

HOBBS OCD
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Mamba 30 State Com

#709H

OH

Design: OH

Midland PVA

20 February, 2019





Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #709H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3580.0usft
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3580.0usft
Well:	#709H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Project	Lee 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:	787,053.00 usft	Longitude:	103° 36' 13.509 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 "

Well	#709H					
Well Position	+N-S	0.0 usft	Northing:	431,177.00 usft	Latitude:	32° 11' 0.099 N
	+E-W	0.0 usft	Easting:	782,614.00 usft	Longitude:	103° 37' 5.130 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,555.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/19/2018	6.64	60.00	47,778.69825378

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	5.29	

Survey Program	Date 2/20/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
173.0	17,470.0	DrRtech MWD (OH)	MWD	OWSG MWD - Standard



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Well:	#709H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey												
MD (usft)	Inc (")	Azi (azimuth (°))		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	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.0
173.0	0.53	58.22	173.0	0.4	0.7	0.31	0.31	0.00	0.00	0.0	0.0	0.0
288.0	0.35	25.87	288.0	1.0	1.3	0.26	-0.16	-28.13	0.0	0.0	0.0	0.0
407.0	0.18	351.77	407.0	1.5	1.4	0.19	-0.14	-28.66	0.0	0.0	0.0	0.0
524.0	0.18	288.56	524.0	1.8	1.2	0.17	0.00	-55.74	0.0	0.0	0.0	0.0
682.0	0.44	273.84	682.0	1.9	0.4	0.17	0.16	-8.18	0.0	0.0	0.0	0.0
777.0	0.62	267.31	777.0	1.9	-0.5	0.20	0.19	-8.66	0.0	0.0	0.0	0.0
871.0	0.79	270.30	871.0	1.9	-1.7	0.18	0.18	3.18	0.0	0.0	0.0	0.0
1,061.0	1.76	180.56	1,060.9	-1.1	-3.0	1.01	0.51	-47.23	0.0	0.0	0.0	0.0
1,205.0	1.85	183.81	1,204.9	-5.6	-3.2	0.09	0.06	2.26	0.0	0.0	0.0	0.0
1,331.0	1.14	170.10	1,330.8	-8.9	-3.1	0.63	-0.56	-10.88	0.0	0.0	0.0	0.0
1,426.0	1.23	167.84	1,425.8	-10.8	-2.7	0.11	0.09	-2.59	0.0	0.0	0.0	0.0
1,521.0	1.58	166.59	1,520.8	-13.1	-2.2	0.37	0.37	-1.11	0.0	0.0	0.0	0.0
1,616.0	6.33	141.36	1,615.5	-18.4	1.4	5.21	5.00	-28.56	0.0	0.0	0.0	0.0
1,711.0	7.91	139.43	1,709.8	-27.5	8.9	1.68	1.66	-2.03	0.0	0.0	0.0	0.0
1,806.0	7.83	136.88	1,803.9	-37.2	17.6	0.38	-0.08	-2.68	0.0	0.0	0.0	0.0
1,901.0	5.98	116.14	1,898.2	-44.1	26.4	3.24	-1.95	-21.83	0.0	0.0	0.0	0.0
1,996.0	5.72	114.12	1,992.7	-48.2	35.2	0.35	-0.27	-2.13	0.0	0.0	0.0	0.0
2,091.0	6.24	134.07	2,087.2	-53.7	43.2	2.24	0.55	21.00	0.0	0.0	0.0	0.0
2,186.0	7.03	146.28	2,181.6	-62.1	50.2	1.70	0.83	12.85	0.0	0.0	0.0	0.0
2,281.0	6.68	144.44	2,275.9	-71.5	58.6	0.43	-0.37	-1.94	0.0	0.0	0.0	0.0
2,375.0	6.86	145.49	2,369.3	-80.5	63.0	0.23	0.19	1.12	0.0	0.0	0.0	0.0
2,470.0	6.60	145.05	2,463.6	-89.7	69.3	0.28	-0.27	-0.46	0.0	0.0	0.0	0.0
2,565.0	6.77	146.55	2,558.0	-98.8	75.5	0.26	0.18	1.58	0.0	0.0	0.0	0.0
2,660.0	6.60	148.22	2,652.3	-108.2	81.5	0.27	-0.18	1.76	0.0	0.0	0.0	0.0
2,754.0	6.88	150.24	2,745.7	-117.5	87.1	0.26	0.09	2.15	0.0	0.0	0.0	0.0
2,849.0	6.77	150.50	2,840.0	-127.2	92.6	0.10	0.09	0.27	0.0	0.0	0.0	0.0



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Well:	#709H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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MD (usft)	Inc (°)	Azi (azimuth (°))		TVD (usft)	NIS (usft)	ENW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
2,944.0	6.85	150.59	150.59	2,934.3	-137.0	98.1	0.19	0.19	0.09	0.0	0.0
3,039.0	5.10	139.87	139.87	3,028.8	-145.3	103.7	2.27	-1.85	-11.28	0.0	0.0
3,133.0	5.19	136.26	136.26	3,122.4	-151.5	109.3	0.36	0.10	-3.84	0.0	0.0
3,228.0	5.19	138.55	138.55	3,217.0	-157.9	115.1	0.22	0.00	2.41	0.0	0.0
3,323.0	5.54	141.89	141.89	3,311.8	-164.7	120.8	0.49	0.37	3.52	0.0	0.0
3,418.0	5.10	142.86	142.86	3,406.2	-171.7	126.2	0.47	-0.46	1.02	0.0	0.0
3,513.0	5.10	148.13	148.13	3,500.8	-178.6	131.0	0.49	0.00	5.55	0.0	0.0
3,608.0	4.86	149.80	149.80	3,595.5	-185.5	135.1	0.49	-0.46	1.78	0.0	0.0
3,703.0	4.48	150.24	150.24	3,690.2	-192.1	138.9	0.19	-0.19	0.46	0.0	0.0
3,798.0	3.89	137.93	137.93	3,785.0	-197.6	142.8	1.24	-0.83	-12.96	0.0	0.0
3,893.0	5.54	146.11	146.11	3,879.6	-203.7	147.4	2.06	1.95	8.61	0.0	0.0
3,988.0	6.16	150.68	150.68	3,974.2	-211.9	152.5	0.82	0.65	4.81	0.0	0.0
4,083.0	5.54	153.05	153.05	4,068.7	-220.5	157.0	0.70	-0.65	2.49	0.0	0.0
4,178.0	5.01	153.58	153.58	4,163.3	-228.3	161.0	0.56	-0.56	0.56	0.0	0.0
4,273.0	5.28	147.78	147.78	4,257.9	-235.7	165.1	0.82	0.28	-6.11	0.0	0.0
4,368.0	5.80	140.31	140.31	4,352.4	-243.1	170.5	0.93	0.55	-7.86	0.0	0.0
4,463.0	5.63	139.60	139.60	4,447.0	-250.3	176.6	0.19	-0.18	-0.75	0.0	0.0
4,558.0	5.98	140.83	140.83	4,541.5	-257.7	182.8	0.39	0.37	1.29	0.0	0.0
4,653.0	7.21	140.83	140.83	4,635.8	-266.1	189.7	1.29	1.29	0.00	0.0	0.0
4,748.0	7.91	140.31	140.31	4,730.0	-275.8	197.6	0.74	0.74	-0.55	0.0	0.0
4,842.0	7.39	140.22	140.22	4,823.2	-285.4	205.6	0.55	-0.55	-0.10	0.0	0.0
4,938.0	6.77	141.19	141.19	4,918.4	-294.6	213.1	0.86	-0.85	1.01	0.0	0.0
5,032.0	6.07	141.19	141.19	5,011.9	-302.8	219.7	0.74	-0.74	0.00	0.0	0.0
5,127.0	5.98	141.98	141.98	5,106.3	-310.6	225.9	0.13	-0.09	0.83	0.0	0.0
5,222.0	5.89	138.99	138.99	5,200.8	-318.2	232.1	0.34	-0.09	-3.15	0.0	0.0
5,317.0	7.85	148.48	148.48	5,295.2	-327.2	238.6	2.19	1.85	9.99	0.0	0.0
5,412.0	8.87	151.38	151.38	5,389.2	-339.1	245.5	1.46	1.39	3.05	0.0	0.0



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5,507.0	8.79	150.77	5,483.0	-352.0	252.8	0.21	-0.19	-0.64	0.0	0.0	
5,602.0	10.38	149.71	5,578.7	-365.7	280.4	1.68	1.67	-1.12	0.0	0.0	
5,898.0	11.61	148.13	5,669.0	-381.0	269.7	1.35	1.31	-1.68	0.0	0.0	
5,781.0	11.87	146.37	5,782.0	-397.3	280.2	0.47	0.27	-1.85	0.0	0.0	
5,886.0	11.61	145.58	5,855.0	-413.3	291.0	0.32	-0.27	-0.83	0.0	0.0	
5,981.0	12.75	146.84	5,947.9	-429.9	302.1	1.22	1.20	1.12	0.0	0.0	
6,076.0	13.19	146.72	6,040.4	-447.8	313.9	0.46	0.46	0.08	0.0	0.0	
6,171.0	13.01	146.02	6,133.0	-465.7	325.8	0.25	-0.19	-0.74	0.0	0.0	
6,266.0	12.66	144.44	6,225.8	-483.0	337.8	0.52	-0.37	-1.66	0.0	0.0	
6,361.0	12.57	143.21	6,318.3	-499.8	350.1	0.30	-0.09	-1.29	0.0	0.0	
6,456.0	12.66	142.24	6,411.0	-516.3	362.6	0.24	0.09	-1.02	0.0	0.0	
6,551.0	12.49	141.45	6,503.7	-532.5	375.4	0.25	-0.18	-0.83	0.0	0.0	
6,646.0	9.76	145.30	6,596.9	-547.2	388.4	2.88	-2.87	4.05	0.0	0.0	
6,740.0	7.56	151.65	6,689.8	-559.2	393.9	2.55	-2.34	6.76	0.0	0.0	
6,835.0	7.74	151.47	6,784.0	-570.3	399.9	0.19	0.19	-0.19	0.0	0.0	
6,930.0	6.33	152.70	6,878.3	-580.6	405.3	1.49	-1.48	1.29	0.0	0.0	
7,025.0	5.01	151.38	6,972.8	-588.9	409.7	1.40	-1.39	-1.39	0.0	0.0	
7,119.0	3.25	143.65	7,066.6	-594.8	413.3	1.96	-1.87	-8.22	0.0	0.0	
7,214.0	3.34	143.65	7,161.4	-599.0	418.5	0.09	0.09	0.00	0.0	0.0	
7,309.0	3.34	147.51	7,256.3	-603.6	419.8	0.24	0.00	4.06	0.0	0.0	
7,404.0	3.43	149.80	7,351.1	-608.4	422.6	0.17	0.09	2.41	0.0	0.0	
7,498.0	3.25	149.54	7,444.9	-613.1	425.3	0.19	-0.19	-0.28	0.0	0.0	
7,593.0	3.25	149.10	7,539.8	-617.7	428.1	0.03	0.00	-0.46	0.0	0.0	
7,688.0	2.99	145.76	7,634.6	-622.1	430.8	0.33	-0.27	-3.52	0.0	0.0	
7,783.0	2.90	149.27	7,729.5	-626.2	433.5	0.21	-0.09	3.69	0.0	0.0	
7,878.0	2.73	144.26	7,824.4	-630.1	436.0	0.31	-0.18	-5.27	0.0	0.0	
7,973.0	2.90	142.50	7,919.3	-633.9	438.8	0.20	0.18	-1.85	0.0	0.0	



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8,068.0	3.34	140.48	140.48	8,014.1	-837.9	442.0	0.48	0.46	-2.13	0.0	0.0	
8,163.0	3.08	133.98	133.98	8,109.0	-841.8	445.6	0.47	-0.27	-8.84	0.0	0.0	
8,258.0	3.08	132.84	132.84	8,203.9	-845.3	449.3	0.06	0.00	-1.20	0.0	0.0	
8,352.0	3.08	137.85	137.85	8,297.7	-848.9	452.9	0.29	0.00	5.33	0.0	0.0	
8,447.0	2.99	138.37	138.37	8,392.6	-852.6	458.2	0.10	-0.09	0.55	0.0	0.0	
8,542.0	2.84	143.21	143.21	8,487.5	-856.3	459.2	0.45	-0.37	5.09	0.0	0.0	
8,637.0	2.55	144.00	144.00	8,582.4	-859.7	461.7	0.10	-0.09	0.83	0.0	0.0	
8,732.0	0.88	164.39	164.39	8,677.3	-862.1	463.2	1.84	-1.76	21.46	0.0	0.0	
8,827.0	0.53	265.02	265.02	8,772.3	-862.9	462.9	1.17	-0.37	105.93	0.0	0.0	
9,018.0	1.06	342.28	342.28	8,863.3	-861.3	461.5	0.58	0.28	40.45	0.0	0.0	
9,113.0	1.14	322.50	322.50	9,056.3	-859.7	460.7	0.41	0.08	-20.82	0.0	0.0	
9,207.0	1.23	319.96	319.96	9,152.3	-858.2	459.5	0.11	0.10	-2.70	0.0	0.0	
9,303.0	1.32	323.38	323.38	9,248.2	-856.5	458.1	0.12	0.09	3.56	0.0	0.0	
9,397.0	1.41	324.97	324.97	9,342.2	-854.7	456.8	0.10	0.10	1.69	0.0	0.0	
9,492.0	1.49	334.63	334.63	9,437.2	-852.6	455.6	0.27	0.08	10.17	0.0	0.0	
9,587.0	1.41	345.44	345.44	9,532.2	-850.3	454.8	0.30	-0.08	11.38	0.0	0.0	
9,682.0	1.76	340.87	340.87	9,627.1	-847.8	454.0	0.39	0.37	-4.81	0.0	0.0	
9,777.0	2.73	318.73	318.73	9,722.0	-844.8	452.1	1.35	1.02	-23.31	0.0	0.0	
9,872.0	2.81	281.64	281.64	9,816.9	-842.6	448.3	1.86	0.08	-39.04	0.0	0.0	
9,968.0	1.93	271.70	271.70	9,910.9	-842.1	444.5	1.03	-0.84	-10.57	0.0	0.0	
10,061.0	1.58	231.54	231.54	10,005.8	-842.8	441.8	1.31	-0.37	-42.27	0.0	0.0	
10,156.0	1.76	220.02	220.02	10,100.8	-844.8	439.9	0.40	0.19	-12.13	0.0	0.0	
10,251.0	2.02	228.55	228.55	10,195.7	-847.0	437.7	0.40	0.27	8.88	0.0	0.0	
10,346.0	1.85	225.91	225.91	10,290.7	-849.2	435.3	0.20	-0.18	-2.78	0.0	0.0	
10,441.0	1.93	227.06	227.06	10,385.6	-851.3	433.0	0.09	0.08	1.21	0.0	0.0	
10,536.0	1.85	223.19	223.19	10,480.6	-853.5	430.8	0.16	-0.08	-4.07	0.0	0.0	
10,631.0	1.58	215.10	215.10	10,575.5	-855.7	429.0	0.38	-0.28	-8.52	0.0	0.0	



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10,726.0	1.58	224.07	10,870.5	-657.7	427.4	0.28	0.00	8.44	0.0	0.0	
10,820.0	1.87	213.17	10,784.5	-659.8	425.7	0.34	0.10	-11.60	0.0	0.0	
10,915.0	2.37	226.97	10,859.4	-662.3	423.5	0.89	0.74	14.53	0.0	0.0	
11,010.0	1.49	222.13	10,954.3	-664.6	421.2	0.94	-0.93	-5.09	0.0	0.0	
11,105.0	0.88	187.03	11,049.3	-666.2	420.6	1.29	-0.64	-58.00	0.0	0.0	
11,200.0	1.23	97.07	11,144.3	-667.0	421.8	1.31	0.37	-73.64	0.0	0.0	
11,295.0	1.32	113.08	11,239.3	-667.6	423.8	0.38	0.09	16.83	0.0	0.0	
11,390.0	0.88	123.28	11,334.3	-668.4	425.4	0.51	-0.46	10.74	0.0	0.0	
11,485.0	0.82	171.86	11,429.3	-669.3	426.1	0.70	-0.27	51.18	0.0	0.0	
11,580.0	0.97	237.87	11,524.3	-670.3	425.5	0.96	0.37	69.48	0.0	0.0	
11,675.0	1.76	248.24	11,619.2	-671.2	423.4	0.87	0.83	10.92	0.0	0.0	
11,813.0	2.20	246.48	11,757.1	-673.1	419.0	0.32	0.32	-1.28	0.0	0.0	
11,869.0	2.02	250.43	11,813.1	-673.8	417.1	0.41	-0.32	7.05	0.1	-0.1	
11,964.0	1.76	249.03	11,908.1	-674.9	414.2	0.28	-0.27	-1.47	0.6	-0.3	
12,059.0	4.13	335.25	12,003.0	-672.3	411.4	4.61	2.49	90.78	-3.3	-2.6	
12,154.0	16.11	357.13	12,098.0	-654.4	409.2	15.11	14.72	23.03	-10.2	-1.7	
12,249.0	29.11	358.08	12,182.9	-616.5	408.9	11.59	11.58	-1.11	-18.2	-0.8	
12,344.0	34.03	354.58	12,263.8	-566.9	402.8	5.24	5.18	-1.58	-20.2	3.7	
12,438.0	39.39	352.58	12,339.1	-511.1	398.4	5.84	5.70	-2.15	-11.7	12.9	
12,533.0	48.38	353.97	12,407.5	-445.8	388.8	9.50	9.44	1.48	3.9	25.7	
12,628.0	60.06	349.75	12,463.0	-369.7	377.7	12.83	12.32	-4.44	19.9	43.0	
12,678.0	71.31	348.52	12,483.6	-325.0	369.1	22.61	22.50	-2.46	27.3	54.0	
12,712.0	80.46	351.60	12,491.9	-292.6	363.4	28.31	26.91	9.06	30.2	60.6	
12,725.0	84.06	355.20	12,483.6	-279.8	361.9	38.98	27.69	27.69	30.5	62.5	
12,820.0	90.75	358.63	12,497.9	-185.1	356.8	7.91	7.04	3.61	28.7	73.9	
12,915.0	94.88	1.70	12,493.2	-80.2	357.1	5.41	4.35	3.23	24.0	78.8	
13,009.0	94.88	3.46	12,485.3	3.3	361.3	1.87	0.00	1.87	15.9	76.6	



Midland PVA

Company: EOG Resources - Midland	Local Co-ordinate Reference: Well #709H
Project: Lea County, NM (NAD 83 NME)	TVD Reference: KB = 25 @ 3580.0usft
Site: Mamba 30 State Com	MD Reference: KB = 25 @ 3580.0usft
Well: #709H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: OH	Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
13,104.0	94.88	5.92	12,477.2	97.8	369.1	2.58	0.00	2.59	7.7	68.5	
13,200.0	93.03	7.77	12,470.5	192.7	380.5	2.72	-1.93	1.93	1.5	56.5	
13,295.0	89.34	9.79	12,468.6	286.6	395.0	4.43	-3.88	2.13	0.2	41.4	
13,389.0	89.52	5.04	12,469.5	378.8	407.1	5.08	0.19	-5.05	1.3	28.8	
13,485.0	89.08	359.24	12,470.7	475.6	410.7	6.06	-0.46	-6.04	2.6	24.7	
13,580.0	89.60	4.43	12,471.8	570.6	413.7	5.49	0.55	5.46	3.9	21.1	
13,674.0	88.29	2.41	12,473.5	664.4	419.3	2.56	-1.39	-2.15	5.8	15.0	
13,768.0	89.16	2.58	12,475.6	758.2	423.4	0.94	0.93	0.18	6.1	10.3	
13,863.0	88.02	1.18	12,477.9	853.2	428.5	1.90	-1.20	-1.47	10.6	6.7	
13,958.0	88.55	0.12	12,480.6	948.1	427.6	1.25	0.56	-1.12	13.7	5.1	
14,053.0	88.46	0.56	12,483.3	1,043.1	428.2	0.47	-0.09	0.46	16.3	4.0	
14,148.0	90.92	1.44	12,483.8	1,138.1	429.8	2.75	2.59	0.93	17.0	1.8	
14,243.0	90.57	0.56	12,482.5	1,233.0	431.5	1.00	-0.37	-0.93	16.0	-0.4	
14,338.0	87.49	357.05	12,484.2	1,328.0	429.5	4.91	-3.24	-3.69	17.8	1.1	
14,433.0	93.03	359.59	12,483.7	1,422.9	426.7	6.41	5.83	2.67	17.5	3.4	
14,528.0	96.11	1.70	12,478.2	1,517.6	427.8	3.93	3.24	2.22	10.2	1.8	
14,623.0	90.57	0.47	12,470.6	1,612.3	429.6	5.97	-5.83	-1.29	4.8	-0.6	
14,717.0	90.57	0.47	12,469.7	1,706.3	430.4	0.00	0.00	0.00	4.1	-1.8	
14,812.0	91.28	0.83	12,468.2	1,801.3	431.4	0.84	0.75	0.38	2.7	-3.5	
14,907.0	89.34	359.33	12,467.6	1,896.3	431.6	2.58	-2.04	-1.58	2.4	-4.1	
15,002.0	89.60	359.77	12,468.5	1,991.3	430.8	0.54	0.27	0.46	3.5	-3.9	
15,097.0	89.25	359.77	12,469.5	2,086.3	430.4	0.37	-0.37	0.00	4.4	-4.0	
15,192.0	90.04	0.12	12,470.1	2,181.3	430.4	0.91	0.83	0.37	4.9	-4.5	
15,287.0	92.86	0.74	12,467.7	2,276.2	431.1	3.04	2.97	0.65	2.4	-5.7	
15,382.0	92.51	0.74	12,463.2	2,371.1	432.3	0.37	-0.37	0.00	-2.2	-7.5	
15,477.0	91.01	0.03	12,460.3	2,466.1	432.9	1.75	-1.58	-0.75	-5.2	-8.7	
15,572.0	92.24	2.67	12,457.6	2,561.0	435.2	3.06	1.29	2.78	-8.0	-11.5	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3580.0usft
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3580.0usft
Well:	#708H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

MD (usft)	Inc (°)	Asl (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
15,878.0	90.48	359.86	12,455.1	2,864.9	437.5	3.19	-1.69	-2.70	-10.7	-14.3
15,781.0	88.87	359.59	12,457.0	2,749.9	437.1	4.14	-4.13	-0.32	-8.9	-14.4
15,856.0	88.11	359.68	12,461.1	2,844.8	436.4	1.20	1.20	0.09	-4.9	-14.3
15,951.0	87.41	359.24	12,464.8	2,939.7	435.6	0.87	-0.74	-0.46	-1.3	-14.0
16,046.0	88.43	359.16	12,467.4	3,034.7	434.2	2.13	2.13	-0.08	1.2	-13.2
16,141.0	89.08	359.16	12,468.7	3,129.7	432.8	0.37	-0.37	0.00	2.3	-12.3
16,236.0	89.34	358.80	12,470.0	3,224.6	431.1	0.47	0.27	-0.38	3.5	-11.2
16,331.0	89.96	358.89	12,470.8	3,319.6	429.2	0.68	0.65	0.09	4.0	-9.8
16,426.0	89.69	359.16	12,470.8	3,414.6	427.6	0.40	-0.28	0.28	4.1	-8.7
16,521.0	90.57	359.51	12,470.8	3,509.6	426.5	1.00	0.93	0.37	3.8	-8.2
16,615.0	92.07	0.30	12,468.5	3,603.6	426.4	1.80	1.60	0.84	1.5	-8.5
16,710.0	91.19	359.77	12,465.8	3,698.5	426.4	1.08	-0.93	-0.56	-1.3	-8.1
16,805.0	91.19	359.42	12,463.8	3,793.5	425.7	0.37	0.00	-0.37	-3.4	-9.0
16,900.0	87.76	358.61	12,464.7	3,888.4	422.5	4.67	-3.61	-2.96	-2.6	-8.2
16,995.0	87.49	358.17	12,468.6	3,983.2	416.5	0.54	-0.28	-0.46	1.2	-0.8
17,090.0	91.10	356.34	12,469.8	4,077.9	410.3	3.80	3.80	0.18	2.2	4.9
17,185.0	92.15	0.12	12,467.1	4,172.8	407.3	4.13	1.11	3.98	-0.6	7.3
17,280.0	92.24	1.00	12,463.4	4,267.8	408.3	0.93	0.09	0.93	-4.3	5.8
17,375.0	91.01	1.00	12,460.7	4,362.7	409.9	1.29	-1.29	0.00	-7.1	3.6
17,412.0	90.31	1.44	12,460.3	4,399.7	410.7	2.23	-1.69	1.19	-7.6	2.8
17,470.0	90.31	1.44	12,460.0	4,457.7	412.2	0.00	0.00	0.00	-8.0	0.8



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #709H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3580.0usft
Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3580.0usft
Well:	#709H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
12,030.0	11,974.0	-673.9	412.3	KOP, MD:12030.0', TVD:11974.0', N/S:-673.9', E/W:412.3', INC:2.95
12,264.2	12,186.1	-609.0	406.3	FTP Crossing, MD:12264.2', TVD:12186.1', N/S:-609.0', E/W:406.3', INC:28.80
17,412.0	12,460.3	4,399.7	410.7	Last MWD Survey (MD=17412.0')
17,470.0	12,460.0	4,457.7	412.2	Projection to Bit (MD=17470.0')

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Mamba 30 State Com #709H

Plan #2

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: #709H

KB = 25 @ 3560.8usft 3566.0
 Northing 431177.00 Easting 762614.00 Longitude 32° 11' 0.089 N 103° 37' 5.130 W



To convert a Magnetic Direction to a Grid Direction, Add 6.46°
 To convert a Magnetic Direction to a True Direction, Add 6.84° East
 To convert a True Direction to a Grid Direction, Subtract 0.38°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dlog	TFace	Vsect	Target
1	11813.0	2.20	248.48	11757.1	-673.1	419.0	0.00	0.00	-631.6	
2	12039.7	2.20	248.48	11983.7	-676.6	411.1	0.00	0.00	-635.8	
3	12789.2	90.11	4.25	12469.4	-198.3	430.0	12.00	117.75	-157.8	
4	13027.6	90.11	359.68	12469.0	29.9	437.8	2.00	-89.95	70.1	TGT#1(Mamba 30 State #709H)
5	15017.9	90.11	359.68	12465.0	2020.2	426.8	0.00	0.00	2050.9	
6	15027.2	89.93	359.68	12465.0	2029.4	426.7	2.00	-178.47	2060.1	
7	17456.8	89.93	359.68	12468.0	4459.0	413.0	0.00	0.00	4478.1	PBHL(Mamba 30 State #709H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP COORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
TGT#1(Mamba 30 State #709H)	12465.0	2020.2	426.8	433197.20	763040.77
PBHL(Mamba 30 State #709H)	12465.0	4459.0	413.0	433534.00	763027.00
FTP(Mamba 30 State #709H)	12468.0	-609.0	442.0	430568.00	763058.00
KOP(Mamba 30 State #709H)	11978.5	-659.0	442.0	430518.00	763058.00

