

Scientific Drilling Intl.

SURVEY REPORT

Company: MACK ENERGY CORPORATION
 Field: LOCO HILLS PADDOCK
 Site: EDDY COUNTY, NEW MEXICO
 Well: BRIGHAM H FEDERAL #3
 Wellpath: OH Original hole

Date: 2/14/100
 Co-ordinate(NE) Reference:
 Vertical (TVD) Reference:
 Section (VS) Reference:
 Survey Calculation Method:

Time: 13:26:16
 Page: 1
 Site: EDDY COUNTY, NEW MEXICO, Grid North
 SITE 0.0 above Mean Sea Level
 Site (0.0E,0.0N,143.4Az)
 Minimum Curvature

Survey: Survey #1

Start Date: 2/6/100

Company: Scientific Drilling Intl.
 Tool:

Engineer: Bill Hoffman

Survey

Sta	CLen ft	MD ft	Inc deg	Azlm deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS d/100ft	Build d/100ft	Turn d/100ft	ChD ft	ChA deg
1	0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00
2	Fmt	426.0	1.25	115.00	426.0	4.1	-2.0	4.2	0.29	0.29	0.00	4.6	115.00
3	94.0	520.0	1.25	101.00	519.9	5.7	-2.6	6.1	0.32	0.00	-14.89	6.7	112.87
4	88.0	608.0	1.75	90.00	607.9	7.3	-2.8	8.4	0.65	0.57	-12.50	8.9	108.22
5	92.0	700.0	1.25	88.00	699.9	8.7	-2.7	10.8	0.55	-0.54	-2.17	11.2	104.19
6	93.0	793.0	1.50	85.00	792.9	9.9	-2.6	13.1	0.28	0.27	-3.23	13.3	101.25
7	93.0	886.0	1.50	70.00	885.8	10.9	-2.1	15.4	0.42	0.00	-16.13	15.6	97.67
8	Fmt	989.0	1.75	58.00	988.8	11.4	-0.8	18.0	0.41	0.24	-11.65	18.0	92.49
9	93.0	1082.0	1.75	54.00	1081.7	11.5	0.8	20.4	0.13	0.00	-4.30	20.4	87.74
10	90.0	1172.0	2.00	51.00	1171.7	11.5	2.6	22.7	0.30	0.28	-3.33	22.9	83.47
11	91.0	1263.0	1.75	34.00	1262.6	10.9	4.8	24.7	0.67	-0.27	-18.68	25.2	79.12
12	92.0	1355.0	1.75	19.00	1354.6	9.7	7.2	26.0	0.50	0.00	-16.30	27.0	74.41
13	92.0	1447.0	2.00	11.00	1446.6	7.8	10.1	26.7	0.39	0.27	-8.70	28.6	69.21
14	93.0	1540.0	2.00	359.00	1539.5	5.4	13.4	27.0	0.45	0.00	-12.90	30.1	63.67
15	93.0	1633.0	1.75	2.00	1632.4	3.0	16.4	27.0	0.29	-0.27	3.23	31.6	58.74
16	94.0	1727.0	1.75	5.00	1726.4	0.8	19.3	27.2	0.10	0.00	3.19	33.3	54.69
17	92.0	1819.0	2.00	347.00	1818.4	-1.8	22.2	27.0	0.69	0.27	-19.57	35.0	50.49
18	93.0	1912.0	2.25	329.00	1911.3	-5.1	25.4	25.7	0.76	0.27	-19.35	36.1	45.31
19	81.0	1993.0	1.60	26.10	1992.3	-7.2	27.8	25.3	2.38	-0.80	70.49	37.6	42.39
20	92.0	2085.0	1.20	141.40	2084.2	-6.8	28.2	26.5	2.58	-0.43	125.33	38.7	43.27
21	92.0	2177.0	3.70	168.90	2176.1	-3.1	24.5	27.7	2.93	2.72	29.89	37.0	48.49
22	62.0	2239.0	5.60	170.30	2237.9	1.4	19.5	28.6	3.07	3.06	2.26	34.6	55.62
23	61.0	2300.0	6.50	159.40	2298.6	7.3	13.4	30.3	2.39	1.48	-17.87	33.1	66.16
24	94.0	2394.0	8.40	155.90	2391.8	19.1	2.1	35.0	2.08	2.02	-3.72	35.0	86.34
25	89.0	2483.0	10.70	150.90	2479.6	33.7	-11.0	41.6	2.74	2.58	-5.62	43.1	104.83
26	62.0	2545.0	11.60	151.60	2540.4	45.6	-21.5	47.4	1.47	1.45	1.13	52.1	114.43
27	94.0	2639.0	10.90	152.00	2632.6	63.7	-37.7	56.1	0.75	-0.74	0.43	67.6	123.91
28	62.0	2701.0	10.60	150.90	2693.5	75.2	-47.9	61.6	0.59	-0.48	-1.77	78.0	127.84
29	60.0	2761.0	11.80	148.10	2752.4	86.7	-57.9	67.5	2.20	2.00	-4.67	88.9	130.61
30	62.0	2823.0	11.60	146.40	2813.1	99.3	-68.5	74.3	0.64	-0.32	-2.74	101.0	132.65
31	63.0	2886.0	11.40	153.10	2874.8	111.7	-79.3	80.6	2.14	-0.32	10.63	113.1	134.51
32	64.0	2950.0	12.00	151.60	2937.5	124.6	-90.8	86.7	1.05	0.94	-2.34	125.5	136.33
33	92.0	3042.0	11.80	151.30	3027.5	143.3	-107.4	95.7	0.23	-0.22	-0.33	143.9	138.30
34	63.0	3105.0	11.30	151.30	3089.2	155.8	-118.5	101.8	0.79	-0.79	0.00	156.2	139.34
35	63.0	3168.0	11.30	149.90	3151.0	168.1	-129.3	107.9	0.44	0.00	-2.22	168.3	140.16
36	63.0	3231.0	11.40	146.70	3212.8	180.4	-139.8	114.4	1.01	0.16	-5.08	180.6	140.72
37	60.0	3291.0	10.90	146.70	3271.6	192.0	-149.5	120.7	0.83	-0.83	0.00	192.2	141.08
38	61.0	3352.0	10.60	148.10	3331.6	203.4	-159.1	126.9	0.65	-0.49	2.30	203.5	141.43
39	91.0	3443.0	11.10	140.40	3420.9	220.5	-172.9	136.9	1.68	0.55	-8.46	220.6	141.64
40	94.0	3537.0	10.60	143.60	3513.3	238.1	-186.9	147.8	0.83	-0.53	3.40	238.2	141.66
41	62.0	3599.0	10.20	143.90	3574.2	249.3	-195.9	154.4	0.65	-0.65	0.48	249.4	141.76
42	91.0	3690.0	10.40	150.00	3663.8	265.5	-209.5	163.2	1.22	0.22	6.70	265.6	142.08
43	94.0	3784.0	9.90	148.50	3756.3	282.0	-223.8	171.7	0.60	-0.53	-1.60	282.1	142.50
44	93.0	3877.0	10.60	151.30	3847.8	298.5	-238.1	180.0	0.92	0.75	3.01	298.5	142.91
45	62.0	3939.0	10.40	149.50	3908.8	309.7	-247.9	185.6	0.62	-0.32	-2.90	309.7	143.18
46	62.0	4001.0	9.50	146.00	3969.9	320.3	-257.0	191.3	1.75	-1.45	-5.65	320.3	143.34
47	95.0	4096.0	7.70	146.40	4063.8	334.5	-268.8	199.2	1.90	-1.89	0.42	334.5	143.46
48	93.0	4189.0	6.00	148.80	4156.1	345.6	-278.1	205.1	1.85	-1.83	2.58	345.6	143.59