Scientific Drilling

MARBOB ENERGY

Field: Lusk
Site: Lea County, NM
Well: King Air Federal #1
Wellpath: VH - Job #32K1009416
Survey: 10/08/09

SUR: B-8-19s-32e, 330/N & 2310/E
BHL: G-8-19s-32e, 2288.N & 2029/E
API # 30-025-38897

This survey is correct to the best of my knowledge and is supported by actual field data.

.....Company Representative

Notorized this date 3rd of November, 2009.

Notary Signature
County of Midland
State of Texas

NOTARY PUBLIC STATE OF TEXAS
CARRIE REED
My Commission Expires
October 4, 2011

Scientific Drilling

Scientific Drilling International
Survey Report

Company:	MARBOB ENERGY	**Date:** 10/14/2009	**Time:** 12:08:20	**Page:**	1
Field:	Lusk	**Co-ordinate(NE) Reference:**	Site: Lea County, NM, True North		
Site:	Lea County, NM	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	King Air Federal #1	**Section (VS) Reference:**	Well (0.00N,0.00E,180.00Azi)		
Wellpath:	VH - Job #32K1009416	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey:	10/08/09 KSRG 0'-10000'	**Start Date:**	10/08/2009
Company:	Scientific Drilling Internatio	**Engineer:**	Guebara/Rowe/Williams
Tool:	Keeper;Keeper Gyro	**Tied-to:**	From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	359.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.83	16.22	100.00	-0.70	0.70	0.20	0.83	0.72	16.22
200.00	0.18	51.94	199.99	-1.49	1.49	0.53	0.69	1.58	19.55
300.00	0.16	97.29	299.99	-1.57	1.57	0.79	0.13	1.75	26.77
400.00	0.15	137.63	399.99	-1.45	1.45	1.02	0.11	1.77	35.00
500.00	0.26	183.89	499.99	-1.13	1.13	1.09	0.19	1.57	43.98
600.00	0.38	185.46	599.99	-0.57	0.57	1.04	0.12	1.19	61.22
700.00	0.44	190.08	699.99	0.14	-0.14	0.94	0.07	0.95	98.15
800.00	0.49	215.76	799.98	0.86	-0.86	0.63	0.21	1.06	143.90
900.00	0.97	213.49	899.98	1.91	-1.91	-0.09	0.48	1.92	182.68
1000.00	0.94	212.77	999.96	3.31	-3.31	-1.00	0.03	3.46	196.83
1100.00	0.87	213.94	1099.95	4.63	-4.63	-1.87	0.07	4.99	201.99
1200.00	0.76	207.64	1199.94	5.85	-5.85	-2.60	0.14	6.40	203.98
1300.00	0.50	214.20	1299.93	6.79	-6.79	-3.15	0.27	7.49	204.90
1400.00	0.40	242.22	1399.93	7.32	-7.32	-3.71	0.24	8.20	206.87
1500.00	0.16	297.44	1499.93	7.42	-7.42	-4.14	0.34	8.49	209.17
1600.00	0.26	344.81	1599.93	7.13	-7.13	-4.32	0.19	8.34	211.22
1700.00	0.33	15.93	1699.93	6.64	-6.64	-4.30	0.17	7.91	212.96
1800.00	0.35	33.37	1799.92	6.10	-6.10	-4.06	0.10	7.33	213.60
1900.00	0.46	32.56	1899.92	5.51	-5.51	-3.67	0.11	6.62	213.68
2000.00	0.63	28.00	1999.92	4 69	-4.69	-3.20	0.18	5.67	214.31
2100.00	0.66	28.49	2099.91	3.70	-3.70	-2.67	0.03	4.56	215.80
2200.00	0.82	37.60	2199.90	2.62	-2.62	-1.95	0.20	3.27	216.69
2300.00	1.26	42.02	2299.89	1.24	-1 24	-0.78	0.45	1.47	212.25
2400.00	1.36	41.64	2399.86	-0.46	0.46	0.74	0.10	0.88	57.98
2500.00	1.61	42.39	2499.83	-2.39	2.39	2.48	0 25	3.44	46.05
2600.00	1.86	47.72	2599.78	-4.52	4.52	4.63	0.30	6.47	45.68
2700.00	1.52	48.38	2699.74	-6.49	6.49	6.82	0.34	9.41	46.41
2800.00	1.09	32.44	2799.71	-8.17	8.17	8.32	0.56	11.66	45.51
2900.00	0.71	9.33	2899.70	-9.59	9.59	8.93	0.52	13.10	42.97
3000.00	0.69	359.93	2999.69	-10.80	10.80	9.03	0.12	14.08	39.89
3100.00	0.60	349.45	3099.69	-11 92	11.92	8.93	0.15	14.90	36.85
3200.00	0.52	334.55	3199.68	-12.84	12.84	8.64	0.17	15.48	33.94
3300.00	0.63	333.45	3299.68	-13.75	13.75	8.20	0.11	16.01	30.83
3400.00	0.54	329.07	3399.67	-14.64	14.64	7.71	0.10	16.55	27.78
3500.00	0.30	333.41	3499.67	-15.28	15.28	7 35	0.24	16.96	25.70
3600.00	0.17	286.95	3599.67	-15.56	15.56	7.10	0.22	17.10	24.52
3700.00	0.27	263.16	3699.67	-15.57	15.57	6.72	0.13	16.96	23.34
3800.00	0.32	262.20	3799.66	-15.51	15.51	6.21	0.05	16.70	21.82
3900.00	0.45	267.46	3899.66	-15.45	15.45	5.54	0.13	16.41	19.73
4000.00	0.60	284.75	3999.66	-15.57	15.57	4.64	0.22	16.24	16.60
4100.00	0.67	291.14	4099.65	-15.91	15.91	3.59	0.10	16.31	12 72
4200.00	0.88	295.27	4199.64	-16.45	16.45	2.35	0.22	16.62	8 13
4300.00	0.86	291.62	4299.63	-17.05	17.05	0.96	0.06	17.08	3.22
4400.00	0 79	297.17	4399.62	-17.65	17.65	-0 35	0.11	17.65	358.85
4500.00	0.80	300.15	4499.61	-18.31	18.31	-1.57	0 04	18.38	355.10
4600.00	0.87	297.81	4599.60	-19.02	19.02	-2.84	0.08	19.23	351.49
4700.00	0.83	300.36	4699.59	-19.74	19.74	-4.14	0.06	20.17	348.15
4800.00	1 25	296.39	4799.57	-20.59	20.59	-5.74	0.43	21.37	344.41

DEPTH
MD ft
5" = 100ft

SHOES

0 GRFET Hr 10
avg = 1 ft

COMMENTS

inc azi
TVD

Survey Report

Vertical Section Plane: 172.11°	Total Correction: 7.61° East to Grid
Calculation Method: Minimum Curvature	Survey Reference: Wellhead
North Aligned to: Grid North	Well: KING AIR FEDERAL #1
KBH: 16.00' KELLY BUSHINGS TO GROUND LEVEL	FIELD: LUSK; BONE SPRING NORTH

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
TIE IN TO SCIENTIFIC GYRO SURVEY AT 8800'MD.											
8800 00	1 87	259 33	8797.66		-42 10	25.08 N	125.69 W	128 17	281 28		
THE FOLLOWING ARE PATHFINDER MWD SURVEYS											
8828.00	1 67	254 74	8825 65	28 00	-42.02	24 89 N	126 53 W	128 96	281 13	0 87	115 48
8860 00	1 41	216 74	8857 64	32 00	-41 68	24 45 N	127.22 W	129 55	280 88	3 23	115 48
8891 00	5 10	163 40	8888 58	31 00	-40.05	22 82 N	127.05 W	129 09	280 18	14 21	119 12
8923 00	10 55	158 08	8920 28	32 00	-35 80	18 74 N	125 55 W	126 94	278 49	17.16	119.12
8954 00	15 56	155 10	8950 46	31 00	-29 06	12 33 N	122 74 W	123 36	275 74	16 30	119 12
8985 00	18 99	152 96	8980 06	31.00	-20 32	4 06 N	118.69 W	118.76	271 96	11 25	119 12
9017 00	22 25	152 01	9010 01	32 00	-9.71	5 93 S	113 48 W	113 64	267.01	10.24	119 12
9049 00	25 15	151 44	9039 31	32 00	2 35	17 25 S	107 39 W	108 76	260 87	9 09	119.12
9080 00	28 40	153 40	9066.98	31 00	15 49	29 63 S	100.94 W	105 19	253.64	10.86	119 09
9112 00	31 74	153 82	9094 67	32 00	30 70	43 99 S	93.81 W	103.62	244 88	10 46	119 09
9143.00	34 56	154 78	9120 62	31 00	46 84	59 27 S	86 47 W	104.83	235 57	9 25	122 71
9174 00	37 81	156 35	9145 64	31 00	64.38	75 93 S	78 91 W	109 51	226 10	10 90	119 09
9206.00	41.24	157.49	9170.32	32 00	84 03	94.67 S	70.93 W	118.29	216 84	10.96	119.09
9237.00	44 93	157 40	9192 96	31 00	104 52	114 22 S	62 81 W	130.35	208.81	11 91	122.71
9268 00	48 72	156 83	9214 16	31 00	126 35	135 04 S	54 02 W	145.44	201 80	12 30	122 71
9300.00	51 88	155 99	9234 60	32.00	150 05	157 60 S	44.16 W	163.67	195.65	10.08	122.71
9331 00	54.61	156 53	9253 15	31 00	173 94	180 33 S	34 16 W	183 54	190 73	8 92	119 09
9362 00	58 04	157 39	9270 34	31 00	198 84	204 07 S	24 07 W	205 49	186 73	11 30	122 71
9394 00	62.70	157.03	9286 15	32 00	225 71	229 71 S	13.30 W	230.09	183.31	14.58	122 71
9425.00	67.18	156.20	9299 28	31 00	252.76	255 47 S	2.15 W	255 48	180 48	14 66	122 71
9456 00	70 70	156 17	9310 42	31 00	280.57	281 94 S	9 53 E	282.10	178 06	11 35	122 71
9488 00	73 51	156 48	9320 25	32 00	309 87	309 82 S	21.75 E	310 58	175 98	8 83	122.71
9519 00	76 94	157 04	9328 16	31 00	338.78	337 36 S	33 58 E	339.03	174.32	11 20	126 32
9550 00	80 37	157 96	9334 25	31 00	368 18	365 44 S	45 20 E	368 22	172 95	11.44	126 32
9582 00	82 83	158 47	9338 93	32 00	398 91	394 83 S	56 95 E	398 92	171 79	7 85	126 32
9613 00	83 89	158 92	9342 51	31 00	428.86	423.52 S	68.14 E	428.97	170 86	3 71	126 32
9645 00	85 82	159 80	9345 38	32 00	459 95	453 34 S	79 37 E	460 24	170 07	6 62	126 32
9676 00	88 02	160.84	9347 05	31 00	490 25	482 49 S	89 80 E	490 77	169 46	7 85	126 32
9708 00	88 64	160 65	9347 98	32 00	521 61	512 68 S	100 34 E	522 41	168 93	2.03	126 32
9739 00	89 08	160 19	9348 60	31 00	551.96	541 89 S	110 73 E	553 08	168 45	2 05	126 32
9771 00	90 57	161 05	9348 70	32 00	583 31	572 07 S	121.35 E	584 80	168 02	5 38	129 94
9803 00	91 28	161 43	9348 18	32 00	614 74	602.37 S	131 64 E	616.58	167.67	2 52	129 94
9834 00	91 19	161 77	9347 51	31.00	645 21	631 78 S	141 42 E	647 41	167 38	1 14	129 94
9865 00	91 28	161 24	9346 84	31 00	675 67	661 17 S	151 25 E	678 25	167 11	1 73	129.94
9896 00	91 01	161 24	9346 22	31 00	706 11	690 51 S	161 22 E	709 09	166 86	0 87	129 94
9928 00	90.48	160 59	9345.81	32.00	737.50	720.75 S	171 68 E	740.92	166 60	2 62	129.94
9959 00	89 78	160 54	9345 74	31.00	767 87	749 99 S	182 00 E	771 75	166 36	2 26	129 94
9990 00	89 08	161 48	9346 04	31 00	798.29	779 30 S	192 08 E	802 62	166 15	3 78	129.94
10022.00	88 64	162 27	9346.68	32 00	829.77	809.70 S	202 04 E	834 53	165.99	2.83	129 94
10085 00	87 85	163 09	9348 61	63 00	891 89	869 82 S	220 78 E	897 40	165 76	1 81	129 94
10149 00	87.76	164 39	9351 06	64 00	955 16	931.21 S	238 69 E	961 32	165.62	2 03	129 94
10211 00	90 31	167 07	9352 11	62 00	1016.76	991 28 S	253.97 E	1023 30	165.63	5 97	129 94
10273 00	90 04	171 29	9351 92	62 00	1078 66	1052 16 S	265 60 E	1085 17	165 83	6 82	129 94
10336 00	89 78	174 36	9352 02	63 00	1141 65	1114 66 S	273 47 E	1147 72	166 22	4 89	133 55
10399 00	90.04	175 27	9352 11	63 00	1204 58	1177 40 S	279 17 E	1210 05	166 66	1 50	133 55
10461 00	90 75	178 37	9351.69	62 00	1266 36	1239.30 S	282 60 E	1271 11	167 15	5 13	133.55
10524 00	90 40	179 73	9351 05	63 00	1328 89	1302 28 S	283 65 E	1332 82	167.71	2 23	133 55
10587 00	90 75	181 71	9350 42	63 00	1391 18	1365 27 S	282 86 E	1394 27	168 30	3.19	137 17
10651 00	90 66	181 13	9349 63	64.00	1454.33	1429.25 S	281.27 E	1456 66	168.87	0 92	137.17
10715.00	90 40	180 60	9349 04	64 00	1517 58	1493.24 S	280 30 E	1519.32	169 37	0 92	137 17
10778 00	90 13	181 58	9348 75	63 00	1579 81	1556 23 S	279 11 E	1581 06	169 83	1 61	137 17

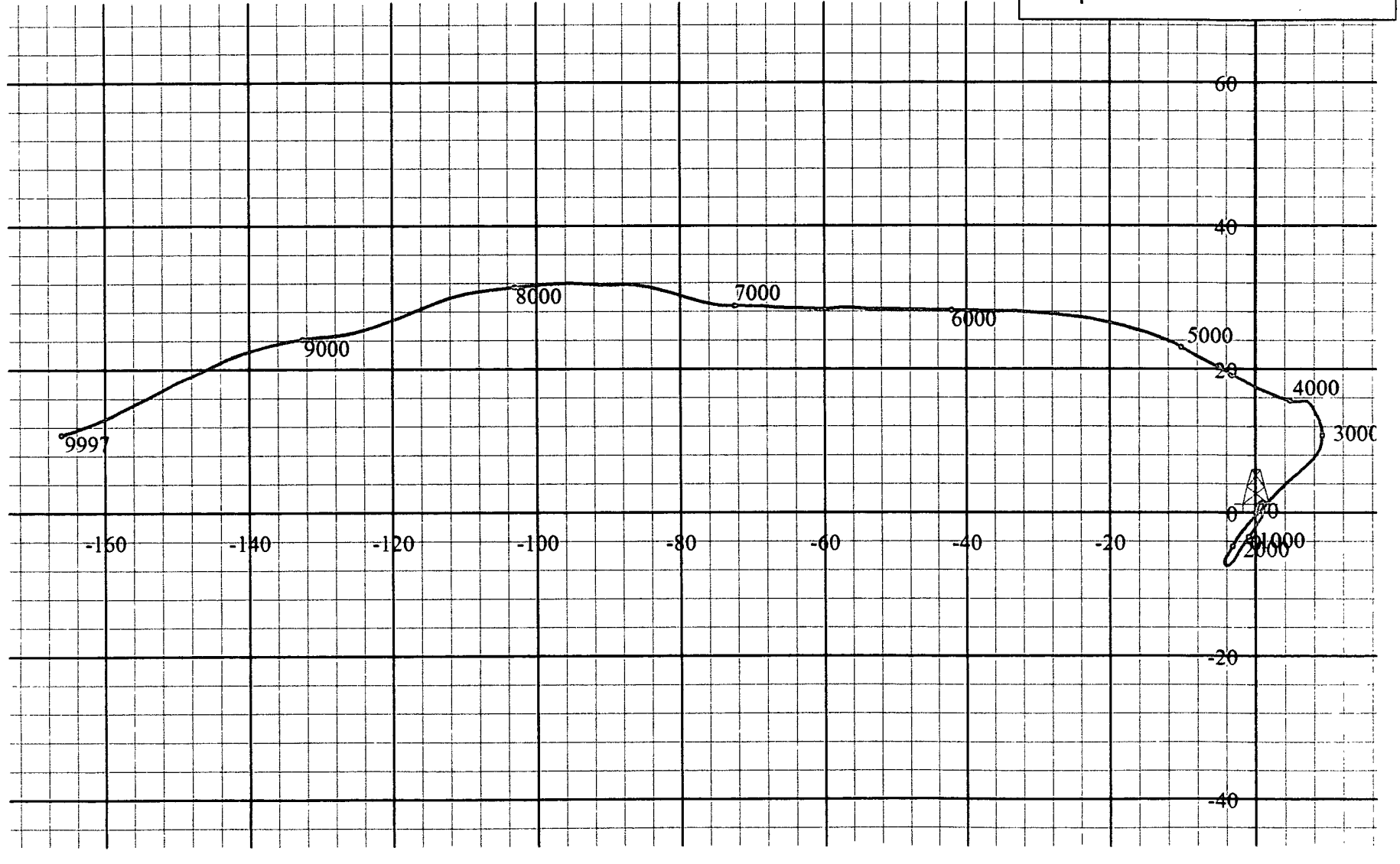
Scientific Drilling

Field: Lusk
Site: Lea County, NM
Well: King Air Federal #1
Wellpath: VH - Job #32K1009416
Survey: 10/08/09

T/M

Azimuths to True North
Magnetic North: 0.00°

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date. 10/14/2009
Model: Wmm_95



South(-)/North(+) [20ft/in]

West(-)/East(+) [20ft/in]