

30-039-26731



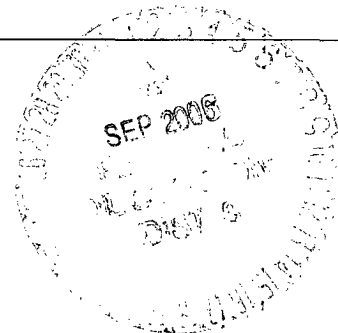
1724-B Townhurst Dr, Houston, Tx 77043
(713) 827-8302
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Job Number: 204-264
Company: Black Hills E & P / Mallon Oil
Lease/Well: Jicarilla 29-03-11 # 2
Location: Rio Arriba Co., NM
Rig Name: Longhorn # 1
RKB:
G.L. or M.S.L.:

State/Country: New Mexico
Declination: 10.60336
Grid: -0.36
File name: N:\BLACKH-1\200515-264J-1\29-03-11.SVY
Date/Time: 28-Apr-06 / 11:24
Curve Name: Final NMOCF Filing

2ND LATERAL

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 289.21
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead



Surf 2050/N 630/E
BHL, 1925/N 751/E
end BHL, 701/W 741/W

md1 3900 md2 7910
Tvd1 3804 Tvd2 3762

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
Tie in w/ Actual Survey									
3900.00	96.70	309.50	3804.98	155.58	124.63	-121.33	173.93	315.77	.00
Fisrt Nevis MWD Survey									
3932.00	93.10	310.00	3802.25	185.43	145.01	-145.84	205.66	314.84	11.36
3963.00	94.20	310.90	3800.27	214.26	165.08	-169.38	236.52	314.26	4.58
3995.00	90.00	310.90	3799.10	243.97	186.02	-193.54	268.44	313.86	13.12
4026.00	89.90	310.90	3799.13	272.78	206.31	-216.98	299.41	313.56	.32
4057.00	86.80	308.70	3800.02	301.78	226.14	-240.78	330.33	313.21	12.26
4118.00	90.10	307.10	3801.67	359.53	263.60	-288.89	391.07	312.38	6.01
4181.00	92.30	303.80	3800.35	419.99	300.12	-340.19	453.65	311.42	6.29
4244.00	92.90	300.30	3797.49	481.34	333.51	-393.52	515.84	310.28	5.63
4307.00	93.60	296.60	3793.92	543.42	363.47	-448.81	577.53	309.00	5.97
4370.00	91.30	292.30	3791.22	606.08	389.51	-506.09	638.63	307.58	7.73
4401.00	91.10	292.40	3790.57	637.02	401.30	-534.76	668.59	306.89	.72
4432.00	90.80	292.00	3790.06	667.98	413.01	-563.46	698.61	306.24	1.61
4496.00	91.00	290.30	3789.06	731.93	436.10	-623.14	760.58	304.99	2.67
4559.00	89.80	288.20	3788.62	794.92	456.87	-682.61	821.39	303.79	3.84
4622.00	90.90	286.80	3788.23	857.89	475.81	-742.69	882.03	302.65	2.83
4685.00	91.00	286.60	3787.19	920.82	493.91	-803.02	942.76	301.59	.35
4747.00	90.30	286.10	3786.48	982.74	511.36	-862.51	1002.71	300.66	1.39
4810.00	90.10	287.80	3786.26	1045.69	529.73	-922.77	1064.01	299.86	2.72
4874.00	89.90	287.90	3786.26	1109.67	549.35	-983.69	1126.69	299.18	.35
4936.00	91.10	286.70	3785.72	1171.63	567.78	-1042.88	1187.43	298.57	2.74

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	
5000.00	90.20	287.90	3785.00	1235.59	586.81	-1103.98	1250.25	297.99	2.34
5063.00	88.10	288.90	3785.93	1298.57	606.70	-1163.75	1312.40	297.53	3.69
5125.00	88.50	288.10	3787.77	1360.54	626.36	-1222.52	1373.64	297.13	1.44
5188.00	90.30	286.70	3788.43	1423.50	645.20	-1282.63	1435.76	296.70	3.62
5250.00	90.70	285.60	3787.89	1485.41	662.44	-1342.18	1496.75	296.27	1.89
5312.00	90.90	285.00	3787.02	1547.26	678.80	-1401.97	1557.66	295.84	1.02
5375.00	90.50	285.40	3786.25	1610.10	695.32	-1462.77	1619.61	295.42	.90
5438.00	89.80	285.20	3786.09	1672.95	711.94	-1523.53	1681.67	295.05	1.16
5501.00	88.70	285.10	3786.91	1735.79	728.40	-1584.34	1743.76	294.69	1.75
5564.00	88.90	285.00	3788.23	1798.61	744.76	-1645.16	1805.89	294.36	.35
5626.00	89.30	281.80	3789.21	1860.27	759.12	-1705.46	1866.78	293.99	5.20
5689.00	90.00	283.60	3789.59	1922.86	772.97	-1766.91	1928.59	293.63	3.07
5752.00	87.60	282.80	3790.91	1985.50	787.36	-1828.23	1990.57	293.30	4.02
5856.00	89.30	281.80	3793.72	2088.70	809.50	-1929.80	2092.71	292.76	1.90
5919.00	92.50	282.30	3792.73	2151.19	822.65	-1991.40	2154.63	292.45	5.14
5981.00	93.00	282.80	3789.76	2212.70	836.11	-2051.85	2215.66	292.17	1.14
6043.00	93.20	281.00	3786.41	2274.11	848.87	-2112.42	2276.60	291.89	2.92
6106.00	93.30	280.40	3782.83	2336.31	860.55	-2174.23	2338.33	291.59	.96
6169.00	93.10	280.80	3779.32	2398.50	872.12	-2236.06	2400.11	291.31	.71
6200.00	92.80	281.00	3777.72	2429.14	877.97	-2266.46	2430.57	291.18	1.16
6232.00	91.70	281.90	3776.47	2460.82	884.32	-2297.79	2462.09	291.05	4.44
6294.00	91.60	282.30	3774.68	2522.32	897.31	-2358.39	2523.33	290.83	.66
6357.00	90.50	281.90	3773.53	2584.82	910.52	-2419.98	2585.60	290.62	1.86
6420.00	90.20	283.10	3773.14	2647.39	924.15	-2481.48	2647.98	290.43	1.96
6483.00	89.70	284.40	3773.20	2710.10	939.13	-2542.68	2710.57	290.27	2.21
6546.00	89.00	284.80	3773.91	2772.89	955.00	-2603.64	2773.26	290.14	1.28
6609.00	88.50	285.30	3775.29	2835.71	971.36	-2664.46	2836.00	290.03	1.12
6672.00	89.60	286.30	3776.33	2898.59	988.51	-2725.07	2898.82	289.94	2.36
6735.00	89.30	285.60	3776.93	2961.48	1005.82	-2785.64	2961.67	289.85	1.21
6798.00	90.30	286.40	3777.15	3024.38	1023.19	-2846.20	3024.53	289.77	2.03
6861.00	90.30	286.80	3776.82	3087.32	1041.18	-2906.58	3087.43	289.71	.63
6924.00	89.00	286.50	3777.21	3150.25	1059.23	-2966.93	3150.34	289.65	2.12
7018.00	90.90	287.50	3777.29	3244.18	1086.72	-3056.82	3244.24	289.57	2.28
7050.00	90.90	287.50	3776.79	3276.16	1096.34	-3087.33	3276.22	289.55	.00
7112.00	90.40	287.20	3776.09	3338.12	1114.83	-3146.51	3338.17	289.51	.94
7174.00	92.20	288.20	3774.68	3400.08	1133.67	-3205.56	3400.12	289.48	3.32
7237.00	91.80	288.40	3772.48	3463.03	1153.44	-3265.33	3463.06	289.46	.71
7299.00	90.60	287.70	3771.18	3525.01	1172.64	-3324.27	3525.03	289.43	2.24
7362.00	91.20	288.90	3770.19	3587.99	1192.42	-3384.07	3588.01	289.41	2.13
7425.00	90.90	287.50	3769.04	3650.97	1212.10	-3443.91	3650.98	289.39	2.27
7488.00	90.50	286.60	3768.27	3713.92	1230.57	-3504.13	3713.93	289.35	1.56
7551.00	90.70	286.80	3767.61	3776.85	1248.67	-3564.47	3776.86	289.31	.45
7614.00	91.50	286.90	3766.40	3839.79	1266.93	-3624.76	3839.79	289.27	1.28
7677.00	91.30	285.40	3764.86	3902.68	1284.45	-3685.25	3902.68	289.22	2.40
7708.00	90.80	285.80	3764.29	3933.61	1292.78	-3715.10	3933.61	289.19	2.07

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	
7739.00	90.70	285.80	3763.89	3964.55	1301.22	-3744.93	3964.55	289.16	.32
7771.00	90.50	286.50	3763.55	3996.50	1310.12	-3775.67	3996.51	289.14	2.27
7802.00	90.40	286.20	3763.31	4027.46	1318.85	-3805.41	4027.47	289.11	1.02
7834.00	90.60	286.60	3763.03	4059.42	1327.88	-3836.11	4059.43	289.09	1.40
Last Nevis MWD Survey									
7865.00	90.70	286.20	3762.68	4090.39	1336.63	-3865.85	4090.40	289.07	1.33
Survey Projected to TD									
7910.00	90.70	286.20	3762.13	4135.32	1349.19	-3909.06	4135.34	289.04	.00

4-28-06

surf 2050 FN - 630 FE
 - 1349 5272'
 BH 701 FN - 3909
 733' FW

SECOND LATERAL

section = 5272'