E & B Natural Resources Management Corp. — DIRECTIONAL DRILLING COMPANY

DIST. CARSON

LEASE WILMINGTON

RADIUS OF CURVATURE

4/11/83

WELL# 19
ELEV. 60' K.B.
SURVEY BY EASTMAN
TYPE SINGLE SHOT LAMB. COORD. N 4 041 448 E 4 204 712
MAG. DEC. 14 DEGREES WELL COURSE - N 24 38' E

MEASURED DEPTH	DRIFT ANGLE	DRIFT DIRECTION	VERTICAL DEPTH	SECTION	LATITUDE FEET	DEPARTURE FEET	DOG LEG/100
0	0 00	N 0 00 E	0.00	0.00	0.00 N	0.00 E	0.00
165	30	S 18 00 W	165.00	-.71	.68 S	.22 W	.30
238	4 30	N 21 00 E	237.91	-.53	1.37 S	1.72 E	6.85
298	8 00	N 22 00 E	297.55	5.99	4.71 N	4.11 E	5.84
359	11 00	N 31 00 E	357.70	16.05	13.71 N	8.60 E	5.47
420	14 30	N 33 00 E	417.19	29.39	25.12 N	15.73 E	5.78
480	18 00	N 31 00 E	474.78	46.04	39.36 N	24.63 E	5.91
541	20 30	N 24 00 E	532.37	66.12	57.19 N	33.91 E	5.57
570	22 15	N 20 00 E	559.37	76.68	66.99 N	37.87 E	7.85
633	25 15	N 23 30 E	617.03	102.01	90.55 N	47.27 E	5.26
695	28 45	N 25 00 E	672.27	130.15	116.21 N	58.83 E	5.75
757	32 15	N 24 30 E	725.68	161.61	144.78 N	72.00 E	5.66
819	29 00	N 27 30 E	779.02	193.18	173.16 N	85.84 E	5.79
881	31 00	N 25 30 E	832.71	224.16	200.90 N	99.67 E	3.61
973	33 45	N 23 00 E	910.41	273.41	245.81 N	119.90 E	3.32
1035	36 30	N 25 00 E	961.11	309.08	278.39 N	134.41 E	4.81
1098	39 15	N 27 00 E	1010.84	347.74	313.15 N	151.36 E	4.78
1157	42 15	N 25 00 E	1055.53	386.24	347.76 N	168.24 E	5.55
1217	45 00	N 24 30 E	1098.96	427.63	385.35 N	185.57 E	4.62
1280	48 00	N 24 00 E	1142.32	473.32	427.01 N	204.34 E	4.80
1406	50 15	N 23 00 E	1224.77	568.56	514.37 N	242.33 E	1.88
1498	50 30	N 23 00 E	1283.44	639.40	579.60 N	270.02 E	.27
1621	50 45	N 23 30 E	1361.47	734.45	666.96 N	307.55 E	.37
1775	50 45	N 24 00 E	1458.91	853.70	776.12 N	355.58 E	.25
1959	51 45	N 24 00 E	1574.08	997.19	907.21 N	413.95 E	.54
2112	51 45	N 24 00 E	1668.80	1117.34	1016.98 N	462.82 E	0.00
2263	52 45	N 24 30 E	1761.24	1236.73	1125.84 N	511.86 E	.71

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JUL 5 1 09 PM '83
DIV. OF OIL AND GAS
LONG BEACH, CA.