

30-039-27717

Williams Production Company
Rosa Unit #169C

slot #1
Mesaverde
Rio Arriba, New Mexico

SURVEY LISTING

by
Baker Hughes INTEQ

Your ref : MWD
Our ref : svy2661
License :

Date printed : 4-Apr-2005
Date created : 8-Sep-2004
Last revised : 8-Nov-2004

Field is centred on n36 59 2.000,w107 26 53
Structure is centred on n36 55 19.000,w107 26 22

Slot location is n36 55 19.000,w107 26 22.000
Slot Grid coordinates are N 2155090.687, E 615139.274
Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico West (3003), Spheroid: Clarke - 1866

Reference North is True North

Surface 150/S 31S/W sec 2, 31-6
BHL 993/S 384/E sec 3, 31-6

TVD 6152
MD 6350

(Rec 7/3/06)

Williams Production Company
Rosa Unit #169C, slot #1
Mesaverde, Rio Arriba, New Mexico

SURVEY LISTING Page 1
Your ref : MWD
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Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect	G R I D Easting	C O O R D S Northing
0.00	0.00	0.00	0.00	0.00N	0.00E	0.00	0.00	615139.27	2155090.69
92.00	0.25	40.00	92.00	0.15N	0.13E	0.27	0.04	615139.40	2155090.84
204.00	0.50	70.00	204.00	0.51N	0.75E	0.28	-0.05	615140.02	2155091.20
300.00	0.50	95.00	299.99	0.61N	1.56E	0.23	-0.46	615140.83	2155091.31
380.00	0.50	106.00	379.99	0.49N	2.24E	0.12	-0.98	615141.51	2155091.18
411.00	0.50	65.00	410.99	0.51N	2.49E	1.13	-1.11	615141.76	2155091.21
442.00	1.00	351.00	441.99	0.83N	2.57E	3.18	-0.91	615141.84	2155091.53
471.00	1.50	326.70	470.98	1.40N	2.32E	2.48	-0.31	615141.59	2155092.10
500.00	2.60	325.60	499.96	2.26N	1.74E	3.80	0.73	615141.01	2155092.95
529.00	3.80	326.60	528.92	3.60N	0.84E	4.14	2.35	615140.10	2155094.29
557.00	5.10	326.10	556.83	5.41N	0.36W	4.64	4.51	615138.89	2155096.10
587.00	5.70	322.30	586.70	7.70N	2.02W	2.33	7.33	615137.23	2155098.38
617.00	6.90	326.70	616.52	10.38N	3.92W	4.31	10.62	615135.31	2155101.05
646.00	7.90	325.60	645.27	13.48N	6.00W	3.48	14.35	615133.22	2155104.14
677.00	8.90	325.80	675.94	17.22N	8.55W	3.23	18.87	615130.65	2155107.87
707.00	10.00	324.00	705.53	21.25N	11.39W	3.80	23.79	615127.80	2155111.89
737.00	11.10	324.60	735.03	25.71N	14.59W	3.68	29.28	615124.58	2155116.34
767.00	11.90	322.50	764.42	30.52N	18.15W	3.01	35.26	615121.00	2155121.13
797.00	12.30	319.30	793.76	35.40N	22.11W	2.60	41.54	615117.02	2155125.99
826.00	13.30	319.20	822.04	40.26N	26.31W	3.45	47.96	615112.80	2155130.84
857.00	13.80	318.70	852.17	45.74N	31.08W	1.66	55.21	615108.01	2155136.30
887.00	14.20	317.80	881.28	51.16N	35.91W	1.52	62.44	615103.16	2155141.69
920.00	15.00	317.70	913.22	57.31N	41.50W	2.43	70.73	615097.54	2155147.82
950.00	16.00	318.60	942.13	63.29N	46.85W	3.43	78.73	615092.17	2155153.77
979.00	16.80	319.60	969.95	69.48N	52.21W	2.93	86.90	615086.78	2155159.94
1009.00	17.80	320.00	998.59	76.29N	57.97W	3.36	95.81	615081.00	2155166.73
1069.00	19.50	320.60	1055.44	91.05N	70.22W	2.85	114.99	615068.68	2155181.44
1099.00	20.50	320.10	1083.63	98.95N	76.77W	3.38	125.24	615062.10	2155189.32
1126.00	21.10	320.50	1108.87	106.33N	82.89W	2.28	134.82	615055.95	2155196.67
1156.00	22.30	321.40	1136.74	114.95N	89.88W	4.15	145.91	615048.93	2155205.25
1187.00	23.60	321.40	1165.28	124.39N	97.42W	4.19	157.99	615041.35	2155214.67
1218.00	24.20	321.30	1193.63	134.20N	105.26W	1.94	170.55	615033.47	2155224.44
1250.00	24.40	321.20	1222.79	144.47N	113.51W	0.64	183.71	615025.18	2155234.68
1281.00	24.40	321.00	1251.02	154.44N	121.55W	0.27	196.52	615017.10	2155244.61
1311.00	24.50	321.20	1278.33	164.10N	129.34W	0.43	208.93	615009.26	2155254.24
1373.00	24.50	321.10	1334.75	184.12N	145.47W	0.07	234.63	614993.05	2155274.20
1436.00	24.60	320.50	1392.05	204.41N	162.02W	0.43	260.80	614976.43	2155294.41
1498.00	24.50	321.40	1448.45	224.41N	178.24W	0.62	286.55	614960.12	2155314.35
1561.00	24.50	322.50	1505.78	244.99N	194.35W	0.72	312.67	614943.93	2155334.85
1623.00	24.50	322.20	1562.20	265.34N	210.05W	0.20	338.38	614928.14	2155355.14
1685.00	24.50	322.10	1618.61	285.64N	225.83W	0.07	364.09	614912.28	2155375.38
1748.00	24.30	322.70	1675.99	306.26N	241.71W	0.51	390.12	614896.32	2155395.93
1810.00	24.40	323.20	1732.47	326.67N	257.11W	0.37	415.68	614880.84	2155416.27
1871.00	24.60	322.50	1787.98	346.83N	272.39W	0.58	440.98	614865.48	2155436.36
1934.00	24.50	322.30	1845.28	367.57N	288.36W	0.21	467.15	614849.42	2155457.03
1994.00	24.40	322.60	1899.90	387.25N	303.49W	0.27	491.99	614834.21	2155476.66
2056.00	24.20	322.30	1956.41	407.48N	319.04W	0.38	517.50	614818.57	2155496.82
2119.00	24.60	322.40	2013.78	428.09N	334.94W	0.64	543.53	614802.59	2155517.36
2181.00	24.20	323.40	2070.25	448.52N	350.39W	0.93	569.14	614787.06	2155537.72
2244.00	24.40	322.60	2127.66	469.22N	365.99W	0.61	595.06	614771.37	2155558.36

All data in feet unless otherwise stated. Calculation uses minimum curvature method.

Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 1093.82 on azimuth 320.40 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 322.48 degrees.

Grid is mercator - New Mexico West (3003).

Grid coordinates in FEET and computed using the Clarke - 1866 spheroid

Presented by Baker Hughes INTEQ

Williams Production Company
Rosa Unit #169C, slot #1
Mesaverde, Rio Arriba, New Mexico

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Your ref : MWD
Last revised : 8-Nov-2004

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D Easting	C O O R D S Northing
2306.00	24.30	322.50	2184.15	489.51N	381.54W	0.17	620.62	614755.75
2369.00	24.20	322.50	2241.59	510.04N	397.29W	0.16	646.50	614739.91
2431.00	24.20	323.60	2298.14	530.35N	412.56W	0.73	671.91	614724.55
2544.00	24.40	323.10	2401.13	567.66N	440.32W	0.25	718.41	614696.64
2556.00	24.30	323.20	2412.06	571.62N	443.29W	0.90	723.35	614693.66
2618.00	24.40	323.00	2468.55	592.06N	458.64W	0.21	748.92	614678.23
2650.00	24.40	322.50	2497.69	602.58N	466.64W	0.65	762.13	614670.18
2713.00	23.10	322.50	2555.35	622.71N	482.09W	2.06	787.51	614654.65
2775.00	21.90	322.40	2612.63	641.52N	496.55W	1.94	811.23	614640.12
2838.00	21.30	323.80	2671.21	660.07N	510.47W	1.26	834.42	614626.11
2870.00	21.10	322.40	2701.04	669.32N	517.42W	1.70	845.99	614619.13
2930.00	19.80	322.60	2757.26	685.95N	530.18W	2.17	866.96	614606.30
2992.00	18.30	322.50	2815.86	702.01N	542.49W	2.42	887.19	614593.93
3056.00	17.30	321.90	2876.80	717.48N	554.47W	1.59	906.76	614581.88
3116.00	16.00	322.10	2934.28	731.02N	565.06W	2.17	923.95	614571.24
3179.00	14.80	322.60	2995.02	744.27N	575.28W	1.92	940.68	614560.96
3240.00	13.50	323.90	3054.17	756.21N	584.21W	2.19	955.58	614551.99
3271.00	13.30	324.50	3084.32	762.03N	588.41W	0.79	962.77	614547.76
3334.00	13.00	322.80	3145.67	773.58N	596.90W	0.78	977.09	614539.22
3365.00	12.70	322.40	3175.89	779.06N	601.09W	1.01	983.99	614535.01
3428.00	12.80	323.20	3237.34	790.13N	609.50W	0.32	997.89	614526.56
3459.00	12.60	322.40	3267.58	795.56N	613.62W	0.86	1004.71	614522.42
3491.00	12.10	322.70	3298.84	800.99N	617.78W	1.58	1011.55	614518.24
3522.00	12.10	322.00	3329.15	806.14N	621.75W	0.47	1018.05	614514.24
3553.00	11.80	321.60	3359.48	811.18N	625.72W	1.00	1024.47	614510.26
3584.00	11.40	320.00	3389.85	816.01N	629.66W	1.66	1030.70	614506.30
3616.00	10.90	319.90	3421.24	820.75N	633.64W	1.56	1036.88	614502.30
3647.00	10.70	319.04	3451.70	825.16N	637.41W	0.83	1042.68	614498.50
3678.00	9.80	320.00	3482.20	829.36N	640.99W	2.95	1048.19	614494.90
3709.00	8.90	321.20	3512.79	833.25N	644.19W	2.97	1053.22	614491.69
3741.00	7.80	323.20	3544.45	836.92N	647.04W	3.55	1057.87	614488.82
3772.00	6.70	327.20	3575.20	840.12N	649.28W	3.90	1061.77	614486.57
3804.00	5.50	331.60	3607.02	843.04N	651.02W	4.02	1065.15	614484.82
3835.00	4.30	333.10	3637.90	845.38N	652.26W	3.89	1067.76	614483.58
3864.00	3.50	328.50	3666.84	847.11N	653.21W	2.96	1069.71	614482.61
3896.00	2.90	320.20	3698.79	848.56N	654.24W	2.36	1071.49	614481.58
3926.00	2.20	306.90	3728.76	849.49N	655.19W	3.04	1072.80	614480.63
3958.00	1.90	301.20	3760.74	850.13N	656.13W	1.13	1073.89	614479.68
4044.00	1.25	300.00	3846.70	851.34N	658.16W	0.76	1076.08	614477.65
4259.00	1.25	240.00	4061.66	851.34N	662.22W	0.58	1078.55	614473.58
4663.00	1.10	260.00	4465.58	848.47N	669.86W	0.11	1080.92	614465.96
5071.00	1.00	270.00	4873.51	847.79N	677.28W	0.05	1084.90	614458.55
5444.00	0.80	245.00	5246.47	846.69N	682.89W	0.12	1087.45	614452.94
5881.00	1.00	250.00	5683.41	844.09N	689.24W	0.05	1089.26	614446.60
6305.00	1.00	270.00	6107.35	842.83N	696.42W	0.08	1092.62	614439.43
6350.00	1.00	270.00	6152.34	842.83N	697.20W	0.00	1093.10	614438.64

All data in feet unless otherwise stated. Calculation uses minimum curvature method.
Coordinates from slot #1 and TVD from rotary table.
Bottom hole distance is 1093.82 on azimuth 320.40 degrees from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 322.48 degrees.
Grid is mercator - New Mexico West (3003).
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid
Presented by Baker Hughes INTEQ

Williams Production Company

Structure : Rosa Unit #169C

Slot : slot #1

Field : Mesaverde

Location : Rio Arriba, New Mexico

Created by planner

Date plotted : 4-Apr-2005

Plot Reference is Pin 1

Coordinates are in feet reference slot #1.

True Vertical Depths are reference rotary table.

--- Baker Hughes INTECO ---

WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	0.00	0.00	322.48	0.00	0.00	0.00	0.00	0.00
KOP	400.00	0.00	322.48	400.00	0.00	0.00	0.00	0.00
End of Build	1219.58	24.59	322.48	1194.65	137.35	-105.47	173.17	3.00
End of Hold	2551.27	24.59	322.48	2405.60	576.83	-442.92	727.26	0.00
Target Int. Csg.	3857.10	5.00	322.48	3662.00	840.00	-645.00	1059.07	1.50
KOP	4357.10	0.00	322.48	4161.37	857.29	-658.28	1080.87	1.00
T.D. & Target BHL	6347.73	0.00	208.53	6152.00	857.29	-658.28	1080.87	0.00

