drilling Survey Completion Report

Company: Williams Production Co. Field: Rio Arriba County, NM Site: Rosa Unit #371 Well: #371 Wellpath: OH		Date: 9/8/2002 Co-ordinate(NE) Reference: Well: #371, True North Vertical (TVD) Reference: SITE 0.0 Section (VS) Reference: Well (0.00N,0.00E,337.05Azi) Survey Calculation Method: Minimum Curvature		Time: 09:05:08 Page: 1 Db: Sybase						
Survey: Survey #1 Company: Scientific Drilling Tool: MWD,		Start Date: 8/30/2002 Engineer: Sears/D.Bayert Tied-to: From Surface								
Field: Rio Arriba County, NM										
Map System: US State Plane Coordinate System 1927 Geo Datum: NAD27 (Clarke 1866) Sys Datum: Mean Sea Level		Map Zone: New Mexico, Central Zone Coordinate System: Well Centre Geomagnetic Model: igrf2000								
Site: Rosa Unit #371 SHL SEC.13,T31N,R5W 970'FNL & 1640'FWL										
Site Position: From: Lease Line Position Uncertainty: 0.00 ft Ground Level: 0.00 ft		Northing: ft Easting: ft Latitude: Longitude: North Reference: True Grid Convergence: -0.64 deg								
Well: #371										
Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft		Slot Name: Latitude: 36 53 42.000 N Longitude: 107 18 59.000 W								
Wellpath: OH										
Current Datum: SITE Magnetic Data: 8/19/2002 Field Strength: 51916 nT Vertical Section: Depth From (TVD) ft		Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 10.92 deg Mag Dip Angle: 63.93 deg +E/-W Direction deg								
0.00		0.00 0.00 337.05								
Survey										
Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	CLSD ft	CLSA deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
697.00	0.60	146.00	696.99	-3.58	-3.03	2.04	0.09	697.00	3.65	146.00
1232.00	1.30	71.00	1231.93	-6.75	-3.37	9.35	0.24	535.00	9.94	109.84
1736.00	0.20	193.00	1735.89	-7.86	-2.37	14.55	0.28	504.00	14.75	99.24
1988.00	0.90	356.00	1987.88	-6.34	-0.82	14.32	0.43	252.00	14.34	93.29
2239.00	0.30	176.00	2238.87	-5.10	0.49	14.23	0.48	251.00	14.23	88.03
2460.00	0.60	151.00	2459.86	-6.79	-1.10	14.83	0.16	221.00	14.87	94.24
2642.00	0.30	320.70	2641.86	-7.28	-1.56	14.99	0.49	182.00	15.07	95.96
2674.00	2.90	338.70	2673.84	-6.40	-0.75	14.64	8.18	32.00	14.66	92.92
2705.00	5.80	340.20	2704.75	-4.05	1.46	13.82	9.36	31.00	13.90	83.97
2737.00	6.50	338.30	2736.57	-0.62	4.66	12.61	2.28	32.00	13.44	69.70
2768.00	6.00	338.30	2767.38	2.75	7.80	11.36	1.61	31.00	13.78	55.53
2799.00	5.70	336.60	2798.22	5.91	10.72	10.15	1.12	31.00	14.76	43.44
2831.00	5.70	336.80	2830.06	9.09	13.64	8.89	0.06	32.00	16.28	33.10
2862.00	5.60	336.60	2860.91	12.14	16.44	7.68	0.33	31.00	18.15	25.05
2893.00	5.80	335.00	2891.76	15.22	19.25	6.42	0.82	31.00	20.29	18.45
2925.00	8.20	337.00	2923.52	19.12	22.81	4.85	7.54	32.00	23.32	11.99
2956.00	11.90	338.20	2954.04	24.53	27.82	2.79	11.95	31.00	27.96	5.74
2988.00	15.50	339.40	2985.12	32.10	34.89	0.06	11.28	32.00	34.89	0.10
3019.00	19.00	339.50	3014.72	41.28	43.49	-3.16	11.29	31.00	43.61	355.84
3051.00	22.70	340.10	3044.62	52.66	54.18	-7.09	11.58	32.00	54.64	352.55
3082.00	26.40	340.70	3072.82	65.51	66.31	-11.40	11.96	31.00	67.29	350.24
3114.00	29.90	340.90	3101.03	80.57	80.57	-16.37	10.94	32.00	82.22	348.52
3143.00	33.20	340.20	3125.74	95.72	94.87	-21.42	11.45	29.00	97.26	347.28



Scientific Drilling Survey Completion Report

Company: Williams Production Co.
Field: Rio Arriba County, NM
Site: Rosa Unit #371
Well: #371
Wellpath: OH

Date: 9/8/2002 Time: 09:05:08 Page: 2
Co-ordinate(NE) Reference: Well: #371, True North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,337.05Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	ClSD ft	ClSA deg
3175.00	36.90	338.40	3151.93	114.08	112.06	-27.93	12.00	32.00	115.48	346.00
3207.00	40.80	337.40	3176.85	134.14	130.65	-35.49	12.34	32.00	135.38	344.80
3238.00	45.10	337.00	3199.53	155.26	150.11	-43.67	13.90	31.00	156.34	343.78
3269.00	49.50	336.90	3220.55	178.04	171.07	-52.59	14.20	31.00	178.97	342.91
3301.00	53.60	337.30	3240.44	203.09	194.15	-62.34	12.85	32.00	203.92	342.20
3332.00	57.70	337.30	3257.93	228.68	217.76	-72.21	13.23	31.00	229.42	341.65
3364.00	61.90	336.60	3274.02	256.33	243.20	-83.04	13.26	32.00	256.99	341.15
3395.00	66.50	336.10	3287.51	284.23	268.76	-94.24	14.91	31.00	284.80	340.68
3427.00	70.80	336.60	3299.16	314.03	296.05	-106.19	13.52	32.00	314.52	340.27
3458.00	75.40	336.80	3308.17	343.68	323.29	-117.92	14.85	31.00	344.12	339.96
3490.00	79.10	337.30	3315.23	374.88	352.02	-130.08	11.66	32.00	375.29	339.72
3522.00	81.00	337.40	3320.76	406.40	381.11	-142.22	5.95	32.00	406.78	339.54
3587.00	85.60	335.50	3328.34	470.93	440.27	-168.01	7.65	65.00	471.24	339.11
3619.00	86.00	338.10	3330.69	502.84	469.60	-180.58	8.20	32.00	503.13	338.97
3650.00	86.80	336.60	3332.63	533.78	498.15	-192.50	5.48	31.00	534.05	338.87
3682.00	88.50	335.00	3333.94	565.74	527.31	-205.60	7.29	32.00	565.98	338.70
3713.00	90.10	332.20	3334.32	596.68	555.07	-219.38	10.40	31.00	596.86	338.43
3745.00	90.80	331.30	3334.07	628.54	583.26	-234.53	3.56	32.00	628.65	338.09
3777.00	90.10	333.00	3333.82	660.42	611.55	-249.48	5.75	32.00	660.48	337.81
3809.00	87.00	330.30	3334.63	692.27	639.70	-264.66	12.84	32.00	692.29	337.52
3841.00	88.10	330.10	3336.00	724.01	667.44	-280.55	3.49	32.00	724.01	337.20
3872.00	89.80	327.10	3336.57	754.66	693.89	-296.70	11.12	31.00	754.67	336.85
3904.00	91.30	327.20	3336.26	786.18	720.78	-314.06	4.70	32.00	786.22	336.46
3935.00	90.90	328.30	3335.66	816.77	746.99	-330.59	3.78	31.00	816.87	336.13
3968.00	90.20	330.30	3335.35	849.46	775.36	-347.44	6.42	33.00	849.65	335.86
4000.00	91.80	330.10	3334.79	881.23	803.12	-363.34	5.04	32.00	881.49	335.66
4031.00	90.40	331.90	3334.19	912.05	830.23	-378.37	7.36	31.00	912.38	335.50
4062.00	90.50	332.60	3333.95	942.94	857.66	-392.80	2.28	31.00	943.33	335.39
4094.00	90.10	335.10	3333.78	974.89	886.39	-406.90	7.91	32.00	975.32	335.34
4126.00	88.20	339.80	3334.26	1006.87	915.93	-419.17	15.84	32.00	1007.28	335.41
4158.00	88.00	339.50	3335.32	1038.82	945.91	-430.29	1.13	32.00	1039.18	335.54
4190.00	88.70	339.50	3336.24	1070.78	975.87	-441.49	2.19	32.00	1071.09	335.66
4221.00	88.90	341.80	3336.89	1101.71	1005.11	-451.76	7.45	31.00	1101.97	335.80
4253.00	88.20	338.90	3337.70	1133.64	1035.24	-462.52	9.32	32.00	1133.86	335.93
4285.00	88.50	339.40	3338.62	1165.61	1065.13	-473.90	1.82	32.00	1165.80	336.01
4317.00	87.60	341.40	3339.71	1197.53	1095.26	-484.63	6.85	32.00	1197.69	336.13
4348.00	87.50	342.00	3341.03	1228.40	1124.66	-494.35	1.96	31.00	1228.51	336.27
4380.00	87.30	339.20	3342.49	1260.30	1154.81	-504.97	8.76	32.00	1260.39	336.38
4411.00	86.70	341.10	3344.11	1291.21	1183.93	-515.48	6.42	31.00	1291.28	336.47
4443.00	86.50	341.70	3346.01	1323.07	1214.20	-525.67	1.97	32.00	1323.11	336.59
4475.00	88.80	341.40	3347.32	1354.94	1244.53	-535.79	7.25	32.00	1354.96	336.71
4507.00	89.50	340.90	3347.79	1386.85	1274.81	-546.13	2.69	32.00	1386.86	336.81
4539.00	90.60	341.20	3347.77	1418.77	1305.07	-556.52	3.56	32.00	1418.78	336.91
4571.00	91.20	341.20	3347.26	1450.69	1335.36	-566.83	1.87	32.00	1450.69	337.00
4603.00	90.20	340.20	3346.87	1482.62	1365.56	-577.40	4.42	32.00	1482.62	337.08
4635.00	90.10	338.90	3346.79	1514.59	1395.54	-588.59	4.07	32.00	1514.59	337.13
4666.00	89.90	337.30	3346.79	1545.58	1424.31	-600.15	5.20	31.00	1545.58	337.15
4698.00	89.70	338.60	3346.90	1577.58	1453.96	-612.16	4.11	32.00	1577.58	337.17
4730.00	90.50	339.80	3346.84	1609.55	1483.88	-623.52	4.51	32.00	1609.56	337.21
4793.00	90.20	338.00	3346.46	1672.52	1542.65	-646.20	2.90	63.00	1672.53	337.27
4857.00	90.90	337.70	3345.85	1736.51	1601.92	-670.33	1.19	64.00	1736.52	337.29
4921.00	91.40	338.60	3344.56	1800.48	1661.31	-694.15	1.61	64.00	1800.50	337.32



Scientific Drilling Survey Completion Report

Company: Williams Production Co.
Field: Rio Arriba County, NM
Site: Rosa Unit #371
Well: #371
Wellpath: OH

Date: 9/8/2002 Time: 09:05:08 Page: 3
Co-ordinate(NE) Reference: Well: #371, True North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,337.05Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	ClsD ft	ClsA deg
4952.00	91.10	337.80	3343.88	1831.47	1690.09	-705.65	2.76	31.00	1831.49	337.34
5016.00	91.60	336.50	3342.38	1895.45	1749.05	-730.50	2.18	64.00	1895.47	337.33
5047.00	90.80	336.90	3341.73	1926.44	1777.52	-742.76	2.89	31.00	1926.46	337.32
5111.00	90.90	335.80	3340.78	1990.43	1836.13	-768.43	1.73	64.00	1990.44	337.29
5174.00	88.70	333.70	3341.00	2053.37	1893.11	-795.30	4.83	63.00	2053.38	337.21
5206.00	89.50	333.40	3341.50	2085.30	1921.75	-809.55	2.67	32.00	2085.31	337.16
5238.00	88.70	337.20	3342.00	2117.28	1950.82	-822.92	12.13	32.00	2117.28	337.13
5301.00	90.10	342.00	3342.66	2180.19	2009.84	-844.87	7.94	63.00	2180.20	337.20
5364.00	91.60	342.20	3341.73	2242.94	2069.78	-864.23	2.40	63.00	2242.97	337.34
5427.00	89.30	340.40	3341.23	2305.76	2129.45	-884.43	4.64	63.00	2305.81	337.45
5491.00	90.40	337.30	3341.40	2369.72	2189.13	-907.52	5.14	64.00	2369.78	337.48
5585.00	90.20	337.20	3340.91	2463.72	2275.82	-943.87	0.24	94.00	2463.78	337.47
5621.00	90.12	337.16	3340.81	2499.71	2309.00	-957.83	0.25	36.00	2499.78	337.47

Annotation

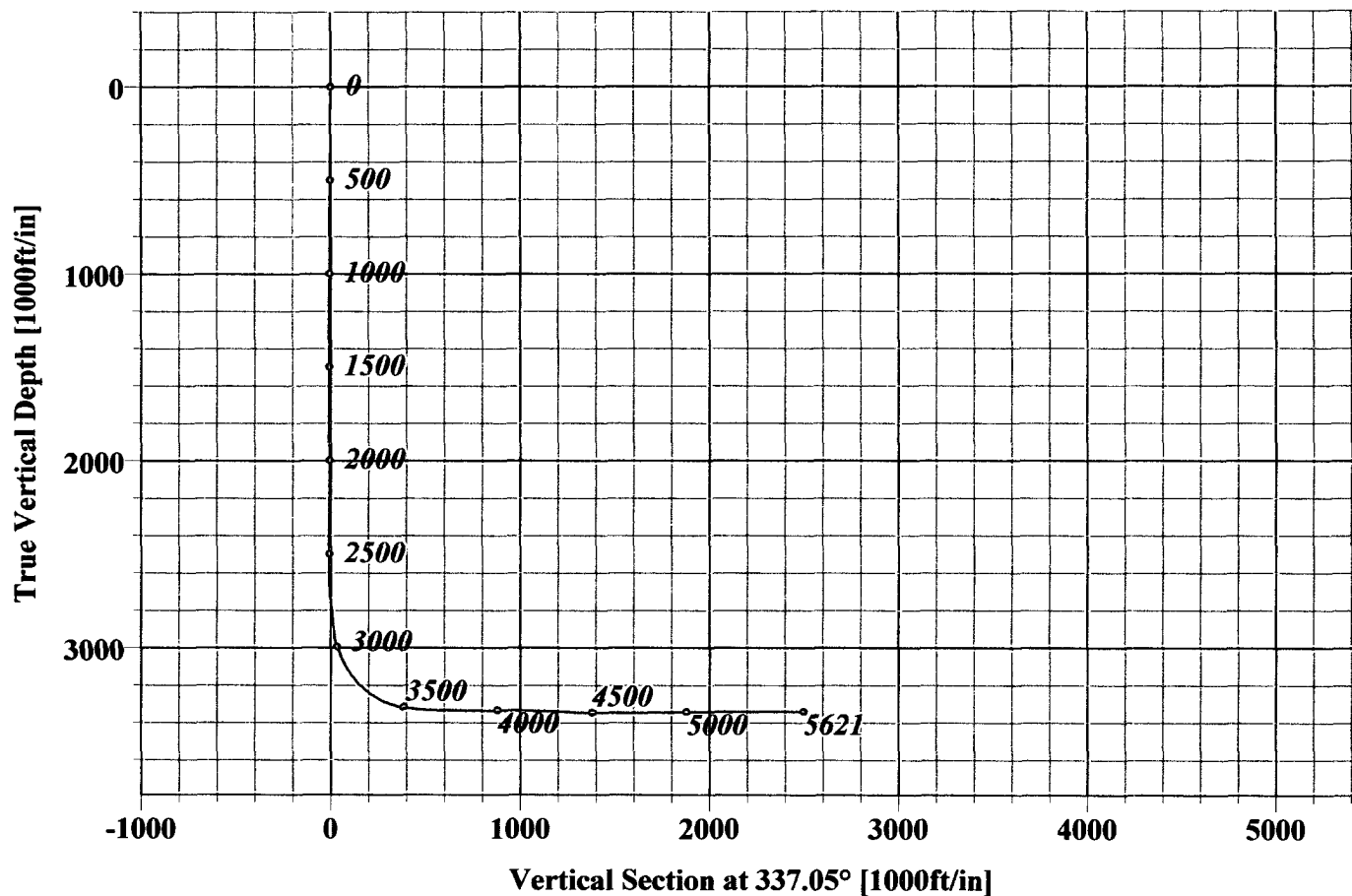
MD ft	TVD ft	
5621.00	3340.81	Survey is an extrapolation



Scientific
Drilling

Williams Production Co.

Field: Rio Arriba County, NM
Site: Rosa Unit #371
Well: #371
Wellpath: OH
Survey: Survey #1

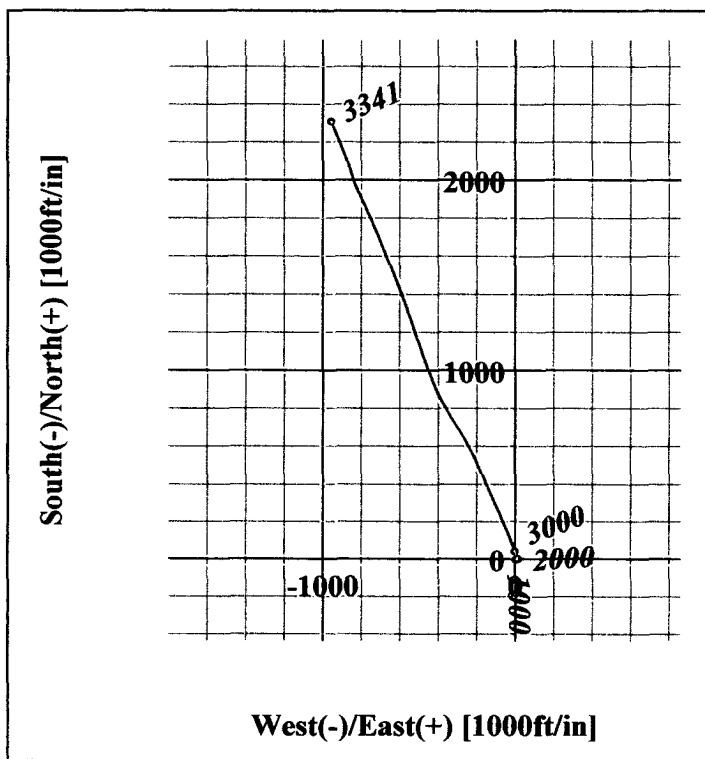


BOTTOM HOLE CLOSURE
(Survey @ 5621' MD is an extrapolation)

2499.78 ft. 337.47° Azimuth

FINAL STATION
(Survey @ 5621' MD is an extrapolation)

5621.0' MD 3340.81' TVD
90.12° Angle 337.16° Azimuth
North 2309.0 ft. West 957.83 ft.
2499.71' Vert. Sec.



Survey: Survey #1 (#371/OH)

Created By: Judi Moore

Date: 9/8/2002