

Customer : Williams Production Company

Well : Rosa #35A

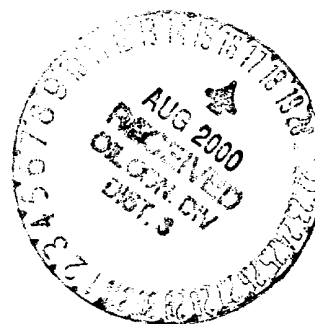
Rig : Aztec Well Service #124

Field : Mesa Verde

Legal : Sec. 5 - T31N - R06W

County : San Juan

State : New Mexico



Calculation Method :

Magnetic Declination Applied :

Vertical Section Direction :

Minimum Curvature

11.2° East

97.813° Azimuth

Note : See attached SSDS Certified Survey Worksheet for all survey information as recorded in the field.

I, Craig Davis, having personal knowledge of all the facts, hereby certify that the above listed Directional Survey is true and correct as determined from all available Sperry-Sun Drilling Services records.

Craig Davis

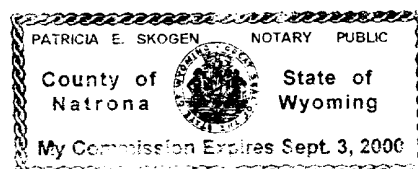
Directional Drilling Coordinator

On this 15th day of AUGUST, 2000, before me personally appeared CRIG DAVIS to me known as the person described in and who executed the same as his/her free act and deed.

Patricia E. Skogen

Notary Public in and for the County of
Natrona, State of Wyoming

SEPT. 3, 2000
My Commission Expires



Williams Production Company

***New Mexico
San Juan County
Sec. 5-T31N-R06W
Rosa # 35A - MWD/S.S.***

SURVEY REPORT

2 August, 2000



sperry-sun
DRILLING SERVICES
A Halliburton Company

Survey Ref: svy2740

Sperry-Sun Drilling Services

Survey Report for Rosa # 35A - MWD/S.S.

Williams Production Company
New Mexico

San Juan County
Sec. 5-T31N-R06W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
379.00	0.600	205.000	378.99	1.80 S	0.84 W	-0.59	0.16
410.00	0.600	176.900	409.99	2.11 S	0.90 W	-0.60	0.94
440.00	1.000	131.900	439.99	2.44 S	0.70 W	-0.36	2.38
470.00	2.200	130.600	469.98	2.99 S	0.06 W	0.34	4.00
500.00	3.100	100.400	499.95	3.51 S	1.17 E	1.64	5.44
531.00	4.000	103.600	530.89	3.92 S	3.05 E	3.55	2.97
561.00	5.000	97.200	560.79	4.33 S	5.36 E	5.90	3.72
591.00	6.200	89.900	590.65	4.49 S	8.28 E	8.81	4.64
621.00	6.200	92.000	620.47	4.54 S	11.52 E	12.03	0.76
651.00	7.300	90.600	650.27	4.62 S	15.04 E	15.53	3.71
681.00	9.000	88.500	679.96	4.58 S	19.29 E	19.74	5.75
711.00	9.700	89.900	709.56	4.51 S	24.17 E	24.56	2.45
741.00	9.700	90.400	739.13	4.52 S	29.22 E	29.57	0.28
771.00	9.900	90.100	768.70	4.54 S	34.33 E	34.63	0.69
801.00	10.200	87.800	798.24	4.45 S	39.56 E	39.80	1.67
831.00	10.600	89.900	827.74	4.34 S	44.98 E	45.15	1.84
862.00	11.200	89.000	858.18	4.28 S	50.84 E	50.95	2.01
892.00	11.800	89.800	887.58	4.22 S	56.82 E	56.86	2.07
922.00	12.700	90.300	916.90	4.23 S	63.18 E	63.17	3.02
952.00	13.700	86.800	946.11	4.05 S	70.03 E	69.93	4.27
984.00	15.000	91.500	977.11	3.94 S	77.95 E	77.76	5.45
1016.00	15.700	91.900	1007.97	4.20 S	86.42 E	86.19	2.21
1048.00	16.600	92.900	1038.70	4.57 S	95.31 E	95.05	2.94
1079.00	17.300	94.500	1068.36	5.16 S	104.33 E	104.06	2.71
1111.00	18.000	97.000	1098.85	6.13 S	113.98 E	113.76	3.22
1143.00	18.600	97.000	1129.23	7.36 S	123.95 E	123.80	1.88
1174.00	19.500	98.400	1158.53	8.72 S	133.98 E	133.92	3.26
1204.00	20.300	98.000	1186.74	10.17 S	144.09 E	144.13	2.70
1235.00	20.700	99.600	1215.78	11.83 S	154.81 E	154.98	2.22
1267.00	21.400	100.100	1245.64	13.80 S	166.14 E	166.47	2.26
1298.00	22.100	100.500	1274.44	15.85 S	177.44 E	177.95	2.31
1328.00	22.300	99.200	1302.21	17.79 S	188.61 E	189.27	1.77
1359.00	23.200	97.500	1330.80	19.53 S	200.47 E	201.26	3.59
1390.00	24.200	95.700	1359.19	20.96 S	212.84 E	213.72	3.98
1421.00	25.300	95.000	1387.34	22.17 S	225.76 E	226.68	3.67
1452.00	26.300	95.400	1415.25	23.39 S	239.20 E	240.16	3.27
1483.00	26.600	97.100	1443.00	24.89 S	252.93 E	253.96	2.63
1516.00	28.100	96.200	1472.31	26.65 S	267.98 E	269.12	4.71
1544.00	29.000	96.400	1496.91	28.12 S	281.29 E	282.50	3.23

Continued...

Sperry-Sun Drilling Services

Survey Report for Rosa # 35A - MWD/S.S.

Williams Production Company
New Mexico

San Juan County
Sec. 5-T31N-R06W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
1576.00	30.000	95.600	1524.76	29.76 S	296.96 E	298.25	3.36
1607.00	30.600	95.600	1551.53	31.29 S	312.52 E	313.87	1.94
1639.00	31.600	94.800	1578.93	32.78 S	328.98 E	330.39	3.38
1670.00	32.500	94.700	1605.20	34.15 S	345.38 E	346.81	2.91
1700.00	33.500	94.500	1630.36	35.46 S	361.66 E	363.13	3.35
1731.00	34.800	95.400	1656.01	36.96 S	379.00 E	380.50	4.50
1762.00	35.900	95.600	1681.30	38.68 S	396.85 E	398.43	3.57
1794.00	37.200	95.200	1707.01	40.47 S	415.82 E	417.46	4.13
1824.00	38.500	95.000	1730.69	42.11 S	434.16 E	435.85	4.35
1853.00	39.300	95.600	1753.26	43.79 S	452.29 E	454.04	3.05
1884.00	39.900	95.700	1777.15	45.74 S	471.95 E	473.79	1.95
1915.00	40.200	96.200	1800.88	47.80 S	491.79 E	493.73	1.42
1945.00	41.200	96.200	1823.62	49.92 S	511.24 E	513.28	3.33
1977.00	42.200	97.700	1847.51	52.50 S	532.37 E	534.57	4.41
2009.00	43.800	98.200	1870.92	55.51 S	553.98 E	556.39	5.11
2041.00	44.600	98.400	1893.86	58.74 S	576.06 E	578.70	2.54
2073.00	45.300	99.200	1916.51	62.20 S	598.40 E	601.30	2.81
2105.00	45.200	99.600	1939.03	65.91 S	620.82 E	624.02	0.94
2135.00	45.000	99.600	1960.21	69.45 S	641.77 E	645.26	0.67
2165.00	44.900	99.900	1981.44	73.04 S	662.66 E	666.44	0.78
2227.00	45.400	100.100	2025.17	80.67 S	705.95 E	710.36	0.84
2257.00	45.600	100.600	2046.19	84.52 S	727.00 E	731.74	1.36
2287.00	46.200	100.500	2067.07	88.46 S	748.18 E	753.26	2.01
2318.00	47.500	100.600	2088.27	92.60 S	770.41 E	775.85	4.20
2349.00	47.700	99.800	2109.18	96.66 S	792.94 E	798.72	2.01
2381.00	47.800	99.100	2130.69	100.55 S	816.31 E	822.40	1.65
2413.00	47.500	98.500	2152.25	104.16 S	839.68 E	846.04	1.67
2443.00	47.400	98.200	2172.54	107.37 S	861.54 E	868.14	0.81
2475.00	47.100	98.900	2194.26	110.87 S	884.78 E	891.64	1.86
2538.00	47.500	100.300	2236.98	118.59 S	930.43 E	937.91	1.75
2600.00	48.300	99.100	2278.55	126.34 S	975.77 E	983.89	1.93
2661.00	48.300	98.400	2319.13	133.26 S	1020.79 E	1029.43	0.86
2723.00	49.000	97.700	2360.09	139.78 S	1066.87 E	1075.97	1.41
2784.00	49.900	97.800	2399.75	146.03 S	1112.80 E	1122.32	1.48
2879.00	50.600	97.500	2460.49	155.75 S	1185.19 E	1195.36	0.78
2911.00	50.900	97.100	2480.74	158.90 S	1209.77 E	1220.14	1.35
2974.00	48.100	97.000	2521.65	164.78 S	1257.31 E	1268.03	4.45
3068.00	45.100	97.000	2586.23	173.10 S	1325.09 E	1336.32	3.19
3162.00	44.200	97.000	2653.10	181.16 S	1390.65 E	1402.37	0.96
3287.00	44.700	95.900	2742.34	190.98 S	1477.63 E	1489.88	0.73

Continued...

Sperry-Sun Drilling Services

Survey Report for Rosa # 35A - MWD/S.S.

Williams Production Company
New Mexico

San Juan County
Sec. 5-T31N-R06W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
3350.00	44.500	95.400	2787.19	195.34 S	1521.65 E	1534.08	0.64
3412.00	43.500	94.700	2831.79	199.13 S	1564.55 E	1577.10	1.79
3472.00	42.800	95.700	2875.57	202.85 S	1605.42 E	1618.09	1.63
3504.00	42.700	96.100	2899.06	205.08 S	1627.03 E	1639.80	0.90
3535.00	42.800	96.400	2921.83	207.37 S	1647.94 E	1660.84	0.73
3567.00	42.800	97.100	2945.31	209.93 S	1669.53 E	1682.57	1.49
3598.00	43.200	97.800	2967.98	212.67 S	1690.50 E	1703.71	2.01
3630.00	44.200	98.900	2991.12	215.88 S	1712.37 E	1725.82	3.92
3661.00	45.500	99.900	3013.09	219.46 S	1733.94 E	1747.67	4.77
3692.00	45.200	100.900	3034.88	223.44 S	1755.63 E	1769.71	2.49
3723.00	45.600	99.000	3056.65	227.25 S	1777.37 E	1791.76	4.55
3753.00	45.900	99.200	3077.58	230.65 S	1798.59 E	1813.24	1.11
3784.00	45.000	99.900	3099.33	234.31 S	1820.37 E	1835.33	3.32
3816.00	45.100	99.800	3121.94	238.19 S	1842.68 E	1857.96	0.38
3848.00	45.400	99.100	3144.46	241.92 S	1865.10 E	1880.67	1.81
3878.00	44.900	99.800	3165.62	245.41 S	1886.08 E	1901.93	2.35
3909.00	43.900	100.300	3187.77	249.19 S	1907.44 E	1923.61	3.42
3938.00	42.900	100.800	3208.84	252.84 S	1927.03 E	1943.51	3.65
3970.00	42.200	99.800	3232.41	256.71 S	1948.32 E	1965.13	3.04
4000.00	41.700	99.400	3254.73	260.05 S	1968.09 E	1985.17	1.89
4032.00	40.300	99.200	3278.88	263.45 S	1988.81 E	2006.16	4.39
4063.00	38.900	98.700	3302.76	266.52 S	2008.33 E	2025.91	4.63
4095.00	37.400	100.100	3327.93	269.75 S	2027.83 E	2045.67	5.41
4125.00	36.300	99.800	3351.93	272.86 S	2045.55 E	2063.65	3.72
4157.00	35.400	99.800	3377.87	276.05 S	2064.02 E	2082.38	2.81
4188.00	34.400	100.100	3403.29	279.11 S	2081.48 E	2100.10	3.27
4218.00	32.800	101.400	3428.28	282.20 S	2097.79 E	2116.68	5.85
4249.00	31.600	100.800	3454.51	285.38 S	2114.00 E	2133.17	4.01
4279.00	31.300	100.300	3480.11	288.25 S	2129.39 E	2148.81	1.33
4310.00	30.400	100.300	3506.72	291.09 S	2145.03 E	2164.69	2.90
4341.00	29.300	100.000	3533.61	293.81 S	2160.22 E	2180.11	3.58
4371.00	27.900	99.600	3559.95	296.26 S	2174.37 E	2194.46	4.71
4451.00	26.000	104.000	3631.26	303.62 S	2209.85 E	2230.61	3.44
4605.00	15.000	91.000	3775.36	312.17 S	2262.71 E	2284.14	7.69
4857.00	10.000	52.000	4021.72	299.24 S	2312.68 E	2331.89	3.78
5325.00	6.000	357.000	4485.67	249.71 S	2343.47 E	2355.66	1.75
5791.00	3.000	352.000	4950.18	213.30 S	2340.49 E	2347.76	0.65
6320.00	1.000	37.000	5478.86	195.91 S	2341.35 E	2346.24	0.45
6794.00	2.250	357.000	5952.67	183.31 S	2343.35 E	2346.52	0.34

Continued...

SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET

OPERATOR:	Williams Production Co.
WELL:	Rosa #35A
FIELD:	Mesa Verde
RIG:	AWS 124
LEGALS:	5-T31N-R06W
COUNTY:	San Juan
STATE:	New Mexico
CAL. METHOD:	Minimum Curvature
MAG. DECL. APPLIED:	11.2°
VERTICAL SEC. DIR. :	97.813°

SSDS Job Number :	CA-MJ-00068
Start Date of Job :	06/04/00
End Date of Job :	06/14/00
Lead Directional Driller:	R. Oaks
Other SSDS DD's :	V. Swanson / A. Kessel
SSDS MWD Engineers :	R. Scott

	Main Hole	1st Side Track	2nd Side Track	3rd Side Track	4th Side Track
Well Head	0.00	Tie On	Tie On	Tie On	Tie On
Surface Csg. Shoe	295.00	NA			
First Survey Depth	379.00	MWD			
Last Survey Depth	4371.00	MWD			
KOP Depth/Sidetrack MD	403.00	KOP	KOP-ST1	KOP-ST2	KOP-ST3
First Survey Depth	4605.00	SS			
Last Survey Depth	6784.00	SS			
Bit Extrapolation to TD	6818.00	T.D.	T.D.	T.D.	T.D.

The following Sperry Sun Drilling Services personnel listed below, do certify the above survey information to be accurate :

Print Name : _____ Print Name : _____

Sign Name : _____ Sign Name : _____

Print Name : _____ Print Name : _____

Sign Name : _____ Sign Name : _____

Examples of
Survey Types:

Tie On
MWD
ESS
Gyro
SS

Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole)
Sperry Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's
Sperry Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's
Gyro Survey's ; Provided by third party vendor, or by Sperry Sun Drilling Services (SSDS)
Single Shot (SS) Survey's ; Provided by Sperry Sun Drilling Services (SSDS) or third party vendor.