



1724-B Townhurst Dr, Houston, Tx 77043
(713) 827-8302
www.nevisenergy.com

Job Number: 71244
Company: Black Hills Gas Resources
Lease/Well: Many Canyons 30-04-12 #124
Location: Rio Arriba County, NM
Rig Name: Patt. 744
RKB: 13'
G.L. or M.S.L.: 7028'

State/Country: NM/USA
Declination: 10.12508
Grid: -0.32
File name: Z:\BLACKH-1\71244M-1\30412124.SVY
Date/Time: 09-Aug-07 / 13:29
Curve Name: MC 30-04-12 #124 Surveys

30-039-29968

Lateral origin 2401/N, 767/E, MC 3989 TVD 3683
Lateral B/H 2011/N 844/W
Md = 7730 TVD 3770

MC 30-04-12 #124 Surveys

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 277.07
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

MC 30-4-12 #124
SURF: 2535' FN 135' FE
H -524' 4292'
2011' FN 4417' FE
-5261
844' FW

RCVD AUG 20 '07
OIL CONS. DIV.
DIST. 3

8-27-07

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
Surface Tie-In									
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
First Nevis MWD Survey									
373.00	.40	217.00	373.00	.65	-1.04	-.78	1.30	217.00	.11
561.00	.40	163.20	560.99	.71	-2.19	-.99	2.40	204.28	.19
751.00	.60	200.80	750.99	.68	-3.76	-1.15	3.93	197.02	.20
940.00	.70	155.50	939.98	.31	-5.73	-1.02	5.82	190.12	.27
1129.00	1.90	178.70	1128.92	-.75	-9.92	-.47	9.93	182.73	.68
1319.00	2.30	177.90	1318.80	-1.82	-16.87	-.26	16.88	180.89	.21
1500.00	2.30	184.80	1499.65	-2.54	-24.12	-.43	24.13	181.03	.15
1682.00	2.10	187.50	1681.52	-2.66	-31.07	-1.17	31.09	182.16	.12
1861.00	2.50	206.30	1860.37	-1.35	-37.82	-3.33	37.97	185.03	.47
2042.00	2.10	233.70	2041.23	2.36	-43.32	-7.75	44.01	190.15	.64
2221.00	1.40	199.80	2220.15	5.23	-47.32	-11.14	48.61	193.24	.68
2402.00	1.40	201.70	2401.10	6.27	-51.46	-12.70	53.00	193.87	.03
2588.00	1.50	184.70	2587.04	6.75	-55.99	-13.74	57.66	193.79	.24
2778.00	1.80	213.60	2776.97	7.98	-60.96	-15.60	62.92	194.35	.46
2850.00	1.70	223.50	2848.93	9.12	-62.67	-16.96	64.93	195.14	.44
2882.00	2.50	233.90	2880.91	9.91	-63.43	-17.85	65.89	195.72	2.76
2914.00	4.40	244.70	2912.85	11.45	-64.37	-19.52	67.26	196.87	6.25
2945.00	5.90	255.50	2943.73	13.94	-65.27	-22.14	68.93	198.74	5.74
2976.00	8.20	259.90	2974.49	17.53	-66.06	-25.86	70.94	201.38	7.62
3007.00	10.90	265.30	3005.06	22.52	-66.69	-30.96	73.52	204.90	9.17

HOLD 0104 FOR NSL

B

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3039.00	13.00	266.20	3036.36	29.01	-67.17	-37.57	76.97	209.22	6.59
3070.00	15.30	265.40	3066.42	36.44	-67.73	-45.12	81.39	213.67	7.45
3102.00	17.20	267.60	3097.14	45.25	-68.27	-54.06	87.08	218.37	6.24
3133.00	19.50	268.40	3126.56	54.88	-68.61	-63.81	93.70	222.93	7.46
3165.00	22.00	270.00	3156.48	66.11	-68.76	-75.15	101.86	227.54	8.01
3196.00	25.10	271.50	3184.90	78.42	-68.58	-87.53	111.20	231.92	10.18
3228.00	28.00	273.50	3213.52	92.68	-67.95	-101.82	122.41	236.28	9.48
3260.00	30.30	277.10	3241.47	108.25	-66.49	-117.33	134.86	240.46	9.04
3291.00	32.80	278.80	3267.89	124.47	-64.24	-133.39	148.05	244.28	8.56
3323.00	33.80	280.60	3294.63	142.02	-61.28	-150.70	162.68	247.87	4.39
3354.00	35.40	283.10	3320.15	159.55	-57.65	-167.93	177.55	251.05	6.90
3386.00	36.80	283.90	3346.00	178.29	-53.25	-186.26	193.72	254.04	4.62
3418.00	38.00	287.70	3371.43	197.49	-47.95	-204.95	210.48	256.83	8.13
3449.00	40.10	288.90	3395.50	216.64	-41.82	-223.49	227.37	259.40	7.20
3481.00	42.20	290.00	3419.60	237.21	-34.80	-243.34	245.82	261.86	6.94
3513.00	44.70	291.80	3442.83	258.57	-26.94	-263.89	265.27	264.17	8.72
3545.00	45.20	291.40	3465.47	280.45	-18.62	-284.91	285.52	266.26	1.79
3576.00	45.90	290.70	3487.18	301.93	-10.67	-305.57	305.75	268.00	2.77
3608.00	47.10	291.00	3509.21	324.47	-2.41	-327.26	327.27	269.58	3.81
3640.00	49.50	292.10	3530.50	347.60	6.37	-349.48	349.53	271.04	7.93
X 3672.00	52.00	292.90	3550.74	371.49	15.85	-372.37	372.70	272.44	8.05
X 3703.00	54.90	294.40	3569.20	395.35	25.85	-395.17	396.02	273.74	10.13
3734.00	57.40	294.80	3586.47	419.90	36.56	-418.58	420.17	274.99	8.14
3765.00	59.60	293.90	3602.66	445.13	47.46	-442.66	445.20	276.12	7.52
3797.00	62.20	293.50	3618.23	471.92	58.69	-468.26	471.92	277.14	8.20
3829.00	64.90	293.30	3632.48	499.42	70.07	-494.55	499.49	278.06	8.46
3862.00	66.50	293.10	3646.06	528.31	81.92	-522.19	528.58	278.92	4.88
3894.00	69.70	294.10	3657.99	556.77	93.81	-549.40	557.35	279.69	10.41
3925.00	73.30	296.00	3667.83	584.72	106.26	-576.02	585.74	280.45	12.99
3957.00	76.50	296.20	3676.16	613.92	119.85	-603.76	615.54	281.23	10.02
3989.00	79.80	296.80	3682.73	643.45	133.82	-631.79	645.80	281.96	10.47
4021.00	81.90	297.10	3687.82	673.16	148.74	-659.95	676.37	282.65	6.63
4057.00	83.20	297.70	3692.49	706.63	164.56	-691.64	710.94	283.38	3.97
4084.00	84.00	298.00	3695.50	731.72	177.10	-715.36	736.96	283.90	3.16
4114.00	83.60	298.20	3698.74	759.56	191.15	-741.67	765.90	284.45	1.49
4145.00	83.70	298.50	3702.17	788.27	205.78	-768.78	795.85	284.98	1.01
4177.00	83.30	298.10	3705.79	817.90	220.85	-796.78	826.82	285.49	1.76
4239.00	82.80	297.80	3713.29	875.40	249.70	-851.14	887.01	286.35	.94
4277.00	82.40	297.80	3718.19	910.65	267.27	-884.48	923.98	286.81	1.05
4306.00	82.70	298.00	3721.95	937.52	280.73	-909.89	952.21	287.15	1.24
4336.00	84.00	297.50	3725.42	965.40	294.60	-936.26	981.52	287.47	4.64
4367.00	84.40	297.30	3728.55	994.32	308.79	-963.64	1011.91	287.77	1.44
4396.00	84.90	296.30	3731.26	1021.50	321.81	-989.41	1040.43	288.02	3.84
4426.00	85.60	296.50	3733.74	1049.71	335.11	-1016.19	1070.02	288.25	2.43
4457.00	86.00	295.00	3736.01	1079.00	348.54	-1044.04	1100.68	288.46	5.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
4487.00	86.30	294.80	3738.03	1107.49	361.14	-1071.19	1130.43	288.63	1.20
4517.00	87.00	293.80	3739.78	1136.10	373.46	-1098.48	1160.23	288.78	4.06
4547.00	87.00	293.30	3741.35	1164.83	385.43	-1125.95	1190.09	288.90	1.66
4576.00	87.30	291.20	3742.79	1192.78	396.40	-1152.75	1219.00	288.98	7.31
4607.00	87.90	291.60	3744.09	1222.79	407.70	-1181.59	1249.95	289.04	2.33
4638.00	88.60	291.00	3745.04	1252.82	418.96	-1210.46	1280.91	289.09	2.97
4668.00	88.90	290.80	3745.69	1281.94	429.66	-1238.48	1310.89	289.13	1.20
4698.00	88.30	289.40	3746.42	1311.16	439.96	-1266.64	1340.88	289.15	5.08
4729.00	88.50	289.70	3747.29	1341.42	450.33	-1295.84	1371.86	289.16	1.16
4759.00	88.10	288.30	3748.18	1370.76	460.09	-1324.20	1401.85	289.16	4.85
4790.00	88.20	288.00	3749.18	1401.16	469.75	-1353.64	1432.83	289.14	1.02
4820.00	88.20	286.70	3750.12	1430.67	478.69	-1382.26	1462.80	289.10	4.33
4850.00	88.10	286.00	3751.09	1460.26	487.13	-1411.03	1492.75	289.05	2.36
4881.00	88.10	284.40	3752.12	1490.93	495.25	-1440.93	1523.66	288.97	5.16
4911.00	88.20	284.00	3753.09	1520.68	502.61	-1470.00	1553.54	288.88	1.37
4941.00	88.30	282.80	3754.00	1550.48	509.56	-1499.16	1583.40	288.77	4.01
4972.00	88.30	282.20	3754.92	1581.33	516.26	-1529.42	1614.20	288.65	1.93
5001.00	88.00	280.50	3755.86	1610.23	521.97	-1557.83	1642.95	288.52	5.95
5032.00	88.00	279.90	3756.94	1641.17	527.45	-1588.32	1673.61	288.37	1.93
5062.00	88.80	278.60	3757.78	1671.13	532.27	-1617.92	1703.23	288.21	5.09
5092.00	89.20	278.30	3758.30	1701.12	536.68	-1647.59	1732.80	288.04	1.67
5122.00	89.40	277.40	3758.67	1731.11	540.78	-1677.31	1762.33	287.87	3.07
5151.00	89.40	276.70	3758.97	1760.11	544.34	-1706.09	1790.82	287.70	2.41
5181.00	89.30	275.50	3759.31	1790.11	547.52	-1735.91	1820.22	287.51	4.01
5211.00	89.30	275.20	3759.68	1820.09	550.32	-1765.78	1849.55	287.31	1.00
5242.00	89.00	273.30	3760.14	1851.05	552.62	-1796.69	1879.76	287.10	6.20
5272.00	89.10	273.20	3760.64	1880.98	554.32	-1826.64	1908.90	286.88	.47
5302.00	89.10	272.70	3761.11	1910.90	555.86	-1856.60	1938.02	286.67	1.67
5332.00	89.30	272.50	3761.53	1940.80	557.22	-1886.56	1967.13	286.46	.94
5362.00	89.90	272.50	3761.74	1970.71	558.53	-1916.53	1996.26	286.25	2.00
5393.00	90.10	272.20	3761.74	2001.60	559.80	-1947.51	2026.37	286.04	1.16
5423.00	90.10	271.60	3761.68	2031.48	560.80	-1977.49	2055.47	285.83	2.00
5483.00	90.30	271.20	3761.47	2091.18	562.26	-2037.47	2113.63	285.43	.75
5513.00	89.20	270.90	3761.61	2121.02	562.81	-2067.47	2142.70	285.23	3.80
5544.00	88.70	270.10	3762.17	2151.81	563.08	-2098.46	2172.69	285.02	3.04
5573.00	89.00	270.50	3762.76	2180.60	563.24	-2127.45	2200.75	284.83	1.72
5604.00	89.40	270.90	3763.19	2211.41	563.61	-2158.45	2230.82	284.63	1.82
5635.00	89.50	270.60	3763.49	2242.22	564.02	-2189.44	2260.92	284.45	1.02
5664.00	89.50	270.50	3763.74	2271.03	564.30	-2218.44	2289.09	284.27	.34
5693.00	89.90	270.80	3763.89	2299.85	564.63	-2247.44	2317.28	284.10	1.72
5723.00	90.10	270.40	3763.89	2329.65	564.94	-2277.44	2346.46	283.93	1.49
5752.00	90.40	270.00	3763.76	2358.45	565.04	-2306.44	2374.64	283.77	1.72
5783.00	90.70	270.70	3763.47	2389.23	565.23	-2337.43	2404.80	283.59	2.46
5814.00	91.00	270.60	3763.01	2420.03	565.58	-2368.43	2435.02	283.43	1.02
5844.00	90.40	269.90	3762.64	2449.82	565.71	-2398.43	2464.24	283.27	3.07

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
5873.00	90.70	270.40	3762.36	2478.61	565.79	-2427.42	2492.49	283.12	2.01
5904.00	91.00	270.40	3761.90	2509.39	566.01	-2458.42	2522.73	282.97	.97
5933.00	89.10	270.00	3761.88	2538.18	566.11	-2487.42	2551.02	282.82	6.70
5964.00	89.20	270.40	3762.34	2568.96	566.22	-2518.41	2581.28	282.67	1.33
5995.00	89.10	269.90	3762.80	2599.73	566.30	-2549.41	2611.55	282.52	1.64
6027.00	89.50	271.10	3763.19	2631.51	566.58	-2581.41	2642.85	282.38	3.95
6058.00	89.80	269.90	3763.38	2662.31	566.85	-2612.40	2673.19	282.24	3.99
6090.00	90.20	270.10	3763.38	2694.07	566.85	-2644.40	2704.48	282.10	1.40
6122.00	90.70	270.30	3763.13	2725.84	566.96	-2676.40	2735.79	281.96	1.68
6153.00	88.90	270.50	3763.23	2756.62	567.18	-2707.40	2766.17	281.83	5.84
6184.00	88.60	270.30	3763.91	2787.41	567.39	-2738.39	2796.56	281.71	1.16
6215.00	88.80	270.60	3764.61	2818.19	567.63	-2769.38	2826.96	281.58	1.16
6247.00	89.10	271.00	3765.20	2850.00	568.08	-2801.37	2858.39	281.46	1.56
6278.00	89.20	270.70	3765.66	2880.81	568.54	-2832.37	2888.87	281.35	1.02
6310.00	88.70	270.40	3766.25	2912.60	568.85	-2864.36	2920.30	281.23	1.82
6342.00	88.60	269.80	3767.00	2944.35	568.90	-2896.35	2951.70	281.11	1.90
6373.00	89.10	270.60	3767.62	2975.12	569.01	-2927.34	2982.13	281.00	3.04
6405.00	89.40	270.00	3768.04	3006.90	569.18	-2959.34	3013.58	280.89	2.10
6437.00	89.40	269.60	3768.38	3038.64	569.07	-2991.34	3044.99	280.77	1.25
6469.00	89.70	269.50	3768.63	3070.36	568.82	-3023.34	3076.38	280.66	.99
6500.00	90.20	269.50	3768.65	3101.09	568.55	-3054.34	3106.80	280.54	1.61
6531.00	90.60	269.40	3768.44	3131.82	568.25	-3085.33	3137.23	280.44	1.33
6562.00	90.90	269.30	3768.03	3162.53	567.90	-3116.33	3167.65	280.33	1.02
6594.00	91.60	269.70	3767.33	3194.25	567.62	-3148.32	3199.08	280.22	2.52
6626.00	91.80	268.90	3766.39	3225.94	567.23	-3180.30	3230.49	280.11	2.58
6658.00	92.30	269.20	3765.24	3257.60	566.70	-3212.28	3261.88	280.00	1.82
6690.00	91.30	269.20	3764.24	3289.29	566.25	-3244.26	3293.30	279.90	3.12
6721.00	91.50	270.00	3763.48	3320.01	566.03	-3275.25	3323.80	279.81	2.66
6752.00	91.60	269.50	3762.64	3350.75	565.90	-3306.24	3354.32	279.71	1.64
6784.00	92.00	269.30	3761.63	3382.45	565.56	-3338.22	3385.79	279.62	1.40
6816.00	92.30	269.10	3760.43	3414.12	565.12	-3370.19	3417.25	279.52	1.13
6847.00	92.50	269.60	3759.14	3444.82	564.77	-3401.16	3447.74	279.43	1.74
6879.00	90.70	269.60	3758.24	3476.53	564.54	-3433.15	3479.26	279.34	5.62
6911.00	89.00	270.20	3758.33	3508.28	564.49	-3465.15	3510.83	279.25	5.63
6943.00	88.80	270.40	3758.94	3540.05	564.65	-3497.14	3542.43	279.17	.88
6983.00	88.80	270.40	3759.78	3579.77	564.93	-3537.13	3581.96	279.07	.00
7014.00	89.50	270.20	3760.24	3610.55	565.10	-3568.13	3612.60	279.00	2.35
7046.00	89.10	269.80	3760.63	3642.31	565.10	-3600.13	3644.21	278.92	1.77
7078.00	90.10	270.80	3760.85	3674.08	565.26	-3632.12	3675.85	278.85	4.42
7110.00	89.60	269.30	3760.94	3705.84	565.29	-3664.12	3707.47	278.77	4.94
7141.00	89.60	269.50	3761.15	3736.56	564.97	-3695.12	3738.06	278.69	.65
7173.00	89.00	269.70	3761.54	3768.29	564.74	-3727.12	3769.66	278.62	1.98
7205.00	88.80	268.90	3762.16	3799.99	564.35	-3759.11	3801.24	278.54	2.58
7236.00	88.40	268.40	3762.91	3830.64	563.62	-3790.09	3831.77	278.46	2.07
7268.00	88.30	268.00	3763.84	3862.25	562.62	-3822.06	3863.25	278.37	1.29

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
7300.00	88.00	267.40	3764.87	3893.80	561.33	-3854.02	3894.68	278.29	2.10
7331.00	88.30	267.00	3765.87	3924.33	559.82	-3884.97	3925.09	278.20	1.61
7363.00	88.50	266.70	3766.76	3955.81	558.06	-3916.90	3956.46	278.11	1.13
7395.00	88.50	266.20	3767.60	3987.25	556.08	-3948.83	3987.79	278.02	1.56
7458.00	89.00	265.40	3768.98	4049.02	551.47	-4011.65	4049.37	277.83	1.50
7488.00	89.10	264.50	3769.47	4078.35	548.83	-4041.53	4078.62	277.73	3.02
7520.00	89.40	264.80	3769.89	4109.60	545.85	-4073.38	4109.79	277.63	1.33
7552.00	89.50	264.20	3770.20	4140.83	542.78	-4105.24	4140.96	277.53	1.90
7583.00	89.70	263.80	3770.42	4171.02	539.54	-4136.06	4171.11	277.43	1.44
7614.00	90.10	264.20	3770.47	4201.22	536.30	-4166.89	4201.26	277.33	1.82
7645.00	89.70	263.70	3770.52	4231.41	533.03	-4197.72	4231.43	277.24	2.07
Last Nevis MWD Survey									
7677.00	90.80	263.60	3770.38	4262.54	529.49	-4229.52	4262.54	277.14	3.45
Survey Projection to TD									
7730.00	90.80	263.60	3769.64	4314.07	523.58	-4282.19	4314.08	276.97	.00

8/17/2007

MC 30-04-12 #124

Wellbore Diagram

API # 30-039-29968

SE NE, Sec12, T30N, R4W Rio Arriba, NM

RCVD AUG 20 '07
OIL CONS. DIV.
DIST. 3

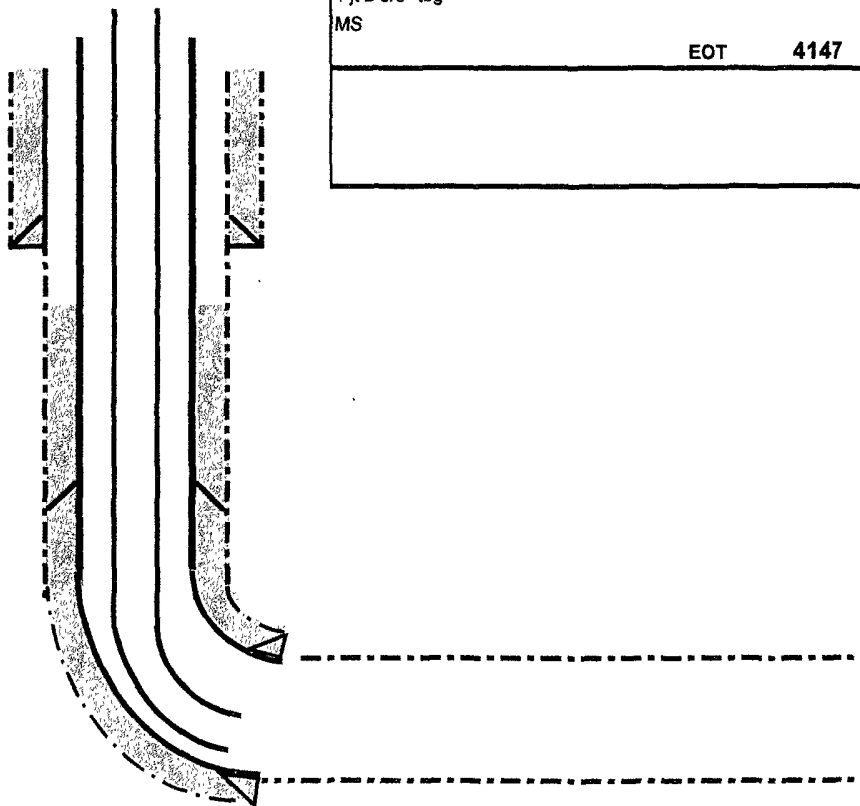
9 5/8" 36 # J-55 casing @ 318'
TOC surf.

TOC = 926'
CBL 8-15-07

DV Tool 3184'

7", 23#, J-55 LT&C casing @
4164' DV tool @ 3184',
Cement; STG 1, 80 sx G +3%
econo, 11.5# 2.9 yld, & 75 sx
50/50/2, 13.5#, 1.33 yld; STG2,
250 sx G +3% econo, 11.5#, 2.9
yld, & 50 sx G 15.6#, 1.18 yld.
Circ cement after stg 1, NO
cement circ on stg 2. TOC = 926'

125 jts 2 3/8" tbg	
SN	4111
1 jt 2 3/8" tbg	
MS	
	EOT 4147



MD from surface

4164

7759