

June 16, 1999

**NEW MEXICO OIL CONSERVATION
Oil & Gas Division
1000 Rio Brazos Road
Aztec, New Mexico
87410**

For the attention of : Frank Chavez

Dear Sir,

Please find enclosed one (1) original of our certified survey results on the well described below.

Customer : Williams Production Company
Well : Rosa Unit #164
Rig : Aztec #124
Field : Mesa Verde
Legal : Sec. 1 - T31N - R06W
County : Rio Arriba
State : New Mexico

RECEIVED
JUN 21 1999
OIL CON. DIV.
DIST. 3

API # 30-039-24151

Please feel free to call upon me at any time should you have any questions regarding the enclosed information.

Sincerely,

Craig Davis

**Craig Davis
Directional Drilling Coordinator
7197 W. Derrick Drive
Casper, Wyoming 82604
(307) 472-5757**

Customer : Williams Production Company

Well : Rosa Unit #164

Rig : Aztec #124

Field : Mesa Verde

Legal : Sec. 1- T31N- R06W

County : Rio Arriba

State : New Mexico

Calculation Method :	Minimum Curvature
Magnetic Declination Applied :	11.3° East
Vertical Section Direction :	272.91° Azimuth

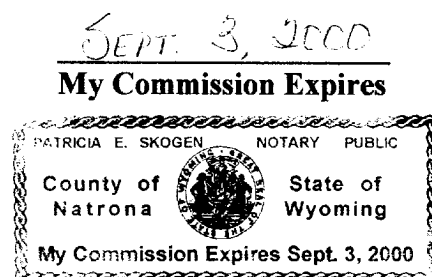
Note : See attached SSDS Certified Survey Worksheet for all survey information as recorded in the field.

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 16th day of June, 1999, 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**



SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET

OPERATOR:	Williams Production Co.
WELL:	Rosa Unit #164
FIELD:	Mesa Verde
RIG:	Aztec #124
LEGALS:	Sec. 1 - T31N - R06W
COUNTY:	Rio Arriba
STATE:	New Mexico
CAL. METHOD:	Minimum Curvature
MAG. DECL. APPLIED:	11.3° East
VERTICAL SEC. DIR. :	272.91° Azimuth

SSDS Job Number :	CA-MJ-90035
Start Date of Job :	05/09/99
End Date of Job :	01/26/99
Lead Directional Driller:	J. Groom
Other SSDS DD's :	V. Swanson
SSDS MWD Engineers :	R. Scott

	Main Hole =====>		1st Side Track =====>		2nd Side Track =====>		3rd Side Track =====>		4th Side Track =====>	
	Tie On		Tie On		Tie On		Tie On		Tie On	
Well Head	0.00									
First Survey Depth	546.42	MWD								
Last Survey Depth	3831.57	MWD								
KOP Depth/Sidetrack MD	596.42	KOP			KOP-ST1		KOP-ST2		KOP-ST3	
First Survey Depth	3901.00	SS			MWD		MWD		MWD	
Last Survey Depth	6583.00	SS			MWD		MWD		MWD	
Bit Extrapolation to TD	6635.00	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	Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole)
	MWD	Sperry Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's
	ESS	Sperry Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's
	Gyro	Gyro Survey's ; Provided by third party vendor, or by Sperry Sun Drilling Services (SSDS)
	SS	Single Shot (SS) Survey's ; Provided by Sperry Sun Drilling Services (SSDS) or third party vendor.

Williams Production Company

***Mesa Verde Field
Rio Arriba Co., NM
Sec. 1 - T31N - R06W
Rosa Unit #164 - MWD/SS Survey***

SURVEY REPORT

27 May, 1999

Your Ref: 90035

sperry-sun
DRILLING SERVICES
A DIVISION OF HANSON INTERNATIONAL, INC.

Survey Ref: svy1456

Sperry-Sun Drilling Services

Survey Report for Rosa Unit #164 - MWD/SS Survey

Your Ref: 90035



Williams Production Company
Mesa Verde Field

Rio Arriba Co., NM
Sec. 1 - 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	
497.00	0.000	0.000	497.00	0.00 N	0.00 E	0.00	0.000
546.42	1.300	338.700	546.42	0.52 N	0.20 W	0.23	2.631
608.38	1.600	321.500	608.36	1.85 N	1.00 W	1.09	0.848
639.03	1.800	317.100	638.99	2.54 N	1.59 W	1.72	0.779
670.04	3.000	298.200	669.98	3.28 N	2.64 W	2.80	4.585
700.74	2.600	296.400	700.64	3.97 N	3.97 W	4.17	1.334
731.10	4.500	295.000	730.94	4.78 N	5.67 W	5.90	6.264
762.26	3.500	276.100	762.02	5.40 N	7.72 W	7.98	5.269
793.71	5.000	278.300	793.39	5.70 N	10.03 W	10.31	4.797
825.11	5.900	273.400	824.64	5.99 N	13.00 W	13.28	3.224
856.21	5.900	273.200	855.58	6.18 N	16.19 W	16.48	0.066
887.61	6.200	276.000	886.80	6.44 N	19.49 W	19.79	1.340
918.16	7.500	279.800	917.14	6.95 N	23.09 W	23.41	4.504
949.11	7.500	274.200	947.82	7.45 N	27.10 W	27.44	2.361
980.17	8.300	276.600	978.59	7.85 N	31.34 W	31.70	2.785
1011.83	7.700	275.000	1009.94	8.30 N	35.73 W	36.10	2.021
1043.02	9.900	272.500	1040.76	8.60 N	40.49 W	40.87	7.158
1074.75	11.500	275.100	1071.94	9.00 N	46.36 W	46.76	5.266
1105.75	12.300	275.000	1102.27	9.56 N	52.73 W	53.15	2.582
1136.35	13.600	278.600	1132.09	10.38 N	59.54 W	59.99	4.998
1168.18	13.700	276.000	1163.02	11.34 N	66.99 W	67.47	1.953
1199.00	15.000	277.100	1192.88	12.21 N	74.57 W	75.10	4.310
1230.05	15.400	273.000	1222.85	12.92 N	82.68 W	83.23	3.693
1261.54	15.500	273.600	1253.20	13.41 N	91.05 W	91.62	0.599
1292.54	17.300	271.100	1282.94	13.76 N	99.80 W	100.37	6.236
1323.84	18.100	271.600	1312.75	13.98 N	109.31 W	109.88	2.602
1354.82	18.600	269.900	1342.16	14.11 N	119.06 W	119.62	2.364
1385.50	18.900	271.200	1371.21	14.20 N	128.92 W	129.48	1.677
1414.27	20.200	272.000	1398.32	14.47 N	138.54 W	139.10	4.613
1443.67	20.400	271.000	1425.90	14.74 N	148.74 W	149.30	1.362
1475.04	22.600	272.600	1455.08	15.11 N	160.23 W	160.79	7.257
1505.65	23.700	274.400	1483.23	15.85 N	172.24 W	172.82	4.273
1537.35	24.500	270.700	1512.16	16.42 N	185.17 W	185.76	5.392
1567.98	25.100	267.900	1539.97	16.26 N	198.01 W	198.58	4.305
1598.26	25.900	269.000	1567.30	15.91 N	211.04 W	211.57	3.070
1629.61	26.600	270.400	1595.42	15.84 N	224.90 W	225.42	2.981
1660.93	27.100	269.200	1623.36	15.78 N	239.05 W	239.54	2.354
1691.73	28.100	270.600	1650.66	15.76 N	253.32 W	253.79	3.870
1722.18	27.900	270.000	1677.54	15.84 N	267.61 W	268.07	1.135

Continued...

Sperry-Sun Drilling Services

Survey Report for Rosa Unit #164 - MWD/SS Survey

Your Ref: 90035



Williams Production Company
Mesa Verde Field

Rio Arriba Co., NM
Sec. 1 - T31N - R06W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
1752.80	28.400	270.000	1704.54	15.84 N	282.06 W	282.50	1.633
1784.13	29.800	273.100	1731.92	16.26 N	297.28 W	297.73	6.566
1815.08	29.600	271.900	1758.80	16.93 N	312.60 W	313.06	2.027
1846.38	30.300	270.800	1785.92	17.29 N	328.22 W	328.68	2.842
1877.69	31.500	273.500	1812.79	17.90 N	344.29 W	344.75	5.856
1909.21	31.200	270.600	1839.71	18.49 N	360.67 W	361.15	4.880
1938.67	32.700	272.900	1864.71	18.98 N	376.25 W	376.73	6.556
1970.00	33.900	272.100	1890.89	19.72 N	393.43 W	393.93	4.079
2001.36	34.300	271.500	1916.86	20.28 N	411.01 W	411.51	1.667
2031.12	35.200	271.700	1941.31	20.75 N	427.96 W	428.47	3.048
2062.31	36.000	272.600	1966.67	21.43 N	446.11 W	446.62	3.066
2093.91	34.900	272.800	1992.41	22.29 N	464.41 W	464.95	3.500
2124.91	35.100	269.200	2017.81	22.60 N	482.19 W	482.71	6.691
2156.09	34.900	269.800	2043.35	22.45 N	500.07 W	500.56	1.277
2187.24	35.200	270.800	2068.85	22.54 N	517.96 W	518.43	2.080
2217.07	35.200	270.600	2093.23	22.75 N	535.15 W	535.62	0.386
2248.72	34.400	269.400	2119.22	22.75 N	553.21 W	553.65	3.327
2279.32	33.600	268.900	2144.59	22.50 N	570.32 W	570.73	2.769
2310.49	33.400	271.200	2170.58	22.51 N	587.52 W	587.91	4.123
2339.94	33.500	272.800	2195.15	23.08 N	603.74 W	604.14	3.014
2370.94	33.400	273.300	2221.02	23.99 N	620.81 W	621.23	0.946
2402.81	33.300	273.600	2247.64	25.04 N	638.30 W	638.75	0.605
2434.04	32.100	270.500	2273.92	25.66 N	655.15 W	655.61	6.596
2465.37	32.500	274.500	2300.41	26.39 N	671.87 W	672.34	6.940
2496.22	33.100	274.200	2326.34	27.66 N	688.53 W	689.05	2.015
2525.08	32.200	273.100	2350.64	28.65 N	704.07 W	704.62	3.735
2555.27	32.800	272.200	2376.10	29.40 N	720.27 W	720.84	2.552
2585.92	33.500	272.200	2401.76	30.04 N	737.02 W	737.60	2.284
2615.74	32.400	272.600	2426.78	30.72 N	753.23 W	753.82	3.760
2646.62	32.600	271.500	2452.83	31.31 N	769.81 W	770.40	2.021
2677.99	33.600	272.600	2479.11	31.93 N	786.93 W	787.53	3.719
2709.35	34.200	274.700	2505.14	33.04 N	804.38 W	805.02	4.196
2740.53	34.100	275.100	2530.94	34.54 N	821.82 W	822.51	0.788
2771.63	33.800	273.300	2556.74	35.81 N	839.14 W	839.87	3.373
2803.75	33.800	274.200	2583.43	36.98 N	856.97 W	857.74	1.559
2832.42	33.200	273.600	2607.34	38.06 N	872.75 W	873.56	2.390
2863.28	33.800	276.100	2633.07	39.50 N	889.72 W	890.58	4.875
2895.02	33.700	277.200	2659.46	41.54 N	907.24 W	908.18	1.951
2926.61	32.700	276.300	2685.90	43.58 N	924.41 W	925.43	3.529
2958.03	32.400	275.600	2712.38	45.33 N	941.23 W	942.32	1.532

Continued...

Sperry-Sun Drilling Services

Survey Report for Rosa Unit #164 - MWD/SS Survey

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Williams Production Company
Mesa Verde Field

Rio Arriba Co., NM
Sec. 1 - T31N - R06W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
2969.98	32.500	275.200	2739.34	46.94 N	958.30 W	959.44	0.741
3021.87	32.000	275.600	2766.31	48.54 N	975.24 W	976.44	1.705
3053.15	31.800	277.200	2792.87	50.38 N	991.66 W	992.94	2.778
3083.51	31.400	277.700	2818.73	52.45 N	1007.44 W	1008.80	1.575
3115.12	31.300	278.000	2845.72	54.69 N	1023.73 W	1025.18	0.586
3146.53	30.700	278.600	2872.65	57.03 N	1039.73 W	1041.29	2.149
3178.30	30.100	279.100	2900.05	59.50 N	1055.62 W	1057.28	2.050
3210.14	29.400	279.800	2927.69	62.09 N	1071.20 W	1072.98	2.454
3240.90	28.900	279.300	2954.56	64.58 N	1085.98 W	1087.86	1.808
3271.77	28.600	279.400	2981.62	66.99 N	1100.63 W	1102.61	0.984
3303.34	28.900	280.000	3009.30	69.55 N	1115.60 W	1117.69	1.319
3335.12	29.600	281.000	3037.03	72.38 N	1130.87 W	1133.08	2.686
3366.51	30.000	281.600	3064.27	75.44 N	1146.16 W	1148.51	1.589
3398.38	30.300	281.600	3091.82	78.66 N	1161.84 W	1164.34	0.941
3427.65	29.700	281.600	3117.17	81.60 N	1176.18 W	1178.80	2.050
3458.77	29.900	280.500	3144.18	84.56 N	1191.36 W	1194.11	1.870
3489.30	31.400	279.100	3170.44	87.21 N	1206.69 W	1209.56	5.441
3521.19	31.500	279.100	3197.65	89.84 N	1223.12 W	1226.11	0.314
3552.41	31.400	276.600	3224.28	92.07 N	1239.26 W	1242.33	4.190
3583.66	30.900	275.600	3251.03	93.78 N	1255.33 W	1258.47	2.302
3613.97	30.800	273.500	3277.05	95.02 N	1270.82 W	1274.00	3.568
3645.58	31.500	273.600	3304.10	96.03 N	1287.14 W	1290.35	2.221
3675.71	32.200	272.900	3329.69	96.93 N	1303.01 W	1306.25	2.627
3706.80	33.000	271.500	3355.89	97.57 N	1319.75 W	1323.00	3.536
3737.76	32.800	270.300	3381.88	97.84 N	1336.57 W	1339.81	2.202
3769.67	33.500	270.100	3408.60	97.90 N	1354.01 W	1357.24	2.220
3800.19	34.200	269.100	3433.94	97.78 N	1371.01 W	1374.21	2.931
3831.57	33.800	268.200	3459.96	97.36 N	1388.56 W	1391.71	2.049
3901.00	32.500	269.300	3518.09	96.53 N	1426.51 W	1429.57	2.063
3950.00	32.000	266.300	3559.53	95.53 N	1452.63 W	1455.61	3.422
4013.00	32.500	269.300	3612.82	94.25 N	1486.22 W	1489.08	2.662
4107.00	33.500	268.300	3691.65	93.17 N	1537.40 W	1540.14	1.211
4170.00	32.500	268.300	3744.49	92.15 N	1571.70 W	1574.35	1.587
4267.00	32.500	271.300	3826.30	91.97 N	1623.80 W	1626.37	1.662
4395.00	35.500	275.300	3932.42	96.18 N	1695.21 W	1697.90	2.922
4426.00	35.500	275.300	3957.66	97.85 N	1713.13 W	1715.89	0.000
4462.00	35.500	277.300	3986.97	100.14 N	1733.91 W	1736.76	3.226
4508.00	36.000	280.300	4024.30	104.25 N	1760.46 W	1763.48	3.962
4540.00	35.500	282.300	4050.27	107.92 N	1778.79 W	1781.98	3.972
4604.00	35.500	282.300	4102.37	115.83 N	1815.10 W	1818.64	0.000

Continued...