



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Cobalt 32 State Com

#704H

OH

Design: OH

Midland PVA

01 December, 2018

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Midland PVA

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 25 @ 3444.0usft
Site:	Cobalt 32 State Com			MD Reference:	KB = 25 @ 3444.0usft
Well:	#704H			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	Cobalt 32 State Com				
Site Position:		Northing:	425,635.00 usft	Latitude:	32° 10' 2.401 N
From:	Map	Easting:	802,483.00 usft	Longitude:	103° 29' 21.743 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	#704H					
Well Position	+N-S	0.0 usft	Northing:	425,635.00 usft	Latitude:	32° 10' 2.404 N
	+E-W	0.0 usft	Easting:	802,450.00 usft	Longitude:	103° 29' 22.127 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,419.0 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2015	8/21/2018	(°)	(°)	(mT)
			6.78	60.01	47,791.97710477

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	351.67	

Survey Program	Date 12/1/2018				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
200.0	17,251.0	Drilltech MWD (OH)	MWD	OWSG MWD - Standard	



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Site:	Cobalt 32 State Corn	MD Reference:	KB = 25 @ 3444.0usft
Well:	#704H	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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	
200.0	0.18	225.35	200.0	-0.2	-0.2	0.09	0.09	0.00	-0.3	0.0	
317.0	0.53	48.89	317.0	0.0	0.1	0.81	0.30	-150.99	0.0	0.0	
404.0	0.70	37.71	404.0	0.7	0.7	0.24	0.20	-12.62	-1.0	-0.1	
493.0	0.70	38.67	493.0	1.5	1.4	0.01	0.00	1.08	-2.1	-0.1	
580.0	0.79	59.86	580.0	2.3	2.2	0.33	0.10	24.36	-3.0	0.9	
666.0	1.06	59.50	666.0	3.0	3.4	0.31	0.31	-0.42	-4.4	0.8	
763.0	0.70	359.21	763.0	4.0	4.2	0.97	-0.37	-62.15	-4.0	-4.2	
856.0	1.23	296.95	855.9	5.0	3.3	1.18	0.57	-66.95	0.6	-6.0	
948.0	1.32	293.29	947.9	5.9	1.4	0.13	0.10	-3.98	-1.0	-6.0	
1,040.0	1.23	308.30	1,039.9	6.9	-0.4	0.33	-0.10	14.14	-4.4	-5.4	
1,229.0	2.02	321.15	1,228.8	10.7	-4.1	0.47	0.42	7.86	-10.8	-3.7	
1,309.0	2.20	311.66	1,308.8	12.8	-6.1	0.49	0.22	-11.86	-11.9	-7.2	
1,401.0	3.61	291.45	1,400.7	15.1	-10.1	1.87	1.53	-21.97	-9.1	-14.3	
1,494.0	5.89	282.04	1,493.3	17.1	-17.5	2.58	2.45	-10.12	-7.0	-19.5	
1,588.0	6.33	279.93	1,586.8	19.0	-27.3	0.53	0.47	-2.24	-6.9	-23.9	
1,683.0	7.21	261.92	1,681.1	19.1	-38.4	2.41	0.93	-18.96	0.1	-27.4	
1,778.0	7.56	245.83	1,775.4	15.7	-50.0	2.20	0.37	-16.94	5.8	-26.0	
1,873.0	7.74	245.48	1,869.5	10.5	-61.5	0.20	0.19	-0.37	3.4	-23.9	
1,968.0	7.83	246.10	1,963.6	5.2	-73.3	0.13	0.09	0.65	0.5	-21.9	
2,063.0	8.35	247.06	2,057.7	-0.1	-85.5	0.57	0.55	1.01	-3.1	-20.0	
2,158.0	7.91	241.96	2,151.7	-5.9	-97.7	0.89	-0.46	-5.37	-4.7	-18.2	
2,253.0	7.47	235.11	2,245.9	-12.5	-108.5	1.07	-0.46	-7.21	-5.6	-15.5	
2,347.0	7.30	241.53	2,339.1	-18.8	-118.8	0.90	-0.18	6.83	-9.5	-11.4	
2,442.0	7.47	253.74	2,433.3	-23.4	-130.0	1.66	0.18	12.85	-13.4	-7.3	
2,537.0	7.30	253.74	2,527.5	-26.9	-141.7	0.18	-0.18	0.00	-15.3	-6.7	
2,632.0	6.77	254.80	2,621.8	-30.0	-152.9	0.57	-0.56	1.12	-16.7	-6.0	



Midland PVA

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Site:	Cobalt 32 State Corn	MD Reference:	KB = 25 @ 3444.0usft
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Asl (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
2,727.0	6.60	255.85	2,716.2	-32.8	-163.6	0.22	-0.18	1.11	-17.5	-5.4	
2,822.0	6.42	254.45	2,810.6	-35.6	-174.0	0.25	-0.19	-1.47	-17.8	-5.5	
2,917.0	6.16	256.73	2,905.0	-38.2	-184.1	0.38	-0.27	2.40	-18.1	-4.5	
3,012.0	5.80	255.50	2,999.5	-40.5	-193.7	0.40	-0.38	-1.29	-17.5	-4.8	
3,107.0	6.24	258.40	3,094.0	-42.8	-203.4	0.56	0.46	3.05	-17.3	-3.9	
3,202.0	5.80	260.42	3,188.4	-44.6	-213.2	0.51	-0.46	2.13	-17.1	-3.7	
3,297.0	6.24	258.93	3,282.9	-46.4	-223.0	0.49	0.46	-1.57	-16.6	-4.7	
3,392.0	6.42	259.45	3,377.3	-48.4	-233.3	0.20	0.19	0.55	-16.8	-4.9	
3,487.0	5.28	258.14	3,471.8	-50.2	-242.8	1.21	-1.20	-1.38	-16.0	-5.6	
3,581.0	5.36	261.12	3,565.4	-51.8	-251.4	0.31	0.09	3.17	-14.7	-5.3	
3,676.0	7.83	277.47	3,659.8	-51.6	-262.2	3.24	2.60	17.21	-16.7	-3.4	
3,771.0	7.83	280.72	3,753.9	-49.6	-274.9	0.47	0.00	3.42	-20.3	-6.2	
3,866.0	8.62	266.93	3,847.9	-48.8	-288.4	2.23	0.83	-14.52	-21.5	-14.2	
3,961.0	8.79	258.40	3,941.9	-50.6	-302.6	1.37	0.18	-8.98	-23.1	-18.6	
4,056.0	6.77	239.50	4,036.0	-54.9	-314.6	3.40	-2.13	-19.89	-18.6	-24.3	
4,151.0	4.75	237.31	4,130.5	-59.9	-322.7	2.14	-2.13	-2.31	-17.4	-21.7	
4,246.0	4.31	242.49	4,225.2	-63.7	-329.2	0.63	-0.46	5.45	-16.7	-17.1	
4,341.0	3.43	250.31	4,320.0	-66.3	-335.0	1.08	-0.93	8.23	-15.0	-13.0	
4,436.0	4.40	253.30	4,414.8	-68.3	-341.2	1.04	1.02	3.15	-11.7	-11.4	
4,531.0	4.92	253.83	4,509.5	-70.5	-348.6	0.55	0.55	0.56	-9.2	-10.7	
4,626.0	5.19	257.52	4,604.1	-72.5	-356.7	0.44	0.28	3.88	-7.9	-9.9	
4,721.0	7.47	266.66	4,698.5	-73.8	-367.1	2.62	2.40	9.62	-9.6	-9.6	
4,816.0	5.36	255.41	4,792.9	-75.3	-377.5	2.58	-2.22	-11.84	-7.7	-12.2	
4,911.0	3.43	233.35	4,887.6	-78.1	-384.1	2.67	-2.03	-23.22	0.0	-11.7	
5,006.0	4.66	229.31	4,982.4	-82.3	-389.3	1.33	1.29	-4.25	3.3	-7.1	
5,101.0	5.54	246.97	5,077.0	-86.6	-396.4	1.88	0.93	18.59	3.0	-4.8	
5,196.0	6.33	259.37	5,171.5	-89.4	-405.8	1.58	0.83	13.05	2.5	-4.8	



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Site: Cobalt 32 State Com		MD Reference:		KB = 25 @ 3444.0usft	
Well: #704H		North Reference:		Grid	
Wellbore: OH		Survey Calculation Method:		Minimum Curvature	
Design: OH		Database:		EDM 5000.14	

Survey											
MD (usft)	Inc (")	Alt (azimuth) (")	TVD (usft)	N/S (usft)	EW (usft)	DLeg (*/100usft)	Build (*/100usft)	Turn (*/100usft)	High to Plan (usft)	Right to Plan (usft)	
5,291.0	5.45	265.61	5,266.0	-90.7	-415.5	1.14	-0.93	6.57	2.5	-6.0	
5,386.0	6.33	272.64	5,360.5	-90.8	-425.2	1.20	0.93	7.40	2.0	-8.5	
5,481.0	7.39	273.25	5,454.8	-90.2	-436.5	1.12	1.12	0.64	0.5	-11.4	
5,576.0	7.47	273.69	5,549.0	-89.5	-448.8	0.10	0.08	0.46	-2.0	-14.4	
5,671.0	7.12	272.02	5,643.3	-88.9	-460.8	0.43	-0.37	-1.76	-3.6	-17.3	
5,766.0	7.56	266.31	5,737.5	-89.1	-472.9	0.90	0.46	-6.01	-3.8	-19.8	
5,860.0	8.44	259.28	5,830.6	-90.7	-485.9	1.40	0.94	-7.48	-4.2	-21.3	
5,956.0	8.44	255.85	5,925.5	-93.8	-499.7	0.52	0.00	-3.57	-6.6	-21.8	
6,050.0	8.79	249.70	6,018.5	-97.9	-513.1	1.05	0.37	-6.54	-8.1	-21.8	
6,145.0	8.35	251.63	6,112.4	-102.6	-526.4	0.55	-0.46	2.03	-12.7	-20.3	
6,240.0	8.18	247.77	6,206.4	-107.4	-539.2	0.61	-0.18	-4.06	-14.8	-19.9	
6,335.0	7.47	247.06	6,300.5	-112.3	-551.2	0.75	-0.75	-0.75	-17.3	-18.4	
6,430.0	7.12	244.87	6,394.8	-117.2	-562.2	0.47	-0.37	-2.31	-18.5	-17.1	
6,524.0	6.86	254.45	6,488.1	-121.2	-572.9	1.27	-0.28	10.19	-22.2	-12.4	
6,619.0	6.95	258.40	6,582.4	-123.9	-584.0	0.51	0.09	4.16	-24.1	-10.8	
6,714.0	6.95	256.73	6,676.7	-126.4	-595.2	0.21	0.00	-1.76	-24.9	-11.6	
6,809.0	6.24	255.50	6,771.1	-129.0	-605.8	0.76	-0.75	-1.29	-25.2	-12.0	
6,904.0	5.98	255.06	6,865.5	-131.6	-615.6	0.28	-0.27	-0.46	-24.9	-11.9	
6,999.0	5.63	253.92	6,960.0	-134.1	-624.8	0.39	-0.37	-1.20	-23.9	-11.9	
7,094.0	4.66	251.37	7,054.7	-136.6	-633.0	1.05	-1.02	-2.68	-21.6	-12.2	
7,189.0	4.31	254.45	7,149.4	-138.8	-640.1	0.45	-0.37	3.24	-19.3	-10.3	
7,284.0	3.34	252.16	7,244.1	-140.6	-646.1	1.03	-1.02	-2.41	-14.9	-10.4	
7,379.0	3.17	257.61	7,339.0	-142.1	-651.3	0.37	-0.18	5.74	-10.8	-8.8	
7,473.0	3.17	258.58	7,432.9	-143.1	-656.4	0.06	0.00	1.03	-5.9	-8.9	
7,568.0	3.17	253.04	7,527.7	-144.4	-661.5	0.32	0.00	-5.83	-0.1	-8.9	
7,663.0	2.81	236.87	7,622.6	-146.4	-666.0	0.96	-0.38	-17.02	4.7	-6.7	
7,758.0	2.90	238.54	7,717.5	-149.0	-670.0	0.13	0.09	1.76	4.1	-5.4	



Midland PVA

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Well:	#704H	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)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
7,853.0	2.73	233.00	7,812.3	-151.6	-673.8	0.34	-0.18	-5.83	1.2	-4.6
7,948.0	2.37	228.87	7,907.3	-154.2	-677.1	0.43	-0.38	-4.35	-2.7	-4.7
8,043.0	2.20	207.16	8,002.2	-157.2	-679.4	0.92	-0.18	-22.85	-4.4	-6.1
8,138.0	2.02	201.10	8,097.1	-160.3	-680.9	0.30	-0.19	-6.38	-7.2	-6.7
8,233.0	1.93	204.79	8,192.1	-163.4	-682.1	0.16	-0.09	3.88	-10.9	-6.1
8,328.0	1.76	205.93	8,287.0	-166.1	-683.4	0.18	-0.18	1.20	-14.1	-5.9
8,422.0	1.14	195.91	8,381.0	-168.3	-684.3	0.71	-0.66	-10.66	-15.2	-8.5
8,517.0	0.88	197.14	8,476.0	-169.9	-684.8	0.27	-0.27	1.29	-17.1	-8.1
8,612.0	0.97	184.57	8,571.0	-171.4	-685.1	0.23	0.09	-13.23	-16.4	-11.8
8,707.0	0.88	182.64	8,665.9	-173.0	-685.2	0.10	-0.09	-2.03	-17.5	-12.4
8,802.0	0.88	192.13	8,760.9	-174.4	-685.4	0.15	0.00	9.99	-20.8	-9.2
8,897.0	0.79	192.22	8,855.9	-175.8	-685.7	0.09	-0.09	0.09	-22.2	-9.2
8,992.0	0.88	187.21	8,950.9	-177.1	-685.9	0.12	0.09	-5.27	-22.7	-11.1
9,087.0	1.06	183.69	9,045.9	-178.7	-686.0	0.20	0.19	-3.71	-23.6	-12.5
9,181.0	1.06	174.64	9,139.9	-180.4	-686.0	0.18	0.00	-9.63	-23.0	-16.2
9,276.0	0.97	170.51	9,234.9	-182.1	-685.8	0.12	-0.09	-4.35	-23.5	-17.9
9,371.0	0.44	138.87	9,329.9	-183.2	-685.4	0.67	-0.56	-33.31	-11.6	-28.0
9,466.0	0.35	150.38	9,424.9	-183.7	-685.0	0.13	-0.09	12.12	-17.6	-25.0
9,557.0	0.26	160.67	9,515.9	-184.1	-684.8	0.12	-0.10	11.31	-22.3	-21.4
9,652.0	0.44	258.66	9,610.9	-184.4	-685.1	0.57	0.19	103.15	-18.5	25.3
9,747.0	1.23	284.86	9,705.8	-184.2	-686.5	0.90	0.83	27.58	-8.7	31.0
9,841.0	1.23	276.59	9,799.8	-183.9	-688.4	0.19	0.00	-8.80	-13.1	29.6
9,936.0	1.58	308.59	9,894.8	-182.9	-690.5	0.89	0.37	33.68	2.3	32.6
10,031.0	1.93	301.47	9,989.7	-181.3	-692.9	0.43	0.37	-7.49	-4.6	32.4
10,126.0	1.41	293.47	10,084.7	-180.0	-695.3	0.60	-0.55	-8.42	-11.8	31.3
10,221.0	0.70	220.70	10,179.7	-179.9	-696.8	1.45	-0.75	-76.60	-34.3	-3.2
10,316.0	0.88	200.66	10,274.7	-181.1	-697.4	0.34	0.19	-21.08	-32.4	-14.9



Midland PVA

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Site:	Cobalt 32 State Com	MD Reference:	KB = 25 @ 3444.0usft
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Adj (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
10,411.0	1.41	238.19	10,369.7	-182.4	-698.6	0.94	0.56	39.51	-36.5	8.4	
10,506.0	0.79	261.12	10,464.6	-183.1	-700.3	0.79	-0.65	24.14	-32.1	22.4	
10,601.0	0.26	119.88	10,559.6	-183.3	-700.7	1.06	-0.56	-148.67	11.3	-38.0	
10,696.0	0.62	181.50	10,654.6	-183.9	-700.6	0.58	0.38	84.86	-28.7	-27.8	
10,790.0	0.53	167.61	10,748.6	-184.8	-700.5	0.18	-0.10	-14.78	-22.1	-34.0	
10,886.0	0.35	90.53	10,844.6	-185.3	-700.1	0.59	-0.19	-80.29	27.8	-29.5	
10,980.0	0.26	158.56	10,938.6	-185.5	-699.7	0.37	-0.10	72.37	-17.3	-36.6	
11,075.0	0.09	110.83	11,033.6	-185.7	-699.6	0.22	-0.18	-50.24	15.2	-37.6	
11,170.0	0.70	246.01	11,128.6	-186.0	-700.0	0.81	0.64	142.29	-37.8	16.0	
11,265.0	0.35	301.64	11,223.6	-186.1	-700.8	0.61	-0.37	58.56	-8.8	40.7	
11,360.0	1.06	350.25	11,318.6	-185.0	-701.2	0.91	0.75	51.17	23.7	33.7	
11,455.0	2.02	354.46	11,413.6	-182.5	-701.5	1.02	1.01	4.43	23.5	32.0	
11,550.0	2.02	358.68	11,508.5	-179.2	-701.7	0.16	0.00	4.44	22.5	30.3	
11,645.0	1.32	351.21	11,603.5	-176.4	-701.9	0.77	-0.74	-7.86	15.6	32.7	
11,716.0	1.23	351.39	11,674.5	-174.9	-702.2	0.13	-0.13	0.25	14.1	32.7	
11,820.0	1.58	345.15	11,778.4	-172.4	-702.7	0.37	0.34	-6.00	7.9	33.9	
11,877.0	2.46	348.03	11,835.4	-170.4	-703.2	1.55	1.54	5.06	7.6	33.5	
KOP 11877.0' MD; 11835.4' TVD; -170.4°; -703.2°; 2.46											
11,883.0	2.55	348.22	11,841.4	-170.1	-703.2	1.55	1.54	3.13	7.5	33.5	
11,978.0	20.58	2.37	11,934.1	-151.2	-703.0	19.07	18.98	14.89	2.9	30.8	
12,073.0	28.84	2.73	12,020.3	-111.6	-701.2	8.70	8.69	0.38	-12.7	29.4	
12,084.4	29.81	2.02	12,030.3	-106.0	-700.9	9.04	8.52	-6.19	-14.6	29.1	
FTP Crossing 12084.4' MD; 12030.3' TVD; -106.0°; -700.9°; 29.81											
12,168.0	37.02	357.89	12,100.0	-60.0	-701.1	9.04	8.62	-4.95	-25.0	27.6	
12,263.0	45.90	357.72	12,171.1	2.8	-703.5	9.35	9.35	-0.18	-29.6	29.2	
12,358.0	57.60	2.81	12,229.9	77.2	-702.9	13.01	12.32	5.36	-29.5	29.4	
12,421.0	67.45	2.81	12,258.9	132.9	-700.2	15.63	15.63	0.00	-31.5	25.9	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3444.0usft
Site:	Cobalt 32 State Corn	MD Reference:	KB = 25 @ 3444.0usft
Well:	#704H	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)	DLog ("/100usft)	Solid ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
12,453.0	68.06	2.29	12,271.0	162.5	-698.9	2.43	1.91	-1.62	-32.1	24.0	
12,500.0	71.58	1.41	12,287.2	206.6	-697.5	7.69	7.49	-1.87	-30.4	21.9	
12,548.0	72.90	1.67	12,301.9	252.3	-696.2	2.80	2.75	0.54	-25.4	20.2	
12,642.0	75.97	1.41	12,327.1	342.8	-693.8	3.28	3.27	-0.28	-5.1	16.5	
12,737.0	91.36	3.25	12,337.5	436.9	-690.0	16.31	16.20	1.94	6.7	11.6	
12,832.0	92.68	2.11	12,334.2	531.7	-685.5	1.84	1.39	-1.20	4.8	6.1	
12,926.0	92.77	2.81	12,329.7	625.5	-681.5	0.75	0.10	0.74	1.7	1.1	
13,021.0	91.71	0.70	12,326.0	720.4	-678.6	2.48	-1.12	-2.22	-0.6	-2.8	
13,116.0	88.29	359.83	12,326.0	815.4	-678.1	3.71	-3.60	-0.92	0.8	-4.3	
13,211.0	89.34	359.47	12,328.0	910.3	-678.7	1.17	1.11	-0.38	4.1	-4.7	
13,306.0	91.01	359.91	12,327.7	1,005.3	-679.2	1.82	1.76	0.46	5.2	-5.2	
13,400.0	88.81	359.91	12,327.8	1,099.3	-679.4	2.34	-2.34	0.00	6.8	-6.1	
13,496.0	89.43	359.65	12,329.3	1,195.3	-679.7	0.70	0.65	-0.27	8.8	-6.8	
13,590.0	89.25	358.42	12,330.4	1,289.3	-681.3	1.32	-0.19	-1.31	10.3	-6.2	
13,685.0	90.31	358.24	12,330.7	1,384.3	-684.1	1.13	1.12	-0.19	11.0	-4.4	
13,781.0	91.19	357.89	12,329.5	1,480.2	-687.3	0.99	0.92	-0.36	10.1	-2.2	
13,876.0	91.98	357.37	12,326.9	1,575.1	-691.3	1.00	0.83	-0.55	7.8	0.7	
13,972.0	91.28	358.95	12,324.1	1,671.0	-694.3	1.80	-0.73	1.65	5.4	2.7	
14,067.0	90.48	358.60	12,322.7	1,766.0	-696.4	0.92	-0.84	-0.37	4.3	3.7	
14,162.0	92.07	359.47	12,320.6	1,860.9	-698.0	1.91	1.67	0.92	2.6	4.3	
14,257.0	87.85	1.06	12,320.6	1,955.9	-697.5	4.75	-4.44	1.67	3.0	2.8	
14,352.0	88.46	0.53	12,323.7	2,050.8	-696.2	0.85	0.64	-0.56	6.4	0.5	
14,448.0	88.72	359.65	12,326.0	2,146.8	-696.1	0.96	0.27	-0.92	9.1	-0.7	
14,543.0	91.63	1.67	12,325.8	2,241.8	-695.0	3.73	3.06	2.13	9.2	-2.8	
14,638.0	93.47	1.06	12,321.5	2,336.6	-692.7	2.04	1.94	-0.64	5.3	-6.1	
14,734.0	92.07	2.37	12,316.9	2,432.5	-689.8	2.00	-1.46	1.36	1.1	-10.0	
14,829.0	91.80	1.58	12,313.7	2,527.4	-686.6	0.88	-0.28	-0.83	-1.8	-14.3	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3444.0usft
Site:	Cobalt 32 State Com	MD Reference:	KB = 25 @ 3444.0usft
Well:	#704H	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)	
14,924.0	89.78	1.76	12,312.4	2,622.3	-683.8	2.13	-2.13	0.19	-2.7	-18.0	
15,019.0	90.31	2.20	12,312.3	2,717.3	-680.5	0.73	0.56	0.46	-2.4	-22.3	
15,115.0	88.46	0.18	12,313.3	2,813.2	-678.5	2.85	-1.93	-2.10	-1.1	-25.4	
15,210.0	89.25	359.83	12,315.2	2,908.2	-678.5	0.91	0.83	-0.37	1.2	-26.4	
15,306.0	90.13	357.72	12,315.7	3,004.2	-680.6	2.38	0.92	-2.20	2.1	-25.4	
15,401.0	91.19	356.84	12,314.6	3,099.1	-685.1	1.45	1.12	-0.93	1.3	-21.9	
15,496.0	91.36	355.61	12,312.5	3,193.8	-691.3	1.31	0.18	-1.29	-0.4	-16.7	
15,591.0	92.95	357.89	12,309.0	3,288.6	-696.7	2.92	1.67	2.40	-3.6	-12.3	
15,686.0	90.66	358.68	12,306.0	3,383.5	-699.6	2.55	-2.41	0.83	-6.3	-10.5	
15,781.0	91.19	358.68	12,304.4	3,478.5	-701.7	0.56	0.56	0.00	-7.4	-9.3	
15,875.0	92.24	358.24	12,301.6	3,572.4	-704.3	1.21	1.12	-0.47	-9.9	-7.8	
15,970.0	90.13	357.63	12,299.7	3,667.3	-707.7	2.31	-2.22	-0.64	-11.5	-5.4	
16,065.0	90.22	357.80	12,299.4	3,762.2	-711.5	0.20	0.09	0.18	-11.0	-2.6	
16,160.0	88.55	357.63	12,300.4	3,857.1	-715.3	1.77	-1.76	-0.18	-8.6	0.2	
16,255.0	90.48	358.33	12,301.2	3,952.1	-718.6	2.16	2.03	0.74	-6.4	2.5	
16,349.0	91.54	359.21	12,299.5	4,046.0	-720.6	1.47	1.13	0.94	-6.6	3.5	
16,444.0	88.02	359.56	12,299.9	4,141.0	-721.7	3.72	-3.71	0.37	-4.8	3.5	
16,539.0	87.67	359.30	12,303.5	4,235.9	-722.6	0.46	-0.37	-0.27	0.2	3.4	
16,633.0	90.75	358.68	12,304.8	4,329.9	-724.3	3.34	3.28	-0.66	2.9	4.1	
16,727.0	92.95	358.60	12,301.7	4,423.8	-726.5	2.34	2.34	-0.09	1.5	5.3	
16,821.0	93.47	357.80	12,296.5	4,517.6	-729.4	1.01	0.55	-0.85	-0.8	7.2	
16,916.0	93.21	357.54	12,290.9	4,612.4	-733.3	0.39	-0.27	-0.27	-3.3	10.1	
17,010.0	92.77	356.93	12,286.0	4,706.2	-737.8	0.80	-0.47	-0.65	-5.2	13.6	
17,104.0	92.51	356.93	12,281.7	4,799.9	-742.8	0.28	-0.28	0.00	-6.5	17.6	
17,188.0	93.56	356.31	12,277.3	4,883.7	-747.8	1.45	1.25	-0.74	-8.2	21.7	
Last MWD Survey (MD = 17188.0)											



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3444.0usft
Site:	Cobalt 32 State Com	MD Reference:	KB = 25 @ 3444.0usft
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)
17,251.0	93.56	356.31	12,273.3	4,946.4	-751.8	0.00	0.00	0.00	-10.1	25.0
Projection to Bit (MD = 17251.0)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
11,877.0	11,835.4	-170.4	-703.2	KOP 11877.0' MD; 11835.4' TVD; -170.4'; -703.2'; 2.46
12,084.4	12,030.3	-106.0	-700.9	FTP Crossing 12084.4' MD; 12030.3' TVD; -106.0'; -700.9'; 29.81
17,188.0	12,277.3	4,883.7	-747.8	Last MWD Survey (MD = 17188.0)
17,251.0	12,273.3	4,946.4	-751.8	Projection to Bit (MD = 17251.0)

Checked By: _____	Approved By: _____	Date: _____
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Lea County, NM (NAD 83 NME)

Cobalt 32 State Com #704H

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: #704H

KB = 25 @ 3444.0usft 3419.0
Northing 425635.00 Easting 802450.00 Latitude 32° 10' 2.404 N Longitude 103° 29' 22.127 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1512.8	6.26	256.93	1512.2	-3.9	-16.8	2.00	256.93	-1.4	
4	7530.3	6.26	256.93	7493.8	-152.1	-655.4	0.00	0.00	-55.5	Brushy Top (Cobalt 32 State #704H)
5	7843.1	0.00	0.00	7806.0	-156.0	-672.0	2.00	180.00	-57.0	
6	11892.4	0.00	0.00	11855.3	-156.0	-672.0	0.00	0.00	-57.0	
7	12651.0	91.04	359.38	12332.7	330.1	-677.2	12.00	359.38	424.8	
8	12744.2	91.04	359.38	12331.0	423.2	-678.2	0.00	0.00	517.0	TGT#1(Cobalt 32 State #704H)
9	12753.9	90.84	359.38	12330.8	433.0	-678.3	2.00	180.00	526.7	
10	13423.4	90.84	359.38	12321.0	1102.3	-685.5	0.00	0.00	1190.0	TGT#2(Cobalt 32 State #704H)
11	13454.7	90.22	359.38	12320.7	1133.6	-685.9	2.00	-180.00	1221.0	
12	16031.0	90.22	359.38	12311.0	3709.8	-713.5	0.00	0.00	3774.0	TGT#3(Cobalt 32 State #704H)
13	16063.2	90.88	359.38	12310.7	3741.9	-713.9	2.00	0.00	3805.9	
14	16710.3	90.88	359.38	12301.0	4308.9	-720.8	0.00	0.00	4447.0	TGT#4(Cobalt 32 State #704H)
15	16759.2	91.84	359.38	12299.8	4437.8	-721.4	2.00	0.00	4495.5	
16	17284.7	91.84	359.38	12283.0	4963.0	-727.0	0.00	0.00	5016.0	PBHL (Cobalt 32 State #704H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
Brushy Top (Cobalt 32 State #704H)	7806.0	-156.0	-672.0	425478.00	801778.00
PBHL (Cobalt 32 State #704H)	12283.0	4963.0	-727.0	430588.00	801723.00
TGT#1(Cobalt 32 State #704H)	12301.0	4388.9	-720.8	430023.90	801725.17
TGT#2(Cobalt 32 State #704H)	12311.0	3709.8	-713.5	429344.80	801734.46
TGT#3(Cobalt 32 State #704H)	12321.0	1102.3	-685.5	426737.30	801764.48
TGT#4(Cobalt 32 State #704H)	12331.0	423.2	-678.2	426088.20	801771.79
FTP (Cobalt 32 State #704H)	12343.0	-106.0	-672.0	425529.00	801778.00

