



HOBBS OCD
JUN 21 2018
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)
Gem 36 State Com
#601H
OH

Design: OH

Midland PVA

17 May, 2018





Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Site:	Gem 36 State Com	MD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Well:	#601H	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	Gem 36 State Com		
Site Position:		Northing:	393,686.00 usft
From:	Map	Easting:	759,213.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 49.331 N
		Longitude:	103° 37' 47.552 W
		Grid Convergence:	0.37 °

Well	#601H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			Ground Level:

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	3/6/2018	6.90
			Dip Angle
			59.91
			Field Strength
			47,772.98445991

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			5.03



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Survey Program		Date	5/17/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description		
169.0	826.0	Olebrook MWD TN to GN (OH)	MWD	OWSG MWD - Standard		
888.0	16,803.0	Total MWD (OH)	MWD	OWSG MWD - Standard		

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	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
169.0	0.26	217.95	169.0	-0.3	-0.2	0.15	0.15	0.00	0.0	0.0
261.0	0.18	290.11	261.0	-0.4	-0.5	0.29	-0.09	78.43	0.0	0.0
353.0	0.26	81.10	353.0	-0.3	-0.4	0.46	0.09	164.12	0.0	0.0
448.0	0.00	129.97	448.0	-0.3	-0.2	0.27	-0.27	0.00	0.0	0.0
542.0	0.44	333.70	542.0	0.0	-0.4	0.47	0.47	0.00	0.0	0.0
637.0	0.35	307.25	637.0	0.5	-0.8	0.21	-0.09	-27.84	0.0	0.0
731.0	0.26	136.21	731.0	0.5	-0.8	0.65	-0.10	-181.86	0.0	0.0
826.0	0.18	12.29	826.0	0.5	-0.7	0.41	-0.08	-130.44	0.0	0.0
888.0	0.50	210.00	888.0	0.4	-0.8	1.09	0.52	-261.76	-0.4	0.0
1,074.0	0.40	211.10	1,074.0	-0.9	-1.5	0.05	-0.05	0.59	-2.4	0.2
1,168.0	0.40	218.40	1,168.0	-1.4	-1.9	0.05	0.00	7.77	-3.2	0.7
1,261.0	0.80	213.30	1,261.0	-2.2	-2.5	0.43	0.43	-5.48	-4.5	0.5
1,448.0	1.30	222.90	1,447.9	-4.8	-4.6	0.28	0.27	5.13	-8.3	1.8
1,541.0	1.40	228.30	1,540.9	-6.4	-6.2	0.17	0.11	5.81	-10.5	2.8
1,635.0	1.40	200.60	1,634.9	-8.2	-7.4	0.71	0.00	-29.47	-13.1	-2.9
1,728.0	1.90	190.90	1,728.9	-10.8	-8.1	0.61	0.53	-10.32	-15.4	-5.3
1,823.0	1.90	194.20	1,822.8	-13.9	-8.8	0.12	0.00	3.51	-19.1	-4.3
2,011.0	2.40	140.70	2,010.7	-19.9	-7.1	1.08	0.27	-28.46	-14.1	-20.9
2,105.0	2.20	145.30	2,104.6	-22.9	-4.8	0.29	-0.21	4.89	-19.7	-19.7
2,199.0	2.20	150.30	2,198.5	-26.0	-2.9	0.20	0.00	5.32	-25.1	-18.0



Midland PVA



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Site:	Gem 36 State Com	MD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Well:	#601H	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)	
2,294.0	2.40	152.60	2,293.5	-29.3	-1.1	0.23	0.21	2.42	-29.9	-17.1	
2,388.0	2.20	152.40	2,387.4	-32.7	0.7	0.21	-0.21	-0.21	-33.8	-17.4	
2,482.0	2.30	154.30	2,481.3	-36.0	2.3	0.13	0.11	2.02	-38.3	-16.4	
2,576.0	2.20	109.90	2,575.2	-38.3	4.8	1.81	-0.11	-47.23	-19.1	-40.1	
2,669.0	2.40	102.90	2,668.2	-39.3	8.4	0.37	0.22	-7.53	-17.8	-42.6	
2,764.0	2.30	103.70	2,763.1	-40.2	12.2	0.11	-0.11	0.84	-22.3	-42.6	
2,858.0	2.20	107.10	2,857.0	-41.2	15.8	0.18	-0.11	3.62	-28.5	-41.4	
2,952.0	2.00	113.00	2,951.0	-42.4	19.0	0.31	-0.21	6.28	-36.1	-38.4	
3,045.0	2.10	109.30	3,043.9	-43.6	22.1	0.18	0.11	-3.98	-36.6	-40.9	
3,139.0	2.00	110.90	3,137.8	-44.7	25.3	0.12	-0.11	1.70	-38.5	-38.6	
3,233.0	2.20	105.70	3,231.8	-45.8	28.5	0.29	0.21	-5.53	-34.1	-39.5	
3,327.0	2.60	101.50	3,325.7	-48.7	32.3	0.46	0.43	-4.47	-31.0	-39.2	
3,421.0	3.10	101.90	3,419.6	-47.7	36.9	0.53	0.53	0.43	-32.0	-36.2	
3,609.0	4.60	132.90	3,607.2	-53.8	47.4	1.34	0.80	16.49	-48.1	-11.3	
3,704.0	4.60	126.10	3,701.9	-58.7	53.3	0.57	0.00	-7.16	-49.1	-16.4	
3,798.0	4.60	131.80	3,795.6	-63.4	59.1	0.49	0.00	6.06	-53.1	-10.7	
3,893.0	4.40	135.40	3,890.3	-68.6	64.5	0.36	-0.21	3.79	-56.2	-7.0	
4,081.0	4.20	107.30	4,077.8	-75.7	76.2	1.11	-0.11	-14.95	-51.0	-31.1	
4,175.0	4.30	128.30	4,171.5	-78.9	82.2	1.65	0.11	22.34	-60.6	-8.9	
4,364.0	4.90	125.10	4,359.9	-88.0	94.4	0.35	0.32	-1.69	-65.5	-10.6	
4,458.0	5.50	125.90	4,453.5	-92.9	101.3	0.64	0.64	0.85	-69.4	-8.7	
4,553.0	5.60	125.60	4,548.1	-98.3	108.8	0.11	0.11	-0.32	-73.6	-8.1	
4,623.0	5.10	124.80	4,617.8	-102.1	114.1	0.72	-0.71	-1.14	-76.1	-8.4	
4,722.0	4.20	125.90	4,716.4	-106.7	120.7	0.91	-0.91	1.11	-77.5	-5.5	
4,816.0	3.60	130.20	4,810.2	-110.6	125.7	0.71	-0.64	4.57	-77.6	1.3	
4,910.0	3.50	125.90	4,904.0	-114.2	130.3	0.30	-0.11	-4.57	-76.8	-3.5	
5,004.0	3.70	125.00	4,997.8	-117.6	135.1	0.22	0.21	-0.96	-76.2	-3.4	



Midland PVA



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Site: Gem 38 State Com
Well: #601H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #601H
TVD Reference: KB = 25 @ 3366.0usft (H&P 379)
MD Reference: KB = 25 @ 3366.0usft (H&P 379)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Buile (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
5,097.0	3.70	123.00	5,090.6	-121.0	140.1	0.14	0.00	-2.15	-75.8	-4.6	
5,191.0	3.70	121.30	5,184.5	-124.2	145.2	0.12	0.00	-1.81	-75.4	-5.2	
5,286.0	3.50	146.10	5,279.3	-128.2	149.4	1.64	-0.21	26.11	-69.7	27.1	
5,380.0	3.80	149.30	5,373.1	-133.3	152.6	0.39	0.32	3.40	-67.7	29.6	
5,474.0	4.00	150.20	5,466.9	-138.8	155.9	0.22	0.21	0.96	-67.2	29.2	
5,568.0	4.00	145.70	5,560.6	-144.3	159.3	0.33	0.00	-4.79	-69.4	22.6	
5,662.0	3.90	146.80	5,654.4	-149.7	162.9	0.13	-0.11	1.17	-69.0	22.9	
5,756.0	3.70	142.30	5,748.2	-154.8	166.5	0.38	-0.21	-4.79	-70.2	16.5	
5,849.0	3.50	144.60	5,841.0	-159.5	170.0	0.27	-0.22	2.47	-68.9	18.6	
5,943.0	3.40	143.40	5,934.8	-164.1	173.3	0.13	-0.11	-1.28	-68.4	16.3	
6,038.0	3.10	140.10	6,029.7	-168.3	176.7	0.37	-0.32	-3.47	-68.0	11.8	
6,132.0	3.10	139.90	6,123.6	-172.2	179.9	0.01	0.00	-0.21	-66.6	11.2	
6,226.0	3.30	141.10	6,217.4	-176.2	183.3	0.22	0.21	1.28	-65.1	12.1	
6,320.0	3.30	142.00	6,311.3	-180.5	186.6	0.06	0.00	0.96	-63.7	12.6	
6,414.0	3.30	137.10	6,405.1	-184.6	190.1	0.30	0.00	-5.21	-63.4	6.9	
6,508.0	3.10	138.90	6,499.0	-188.5	193.7	0.24	-0.21	1.91	-61.9	8.7	
6,602.0	3.10	138.40	6,592.8	-192.3	197.0	0.03	0.00	-0.53	-60.5	8.0	
6,696.0	2.70	140.10	6,686.7	-195.9	200.1	0.44	-0.43	1.81	-58.4	9.4	
6,790.0	2.90	139.30	6,780.6	-199.4	203.1	0.22	0.21	-0.85	-56.6	8.3	
6,884.0	2.80	145.40	6,874.5	-203.1	205.9	0.34	-0.11	6.49	-53.5	13.5	
6,977.0	2.30	145.50	6,967.4	-206.5	208.3	0.54	-0.54	0.11	-51.2	12.7	
7,071.0	2.40	148.60	7,061.3	-209.7	210.4	0.17	0.11	3.30	-47.9	14.2	
7,165.0	2.10	146.80	7,155.2	-212.9	212.4	0.33	-0.32	-1.91	-45.6	11.5	
7,259.0	1.50	112.20	7,249.2	-214.8	214.4	1.29	-0.64	-36.81	-40.7	-14.6	
7,353.0	1.60	95.30	7,343.1	-215.4	216.9	0.50	0.11	-17.98	-32.3	-21.8	
7,447.0	1.60	121.20	7,437.1	-216.2	219.3	0.76	0.00	27.55	-34.7	-3.2	
7,540.0	1.80	119.10	7,530.1	-217.5	221.7	0.23	0.22	-2.26	-31.2	-2.6	



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Well:	#801H	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)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
7,634.0	1.90	118.80	7,624.0	-219.0	224.4	0.11	0.11	-0.32	-27.9	-0.7
7,728.0	1.40	127.90	7,718.0	-220.5	226.6	0.60	-0.53	9.68	-23.9	5.0
7,821.0	1.50	129.70	7,810.9	-221.9	228.5	0.12	0.11	1.94	-19.7	6.5
7,915.0	1.50	139.20	7,904.9	-223.7	230.2	0.26	0.00	10.11	-14.2	9.6
8,009.0	1.40	144.70	7,998.9	-225.5	231.7	0.18	-0.11	5.85	-9.1	10.1
8,102.0	1.20	99.60	8,091.9	-226.6	233.3	1.09	-0.22	-48.49	-10.2	3.8
8,197.0	1.80	95.10	8,186.8	-226.9	235.8	0.64	0.63	-4.74	-8.0	7.4
8,292.0	1.50	108.30	8,281.8	-227.4	238.4	0.51	-0.32	13.89	-3.0	12.5
8,387.0	1.30	124.60	8,376.8	-228.4	240.5	0.47	-0.21	17.16	4.8	14.6
8,480.0	1.40	129.00	8,469.7	-229.8	242.2	0.15	0.11	4.73	10.2	15.1
8,575.0	1.20	131.80	8,564.7	-231.1	243.9	0.22	-0.21	2.95	15.4	15.3
8,669.0	1.10	148.50	8,658.7	-232.6	245.1	0.37	-0.11	17.77	23.7	9.2
8,763.0	1.10	135.50	8,752.7	-234.0	246.2	0.26	0.00	-13.83	25.8	14.2
8,858.0	1.00	111.10	8,847.7	-234.9	247.6	0.48	-0.11	-25.68	21.9	26.1
8,952.0	2.00	113.50	8,941.6	-235.9	249.9	1.07	1.06	2.55	26.6	27.7
9,047.0	1.60	120.90	9,036.6	-237.2	252.5	0.49	-0.42	7.79	31.5	25.6
9,141.0	0.50	144.90	9,130.6	-238.2	253.9	1.24	-1.17	25.53	39.0	10.9
9,235.0	1.00	205.90	9,224.6	-239.3	253.8	0.93	0.53	64.89	27.4	-28.5
9,330.0	0.80	255.90	9,319.5	-240.2	252.8	0.82	-0.21	52.63	-5.4	-38.7
9,424.0	1.80	293.00	9,413.5	-239.8	250.8	1.34	1.06	39.47	-29.6	-27.2
9,518.0	2.00	20.00	9,507.5	-237.7	250.0	2.79	0.21	92.55	-30.4	29.7
9,612.0	3.70	38.80	9,601.4	-233.8	252.4	2.04	1.81	20.00	-23.8	38.4
9,706.0	3.00	18.90	9,695.2	-229.1	255.1	1.43	-0.74	-21.17	-40.8	27.0
9,800.0	2.00	331.40	9,789.1	-225.3	255.2	2.35	-1.06	-50.53	-50.8	-13.7
9,894.0	3.30	301.60	9,883.0	-222.5	252.1	1.97	1.38	-31.70	-41.3	-38.0
9,988.0	2.40	343.60	9,976.9	-219.2	249.2	2.35	-0.96	44.68	-60.1	1.3
10,082.0	1.80	12.00	10,070.9	-215.8	249.0	1.26	-0.64	30.21	-55.5	30.7



Midland PVA



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Well:	#801H	North Reference:	Grid
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Survey											
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10,176.0	1.50	347.10	10,164.8	-213.2	248.0	0.82	-0.32	-26.49	-65.8	3.9	
10,270.0	0.90	13.50	10,258.8	-211.3	248.9	0.85	-0.64	28.09	-59.1	33.3	
10,364.0	1.00	47.30	10,352.8	-210.0	249.7	0.60	0.11	35.96	-32.0	60.9	
10,458.0	0.40	68.10	10,446.8	-209.3	250.6	0.68	-0.64	22.13	-9.4	68.6	
10,552.0	0.50	51.10	10,540.8	-208.9	251.2	0.18	0.11	-18.09	-29.8	62.7	
10,645.0	1.00	7.50	10,633.8	-207.9	251.6	0.78	0.54	-46.88	-65.9	24.6	
10,739.0	1.00	337.40	10,727.8	-206.3	251.4	0.55	0.00	-32.02	-70.9	-12.2	
10,833.0	1.80	301.30	10,821.7	-204.8	249.8	1.23	0.85	-38.40	-52.3	-52.1	
10,927.0	2.80	284.50	10,915.7	-203.4	246.3	1.27	1.06	-17.87	-38.7	-65.4	
11,021.0	2.20	233.00	11,009.6	-203.9	242.7	2.38	-0.64	-54.79	23.9	-72.8	
11,115.0	1.50	193.40	11,103.5	-206.2	241.0	1.51	-0.74	-42.13	62.2	-42.0	
11,210.0	2.30	224.10	11,198.5	-208.8	239.3	1.33	0.84	32.32	29.0	-67.3	
11,304.0	1.70	257.20	11,292.4	-210.5	236.7	1.36	-0.64	35.21	-15.4	-71.2	
11,398.0	1.80	325.60	11,386.4	-209.6	234.5	2.09	0.11	72.77	-73.8	-10.6	
11,433.0	1.60	337.00	11,421.4	-208.7	234.0	1.12	-0.57	32.57	-75.5	4.3	
11,520.0	1.70	346.10	11,508.3	-206.3	233.2	0.32	0.11	10.46	-76.3	16.4	
11,614.0	4.00	12.10	11,602.2	-201.7	233.5	2.75	2.45	27.66	-65.9	48.9	
11,661.0	14.80	23.30	11,648.5	-194.6	236.3	23.20	22.98	23.83	-60.4	61.4	
11,708.0	23.40	20.10	11,692.9	-180.3	241.9	18.43	18.30	-6.81	-71.7	58.4	
11,755.0	32.10	17.80	11,734.4	-159.6	248.9	18.65	18.51	-4.89	-83.6	57.1	
11,803.0	39.50	20.30	11,773.4	-133.1	258.1	15.71	15.42	5.21	-92.4	62.5	
11,850.0	40.00	20.60	11,809.5	-104.9	268.6	1.14	1.06	0.64	-101.5	63.4	
11,896.0	39.70	21.40	11,844.8	-77.4	279.2	1.29	-0.65	1.74	-104.1	65.5	
11,943.0	39.40	22.00	11,881.0	-49.6	290.2	1.03	-0.64	1.28	-100.5	67.7	
11,990.0	43.70	23.90	11,916.2	-20.9	302.4	9.53	9.15	4.04	-93.3	69.2	
12,029.1	47.27	21.54	11,943.6	4.8	313.2	10.10	9.14	-6.03	-89.4	63.8	

FTP Crossing 12029.1' MD; 11943.6' TVD; 4.8°; 313.2°; 47.27



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Site:	Gem 36 State Com	MD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Well:	#601H	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)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
12,037.0	48.00	21.10	11,948.9	10.2	315.3	10.10	9.21	-5.61	-88.4	62.7
12,084.0	51.50	19.30	11,979.3	43.9	327.6	8.00	7.45	-3.83	-80.6	56.1
12,131.0	55.50	18.30	12,007.3	79.7	339.8	8.68	8.51	-2.13	-70.6	48.3
12,178.0	59.20	14.50	12,032.6	117.6	351.0	10.41	7.87	-8.09	-59.3	39.3
12,225.0	65.80	10.90	12,054.3	158.3	360.1	15.60	14.04	-7.66	-47.2	31.3
12,272.0	70.50	9.10	12,071.8	201.2	367.6	10.61	10.00	-3.83	-34.4	24.5
12,366.0	85.80	4.30	12,091.1	292.3	378.2	17.02	16.28	-5.11	-17.2	13.3
12,460.0	92.50	0.70	12,092.5	386.1	382.3	8.09	7.13	-3.83	-16.7	9.7
12,554.0	90.10	1.10	12,090.3	480.1	383.8	2.59	-2.55	0.43	-19.8	8.7
12,648.0	90.80	359.20	12,089.6	574.1	384.0	2.15	0.74	-2.02	-21.5	9.0
12,742.0	88.30	0.50	12,090.3	668.1	383.8	3.00	-2.66	1.38	-20.1	9.8
12,836.0	89.40	0.40	12,092.2	762.0	384.5	1.18	1.17	-0.11	-17.0	9.6
12,930.0	89.70	1.50	12,092.9	856.0	386.1	1.21	0.32	1.17	-15.1	8.5
13,025.0	85.80	2.40	12,096.7	950.9	389.3	4.21	-4.11	0.95	-10.1	5.8
13,119.0	86.20	2.20	12,103.2	1,044.6	393.1	0.48	0.43	-0.21	-2.3	2.6
13,213.0	91.70	0.40	12,105.0	1,138.5	395.2	6.16	5.85	-1.91	0.6	1.0
13,308.0	90.70	0.50	12,103.0	1,233.5	396.0	1.06	-1.05	0.11	-0.1	0.8
13,402.0	90.70	359.70	12,101.8	1,327.5	396.1	0.85	0.00	-0.85	-0.1	1.1
13,496.0	92.80	0.00	12,098.9	1,421.4	395.9	2.26	2.23	0.32	-1.7	1.9
13,590.0	90.20	359.60	12,096.5	1,515.4	395.5	2.80	-2.77	-0.43	-3.0	2.7
13,684.0	91.10	358.50	12,095.4	1,609.3	394.0	1.51	0.96	-1.17	-2.8	4.8
13,778.0	93.80	357.70	12,091.4	1,703.2	390.9	3.00	2.87	-0.85	-5.6	8.4
13,872.0	91.30	358.80	12,087.2	1,797.0	388.0	2.91	-2.66	1.17	-8.6	11.8
13,966.0	90.90	2.30	12,085.4	1,891.0	388.9	3.75	-0.43	3.72	-9.2	11.4
14,060.0	91.90	2.30	12,083.1	1,984.9	392.7	1.06	1.06	0.00	-10.2	8.2
14,154.0	92.70	1.30	12,079.3	2,078.8	395.6	1.36	0.85	-1.06	-12.8	5.7
14,248.0	91.70	1.70	12,075.7	2,172.7	398.1	1.15	-1.06	0.43	-15.2	3.8



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Site:	Gem 38 State Com	MD Reference:	KB = 25 @ 3368.0usft (H&P 379)
Well:	#601H	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)	BuId (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
14,342.0	93.40	2.00	12,071.6	2,266.5	401.1	1.84	1.81	0.32	-18.1	1.3	
14,436.0	90.10	2.80	12,068.7	2,360.4	405.1	3.61	-3.51	0.85	-19.8	-2.1	
14,530.0	89.50	2.60	12,069.0	2,454.3	409.5	0.67	-0.64	-0.21	-18.2	-6.0	
14,624.0	90.90	1.90	12,068.7	2,548.2	413.2	1.67	1.49	-0.74	-17.4	-9.2	
14,718.0	89.70	0.60	12,068.2	2,642.2	415.2	1.88	-1.28	-1.38	-16.7	-10.7	
14,813.0	91.10	359.90	12,067.5	2,737.2	415.6	1.65	1.47	-0.74	-18.2	-10.6	
14,907.0	90.10	359.20	12,066.5	2,831.2	414.9	1.30	-1.06	-0.74	-16.0	-9.4	
15,002.0	90.70	358.00	12,065.9	2,926.1	412.6	1.41	0.63	-1.26	-15.5	-6.5	
15,096.0	92.70	357.70	12,063.1	3,020.0	409.1	2.15	2.13	-0.32	-17.1	-2.5	
15,190.0	88.20	358.20	12,062.4	3,113.9	405.7	4.82	-4.79	0.53	-16.6	1.4	
15,284.0	88.60	357.40	12,065.0	3,207.8	402.1	0.95	0.43	-0.85	-12.8	5.5	
15,379.0	91.80	359.00	12,064.6	3,302.8	399.1	3.77	3.37	1.68	-12.0	9.0	
15,473.0	93.50	358.60	12,060.3	3,396.6	397.1	1.86	1.81	-0.43	-15.1	11.5	
15,567.0	91.10	0.40	12,056.5	3,490.5	396.3	3.19	-2.55	1.91	-17.7	12.9	
15,662.0	91.60	359.40	12,054.3	3,585.5	396.2	1.18	0.53	-1.05	-18.8	13.6	
15,755.0	92.90	359.10	12,050.6	3,678.4	394.9	1.43	1.40	-0.32	-21.3	15.3	
15,849.0	92.00	2.10	12,046.6	3,772.3	395.9	3.33	-0.96	3.19	-24.1	14.8	
15,944.0	92.30	2.80	12,043.1	3,867.2	400.0	0.80	0.32	0.74	-26.5	11.3	
16,038.0	91.90	3.60	12,039.6	3,961.0	405.2	0.95	-0.43	0.85	-28.8	6.5	
16,132.0	89.90	3.10	12,038.1	4,054.8	410.7	2.19	-2.13	-0.53	-29.1	1.6	
16,226.0	89.10	3.00	12,039.0	4,148.7	415.7	0.86	-0.85	-0.11	-27.1	-2.9	
16,321.0	90.20	2.40	12,039.5	4,243.5	420.2	1.32	1.16	-0.63	-25.3	-6.9	
16,415.0	91.60	1.60	12,038.1	4,337.5	423.5	1.72	1.49	-0.85	-25.8	-9.6	
16,509.0	90.50	3.30	12,036.3	4,431.4	427.5	2.15	-1.17	1.81	-26.6	-13.1	
16,603.0	91.10	3.30	12,035.0	4,525.2	432.9	0.64	0.64	0.00	-27.0	-18.0	
16,698.0	92.10	1.10	12,032.4	4,620.1	436.5	2.54	1.05	-2.32	-28.7	-21.1	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Site:	Gem 38 State Com	MD Reference:	KB = 25 @ 3366.0usft (H&P 379)
Well:	#601H	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)
16,704.2	92.15	1.27	12,032.1	4,626.3	436.7	2.82	0.81	2.70	-28.9	-21.2
LTP Crossing 16704.2' MD; 12032.2' TVD; 4626.3'; 436.7'; 92.15										
16,735.0	92.40	2.10	12,030.9	4,657.0	437.6	2.82	0.81	2.70	-29.8	-22.0
16,751.0	92.80	1.90	12,030.2	4,673.0	438.1	2.79	2.49	-1.25	-30.3	-22.5
Last MWD Survey (MD = 16751.0)										
16,803.0	92.80	1.90	12,027.7	4,724.9	439.9	0.00	0.00	0.00	-32.3	-23.9
Projection to Bit (MD = 16803.0)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
12,029.1	11,943.6	4.8	313.2	FTP Crossing 12029.1' MD; 11943.6' TVD; 4.8'; 313.2'; 47.27
16,704.2	12,032.1	4,626.3	436.7	LTP Crossing 16704.2' MD; 12032.2' TVD; 4626.3'; 436.7'; 92.15
16,751.0	12,030.2	4,673.0	438.1	Last MWD Survey (MD = 16751.0)
16,803.0	12,027.7	4,724.9	439.9	Projection to Bit (MD = 16803.0)

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Gem 36 State Com #601H

H&P 379

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: #601H

KB = 25 @ 3366.0usft (H&P 379)
Northing 383766.00 Easting 757198.00 Latitude 32° 4' 50.252 N Longitude 103° 38' 10.966 W

SECTION DETAILS

Sec	MD	Inc	Asl	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target	Annotation
1	828.0	0.18	12.29	828.0	0.9	-0.7	0.00	0.0	0.5		
2	3000.0	0.18	12.29	3000.0	7.2	0.8	0.00	0.0	7.2		
3	3158.3	3.00	138.80	3158.3	4.5	3.6	2.00	127.25	4.8		
4	4578.0	3.00	138.80	4578.0	-49.9	84.6	0.00	0.00	-44.9		
5	4629.0	4.00	138.80	4629.0	-52.1	58.7	2.00	0.00	-46.9		
6	8941.6	4.00	138.80	8929.0	-271.4	282.7	0.80	0.00	-247.3		
7	9141.6	0.00	0.00	9128.8	-276.4	287.4	2.00	180.00	-251.9		
8	11619.8	0.00	0.00	11607.0	-276.4	287.4	0.00	0.00	-251.9		
9	12066.5	46.40	23.39	11992.8	-140.4	326.3	12.00	23.39	-111.3		
10	12018.8	46.40	23.39	11958.9	-133.6	329.2	0.00	0.00	-104.2		
11	12414.2	89.43	0.32	12107.5	217.7	391.1	12.00	-31.99	251.2		TGT #1(Gem 36 State Com #601H)
12	12784.2	89.43	0.32	12111.0	567.7	393.0	0.00	0.00	606.0		
13	12829.9	90.74	0.32	12116.9	633.4	393.4	2.00	-0.16	665.4		
14	14670.8	96.74	0.32	12087.0	2474.1	403.6	0.00	0.00	2500.0		TGT #3 (Gem 36 State Com #601H)
15	14672.1	90.72	0.32	12087.0	2475.4	403.6	2.00	179.88	2501.3		TGT #5(Gem 36 State Com #601H)
16	16427.0	90.72	0.32	12065.0	4230.1	413.3	0.00	0.00	4250.0		
17	16434.0	90.58	0.32	12064.9	4237.2	413.3	2.00	-190.00	4257.1		
18	16922.9	90.58	0.32	12060.0	4726.0	416.0	0.00	0.00	4744.3		PBHL(Gem 36 State Com #601H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
TGT #1(Gem 36 State Com #601H)	12111.0	567.7	393.0	384333.70	757391.63
TGT #3 (Gem 36 State Com #601H)	12087.0	2474.1	403.6	386240.10	757601.56
TGT #5(Gem 36 State Com #601H)	12065.0	4230.1	413.3	397996.10	757811.26
PBHL(Gem 36 State Com #601H)	12060.0	4726.0	416.0	386492.60	757614.00
FTPI(Gem 36 State Com #601H)	12121.0	6.0	389.0	383772.00	757587.00
KOP (Gem 36 State Com #601H)	9128.8	-276.4	287.4	383469.60	757465.40
TGT #2(Gem 36 State Com #601H)	12100.0	1470.8	398.0	385236.80	757596.02
TGT #4 (Gem 36 State Com #601H)	12074.0	2477.5	409.1	387243.50	757607.10



