



HOBBS OCD
NOV 20 2018
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Mamba 30 State Com

#502H

OH

Design: OH

Final PVA

27 September, 2018



Final PVA

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #502H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 25 @ 3576.0usft
Site:	Mamba 30 State Com			MD Reference:	KB = 25 @ 3576.0usft
Well:	#502H			North Reference:	Grid
Wellbore:	OH			Survey Calculation Method:	Minimum Curvature
Design:	OH			Database:	EDM 5000.14

Project	Lea County, NM (NAD 83 NME)				
Map System:	US State Plane 1983		System Datum:	Mean Sea Level	
Geo Datum:	North American Datum 1983				
Map Zone:	New Mexico Eastern Zone				

Site	Mamba 30 State Com				
Site Position:		Northing:	430,807.00 usft	Latitude:	32° 10' 56.143 N
From:	Map	Easting:	767,053.00 usft	Longitude:	103° 36' 13.509 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 °

Well	#502H					
Well Position	+N/-S	0.0 usft	Northing:	434,950.00 usft	Latitude:	32° 11' 37.156 N
	+E/-W	0.0 usft	Easting:	766,809.00 usft	Longitude:	103° 36' 16.021 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,551.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/5/2018	6.85	60.02	47,807.85294826

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	191.68	



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Survey Program		Date	9/27/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
183.0	5,021.0	Catel 18 MWD 22' KB + 3' (OH)	MWD	OWSG MWD - Standard	
5,046.0	16,235.0	Total MWD #1 (OH)	MWD	OWSG MWD - Standard	

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	
183.0	0.62	204.64	183.0	-0.9	-0.4	0.34	0.34	0.00	0.0	0.0	
334.0	0.51	251.30	334.0	-1.9	-1.4	0.30	-0.07	30.90	0.0	0.0	
508.0	1.13	213.60	508.0	-3.5	-3.1	0.45	0.36	-21.67	0.0	0.0	
683.0	1.94	238.73	682.9	-6.5	-6.6	0.59	0.46	14.36	0.0	0.0	
857.0	2.56	240.67	856.8	-9.9	-12.5	0.36	0.36	1.11	0.0	0.0	
1,032.0	2.95	219.85	1,031.6	-15.3	-18.8	0.61	0.22	-11.90	0.0	0.0	
1,118.0	3.02	211.02	1,117.5	-19.0	-21.3	0.54	0.08	-10.27	0.0	0.0	
1,205.0	2.93	207.61	1,204.3	-22.9	-23.6	0.23	-0.10	-3.92	0.0	0.0	
1,379.0	3.23	309.22	1,378.2	-23.7	-29.4	2.75	0.17	58.40	0.0	0.0	
1,554.0	5.79	329.05	1,552.6	-13.0	-37.8	1.69	1.46	11.33	0.0	0.0	
1,729.0	8.12	342.98	1,726.4	6.4	-45.9	1.63	1.33	7.96	0.0	0.0	
1,903.0	10.08	336.73	1,898.2	32.1	-55.6	1.28	1.13	-3.59	0.0	0.0	
2,078.0	11.80	324.29	2,070.0	60.7	-72.0	1.66	0.98	-7.11	0.0	0.0	
2,252.0	10.55	308.20	2,240.7	85.0	-95.0	1.92	-0.72	-9.25	0.0	0.0	
2,426.0	12.41	306.10	2,411.2	105.9	-122.6	1.10	1.07	-1.21	0.0	0.0	
2,601.0	11.52	304.02	2,582.4	126.7	-152.3	0.57	-0.51	-1.19	0.0	0.0	
2,775.0	11.31	310.59	2,753.0	147.5	-179.6	0.76	-0.12	3.78	0.0	0.0	
2,950.0	10.37	310.01	2,924.9	168.8	-204.7	0.54	-0.54	-0.33	0.0	0.0	
3,124.0	9.26	309.78	3,096.3	187.9	-227.5	0.64	-0.64	-0.13	0.0	0.0	
3,299.0	10.09	304.23	3,268.8	205.5	-251.0	0.71	0.47	-3.17	0.0	0.0	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
3,473.0	11.57	315.25	3,439.8	226.5	-275.9	1.46	0.85	6.33	0.0	0.0	
3,648.0	10.38	309.80	3,611.6	249.0	-300.3	0.90	-0.68	-3.11	0.0	0.0	
3,823.0	9.41	306.21	3,784.0	267.6	-324.0	0.66	-0.55	-2.05	0.0	0.0	
3,997.0	9.80	304.35	3,955.5	284.3	-347.7	0.29	0.22	-1.07	0.0	0.0	
4,172.0	9.23	305.12	4,128.1	300.8	-371.5	0.33	-0.33	0.44	0.0	0.0	
4,346.0	9.39	310.50	4,299.8	318.1	-393.7	0.51	0.09	3.09	0.0	0.0	
4,520.0	8.41	307.14	4,471.7	335.0	-414.6	0.64	-0.56	-1.93	0.0	0.0	
4,695.0	8.39	304.24	4,644.8	349.9	-435.4	0.24	-0.01	-1.66	0.0	0.0	
4,869.0	10.73	306.35	4,816.4	366.6	-458.9	1.36	1.34	1.21	0.0	0.0	
4,964.0	13.22	309.79	4,909.3	378.8	-474.4	2.73	2.62	3.62	0.0	0.0	
5,021.0	13.22	309.79	4,964.8	387.1	-484.4	0.00	0.00	0.00	0.0	0.0	
5,046.0	12.10	311.40	4,989.2	390.7	-488.6	4.69	-4.48	6.44	0.4	-0.1	
5,140.0	13.10	306.90	5,081.0	403.6	-504.5	1.49	1.06	-4.79	3.7	0.4	
5,235.0	15.80	304.80	5,173.0	417.5	-523.7	2.89	2.84	-2.21	6.1	2.4	
5,330.0	17.50	308.90	5,264.0	433.8	-545.4	2.17	1.79	4.32	5.2	3.4	
5,424.0	17.20	309.90	5,353.7	451.6	-567.1	0.45	-0.32	1.06	3.1	3.5	
5,519.0	17.10	309.80	5,444.5	469.6	-588.6	0.11	-0.11	-0.11	1.1	3.5	
5,613.0	16.90	309.00	5,534.4	487.0	-609.8	0.33	-0.21	-0.85	-0.5	3.7	
5,708.0	16.60	309.00	5,625.3	504.2	-631.1	0.32	-0.32	0.00	-1.8	4.1	
5,803.0	16.60	308.50	5,716.4	521.2	-652.3	0.15	0.00	-0.53	-2.8	4.6	
5,897.0	16.30	312.60	5,806.5	538.5	-672.5	1.28	-0.32	4.36	-3.3	4.5	
5,992.0	15.70	313.60	5,897.9	556.4	-691.6	0.70	-0.63	1.05	-3.2	3.1	
6,087.0	14.60	312.50	5,989.6	573.4	-709.8	1.20	-1.16	-1.16	-1.9	1.6	
6,181.0	15.60	309.00	6,080.3	589.3	-728.3	1.44	1.06	-3.72	-0.5	1.2	
6,275.0	15.70	307.60	6,170.8	605.0	-748.2	0.42	0.11	-1.49	0.0	1.9	
6,369.0	15.30	307.60	6,261.4	620.4	-768.1	0.43	-0.43	0.00	0.8	2.9	
6,464.0	15.30	306.50	6,353.0	635.5	-788.1	0.31	0.00	-1.16	1.9	4.2	



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6,559.0	15.30	306.90	6,444.7	650.4	-808.2	0.11	0.00	0.42	3.0	5.7	
6,653.0	15.20	313.50	6,535.4	666.4	-827.1	1.85	-0.11	7.02	4.9	5.1	
6,748.0	15.10	316.00	6,627.1	683.8	-844.7	0.70	-0.11	2.63	6.4	2.6	
6,843.0	14.40	310.60	6,718.9	700.4	-862.3	1.62	-0.74	-5.68	7.4	1.7	
6,937.0	11.60	309.30	6,810.5	714.0	-878.5	2.99	-2.98	-1.38	8.5	1.8	
7,031.0	10.00	308.30	6,902.9	725.1	-892.2	1.71	-1.70	-1.06	10.1	2.3	
7,125.0	8.00	310.70	6,995.7	734.4	-903.6	2.16	-2.13	2.55	11.8	2.0	
7,220.0	7.10	314.40	7,089.9	742.8	-912.8	1.08	-0.95	3.89	12.6	0.6	
7,315.0	4.80	314.50	7,184.3	749.7	-919.8	2.42	-2.42	0.11	12.9	-0.2	
7,409.0	3.00	316.30	7,278.1	754.2	-924.3	1.92	-1.91	1.91	13.3	-1.3	
7,504.0	2.20	311.70	7,373.0	757.3	-927.4	0.87	-0.84	-4.84	12.9	-0.5	
7,598.0	0.60	332.60	7,467.0	758.9	-929.0	1.76	-1.70	22.23	10.5	-4.8	
7,693.0	0.20	355.50	7,562.0	759.5	-929.2	0.45	-0.42	24.11	7.2	-8.3	
7,787.0	0.30	342.80	7,656.0	759.9	-929.3	0.12	0.11	-13.51	8.4	-6.5	
7,881.0	0.50	10.10	7,750.0	760.5	-929.3	0.29	0.21	29.04	3.8	-9.5	
7,976.0	0.40	48.30	7,845.0	761.2	-929.0	0.33	-0.11	40.21	-3.5	-9.6	
8,070.0	0.40	57.20	7,939.0	761.6	-928.4	0.07	0.00	9.47	-5.6	-8.9	
8,165.0	0.40	68.60	8,034.0	761.9	-927.9	0.08	0.00	12.00	-7.9	-7.6	
8,259.0	0.40	78.10	8,128.0	762.1	-927.2	0.07	0.00	10.11	-9.7	-6.1	
8,354.0	0.10	162.40	8,223.0	762.0	-926.9	0.42	-0.32	88.74	-7.1	9.4	
8,449.0	0.20	112.90	8,318.0	761.9	-926.7	0.16	0.11	-52.11	-12.0	0.6	
8,543.0	0.30	180.30	8,412.0	761.6	-926.5	0.31	0.11	71.70	-4.4	11.5	
8,638.0	0.50	201.70	8,507.0	761.0	-926.7	0.26	0.21	22.53	-0.5	12.4	
8,732.0	0.80	218.30	8,601.0	760.1	-927.3	0.37	0.32	17.66	2.0	12.1	
8,827.0	0.90	221.80	8,696.0	759.0	-928.2	0.12	0.11	3.68	1.3	12.0	
8,922.0	1.00	219.60	8,790.9	757.8	-929.2	0.11	0.11	-2.32	-0.7	12.0	
9,016.0	1.00	228.30	8,884.9	756.6	-930.3	0.16	0.00	9.26	-0.5	12.1	



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Survey											
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9,110.0	0.90	253.30	8,978.9	755.9	-931.7	0.45	-0.11	26.60	3.2	11.5	
9,204.0	1.00	264.80	9,072.9	755.6	-933.2	0.23	0.11	12.23	3.9	10.8	
9,299.0	1.60	271.80	9,167.9	755.5	-935.3	0.65	0.63	7.37	3.0	10.4	
9,393.0	2.30	268.00	9,261.8	755.5	-938.5	0.76	0.74	-4.04	-0.9	10.5	
9,488.0	1.30	273.80	9,356.8	755.5	-941.5	1.07	-1.05	6.11	-2.8	10.7	
9,583.0	1.30	295.90	9,451.8	756.1	-943.5	0.52	0.00	23.26	-0.6	11.4	
9,677.0	1.70	287.90	9,545.7	756.9	-945.8	0.48	0.43	-8.51	-4.7	11.0	
9,772.0	2.80	271.70	9,640.7	757.5	-949.5	1.33	1.16	-17.05	-11.2	8.9	
9,866.0	2.40	270.50	9,734.6	757.5	-953.8	0.43	-0.43	-1.28	-15.7	8.6	
9,961.0	0.60	247.80	9,829.5	757.4	-956.2	1.96	-1.89	-23.89	-20.1	1.1	
10,055.0	0.10	54.30	9,923.5	757.2	-956.6	0.74	-0.53	177.13	20.2	3.7	
10,159.0	0.30	306.30	10,027.5	757.4	-956.7	0.33	0.19	-103.85	-10.0	18.0	
10,253.0	1.50	300.30	10,121.5	758.2	-958.0	1.28	1.28	-6.38	-13.3	16.8	
10,348.0	1.40	279.30	10,216.5	759.0	-960.2	0.57	-0.11	-22.11	-20.8	10.5	
10,442.0	0.40	163.10	10,310.5	758.9	-961.3	1.72	-1.06	-123.62	0.0	-24.3	
10,536.0	0.90	106.00	10,404.5	758.4	-960.5	0.81	0.53	-60.74	19.5	-13.5	
10,631.0	0.70	77.10	10,499.5	758.3	-959.2	0.47	-0.21	-30.42	22.4	-2.8	
10,726.0	1.40	328.60	10,594.4	759.4	-959.2	1.84	0.74	-114.21	-5.4	21.5	
10,773.0	2.20	306.80	10,641.4	760.5	-960.2	2.21	1.70	-46.38	-14.5	17.8	
10,801.5	2.19	301.23	10,669.9	761.1	-961.1	0.75	-0.02	-19.58	-17.2	16.2	
KOP (Mamba 30 State #502H)											
10,820.0	2.20	297.60	10,688.4	761.4	-961.8	0.75	0.04	-19.56	-19.1	14.8	
10,867.0	1.10	190.10	10,735.4	761.4	-962.6	5.83	-2.34	-228.72	-4.5	-24.2	
10,916.0	5.10	159.00	10,784.3	758.9	-961.9	8.56	8.16	-63.47	14.5	-20.2	
10,963.0	11.40	158.30	10,830.8	752.6	-959.5	13.41	13.40	-1.49	20.4	-15.4	
11,010.0	18.40	158.30	10,876.2	741.4	-955.0	14.89	14.89	0.00	24.7	-9.4	
11,057.0	25.70	159.70	10,919.7	724.9	-948.7	15.57	15.53	2.98	27.3	-2.9	



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11,077.8	28.56	160.82	10,938.2	716.0	-945.5	13.94	13.73	5.37	28.1	-0.1	
HL Crossing, MD:11077.8, TVD:10938.2, N/S:716.0, E/W:-945.5, INC:28.56											
11,105.0	32.30	162.00	10,961.7	702.9	-941.1	13.94	13.77	4.35	29.0	3.7	
11,152.0	39.00	164.70	10,999.8	676.7	-933.3	14.64	14.26	5.74	30.2	10.1	
11,199.0	45.20	168.20	11,034.7	646.1	-926.0	14.10	13.19	7.45	31.0	15.4	
11,219.8	48.56	169.33	11,048.9	631.2	-923.1	16.62	16.14	5.44	31.1	17.7	
FTP (Mamba 30 State #502H)											
11,246.0	52.80	170.60	11,065.5	611.2	-919.5	16.62	16.19	4.84	30.7	20.3	
11,293.0	58.30	171.30	11,092.1	573.0	-913.5	11.77	11.70	1.49	29.2	25.4	
11,357.0	67.20	175.10	11,121.4	516.5	-906.8	14.87	13.91	5.94	26.7	30.2	
11,388.0	71.40	175.30	11,132.3	487.6	-904.4	13.56	13.55	0.65	24.5	32.2	
11,420.0	77.40	175.40	11,140.9	456.9	-901.9	18.75	18.75	0.31	21.4	34.3	
11,451.0	82.60	175.40	11,146.3	426.5	-899.4	16.77	16.77	0.00	17.3	36.3	
11,481.0	87.60	176.90	11,148.9	396.7	-897.4	17.39	16.67	5.00	12.6	37.9	
11,584.0	92.80	180.30	11,148.5	293.8	-894.9	6.03	5.05	3.30	0.5	39.6	
11,670.0	92.00	181.70	11,144.9	207.9	-896.4	1.87	-0.93	1.63	-3.0	37.5	
11,764.0	89.90	182.60	11,143.4	114.0	-899.9	2.43	-2.23	0.96	-4.5	33.2	
11,859.0	92.00	183.00	11,141.8	19.1	-904.6	2.25	2.21	0.42	-6.1	27.9	
11,953.0	88.70	182.40	11,141.2	-74.8	-909.0	3.57	-3.51	-0.64	-6.5	22.8	
12,047.0	89.10	182.50	11,143.0	-168.7	-913.0	0.44	0.43	0.11	-4.6	18.1	
12,141.0	89.50	182.10	11,144.2	-262.6	-916.8	0.60	0.43	-0.43	-3.4	13.6	
12,236.0	89.40	181.30	11,145.1	-357.5	-919.6	0.85	-0.11	-0.84	-2.4	10.1	
12,330.0	89.40	180.70	11,146.1	-451.5	-921.3	0.64	0.00	-0.64	-1.4	7.7	
12,424.0	90.30	180.50	11,146.3	-545.5	-922.2	0.98	0.96	-0.21	-1.1	6.1	
12,518.0	88.00	181.30	11,147.7	-639.5	-923.7	2.59	-2.45	0.85	0.4	3.9	
12,612.0	87.90	181.10	11,151.1	-733.4	-925.7	0.24	-0.11	-0.21	3.8	1.2	
12,706.0	87.40	180.40	11,154.9	-827.3	-926.9	0.91	-0.53	-0.74	7.8	-0.7	



Final PVA

Company: EOG Resources - Midland			Local Co-ordinate Reference: Well #502H		
Project: Lea County, NM (NAD 83 NME)			TVD Reference: KB = 25 @ 3576.0usft		
Site: Mamba 30 State Com			MD Reference: KB = 25 @ 3576.0usft		
Well: #502H			North Reference: Grid		
Wellbore: OH			Survey Calculation Method: Minimum Curvature		
Design: OH			Database: EDM 5000.14		

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLag (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
12,801.0	89.10	180.30	11,157.8	-922.3	-927.5	1.79	1.79	-0.11	10.7	-2.0	
12,895.0	87.60	179.50	11,160.5	-1,016.2	-927.3	1.81	-1.60	-0.85	13.5	-2.5	
12,913.1	88.04	179.65	11,161.2	-1,034.3	-927.2	2.56	2.42	0.84	14.2	-2.5	
TOT 1 (Mamba 30 State #502H)											
12,990.0	89.90	180.30	11,162.6	-1,111.2	-927.2	2.56	2.42	0.84	15.4	-3.1	
13,084.0	92.90	180.40	11,160.3	-1,205.2	-927.7	3.19	3.19	0.11	12.8	-4.3	
13,178.0	92.10	181.30	11,156.2	-1,299.1	-929.1	1.28	-0.85	0.96	8.4	-6.4	
13,272.0	90.80	181.40	11,153.8	-1,393.0	-931.3	1.39	-1.38	0.11	5.7	-9.3	
13,367.0	89.30	181.50	11,153.7	-1,488.0	-933.7	1.58	-1.58	0.11	5.4	-12.4	
13,462.0	89.40	181.30	11,154.8	-1,582.9	-936.1	0.24	0.11	-0.21	6.1	-15.5	
13,556.0	89.10	179.80	11,156.0	-1,676.9	-937.0	1.63	-0.32	-1.60	7.1	-17.1	
13,651.0	89.60	179.00	11,157.1	-1,771.9	-936.0	0.99	0.53	-0.84	7.9	-16.8	
13,746.0	92.10	179.10	11,155.7	-1,866.9	-934.4	2.63	2.63	0.11	6.2	-15.9	
13,840.0	90.90	178.50	11,153.2	-1,960.8	-932.4	1.43	-1.28	-0.64	3.4	-14.6	
13,934.0	88.90	178.70	11,153.4	-2,054.8	-930.1	2.14	-2.13	0.21	3.3	-13.0	
14,028.0	91.50	180.30	11,153.1	-2,148.8	-929.3	3.25	2.77	1.70	2.7	-12.9	
14,122.0	90.20	179.00	11,151.7	-2,242.8	-928.7	1.96	-1.38	-1.38	1.0	-13.0	
14,216.0	88.90	178.40	11,152.4	-2,336.7	-928.6	1.52	-1.38	-0.64	1.5	-11.6	
14,311.0	88.30	178.40	11,154.8	-2,431.7	-924.0	0.63	-0.63	0.00	3.5	-9.6	
14,405.0	88.30	178.40	11,157.5	-2,525.6	-921.3	0.00	0.00	0.00	6.0	-7.7	
14,500.0	88.70	178.00	11,160.0	-2,620.5	-918.3	0.60	0.42	-0.42	8.2	-5.4	
14,550.3	88.70	178.00	11,161.2	-2,670.7	-916.6	0.00	0.00	0.00	9.2	-4.0	
TOT 2 (Mamba 30 State #502H)											
14,594.0	88.70	178.00	11,162.2	-2,714.4	-915.1	0.00	0.00	0.00	10.1	-2.8	
14,688.0	89.40	178.10	11,163.7	-2,808.4	-911.9	0.75	0.74	0.11	11.4	-0.3	
14,782.0	90.90	178.30	11,163.5	-2,902.3	-908.9	1.61	1.60	0.21	10.9	1.9	
14,876.0	89.80	179.20	11,162.9	-2,996.3	-906.9	1.51	-1.17	0.96	10.1	3.3	



Final PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3578.0usft
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3578.0usft
Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)
14,970.0	90.30	179.10	11,162.8	-3,090.3	-905.5	0.54	0.53	-0.11	9.8	4.0
15,064.0	91.30	179.10	11,161.5	-3,184.2	-904.0	1.06	1.06	0.00	8.3	4.7
15,158.0	89.40	179.30	11,160.9	-3,278.2	-902.7	2.03	-2.02	0.21	7.5	5.4
15,252.0	90.40	178.80	11,161.1	-3,372.2	-901.1	1.19	1.06	-0.53	7.4	6.2
15,346.0	90.30	178.40	11,160.5	-3,466.2	-898.8	0.44	-0.11	-0.43	6.6	7.8
15,440.0	88.60	178.10	11,161.4	-3,560.1	-896.0	1.84	-1.81	-0.32	7.3	10.0
15,535.0	91.60	178.40	11,161.3	-3,655.1	-893.1	3.17	3.16	0.32	6.9	12.2
15,629.0	91.80	180.10	11,158.5	-3,749.0	-891.8	1.82	0.21	1.81	3.9	12.7
15,723.0	88.50	180.50	11,158.2	-3,843.0	-892.3	3.54	-3.51	0.43	3.4	11.5
15,817.0	89.50	180.00	11,159.9	-3,937.0	-892.7	1.19	1.06	-0.53	4.9	10.4
15,911.0	90.50	178.90	11,159.9	-4,031.0	-891.8	1.58	1.06	-1.17	4.6	10.6
16,005.0	92.40	177.90	11,157.5	-4,124.9	-889.2	2.28	2.02	-1.06	2.0	12.6
16,100.0	91.00	178.60	11,154.7	-4,219.8	-886.3	1.65	-1.47	0.74	-1.0	14.8
16,189.0	87.80	178.00	11,155.6	-4,308.8	-883.7	3.66	-3.60	-0.67	-0.3	16.7
Final MWD Survey (MD=16189.0')										
16,234.6	87.80	178.00	11,157.3	-4,354.3	-882.1	0.00	0.00	0.00	1.3	18.0
PBHL (Mamba 30 State #502H)										
16,235.0	87.80	178.00	11,157.4	-4,354.7	-882.1	0.00	0.00	0.00	1.3	18.0
Final Projection to Bit (MD=16235.0')										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
11,077.8	10,938.2	716.0	-945.5	HL Crossing, MD:11077.8', TVD:10938.2', N/S:716.0', E/W:-945.5', INC:28.56
16,189.0	11,155.6	-4,308.8	-883.7	Final MWD Survey (MD=16189.0')
16,235.0	11,157.4	-4,354.7	-882.1	Final Projection to Bit (MD=16235.0')



Lea County, NM (NAD 83 NME)

Mamba 30 State Com #502H

Plan #1

PROJECT DETAILS: Lea County NM (NAD 83 NME)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: #502H

KB = 25 @ 3578.0ust
Northing 434950.00 Easting 766809.00 Latitude 32° 17' 37.05 N Longitude 103° 36' 16.021 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	5021.0	13.22	309.79	4964.8	387.1	-484.4	0.00	0.00	-281.1	
2	5159.9	16.00	309.87	5099.2	409.6	-511.3	2.00	0.46	-297.6	
3	6774.7	16.00	309.87	6651.5	694.9	-852.9	0.00	0.00	-507.9	
4	7574.5	0.00	0.00	7441.0	768.0	-938.0	2.00	180.00	-560.3	
5	10804.0	0.00	0.00	10670.5	768.0	-938.0	0.00	0.00	-560.3	KOP (Mamba 30 State #502H)
6	11554.4	90.04	179.58	11148.0	288.2	-924.7	12.00	179.58	-53.1	TGT 1 (Mamba 30 State #502H)
7	12877.2	90.04	179.58	11147.0	-1034.6	-924.7	0.00	0.00	1200.3	TGT 2 (Mamba 30 State #502H)
8	12886.1	89.82	179.58	11147.0	-1045.5	-924.6	2.00	180.00	1211.0	
9	14513.5	89.82	179.58	11152.0	-2670.8	-912.5	0.00	0.00	2800.2	
10	14515.5	89.86	179.58	11152.0	-2672.8	-912.5	2.00	-0.21	2802.2	
11	16197.7	89.86	179.58	11156.0	-4355.0	-900.1	0.00	0.00	4447.0	PBHL (Mamba 30 State #502H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
KOP (Mamba 30 State #502H)	10670.5	768.0	-938.0	435716.00	765971.00
TGT 1 (Mamba 30 State #502H)	11147.0	-1034.6	-924.7	433916.40	765884.34
TGT 2 (Mamba 30 State #502H)	11152.0	-2670.8	-912.5	432278.20	765896.45
PBHL (Mamba 30 State #502H)	11156.0	-4355.0	-900.1	430556.03	765905.93
FTP (Mamba 30 State #502H)	11148.0	718.0	-938.0	435566.00	765971.00

