

**HOBBS OCD**  
**MAY 02 2019**  
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**EOG Resources - Midland**

Lea County, NM (NAD 83 NME)

Mamba 30 State Com

#708H

OH

Design: OH

**Midland PVA**

03 February, 2019





Midland PVA

<b>Company:</b>	EOG Resources - Midland	<b>Local Co-ordinate Reference:</b>	Well #708H
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>TVD Reference:</b>	KB = 25 @ 3581.0usft
<b>Site:</b>	Mamba 30 State Com	<b>MD Reference:</b>	KB = 25 @ 3581.0usft
<b>Well:</b>	#708H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.14

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

<b>Site</b>	Mamba 30 State Com				
<b>Site Position:</b>		<b>Northing:</b>	430,807.00 usft	<b>Latitude:</b>	32° 10' 56.143 N
<b>From:</b>	Map	<b>Easting:</b>	767,053.00 usft	<b>Longitude:</b>	103° 37' 13.509 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.39 "

<b>Well</b>	#708H					
<b>Well Position</b>	+N-S	0.0 usft	<b>Northing:</b>	431,177.00 usft	<b>Latitude:</b>	32° 11' 0.095 N
	+E-W	0.0 usft	<b>Easting:</b>	762,680.00 usft	<b>Longitude:</b>	103° 37' 4.382 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	3,556.0 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (mT)</b>
	IGRF2015	9/19/2018	8.84	60.00	47,778.91257737

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	356.11	

<b>Survey Program</b>	Date 2/3/2019				
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
173.0	17,353.0	Driftech MWD (OH)	MWD	OWSG MWD - Standard	



Midland PVA

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<b>Site:</b>	Mamba 30 State Com	<b>MD Reference:</b>	KB = 25 @ 3581.0usft
<b>Well:</b>	#708H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	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	0.70	46.00	173.0	0.7	0.8	0.40	0.40	0.00	0.00	0.00	0.0	0.0
317.0	0.70	53.82	317.0	1.9	2.1	0.07	0.00	5.43	0.00	0.00	0.0	0.0
407.0	0.53	59.82	407.0	2.4	2.9	0.20	-0.19	6.44	0.00	0.00	0.0	0.0
494.0	0.35	70.70	494.0	2.7	3.5	0.23	-0.21	12.74	0.00	0.00	0.0	0.0
587.0	0.09	61.73	587.0	2.8	3.8	0.28	-0.28	-8.65	0.00	0.00	0.0	0.0
682.0	0.18	295.81	682.0	2.9	3.8	0.28	0.09	-132.76	0.00	0.00	0.0	0.0
777.0	0.26	270.47	777.0	3.0	3.4	0.13	0.08	-28.46	0.00	0.00	0.0	0.0
871.0	0.53	254.13	871.0	2.9	2.8	0.31	0.29	-17.38	0.00	0.00	0.0	0.0
966.0	0.70	249.56	966.0	2.5	1.8	0.19	0.18	-4.81	0.00	0.00	0.0	0.0
1,061.0	0.88	246.83	1,061.0	2.1	0.6	0.19	0.19	-2.87	0.00	0.00	0.0	0.0
1,156.0	0.79	240.50	1,155.9	1.4	-0.6	0.14	-0.09	-6.66	0.00	0.00	0.0	0.0
1,190.0	0.88	235.49	1,189.9	1.2	-1.1	0.34	0.26	-14.74	0.00	0.00	0.0	0.0
1,332.0	1.76	222.40	1,331.9	-1.0	-3.4	0.65	0.62	-9.22	0.00	0.00	0.0	0.0
1,427.0	6.07	208.51	1,426.7	-6.5	-8.8	4.61	4.54	-14.62	0.00	0.00	0.0	0.0
1,522.0	6.95	213.96	1,521.1	-15.7	-12.4	1.13	0.93	5.74	0.00	0.00	0.0	0.0
1,617.0	6.77	222.75	1,615.4	-24.6	-19.4	1.12	-0.19	9.25	0.00	0.00	0.0	0.0
1,712.0	7.21	207.46	1,709.7	-34.0	-26.0	2.01	0.46	-16.09	0.00	0.00	0.0	0.0
1,807.0	7.56	195.94	1,803.9	-45.3	-30.4	1.60	0.37	-12.13	0.00	0.00	0.0	0.0
1,902.0	7.56	197.52	1,898.1	-57.3	-34.0	0.22	0.00	1.66	0.00	0.00	0.0	0.0
1,997.0	8.00	188.01	1,992.2	-69.8	-38.6	1.70	0.46	-12.12	0.00	0.00	0.0	0.0
2,092.0	8.44	180.56	2,086.2	-83.4	-37.4	0.94	0.46	-5.74	0.00	0.00	0.0	0.0
2,187.0	8.79	182.14	2,180.2	-97.6	-37.7	0.44	0.37	1.66	0.00	0.00	0.0	0.0
2,282.0	4.75	181.88	2,274.5	-108.8	-38.1	4.25	-4.25	-0.27	0.00	0.00	0.0	0.0
2,377.0	4.22	184.52	2,369.2	-116.2	-38.5	0.60	-0.56	2.78	0.00	0.00	0.0	0.0
2,471.0	4.22	186.36	2,462.9	-123.1	-39.2	0.14	0.00	1.96	0.00	0.00	0.0	0.0
2,566.0	4.75	181.55	2,557.6	-130.4	-40.3	0.70	0.56	5.48	0.00	0.00	0.0	0.0



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<b>Well:</b> #708H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> OH	<b>Database:</b> EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (azimuth) (")		TVD (usft)	N/S (usft)	E/W (usft)	D/Leg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)
2,661.0	5.01	184.36	184.36	2,652.3	-136.3	-42.2	0.37	0.27	2.96	0.0	0.0
2,755.0	5.36	195.77	195.77	2,745.9	-146.5	-44.4	0.40	0.37	1.50	0.0	0.0
2,850.0	5.01	192.43	192.43	2,840.5	-154.8	-46.5	0.49	-0.37	-3.52	0.0	0.0
2,945.0	4.22	186.98	186.98	2,935.2	-162.3	-47.8	0.95	-0.83	-5.74	0.0	0.0
3,040.0	4.46	188.65	188.65	3,029.8	-169.4	-48.8	0.30	0.27	1.76	0.0	0.0
3,135.0	4.66	186.54	186.54	3,124.6	-178.9	-49.8	0.26	0.19	-2.22	0.0	0.0
3,229.0	4.92	185.57	185.57	3,218.3	-184.8	-50.6	0.29	0.28	-1.03	0.0	0.0
3,325.0	4.66	200.60	200.60	3,314.0	-192.5	-52.4	1.33	-0.27	15.66	0.0	0.0
3,420.0	4.40	210.18	210.18	3,408.7	-199.3	-55.6	0.84	-0.27	10.08	0.0	0.0
3,515.0	4.13	212.55	212.55	3,503.4	-205.3	-59.2	0.34	-0.28	2.49	0.0	0.0
3,609.0	4.04	216.42	216.42	3,597.2	-210.6	-63.0	0.31	-0.10	4.12	0.0	0.0
3,704.0	3.96	202.62	202.62	3,691.9	-216.5	-66.3	1.01	-0.08	-14.53	0.0	0.0
3,800.0	2.73	188.30	188.30	3,787.8	-221.9	-67.9	1.54	-1.28	-14.92	0.0	0.0
3,894.0	3.67	202.69	202.69	3,881.8	-227.0	-69.4	1.50	1.21	15.52	0.0	0.0
3,989.0	5.36	217.12	217.12	3,976.3	-233.5	-73.4	1.97	1.57	14.98	0.0	0.0
4,084.0	6.07	227.06	227.06	4,070.8	-240.4	-79.7	1.28	0.75	10.46	0.0	0.0
4,179.0	6.95	222.75	222.75	4,165.2	-246.1	-87.3	1.06	0.93	-4.54	0.0	0.0
4,274.0	7.30	203.76	203.76	4,259.5	-257.8	-93.6	2.49	0.37	-19.99	0.0	0.0
4,369.0	8.18	185.40	185.40	4,353.7	-270.1	-98.7	2.75	0.93	-19.33	0.0	0.0
4,464.0	6.89	191.72	191.72	4,447.9	-281.6	-98.3	2.54	-2.41	6.65	0.0	0.0
4,559.0	5.36	184.69	184.69	4,542.5	-290.8	-99.7	0.91	-0.58	-7.40	0.0	0.0
4,654.0	6.42	172.39	172.39	4,637.0	-300.5	-99.3	1.73	1.12	-12.95	0.0	0.0
4,749.0	6.16	195.50	195.50	4,731.4	-310.7	-100.0	2.66	-0.27	24.33	0.0	0.0
4,844.0	5.10	197.26	197.26	4,826.0	-319.6	-102.6	1.13	-1.12	1.85	0.0	0.0
4,939.0	4.66	197.35	197.35	4,920.6	-327.3	-105.0	0.46	-0.46	0.09	0.0	0.0
5,034.0	4.13	195.94	195.94	5,015.3	-334.3	-107.1	0.57	-0.58	-1.48	0.0	0.0
5,128.0	4.92	205.87	205.87	5,109.1	-341.2	-109.8	1.18	0.84	10.56	0.0	0.0



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Site:	Mamba 30 State Com	MD Reference:	KB = 25 @ 3581.0usft
Well:	#708H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	NIS (usft)	EW (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
5,223.0	6.24	209.30	5,203.6	-349.3	-114.1	1.43	1.39	3.81	0.0	0.0	
5,318.0	6.16	208.16	5,298.0	-358.3	-119.0	0.15	-0.08	-1.20	0.0	0.0	
5,413.0	6.24	208.07	5,392.5	-367.4	-123.9	0.08	0.08	-0.09	0.0	0.0	
5,508.0	6.27	201.89	5,486.7	-378.3	-128.8	2.29	2.14	-8.51	0.0	0.0	
5,603.0	6.53	201.98	5,580.7	-391.2	-134.0	0.27	0.27	0.09	0.0	0.0	
5,698.0	9.58	203.56	5,674.5	-404.9	-139.8	1.14	1.11	1.66	0.0	0.0	
5,793.0	10.20	205.58	5,768.1	-419.8	-146.6	0.75	0.65	2.13	0.0	0.0	
5,888.0	9.94	200.31	5,861.6	-435.0	-153.1	1.01	-0.27	-5.55	0.0	0.0	
5,983.0	8.97	192.40	5,955.4	-450.0	-157.5	1.70	-1.02	-8.33	0.0	0.0	
6,078.0	8.88	191.52	6,049.2	-464.4	-160.6	0.17	-0.09	-0.93	0.0	0.0	
6,172.0	8.53	190.73	6,142.1	-478.3	-163.3	0.39	-0.37	-0.84	0.0	0.0	
6,267.0	8.09	190.64	6,236.1	-491.8	-165.9	0.46	-0.46	-0.09	0.0	0.0	
6,362.0	8.35	192.75	6,330.2	-505.1	-168.6	0.42	0.27	2.22	0.0	0.0	
6,457.0	9.23	195.30	6,424.0	-519.2	-172.2	1.01	0.93	2.68	0.0	0.0	
6,552.0	9.06	193.28	6,517.8	-533.6	-175.9	0.38	-0.18	-2.13	0.0	0.0	
6,647.0	8.62	191.96	6,611.7	-548.1	-179.1	0.51	-0.46	-1.39	0.0	0.0	
6,742.0	8.44	190.11	6,705.7	-561.9	-181.8	0.35	-0.19	-1.95	0.0	0.0	
6,836.0	8.62	199.60	6,799.6	-575.3	-185.4	1.51	0.19	10.10	0.0	0.0	
6,931.0	8.27	202.94	6,892.6	-588.3	-190.4	0.63	-0.37	3.52	0.0	0.0	
7,026.0	7.74	202.86	6,986.7	-600.5	-195.6	0.56	-0.56	-0.08	0.0	0.0	
7,121.0	7.39	203.65	7,080.8	-612.0	-200.5	0.38	-0.37	0.83	0.0	0.0	
7,216.0	7.30	203.56	7,175.1	-623.1	-205.4	0.10	-0.09	-0.09	0.0	0.0	
7,310.0	6.24	203.29	7,269.4	-633.3	-209.8	1.13	-1.13	-0.29	0.0	0.0	
7,405.0	5.45	202.33	7,362.9	-642.2	-213.5	0.84	-0.83	-1.01	0.0	0.0	
7,500.0	4.04	193.89	7,457.6	-649.7	-216.0	1.65	-1.48	-8.88	0.0	0.0	
7,595.0	2.29	182.55	7,552.4	-654.8	-216.9	1.95	-1.84	-11.94	0.0	0.0	
7,689.0	1.76	157.94	7,646.4	-658.0	-216.5	1.07	-0.56	-26.18	0.0	0.0	



Midland PVA

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 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #708H  
 TVD Reference: KB = 25 @ 3581.0usft  
 MD Reference: KB = 25 @ 3581.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 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)	
7,784.0	1.49	153.37	7,741.3	-660.5	-215.4	0.32	-0.28	-4.81	0.0	0.0	
7,879.0	1.49	155.04	7,836.3	-662.7	-214.3	0.05	0.00	1.78	0.0	0.0	
7,974.0	1.58	157.24	7,931.3	-665.0	-213.3	0.11	0.09	2.32	0.0	0.0	
8,069.0	1.58	161.20	8,026.2	-667.5	-212.3	0.11	0.00	4.17	0.0	0.0	
8,164.0	0.53	279.87	8,121.2	-668.6	-212.3	1.99	-1.11	124.71	0.0	0.0	
8,259.0	1.41	319.75	8,216.2	-667.7	-213.5	1.12	0.93	42.19	0.0	0.0	
8,354.0	1.41	305.07	8,311.2	-666.1	-215.2	0.38	0.00	-15.45	0.0	0.0	
8,449.0	1.41	301.12	8,406.1	-664.8	-217.2	0.10	0.00	-4.18	0.0	0.0	
8,543.0	1.76	266.30	8,500.1	-664.3	-219.6	1.07	0.37	-37.04	0.0	0.0	
8,639.0	2.20	252.60	8,596.1	-665.0	-222.9	0.67	0.46	-14.27	0.0	0.0	
8,734.0	0.70	243.02	8,691.0	-665.8	-225.1	1.59	-1.58	-10.08	0.0	0.0	
8,828.0	0.88	237.66	8,785.0	-666.4	-229.2	0.21	0.19	-5.70	0.0	0.0	
8,923.0	1.32	251.72	8,880.0	-667.2	-227.9	0.54	0.46	14.80	0.0	0.0	
9,018.0	1.85	254.45	8,975.0	-667.9	-230.4	0.56	0.56	2.87	0.0	0.0	
9,113.0	2.02	258.40	9,069.9	-668.7	-233.5	0.23	0.18	4.16	0.0	0.0	
9,208.0	1.49	269.54	9,164.9	-668.4	-236.2	1.40	-0.56	43.31	0.0	0.0	
9,303.0	1.85	322.30	9,259.8	-666.6	-236.3	0.79	0.38	23.96	0.0	0.0	
9,398.0	1.76	348.14	9,354.8	-663.9	-239.5	0.85	-0.09	27.20	0.0	0.0	
9,493.0	1.93	14.51	9,449.7	-660.9	-239.4	0.90	0.18	27.76	0.0	0.0	
9,587.0	1.67	359.21	9,543.7	-658.0	-239.0	0.58	-0.28	-16.28	0.0	0.0	
9,682.0	1.67	341.63	9,638.6	-655.3	-239.5	0.54	0.00	-16.51	0.0	0.0	
9,776.0	0.88	52.74	9,732.6	-653.6	-239.3	1.72	-0.84	75.65	0.0	0.0	
9,871.0	0.70	186.66	9,827.6	-653.7	-238.8	1.53	-0.19	141.18	0.0	0.0	
9,966.0	1.41	225.44	9,922.6	-655.1	-239.7	1.02	0.75	40.61	0.0	0.0	
10,061.0	1.58	111.01	10,017.6	-658.4	-239.3	2.65	0.18	-120.45	0.0	0.0	
10,156.0	1.23	146.34	10,112.6	-657.7	-237.5	0.98	-0.37	37.19	0.0	0.0	
10,251.0	0.97	155.66	10,207.5	-659.3	-238.6	0.33	-0.27	9.81	0.0	0.0	



Midland PVA

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<b>Site:</b> Mamba 30 State Com	<b>MD Reference:</b> KB = 25 @ 3581.0usft
<b>Well:</b> #708H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> OH	<b>Database:</b> 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)	
10,348.0	0.88	174.12	10,302.5	-660.8	-238.2	0.33	-0.09	19.43	0.0	0.0	
10,440.0	0.88	87.37	10,398.5	-661.5	-235.4	1.29	0.00	-82.28	0.0	0.0	
10,535.0	0.79	69.00	10,491.5	-661.2	-234.1	0.30	-0.08	-19.34	0.0	0.0	
10,630.0	0.09	337.50	10,588.5	-660.9	-233.5	0.84	-0.74	-98.32	0.0	0.0	
10,725.0	0.26	353.80	10,681.5	-660.6	-233.8	0.18	0.18	16.84	0.0	0.0	
10,820.0	0.35	344.80	10,776.5	-660.1	-233.7	0.11	0.09	-9.16	0.0	0.0	
10,915.0	0.26	303.23	10,871.5	-659.7	-233.9	0.24	-0.09	-43.76	0.0	0.0	
11,010.0	0.09	111.71	10,966.5	-659.6	-234.0	0.37	-0.18	177.35	0.0	0.0	
11,105.0	0.70	102.84	11,061.5	-659.8	-233.4	0.64	0.64	-9.34	0.0	0.0	
11,200.0	0.44	61.09	11,156.5	-659.7	-232.5	0.50	-0.27	-43.95	0.0	0.0	
11,295.0	0.28	25.49	11,251.5	-659.4	-232.1	0.29	-0.19	-37.47	0.0	0.0	
11,390.0	0.44	312.98	11,346.5	-658.9	-232.3	0.48	0.19	-76.33	0.0	0.0	
11,484.0	0.62	318.70	11,440.5	-658.3	-232.9	0.20	0.19	6.09	-0.1	0.0	
11,579.0	1.06	217.80	11,535.5	-658.6	-233.8	1.40	0.46	-106.21	-0.8	0.1	
11,674.0	2.29	231.51	11,630.4	-680.5	-235.8	1.35	1.29	14.43	-3.4	1.2	
11,769.0	2.02	230.01	11,725.4	-662.7	-238.6	0.29	-0.28	-1.58	-8.9	1.8	
11,818.0	2.46	229.75	11,774.3	-664.0	-240.0	0.90	0.90	-0.53	-8.8	2.1	
11,904.0	2.73	247.09	11,860.3	-666.0	-243.3	0.66	0.31	20.16	-11.3	5.8	
11,996.0	1.28	337.09	11,952.2	-665.9	-245.7	3.28	-1.58	97.83	5.4	13.2	
<b>KOP 11996.0' MD; 11952.2' TVD; -665.9'; -248.7'; 1.28</b>											
11,999.0	1.32	340.88	11,955.2	-665.8	-245.8	3.28	1.49	128.92	6.2	12.8	
12,094.0	19.61	58.74	12,048.3	-656.4	-232.4	20.39	19.25	81.87	-0.4	-7.0	
12,125.0	23.21	50.83	12,077.2	-649.9	-223.2	14.86	11.61	-25.52	-7.5	-12.4	
12,157.0	26.56	46.70	12,106.2	-641.0	-213.1	11.79	10.47	-12.91	-15.2	-18.5	
12,189.0	30.07	37.12	12,134.4	-629.7	-203.0	17.91	10.97	-29.94	-19.6	-29.6	
12,220.0	34.82	28.84	12,160.6	-615.5	-194.3	23.43	15.32	-33.16	-21.2	-40.0	



Midland PVA

<b>Company:</b>	EOG Resources - Midland	<b>Local Co-ordinate Reference:</b>	Well #708H
<b>Project:</b>	Lee County, NM (NAD 83 NME)	<b>TVD Reference:</b>	KB = 25 @ 3581.0usft
<b>Site:</b>	Mamba 30 State Com	<b>MD Reference:</b>	KB = 25 @ 3581.0usft
<b>Well:</b>	#708H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.14

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	NIS (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
12,224.9	35.46	25.52	12,164.6	-613.0	-193.1	20.24	13.03	-26.92	-21.5	-41.5
<b>FTP Crossing 12224.9' MD; 12164.6' TVD; -613.0'; -193.1'; 35.46</b>										
12,252.0	39.22	18.93	12,186.1	-597.8	-186.9	20.24	13.88	-24.32	-23.2	-49.3
12,283.0	42.47	11.55	12,209.6	-578.3	-181.6	18.76	10.48	-23.81	-24.6	-57.1
12,315.0	46.78	4.25	12,232.4	-556.0	-178.6	20.92	13.47	-22.81	-25.5	-63.5
12,343.0	49.68	358.36	12,251.0	-535.2	-178.1	18.79	10.36	-21.04	-26.9	-67.3
12,407.0	58.56	353.79	12,288.5	-483.5	-161.8	15.03	13.87	-7.14	-37.8	-69.5
12,439.0	65.77	354.41	12,303.5	-455.4	-184.7	22.60	22.53	1.94	-46.2	-69.0
12,486.0	73.07	354.67	12,320.0	-411.6	-188.9	15.54	15.53	0.55	-60.2	-68.7
12,534.0	75.87	351.77	12,332.8	-365.7	-194.4	8.39	6.04	-6.04	-73.2	-67.8
12,581.0	76.59	350.45	12,343.9	-320.6	-201.4	3.03	1.32	-2.81	-83.1	-63.9
12,629.0	77.03	350.45	12,354.9	-274.5	-209.2	0.92	0.92	0.00	-88.2	-58.6
12,676.0	77.73	350.19	12,365.1	-229.3	-216.9	1.58	1.49	-0.55	-87.6	-53.7
12,724.0	78.17	349.93	12,375.2	-183.1	-225.0	1.06	0.92	-0.54	-81.4	-48.7
12,771.0	78.44	349.58	12,384.7	-137.8	-233.2	0.93	0.57	-0.74	-72.0	-43.3
12,819.0	78.05	352.12	12,394.1	-91.3	-240.7	5.34	1.27	5.29	-62.6	-37.5
12,866.0	80.02	355.38	12,402.6	-45.4	-245.7	7.13	2.06	6.84	-54.0	-33.0
12,914.0	81.34	356.34	12,410.4	1.9	-249.1	3.38	2.75	2.00	-46.1	-29.7
12,961.0	85.21	357.57	12,415.9	48.5	-251.6	8.63	8.23	2.62	-40.6	-27.2
13,008.0	89.16	358.01	12,418.2	95.4	-253.4	8.46	8.40	0.94	-38.2	-25.6
13,103.0	89.69	356.96	12,419.1	190.3	-257.6	1.24	0.56	-1.11	-36.8	-21.9
13,198.0	89.34	357.75	12,419.9	285.2	-261.9	0.91	-0.37	0.63	-35.7	-16.0
13,283.0	88.29	357.92	12,421.9	380.1	-265.5	1.12	-1.11	0.18	-33.3	-15.0
13,388.0	88.46	359.16	12,424.6	475.0	-267.9	1.32	0.18	1.31	-30.3	-13.1
13,483.0	87.49	359.07	12,428.0	570.0	-269.4	1.03	-1.02	-0.09	-26.6	-12.2
13,578.0	87.85	358.28	12,431.8	664.9	-271.6	0.91	0.38	-0.83	-22.3	-10.5
13,672.0	89.69	359.77	12,433.8	758.8	-273.2	2.52	1.96	1.59	-20.0	-9.4





Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Mamba 30 State Com  
 Well: #708H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #708H  
 TVD Reference: KB = 25 @ 3581.0usft  
 MD Reference: KB = 25 @ 3581.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 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)	
13,767.0	88.46	358.28	12,435.4	853.8	-274.8	2.03	-1.29	-1.57	-18.1	-8.3	
13,862.0	89.87	357.22	12,438.8	946.7	-278.6	1.88	1.48	-1.12	-16.3	-5.1	
13,857.0	87.87	357.84	12,438.8	1,043.6	-282.8	2.41	-2.32	0.65	-13.9	-1.5	
14,052.0	88.20	357.92	12,442.2	1,138.4	-288.2	0.58	0.58	0.08	-10.2	1.5	
14,147.0	87.32	356.61	12,445.9	1,233.3	-290.7	1.66	-0.93	-1.38	-8.1	5.5	
14,242.0	91.54	358.89	12,446.9	1,328.2	-294.4	5.05	4.44	2.40	-4.8	8.7	
14,337.0	90.92	0.12	12,444.6	1,423.1	-295.2	1.45	-0.65	1.29	-8.4	9.0	
14,432.0	91.10	0.03	12,443.2	1,518.1	-295.1	0.21	0.19	-0.09	-7.8	8.3	
14,526.0	91.45	1.97	12,441.1	1,612.1	-293.5	2.10	0.37	2.06	-9.5	6.1	
14,621.0	89.16	0.21	12,440.6	1,707.0	-291.7	3.04	-2.41	-1.85	-9.6	3.8	
14,716.0	90.66	0.56	12,440.7	1,802.0	-291.0	1.62	1.58	0.37	-9.1	2.7	
14,811.0	88.89	358.98	12,441.0	1,897.0	-291.4	2.42	-1.76	-1.66	-8.5	2.5	
14,906.0	89.25	357.49	12,442.5	1,992.0	-294.3	1.59	0.27	-1.57	-8.7	4.9	
15,001.0	88.29	358.89	12,444.5	2,086.9	-297.3	1.79	-1.01	1.47	-4.5	7.4	
15,096.0	88.37	359.42	12,447.3	2,181.8	-298.7	0.56	0.08	0.56	-1.9	8.3	
15,191.0	90.75	359.66	12,448.0	2,276.8	-299.5	2.52	2.51	0.27	-1.3	8.5	
15,286.0	90.66	358.89	12,448.8	2,371.8	-302.5	3.15	-0.09	-3.15	-2.6	11.0	
15,381.0	90.40	357.49	12,448.0	2,466.6	-307.3	0.89	-0.27	0.84	-3.6	15.3	
15,476.0	89.69	0.30	12,445.9	2,561.6	-309.1	3.05	-0.75	2.98	-3.7	16.6	
15,570.0	88.64	359.86	12,447.3	2,655.6	-309.0	1.21	-1.12	-0.47	-2.5	15.9	
15,665.0	91.28	359.88	12,447.3	2,750.6	-309.2	2.78	2.78	0.00	-2.5	15.6	
15,760.0	91.36	359.88	12,445.1	2,845.6	-309.5	0.08	0.08	0.00	-4.9	15.4	
15,855.0	91.28	359.42	12,442.9	2,940.5	-310.1	0.47	-0.08	-0.46	-7.2	15.4	
15,950.0	92.86	359.33	12,439.5	3,035.5	-311.1	1.87	1.66	-0.09	-10.7	15.9	
16,045.0	92.77	359.88	12,434.8	3,130.4	-311.8	0.57	-0.09	0.56	-15.5	16.1	
16,140.0	89.52	0.21	12,432.9	3,225.3	-311.7	3.44	-3.42	0.37	-17.5	15.5	
16,235.0	87.14	0.39	12,435.7	3,320.3	-311.2	2.51	-2.51	0.19	-14.9	14.5	



Midland PVA

<b>Company:</b>	EOG Resources - Midland	<b>Local Co-ordinate Reference:</b>	Well #708H
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>TVD Reference:</b>	KB = 25 @ 3581.0usft
<b>Site:</b>	Mamba 30 State Com	<b>MD Reference:</b>	KB = 25 @ 3581.0usft
<b>Well:</b>	#708H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.14

MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	NIS (usft)	E/W (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)
16,330.0	87.58	358.98	12,440.1	3,415.2	-311.7	1.55	0.46	-1.48	-10.6	14.5
16,425.0	88.46	359.24	12,443.4	3,510.1	-313.2	0.97	0.93	0.27	-7.4	15.4
16,520.0	90.75	0.03	12,444.0	3,605.1	-313.8	2.55	2.41	0.83	-6.9	15.5
16,614.0	92.07	0.91	12,441.7	3,699.1	-313.1	1.69	1.40	0.94	-9.3	14.2
16,709.0	88.99	358.63	12,440.8	3,794.0	-313.4	4.03	-3.24	-2.40	-10.3	14.1
16,804.0	89.52	358.54	12,442.1	3,889.0	-315.8	0.57	0.56	-0.09	-9.2	15.9
16,899.0	93.74	1.18	12,439.4	3,983.9	-316.0	5.24	4.44	2.78	-12.0	15.6
16,994.0	93.39	2.14	12,433.5	4,078.7	-313.3	1.07	-0.37	1.01	-18.1	12.3
17,089.0	90.84	1.79	12,430.0	4,173.6	-310.0	2.71	-2.68	-0.37	-21.7	8.6
17,184.0	89.52	2.93	12,428.7	4,268.5	-306.1	1.84	-1.39	1.20	-22.1	4.1
17,284.0	88.55	3.46	12,431.5	4,378.3	-300.0	1.00	-0.88	0.48	-20.4	-2.6
Last MWD Survey (MD = 17294.0)										
17,353.0	88.55	3.46	12,433.0	4,437.2	-286.4	0.00	0.00	0.00	-19.0	-6.5
Projection to Bit (MD = 17353.0)										

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
11,998.0	11,952.2	-665.9	-245.7	KOP 11998.0' MD; 11952.2' TVD; -665.9'; -245.7'; 1.28
12,224.9	12,184.8	-613.0	-193.1	FTP Crossing 12224.9' MD; 12184.8' TVD; -613.0'; -193.1'; 35.46
17,294.0	12,431.5	4,378.3	-300.0	Last MWD Survey (MD = 17294.0)
17,353.0	12,433.0	4,437.2	-286.4	Projection to Bit (MD = 17353.0)

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



Lea County, NM (NAD 83 NME)

Mamba 30 State Com #708H

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: #708H

KB = 25 @ 3581.0usft 3558.0  
 Northing 431177.00 Easting 762680.00  
 Longitude 103° 37' 4.352 W  
 Latitude 32° 11' 0.093 N

To convert a Magnetic Direction to a Grid Direction, Add 6.45°  
 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	Dleg	TFace	VSect	Target
1	11390.0	0.44	312.98	11348.5	-858.9	-232.3	0.00	0.00	-841.7	
2	12026.0	0.44	312.98	11982.5	-655.6	-235.9	0.00	0.00	-638.1	
3	12774.1	90.10	355.83	12457.2	-178.8	-273.1	12.00	42.85	-159.8	
4	12902.7	90.22	359.68	12456.9	-50.4	-276.1	3.00	88.24	-31.4	
5	14979.1	90.22	359.68	12449.0	2026.0	-289.6	0.00	0.00	2041.0	TGT#1(Mamba 30 State #708H)
6	14993.5	89.93	359.68	12449.0	2040.5	-289.7	2.00	-178.99	2055.4	
7	17408.1	89.93	359.68	12452.0	4455.0	-303.0	0.00	0.00	4465.3	PBHL (Mamba 30 State #708H)

CASING DETAILS

No casing data is available

WELLSBORE TARGET DETAILS (MAP COORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
TGT#1 (Mamba 30 State #708H)	12448.0	-94	-289.6	432203.00	762380.40
PBHL (Mamba 30 State #708H)	12452.0	4454.0	-303.0	432054.00	762277.00
FTP (Mamba 30 State #708H)	12453.0	-811.0	-274.0	432054.00	762406.00
KOP (Mamba 30 State #708H)	11974.8	-463.0	-274.0	430514.00	762406.00

