



EOG Resources - Midland

Eddy County, NM (NAD 83 NME)

Golden Graham 1 State Com

#721H

OH

Design: OH

Midland PVA

03 December, 2018



Midland PVA

Company:	Eog Resources - Midland	Local Co-ordinate Reference:	Well #721H:
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 2965.0usft
Site:	Golden Graham 1 State Com	MD Reference:	KB = 25 @ 2965.0usft
Well:	#721H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Project	Eddy 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	Golden Graham 1 State Com				
Site Position:		Northing:	387,494.00 usft	Latitude:	32° 3' 53.919 N
From:	Map	Eastings:	630,031.00 usft	Longitude:	104° 2' 49.246 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	#721H					
Well Position	+N-S	0.0 usft	Northing:	387,497.00 usft	Latitude:	32° 3' 53.947 N
	+E-W	0.0 usft	Easting:	630,064.00 usft	Longitude:	104° 2' 48.862 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	2,940.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/11/2018	7.02	59.82	47,661.45733976

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	1.61

Survey Program	Date 12/3/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
199.0	19,885.0	Dritech MWD (OH)	MWD	OWSG MWD - Standard



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Well:	#721H	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)	DLag (°/100usft)	Bulld (°/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	0.00	0.0		0.0
199.0	0.53	289.78	199.0	0.3	-0.9	0.27	0.27	0.00	-0.9	0.0		0.0
320.0	0.88	286.62	320.0	0.8	-2.3	0.29	0.29	-2.61	-2.4	-0.1		
380.0	0.70	305.42	380.0	1.1	-3.0	0.52	-0.30	31.33	-3.1	0.8		
434.0	0.88	305.42	434.0	1.5	-3.6	0.33	0.33	0.00	-3.9	0.8		
517.0	0.26	334.60	517.0	2.1	-4.2	0.80	-0.75	35.16	-3.7	2.9		
677.0	1.58	318.61	676.9	4.1	-5.8	0.83	0.82	-9.99	-6.9	1.7		
777.0	1.67	324.23	776.9	6.3	-7.6	0.18	0.09	5.62	-9.5	2.5		
871.0	0.44	6.33	870.9	7.8	-8.4	1.46	-1.31	44.79	-6.8	9.2		
965.0	1.14	120.59	964.9	7.6	-7.5	1.47	0.74	121.55	10.4	2.7		
1,060.0	2.73	118.66	1,059.8	6.1	-4.7	1.67	1.67	-2.03	7.1	3.1		
1,155.0	4.31	117.60	1,154.6	3.3	0.4	1.66	1.66	-1.12	1.7	3.2		
1,250.0	3.87	121.73	1,249.4	0.0	6.3	0.56	-0.46	4.35	-1.5	3.2		
1,344.0	4.66	118.66	1,343.1	-3.5	12.4	0.87	0.84	-3.27	-2.2	3.1		
1,438.0	6.07	117.16	1,436.7	-7.6	20.1	1.51	1.50	-1.60	-2.5	3.4		
1,532.0	6.24	115.40	1,530.2	-12.1	29.2	0.27	0.18	-1.87	-4.1	3.9		
1,627.0	5.45	116.46	1,624.7	-16.3	37.9	0.84	-0.83	1.12	-5.0	4.7		
1,722.0	5.10	115.40	1,719.3	-20.1	45.7	0.38	-0.37	-1.12	-5.2	5.2		
1,816.0	4.92	115.84	1,812.9	-23.7	53.1	0.20	-0.19	0.47	-4.7	6.0		
1,911.0	4.92	114.00	1,907.6	-27.1	60.5	0.17	0.00	-1.94	-4.4	6.6		
2,006.0	5.98	106.35	2,002.2	-30.1	69.0	1.35	1.12	-8.05	-5.8	7.5		
2,101.0	6.68	112.33	2,096.6	-33.6	78.8	1.01	0.74	6.29	-6.8	9.8		
2,195.0	6.42	116.46	2,190.0	-38.1	88.6	0.57	-0.28	4.39	-8.2	11.2		
2,288.0	7.30	112.50	2,282.3	-42.6	98.7	1.07	0.95	-4.26	-11.6	11.4		
2,383.0	8.09	110.92	2,376.4	-47.3	110.5	0.86	0.83	-1.66	-16.0	12.4		
2,478.0	8.27	107.85	2,470.5	-51.8	123.3	0.50	0.19	-3.23	-21.7	13.0		
2,656.0	6.68	110.40	2,647.0	-59.3	145.2	0.91	-0.89	1.43	-28.2	17.3		



Midland PVA

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Site:	Golden Graham 1 State Com	MD Reference:	KB = 25 @ 2965.0usft
Well:	#721H	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)	D Leg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
2,751.0	5.54	119.36	2,741.4	-63.5	154.4	1.56	-1.20	9.43	-26.5		22.5
2,845.0	5.54	125.34	2,835.0	-68.4	162.0	0.61	0.00	6.36	-24.5		24.8
2,940.0	5.19	123.14	2,929.6	-73.4	169.4	0.43	-0.37	-2.32	-25.6		23.2
3,034.0	5.28	122.52	3,023.2	-78.0	176.6	0.11	0.10	-0.66	-25.8		22.6
3,129.0	5.10	122.88	3,117.8	-82.7	183.8	0.19	-0.19	0.38	-25.6		22.4
3,224.0	4.75	122.70	3,212.4	-87.1	190.6	0.37	-0.37	-0.19	-25.1		21.9
3,319.0	4.57	121.47	3,307.1	-91.2	197.2	0.22	-0.19	-1.29	-24.6		21.1
3,414.0	6.16	119.71	3,401.7	-95.7	204.8	1.68	1.67	-1.85	-25.4		20.3
3,509.0	6.07	119.10	3,496.2	-100.7	213.7	0.12	-0.09	-0.64	-27.0		20.1
3,603.0	5.19	117.25	3,589.7	-105.0	221.8	0.96	-0.94	-1.97	-28.2		19.5
3,698.0	5.19	115.32	3,684.3	-108.8	229.5	0.18	0.00	-2.03	-28.8		19.2
3,793.0	5.19	114.53	3,778.9	-112.4	237.3	0.08	0.00	-0.83	-29.0		19.6
3,887.0	5.54	112.15	3,872.5	-115.9	245.3	0.44	0.37	-2.53	-30.0		19.4
3,982.0	5.01	117.16	3,967.1	-119.5	253.3	0.74	-0.56	5.27	-28.2		22.8
4,077.0	3.43	116.55	4,061.8	-122.7	259.5	1.66	-1.66	-0.64	-26.7		23.0
4,172.0	4.13	144.67	4,156.6	-126.8	264.0	2.06	0.74	29.60	-10.8		30.6
4,267.0	4.84	162.51	4,251.4	-133.4	267.2	1.64	0.75	18.78	-1.7		27.6
4,362.0	2.20	143.00	4,346.2	-138.7	269.5	3.01	-2.78	-20.54	-8.3		20.8
4,456.0	0.79	356.31	4,440.2	-139.5	270.6	3.08	-1.50	-156.05	-8.4		-15.8
4,551.0	1.23	348.75	4,535.1	-137.8	270.3	0.48	0.46	-7.96	-13.6		-10.5
4,646.0	1.06	346.91	4,630.1	-135.9	269.9	0.18	-0.18	-1.94	-19.4		-6.4
4,741.0	0.97	334.52	4,725.1	-134.4	269.4	0.25	-0.09	-13.04	-21.7		-8.9
4,836.0	0.97	310.17	4,820.1	-133.1	268.4	0.43	0.00	-25.63	-18.0		-17.4
4,931.0	0.88	301.21	4,915.1	-132.2	267.2	0.18	-0.09	-9.43	-16.6		-20.1
5,025.0	0.70	298.74	5,009.1	-131.6	266.1	0.19	-0.19	-2.63	-17.0		-20.8
5,120.0	0.53	294.09	5,104.1	-131.1	265.2	0.19	-0.18	-4.89	-16.3		-22.2
5,309.0	0.35	215.95	5,293.1	-131.2	264.0	0.30	-0.10	-41.34	17.6		-21.4



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

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)
5,403.0	0.53	198.29	5,387.1	-131.9	263.7	0.24	0.19	-18.79	22.5	-15.1
5,498.0	0.44	198.46	5,482.1	-132.6	263.5	0.09	-0.09	0.18	21.7	-15.2
5,688.0	0.70	175.96	5,672.0	-134.5	263.3	0.18	0.14	-11.84	24.0	-8.0
5,782.0	0.79	172.18	5,766.0	-135.7	263.4	0.11	0.10	-4.02	23.1	-4.5
5,877.0	0.97	163.66	5,861.0	-137.1	263.8	0.23	0.19	-8.97	22.1	-1.1
5,972.0	1.06	169.37	5,956.0	-138.8	264.1	0.14	0.09	6.01	20.2	-3.2
6,066.0	1.14	177.54	6,050.0	-140.5	264.3	0.19	0.09	8.69	17.7	-5.9
6,161.0	1.32	172.62	6,145.0	-142.6	264.5	0.22	0.19	-5.18	16.1	-4.4
6,255.0	1.23	176.75	6,239.0	-144.7	264.7	0.14	-0.10	4.39	13.7	-5.5
6,350.0	1.32	165.24	6,333.9	-146.7	265.1	0.29	0.09	-12.12	12.4	-2.9
6,445.0	1.14	181.15	6,428.9	-148.7	265.3	0.40	-0.19	16.75	9.2	-5.9
6,539.0	1.23	185.89	6,522.9	-150.7	265.2	0.14	0.10	5.04	6.7	-6.5
6,634.0	1.23	220.70	6,617.9	-152.5	264.4	0.77	0.00	36.64	-0.1	-8.6
6,729.0	1.32	238.01	6,712.8	-153.8	262.8	0.41	0.09	18.22	-4.7	-7.9
6,824.0	1.06	272.99	6,807.8	-154.3	261.0	0.80	-0.27	36.82	-10.1	-3.1
6,919.0	0.97	268.95	6,902.8	-154.3	259.3	0.12	-0.09	-4.25	-11.6	-3.9
7,014.0	1.23	256.29	6,997.8	-154.6	257.6	0.37	0.27	-13.33	-12.3	-6.5
7,109.0	1.23	259.81	7,092.8	-155.0	255.6	0.08	0.00	3.71	-14.7	-5.7
7,203.0	1.32	307.09	7,186.7	-154.5	253.7	1.09	0.10	50.30	-15.9	7.7
7,298.0	1.49	249.97	7,281.7	-154.3	251.7	1.42	0.18	-60.13	-16.9	-10.1
7,393.0	1.76	241.44	7,376.7	-155.4	249.2	0.38	0.28	-8.98	-17.9	-12.7
7,487.0	1.41	231.51	7,470.6	-156.8	247.1	0.47	-0.37	-10.56	-18.0	-15.8
7,582.0	1.23	227.11	7,565.6	-158.2	245.4	0.22	-0.19	-4.63	-18.9	-17.3
7,677.0	0.97	217.53	7,660.6	-159.6	244.2	0.33	-0.27	-10.08	-17.6	-20.3
7,772.0	0.88	226.06	7,755.6	-160.7	243.1	0.17	-0.09	8.98	-21.9	-17.4
7,867.0	0.26	210.94	7,850.6	-161.4	242.5	0.67	-0.65	-15.92	-17.6	-22.7
7,962.0	1.06	141.68	7,945.6	-162.3	242.9	1.05	0.84	-72.91	14.0	-24.7



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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Survey											
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8,056.0	1.85	158.21	8,039.6	-164.4	244.0	0.94	0.84	17.59	4.1	-27.4	
8,151.0	2.29	165.85	8,134.5	-167.6	245.1	0.55	0.46	8.04	-3.0	-27.5	
8,246.0	1.93	190.55	8,229.4	-171.0	245.2	1.02	-0.38	26.00	-17.5	-22.9	
8,341.0	1.49	209.36	8,324.4	-173.7	244.3	0.74	-0.46	19.80	-26.7	-15.5	
8,435.0	2.20	215.86	8,418.3	-176.2	242.7	0.79	0.76	6.91	-31.3	-12.3	
8,529.0	0.53	161.81	8,512.3	-178.1	241.8	2.06	-1.78	-57.50	-10.0	-34.0	
8,623.0	0.62	294.44	8,606.3	-178.3	241.4	1.12	0.10	141.10	-18.5	30.7	
8,718.0	1.49	38.94	8,701.3	-177.1	241.7	1.84	0.92	110.00	33.3	10.7	
8,813.0	1.67	83.94	8,796.3	-176.0	243.9	1.28	0.19	47.37	28.8	-15.1	
8,927.0	0.88	112.59	8,910.2	-176.2	245.4	0.87	-0.69	25.13	15.8	-26.2	
9,042.0	0.35	201.80	9,025.2	-176.8	247.0	0.82	-0.46	77.57	-26.4	-15.2	
9,137.0	0.26	210.33	9,120.2	-177.3	246.8	0.11	-0.09	8.98	-28.9	-11.1	
9,232.0	0.44	275.89	9,215.2	-177.4	246.4	0.43	0.19	69.01	-22.5	21.9	
9,323.0	0.61	314.59	9,306.2	-177.1	245.7	0.42	0.18	42.53	-3.5	32.6	
KOP 9323.0' MD; 9306.2' TVD; -177.1°; 245.7°; 0.61											
9,327.0	0.62	315.71	9,310.2	-177.0	245.6	0.42	0.29	27.94	-2.7	32.9	
9,422.0	12.31	7.04	9,404.5	-166.6	246.5	12.56	12.31	54.03	30.9	21.0	
9,517.0	23.21	13.10	9,494.8	-138.2	252.0	11.62	11.47	6.38	37.9	11.5	
9,612.0	29.63	16.00	9,579.8	-97.4	262.8	6.89	6.76	3.05	45.7	-1.8	
9,706.0	42.65	10.82	9,655.6	-43.5	275.2	14.22	13.85	-5.51	54.9	-11.1	
9,800.0	59.09	6.33	9,714.8	28.4	285.7	17.87	17.49	-4.78	57.4	-17.8	
9,887.8	68.51	1.67	9,753.5	106.8	291.0	11.74	10.73	-5.31	55.2	-20.2	
FTP Crossing 9887.8' MD; 9753.5' TVD; 106.8°; 291.0°; 68.51											
9,895.0	69.29	1.32	9,756.1	113.6	291.2	11.74	10.81	-4.89	54.9	-20.3	
9,989.0	78.79	357.19	9,781.9	203.8	290.0	10.95	10.11	-4.39	52.5	-17.8	
10,084.0	89.78	358.60	9,791.4	298.1	286.5	11.66	11.57	1.48	49.4	-14.8	
10,178.0	87.67	355.96	9,793.4	392.0	282.1	3.59	-2.24	-2.81	50.4	-10.2	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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10,273.0	90.84	355.35	9,794.7	486.7	274.9	3.40	3.34	-0.64	50.8	-2.8	
10,368.0	88.64	355.96	9,795.1	581.4	267.7	2.40	-2.32	0.64	50.3	4.5	
10,463.0	87.58	0.71	9,798.2	676.3	264.9	5.12	-1.12	5.00	52.6	7.4	
10,558.0	87.67	2.11	9,802.2	771.2	267.2	1.48	0.09	1.47	55.7	5.2	
10,653.0	88.72	2.90	9,805.2	866.0	271.4	1.38	1.11	0.83	57.8	1.2	
10,747.0	89.52	2.55	9,806.6	959.9	275.9	0.93	0.85	-0.37	58.4	-3.2	
10,843.0	90.92	1.76	9,806.3	1,055.8	279.5	1.67	1.46	-0.82	57.1	-6.6	
10,937.0	88.64	2.20	9,806.6	1,149.8	282.7	2.47	-2.43	0.47	56.6	-9.7	
11,032.0	90.13	1.50	9,807.6	1,244.7	285.8	1.73	1.57	-0.74	56.8	-12.6	
11,127.0	88.29	359.74	9,808.9	1,339.7	286.8	2.68	-1.94	-1.85	57.2	-13.5	
11,222.0	86.97	358.33	9,812.9	1,434.6	285.2	2.03	-1.39	-1.48	60.3	-11.7	
11,316.0	88.20	358.51	9,816.8	1,528.5	282.6	1.32	1.31	0.19	63.4	-9.0	
11,410.0	87.85	359.21	9,820.1	1,622.4	280.8	0.83	-0.37	0.74	65.8	-7.0	
11,505.0	85.74	358.25	9,825.4	1,717.2	278.7	2.44	-2.22	-1.01	70.2	-4.7	
11,600.0	88.90	358.07	9,829.8	1,812.1	275.6	3.33	3.33	-0.19	73.8	-1.5	
11,695.0	90.04	0.97	9,830.7	1,907.0	274.8	3.28	1.20	3.05	73.8	-0.6	
11,789.0	87.85	1.50	9,832.4	2,001.0	276.8	2.40	-2.33	0.56	74.7	-2.5	
11,884.0	92.24	2.90	9,832.4	2,095.9	280.5	4.85	4.62	1.47	73.7	-6.0	
11,979.0	87.41	356.93	9,832.6	2,190.8	280.3	8.08	-5.08	-6.28	73.1	-5.7	
12,074.0	87.05	358.60	9,837.2	2,285.6	276.6	1.80	-0.38	1.76	76.9	-1.8	
12,168.0	88.37	0.97	9,841.0	2,379.6	276.3	2.88	1.40	2.52	79.8	-1.4	
12,263.0	86.53	1.76	9,845.2	2,474.4	278.6	2.11	-1.94	0.83	83.1	-3.5	
12,358.0	90.84	3.78	9,847.4	2,569.3	283.1	5.01	4.54	2.13	84.4	-8.0	
12,452.0	86.81	359.04	9,847.7	2,663.2	285.5	5.49	-2.16	-5.04	83.9	-10.1	
12,546.0	85.74	354.91	9,852.2	2,756.9	280.5	5.47	-3.27	-4.39	87.5	-4.9	
12,641.0	89.43	358.69	9,856.2	2,851.7	275.2	5.56	3.88	3.98	90.6	0.5	
12,736.0	86.70	359.30	9,859.4	2,946.6	273.5	2.94	-2.87	0.64	92.9	2.3	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #721H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 2985.0usft
Site:	Golden Graham 1 State Com	MD Reference:	KB = 25 @ 2985.0usft
Well:	#721H	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)	
12,831.0	88.64	359.21	9,863.2	3,041.5	272.3	2.04	2.04	-0.09	95.9	3.6	
12,925.0	89.87	358.69	9,864.5	3,135.5	270.6	1.42	1.31	-0.55	96.3	5.5	
13,020.0	89.25	359.48	9,865.2	3,230.5	269.1	1.06	-0.65	0.83	96.2	7.2	
13,115.0	87.93	0.18	9,867.5	3,325.4	268.8	1.57	-1.39	0.74	97.6	7.6	
13,210.0	88.29	0.00	9,870.7	3,420.4	268.9	0.42	0.38	-0.19	99.9	7.6	
13,305.0	87.05	0.09	9,874.5	3,515.3	269.0	1.31	-1.31	0.09	102.9	7.7	
13,399.0	89.96	1.50	9,877.0	3,609.2	270.3	3.44	3.10	1.50	104.5	6.5	
13,493.0	90.66	359.83	9,876.5	3,703.2	271.4	1.93	0.74	-1.78	103.1	5.6	
13,588.0	86.00	357.19	9,879.2	3,798.1	268.9	5.64	-4.91	-2.78	105.0	8.2	
13,683.0	92.42	358.25	9,880.5	3,893.0	265.2	6.85	6.76	1.12	105.5	12.1	
13,762.0	95.85	2.64	9,874.8	3,971.7	265.8	7.04	4.34	5.56	99.0	11.6	
13,872.0	90.31	4.40	9,868.9	4,081.3	272.5	5.28	-5.04	1.60	92.2	5.0	
13,967.0	90.48	5.63	9,868.3	4,176.0	280.8	1.31	0.18	1.29	90.7	-3.2	
14,061.0	88.99	4.93	9,868.7	4,269.6	289.5	1.75	-1.59	-0.74	90.4	-11.7	
14,156.0	88.29	6.51	9,871.0	4,364.1	298.9	1.82	-0.74	1.66	91.8	-20.9	
14,250.0	87.67	3.61	9,874.3	4,457.6	307.2	3.15	-0.66	-3.09	94.3	-29.1	
14,344.0	88.99	0.44	9,877.0	4,551.5	310.5	3.65	1.40	-3.37	96.3	-32.3	
14,438.0	88.90	359.04	9,878.8	4,645.5	310.1	1.49	-0.10	-1.49	97.2	-31.7	
14,533.0	89.34	356.05	9,880.2	4,740.4	306.0	3.18	0.46	-3.15	97.9	-27.4	
14,628.0	91.01	355.52	9,879.9	4,835.1	299.1	1.84	1.76	-0.56	96.8	-20.2	
14,723.0	89.43	357.28	9,879.6	4,929.9	293.1	2.49	-1.66	1.85	95.6	-14.2	
14,817.0	90.75	357.98	9,879.4	5,023.8	289.2	1.59	1.40	0.74	94.7	-10.2	
14,912.0	89.16	357.37	9,879.5	5,118.8	285.4	1.79	-1.67	-0.64	93.9	-6.2	
15,007.0	90.92	358.86	9,879.4	5,213.7	282.2	2.43	1.85	1.57	93.0	-2.9	
15,101.0	89.69	358.77	9,878.9	5,307.7	280.3	1.31	-1.31	-0.10	91.7	-0.8	
15,195.0	87.49	358.25	9,881.2	5,401.6	277.8	2.40	-2.34	-0.55	93.3	1.8	
15,290.0	87.58	358.95	9,885.3	5,496.5	275.5	0.74	0.09	0.74	96.5	4.2	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #721H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 2965.0usft
Site:	Golden Graham-1 State Com	MD Reference:	KB = 25 @ 2965.0usft
Well:	#721H	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)	D Leg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
15,384.0	87.41	359.13	9,889.4	5,590.4	274.0	0.26	-0.18	0.19	99.9	5.9	
15,479.0	85.91	357.90	9,895.0	5,685.2	271.5	2.04	-1.58	-1.29	104.6	8.6	
15,573.0	92.95	359.13	9,895.9	5,779.1	269.1	7.60	7.49	1.31	104.7	11.1	
15,668.0	94.88	359.21	9,889.4	5,873.9	267.7	2.03	2.03	0.08	97.4	12.7	
15,761.0	89.69	358.33	9,885.7	5,966.7	265.7	5.66	-5.58	-0.95	92.9	14.8	
15,855.0	94.26	358.95	9,882.5	6,060.6	263.5	4.91	4.86	0.66	88.9	17.2	
15,950.0	86.97	358.77	9,881.4	6,155.5	261.6	7.68	-7.67	-0.19	87.0	19.2	
16,044.0	88.46	1.85	9,885.2	6,249.5	262.1	3.64	1.59	3.28	90.0	18.8	
16,139.0	90.04	1.23	9,886.4	6,344.4	264.6	1.79	1.66	-0.65	90.4	16.4	
16,234.0	87.32	0.62	9,888.6	6,439.4	266.2	2.93	-2.86	-0.64	91.8	15.0	
16,329.0	89.87	2.64	9,891.0	6,534.3	268.9	3.42	2.68	2.13	93.3	12.4	
16,424.0	89.34	3.08	9,891.6	6,629.2	273.6	0.73	-0.56	0.46	93.1	7.8	
16,518.0	89.78	0.44	9,892.3	6,723.1	276.5	2.85	0.47	-2.81	93.0	5.1	
16,613.0	90.84	2.55	9,891.8	6,818.1	279.0	2.49	1.12	2.22	91.7	2.8	
16,708.0	90.57	3.70	9,890.6	6,912.9	284.2	1.24	-0.28	1.21	89.7	-2.3	
16,802.0	90.04	1.85	9,890.1	7,006.8	288.7	2.05	-0.56	-1.97	88.4	-6.7	
16,897.0	91.71	357.54	9,888.7	7,101.8	288.2	4.86	1.76	-4.54	86.1	-5.9	
16,992.0	90.31	357.02	9,887.0	7,196.6	283.7	1.57	-1.47	-0.55	83.6	-1.3	
17,086.0	89.96	357.10	9,886.8	7,290.5	278.9	0.38	-0.37	0.09	82.6	3.7	
17,181.0	88.90	357.90	9,887.7	7,385.4	274.7	1.40	-1.12	0.84	82.7	7.9	
17,275.0	90.66	359.30	9,888.1	7,479.4	272.4	2.39	1.87	1.49	82.2	10.4	
17,370.0	91.80	359.13	9,886.1	7,574.3	271.1	1.21	1.20	-0.18	79.6	11.8	
17,465.0	90.40	0.00	9,884.2	7,669.3	270.4	1.73	-1.47	0.92	77.3	12.7	
17,560.0	88.37	0.36	9,885.3	7,764.3	270.7	2.17	-2.14	0.38	77.9	12.5	
17,654.0	88.81	1.06	9,887.6	7,858.3	271.9	0.88	0.47	0.74	79.7	11.5	
17,749.0	89.16	359.92	9,889.3	7,953.3	272.7	1.26	0.37	-1.20	80.9	10.8	
17,844.0	89.34	0.27	9,890.5	8,048.2	272.8	0.41	0.19	0.37	81.6	10.8	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #721H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 2965.0usft
Site:	Golden Graham 1 State Com	MD Reference:	KB = 25 @ 2965.0usft
Well:	#721H	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)	
17,938.0	84.06	358.33	9,895.9	8,142.0	271.7	5.98	-5.62	-2.06	86.5	12.2	
18,033.0	88.37	0.00	9,902.2	8,236.8	270.3	4.86	4.54	1.76	92.3	13.6	
18,128.0	92.15	0.53	9,901.8	8,331.8	270.8	4.02	3.98	0.56	91.4	13.4	
18,223.0	91.10	0.44	9,899.1	8,426.7	271.6	1.11	-1.11	-0.09	88.2	12.7	
18,318.0	92.86	359.83	9,895.8	8,521.7	271.8	1.96	1.85	-0.64	84.5	12.6	
18,413.0	90.22	357.72	9,893.2	8,616.6	269.8	3.56	-2.78	-2.22	81.4	14.8	
18,508.0	89.78	356.75	9,893.2	8,711.5	265.2	1.12	-0.46	-1.02	80.9	19.5	
18,603.0	92.86	0.62	9,891.0	8,806.4	263.0	5.21	3.24	4.07	78.2	21.9	
18,697.0	93.03	1.85	9,886.2	8,900.3	265.0	1.32	0.18	1.31	72.9	20.0	
18,792.0	89.34	1.50	9,884.2	8,995.2	267.8	3.90	-3.88	-0.37	70.5	17.3	
18,886.0	93.30	4.40	9,882.1	9,089.0	272.6	5.22	4.21	3.09	67.8	12.6	
18,981.0	90.13	1.50	9,879.2	9,183.8	277.5	4.52	-3.34	-3.05	64.5	7.9	
19,076.0	87.05	0.62	9,881.6	9,278.8	279.3	3.37	-3.24	-0.93	66.3	6.3	
19,171.0	85.74	0.27	9,887.5	9,373.6	280.0	1.43	-1.38	-0.37	71.8	5.7	
19,265.0	87.67	0.18	9,892.9	9,467.4	280.4	2.06	2.05	-0.10	76.7	5.5	
19,360.0	94.62	1.67	9,891.0	9,562.3	281.9	7.48	7.32	1.57	74.4	4.1	
19,459.0	92.42	1.85	9,885.0	9,661.1	284.9	2.23	-2.22	0.18	67.8	1.2	
19,553.0	89.78	359.48	9,883.2	9,755.0	286.0	3.77	-2.81	-2.52	65.5	0.3	
19,648.0	90.22	358.33	9,883.2	9,850.0	284.2	1.30	0.46	-1.21	65.0	2.2	
19,743.0	93.39	359.65	9,880.2	9,944.9	282.5	3.61	3.34	1.39	61.5	4.1	
Last MWD Survey (MD = 19743.0)											
19,885.0	93.39	359.65	9,871.8	10,086.7	281.7	0.00	0.00	0.00	52.4	5.2	
Projection to Bit (MD = 19885.0)											



Midland PVA

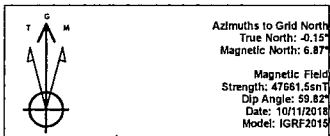
Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #721H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 2965.0usft
Site:	Golden Graham 1 State Com	MD Reference:	KB = 25 @ 2965.0usft
Well:	#721H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,323.0	9,308.2	-177.1	245.7	KOP 9323.0' MD; 9308.2' TVD; -177.1'; 245.7'; 0.61
9,887.8	9,753.5	106.8	291.0	FTP Crossing 9887.8' MD; 9753.5' TVD; 106.8'; 291.0'; 68.51
19,743.0	9,880.2	9,944.9	282.5	Last MWD Survey (MD = 19743.0)
19,885.0	9,871.8	10,086.7	281.7	Projection to Bit (MD = 19885.0)

Checked By: _____	Approved By: _____	Date: _____
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Eddy County, NM (NAD 83 NME)
Golden Graham 1 State Com #721H
Plan #1



To convert a Magnetic Direction to a Grid Direction, Add 6.87°
To convert a Magnetic Direction to a True Direction, Add 7.02° East
To convert a True Direction to a Grid Direction, Subtract 0.15°

PROJECT DETAILS: Eddy 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: #721H

KB = 25 @ 2965.00ft 2940.0
Northing 387497.00 Easting 630084.00 Latitude 32° 3' 53.947 N Longitude 104° 2' 48.862 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	1100.0	0.00	0.00	1100.0	0.0	0.0	0.00	0.00	0.0	
3	1363.1	5.26	120.24	1362.8	-6.1	10.4	2.00	120.24	-5.8	
4	4519.9	5.26	120.24	4506.2	-151.9	260.6	0.00	0.00	-144.5	
5	4783.0	0.00	0.00	4769.0	-158.0	271.0	2.00	180.00	-150.3	Brushy Top(GG 1 SC #721H)
6	9278.9	0.00	0.00	9264.9	-158.0	271.0	0.00	0.00	-150.3	
7	10024.6	89.48	0.09	9742.3	315.1	271.7	12.00	0.09	322.6	
8	13703.4	89.48	0.09	9776.0	3993.8	277.4	0.00	0.00	4000.0	TGT#2(GG 1 SC #721H)
9	13705.3	89.51	0.09	9776.0	3995.7	277.4	2.00	0.00	4001.9	
10	15704.2	89.51	0.09	9793.0	5994.5	280.5	0.00	0.00	6000.0	TGT#3(GG 1 SC #721H)
11	15847.6	89.50	0.09	9794.2	6137.9	280.7	0.01	-180.00	6143.4	
12	17204.8	89.50	0.09	9806.0	7495.0	282.8	0.00	0.00	7500.0	TGT#4(GG 1 SC #721H)
13	17214.8	89.70	0.09	9806.1	7505.1	282.8	2.00	-0.09	7510.0	
14	19912.8	89.70	0.09	9820.0	10203.0	287.0	0.00	0.00	10207.0	PBHL(GG 1 SC #721H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Brushy Top(GG 1 SC #721H)	4769.0	-158.0	271.0	387339.00	630335.00
FTRPG(GG 1 SC #721H)	9740.0	108.0	271.0	387655.00	630335.00
TGT#1(GG 1 SC #721H)	9758.0	1993.1	274.3	385490.10	630338.33
TGT#2(GG 1 SC #721H)	9776.0	3993.8	277.4	391480.80	630341.42
TGT#3(GG 1 SC #721H)	9793.0	5994.5	280.5	393491.50	630344.51
TGT#4(GG 1 SC #721H)	9806.0	7495.0	282.8	394992.00	630346.83
PBHL(GG 1 SC #721H)	9820.0	10203.0	287.0	397700.00	630351.00

