

HOBBS OCD
MAR 12 2018
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Neptune 10 State Com

#602H

OH

Design: OH

PVA Report

10 January, 2018



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Site:	Neptune 10 State Com	MD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Well:	#602H	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	Neptune 10 State Com		
Site Position:		Northing:	446,557.00 usft
From:	Map	Easting:	778,964.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 31.172 N
		Longitude:	103° 33' 53.609 W
		Grid Convergence:	0.41 °

Well	#602H					
Well Position	+N/-S	0.0 usft	Northing:	447,029.00 usft	Latitude:	32° 13' 35.771 N
	+E/-W	0.0 usft	Easting:	779,975.00 usft	Longitude:	103° 33' 41.801 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,606.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/23/2017	6.89	60.06	47,886.15218541

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	357.57	



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Survey Program		Date 1/10/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
133.0	1,359.0	Invictus MWD (OH)	MWD	MWD - Standard
1,541.0	22,338.0	Intrepid MWD (OH)	MWD	MWD - Standard

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	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	0.0
133.0	0.30	293.52	133.0	0.1	-0.3	0.23	0.23	0.00	-0.3	0.0	0.0
161.0	0.10	205.52	161.0	0.1	-0.4	1.12	-0.71	-314.29	0.0	-0.4	0.0
190.0	0.30	15.52	190.0	0.2	-0.4	1.38	0.69	586.21	-0.1	0.4	0.0
218.0	0.50	300.52	218.0	0.3	-0.5	1.83	0.71	-267.86	-0.6	0.0	0.0
249.0	0.40	307.52	249.0	0.5	-0.7	0.37	-0.32	22.58	-0.8	0.0	0.0
311.0	1.00	347.52	311.0	1.1	-1.0	1.19	0.97	64.52	-1.3	0.7	0.0
341.0	0.90	342.52	341.0	1.6	-1.1	0.43	-0.33	-16.67	-1.9	0.6	0.0
373.0	0.70	321.52	373.0	2.0	-1.3	1.10	-0.62	-65.62	-2.4	-0.2	0.0
404.0	0.10	280.52	404.0	2.2	-1.4	2.03	-1.94	-132.26	-1.8	-1.9	0.0
435.0	0.40	39.52	435.0	2.2	-1.4	1.47	0.97	383.87	-0.8	2.5	0.0
466.0	0.70	306.52	466.0	2.4	-1.5	2.66	0.97	-300.00	-2.6	-1.1	0.0
529.0	0.40	53.52	529.0	2.8	-1.6	1.43	-0.48	169.84	-0.4	3.2	0.0
561.0	0.50	293.52	561.0	2.9	-1.6	2.44	0.31	-375.00	-2.7	-2.0	0.0
592.0	0.70	346.52	592.0	3.2	-1.8	1.82	0.65	170.97	-3.5	1.0	0.0
623.0	0.20	58.52	623.0	3.4	-1.8	2.15	-1.61	232.26	-0.2	3.8	0.0
654.0	0.40	7.52	654.0	3.5	-1.8	1.02	0.65	-164.52	-3.2	2.2	0.0
685.0	0.50	20.52	685.0	3.7	-1.7	0.46	0.32	41.94	-2.9	2.9	0.0
717.0	0.60	305.52	717.0	4.0	-1.8	2.11	0.31	-234.37	-3.7	-2.2	0.0
748.0	0.40	260.52	748.0	4.0	-2.0	1.37	-0.65	-145.16	-1.3	-4.3	0.0
779.0	0.30	282.52	779.0	4.0	-2.2	0.53	-0.32	70.97	-3.0	-3.5	0.0



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

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
810.0	0.50	43.52	810.0	4.2	-2.2	2.27	0.65	390.32	-1.5	4.4	
874.0	0.20	120.52	874.0	4.3	-1.9	0.77	-0.47	120.31	3.8	2.7	
906.0	0.40	128.52	906.0	4.2	-1.8	0.64	0.62	25.00	4.0	2.2	
937.0	0.60	333.52	937.0	4.3	-1.8	3.15	0.65	-500.00	-4.6	-0.3	
969.0	0.70	347.52	969.0	4.6	-1.9	0.58	0.31	43.75	-4.9	0.8	
1,001.0	0.50	48.52	1,001.0	4.9	-1.8	1.98	-0.62	190.62	-1.9	4.9	
1,063.0	0.60	25.52	1,063.0	5.4	-1.5	0.39	0.16	-37.10	-4.2	3.6	
1,095.0	0.50	4.52	1,095.0	5.7	-1.4	0.70	-0.31	-65.62	-5.5	1.8	
1,126.0	0.30	125.52	1,126.0	5.8	-1.3	2.27	-0.65	390.32	4.4	3.9	
1,157.0	0.30	37.52	1,157.0	5.8	-1.2	1.34	0.00	-283.87	-3.9	4.5	
1,188.0	0.40	16.52	1,188.0	5.9	-1.1	0.52	0.32	-67.74	-5.4	2.8	
1,220.0	0.50	352.52	1,220.0	6.2	-1.1	0.66	0.31	-75.00	-6.3	0.3	
1,250.0	0.40	156.52	1,250.0	6.2	-1.1	2.97	-0.33	546.67	6.1	1.5	
1,282.0	0.50	55.52	1,282.0	6.2	-0.9	2.18	0.31	-315.62	-2.8	5.6	
1,313.0	0.50	23.52	1,313.0	6.4	-0.7	0.89	0.00	-103.23	-5.6	3.2	
1,359.0	0.70	25.52	1,359.0	6.8	-0.5	0.44	0.43	4.35	-5.9	3.4	
1,541.0	0.10	343.00	1,541.0	8.0	-0.1	0.35	-0.33	-23.36	-7.7	-2.2	
1,728.0	0.60	20.40	1,727.9	9.1	0.2	0.28	0.27	20.00	-8.6	3.0	
1,915.0	0.60	1.60	1,914.9	11.0	0.6	0.10	0.00	-10.05	-11.0	-0.2	
2,103.0	0.30	341.50	2,102.9	12.4	0.4	0.18	-0.16	-10.69	-11.6	-4.3	
2,291.0	0.50	288.10	2,290.9	13.1	-0.5	0.21	0.11	-28.40	-4.6	-12.3	
2,478.0	0.90	252.90	2,477.9	13.0	-2.7	0.30	0.21	-18.82	1.2	-13.2	
2,666.0	1.10	230.30	2,665.9	11.4	-5.5	0.23	0.11	-12.02	6.5	-13.5	
2,853.0	1.90	235.20	2,852.8	8.5	-9.4	0.43	0.43	2.62	14.5	-20.5	
3,040.0	2.90	236.10	3,039.7	4.0	-15.9	0.54	0.53	0.48	29.0	-31.7	
3,228.0	4.60	231.40	3,227.2	-3.3	-25.7	0.92	0.90	-2.50	43.7	-39.1	
3,415.0	4.40	233.10	3,413.7	-12.3	-37.3	0.13	-0.11	0.91	51.9	-50.4	



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Design:	OH	Database:	EDM 5000.14

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3,602.0	5.60	227.10	3,600.0	-22.8	-49.7	0.70	0.64	-3.21	65.5	-53.1	
3,789.0	8.60	228.20	3,785.5	-38.3	-66.9	1.61	1.60	0.59	66.2	-62.2	
3,977.0	10.50	210.00	3,970.9	-62.6	-85.9	1.89	1.01	-9.68	77.8	-43.1	
4,165.0	11.10	203.40	4,155.6	-94.0	-101.7	0.73	0.32	-3.51	72.9	-32.9	
4,353.0	10.80	196.40	4,340.2	-127.5	-113.8	0.72	-0.16	-3.72	66.1	-19.9	
4,541.0	11.70	183.00	4,524.6	-163.5	-119.8	1.47	0.48	-7.13	55.9	3.6	
4,729.0	11.60	183.50	4,708.7	-201.4	-121.9	0.08	-0.05	0.27	41.2	14.9	
4,916.0	12.90	187.50	4,891.5	-240.8	-125.8	0.83	0.70	2.14	26.3	23.2	
5,058.0	13.90	181.70	5,029.6	-273.6	-128.4	1.18	0.70	-4.08	8.4	33.5	
5,201.0	13.00	189.00	5,168.7	-306.6	-131.4	1.34	-0.63	5.10	-2.2	41.5	
5,388.0	11.50	210.00	5,351.5	-343.6	-144.0	2.50	-0.80	11.23	0.0	47.2	
5,576.0	13.50	207.90	5,535.1	-379.2	-163.7	1.09	1.06	-1.12	-16.4	47.4	
5,763.0	9.90	215.80	5,718.2	-411.5	-183.3	2.10	-1.93	4.22	-21.9	49.6	
5,951.0	9.50	218.80	5,903.5	-436.7	-202.5	0.34	-0.21	1.60	-25.2	47.5	
6,139.0	9.70	215.80	6,088.8	-461.7	-221.5	0.29	0.11	-1.60	-32.9	42.7	
6,326.0	9.10	213.00	6,273.3	-486.9	-238.7	0.40	-0.32	-1.50	-39.6	38.9	
6,514.0	9.30	212.50	6,458.9	-512.1	-255.0	0.11	0.11	-0.27	-43.9	37.3	
6,701.0	9.10	213.40	6,643.5	-537.2	-271.3	0.13	-0.11	0.48	-47.3	36.7	
6,889.0	7.70	226.00	6,829.5	-558.4	-288.5	1.23	-0.74	6.70	-40.2	42.1	
7,077.0	4.60	234.80	7,016.4	-571.5	-303.7	1.72	-1.65	4.68	-29.5	38.7	
7,264.0	3.60	244.20	7,202.9	-578.4	-315.1	0.64	-0.53	5.03	-14.4	29.6	
7,451.0	1.90	324.70	7,389.8	-578.4	-322.2	2.02	-0.91	43.05	13.3	4.1	
7,639.0	1.50	186.40	7,577.7	-578.3	-324.3	1.69	-0.21	-73.56	-2.6	8.1	
7,826.0	1.60	260.50	7,764.7	-581.2	-327.1	1.00	0.05	39.63	4.5	6.3	
8,014.0	1.90	312.70	7,952.6	-579.5	-332.0	0.83	0.16	27.77	3.0	2.4	
8,202.0	2.10	330.10	8,140.5	-574.4	-336.0	0.34	0.11	9.26	-2.9	2.3	
8,390.0	1.90	332.00	8,328.4	-568.6	-339.2	0.11	-0.11	1.01	-9.3	2.5	



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8,577.0	1.70	329.00	8,515.3	-563.5	-342.1	0.12	-0.11	-1.60	-15.3	1.9	
8,765.0	1.70	318.50	8,703.2	-559.1	-345.4	0.17	0.00	-5.59	-20.9	-1.5	
8,953.0	0.80	82.40	8,891.2	-556.8	-345.9	1.19	-0.48	65.90	10.7	20.5	
9,141.0	0.70	90.20	9,079.1	-556.6	-343.5	0.08	-0.05	4.15	10.9	19.0	
9,328.0	0.30	293.30	9,266.1	-556.4	-342.8	0.53	-0.21	-83.90	-17.0	-13.7	
9,501.0	1.20	273.40	9,439.1	-556.1	-345.0	0.53	0.52	-11.50	-13.5	-18.8	
9,688.0	2.40	268.00	9,626.0	-556.2	-350.9	0.65	0.64	-2.89	-17.6	-20.2	
9,875.0	0.40	132.30	9,813.0	-556.7	-354.3	1.44	-1.07	-72.57	28.8	-0.6	
10,062.0	0.80	148.80	10,000.0	-558.3	-353.1	0.23	0.21	8.82	25.5	-8.6	
10,249.0	1.50	163.50	10,186.9	-561.8	-351.8	0.40	0.37	7.86	18.8	-14.4	
10,437.0	2.00	167.40	10,374.8	-567.3	-350.4	0.27	0.27	2.07	12.1	-15.5	
10,624.0	0.80	122.00	10,561.8	-571.2	-348.5	0.83	-0.64	-24.28	15.9	-4.6	
10,813.0	1.20	151.90	10,750.8	-573.6	-346.5	0.34	0.21	15.82	8.4	-11.3	
10,999.0	2.00	150.80	10,936.7	-578.2	-344.0	0.43	0.43	-0.59	3.4	-11.2	
11,187.0	0.60	90.50	11,124.6	-581.1	-341.4	0.95	-0.74	-32.07	8.8	-5.4	
11,375.0	0.80	78.00	11,312.6	-580.8	-339.1	0.13	0.11	-6.65	7.4	-3.6	
11,562.0	1.00	81.80	11,499.6	-580.3	-336.2	0.11	0.11	2.03	4.3	-4.0	
11,588.0	1.10	79.50	11,525.6	-580.2	-335.8	0.42	0.38	-8.85	3.9	-3.9	
11,756.0	1.30	40.10	11,693.6	-578.5	-333.0	0.49	0.12	-23.45	2.3	-1.5	
11,803.0	9.50	347.70	11,740.3	-574.3	-333.4	18.65	17.45	-111.49	-1.6	0.5	
11,843.6	17.35	346.20	11,779.8	-565.1	-335.6	19.36	19.35	-3.68	-9.4	0.8	
KOP(Neptune 10 St Com #602H)											
11,849.0	18.40	346.10	11,784.9	-563.5	-336.0	19.36	19.36	-1.93	-10.7	0.9	
11,896.0	22.50	352.30	11,829.0	-547.4	-339.0	9.85	8.72	13.19	-21.3	3.6	
11,943.0	24.70	357.50	11,872.0	-528.6	-340.6	6.44	4.68	11.06	-30.3	6.7	
11,990.0	26.40	0.00	11,914.4	-508.4	-341.0	4.28	3.62	5.32	-37.2	8.3	
12,036.0	27.80	2.30	11,955.4	-487.4	-340.6	3.80	3.04	5.00	-41.0	9.1	



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12,083.0	32.70	2.10	11,996.0	-463.8	-339.7	10.43	10.43	-0.43	-43.1	7.9	
12,130.0	39.90	359.40	12,033.8	-436.0	-339.4	15.69	15.32	-5.74	-45.2	5.6	
12,177.0	45.60	357.80	12,068.3	-404.1	-340.2	12.35	12.13	-3.40	-47.3	5.2	
12,224.0	46.80	357.60	12,100.9	-370.2	-341.6	2.57	2.55	-0.43	-47.0	6.4	
12,271.0	50.30	359.30	12,132.0	-335.0	-342.5	7.92	7.45	3.62	-43.4	8.0	
12,312.6	54.74	359.86	12,157.3	-302.0	-342.7	10.72	10.67	1.34	-39.0	8.2	
HL Crossing, MD:12312.6', TVD:12157.3', N/S:-302.0', E/W:-342.7', INC:54.74											
12,316.0	55.10	359.90	12,159.2	-299.2	-342.8	10.72	10.67	1.26	-38.6	8.2	
12,363.0	60.20	357.40	12,184.4	-259.5	-343.7	11.74	10.85	-5.32	-32.9	8.3	
12,370.0	60.74	357.26	12,187.8	-253.4	-344.0	7.84	7.65	-1.97	-32.0	8.5	
FTP(Neptune 10 St Com #602H)											
12,410.0	63.80	356.50	12,206.4	-218.1	-345.9	7.84	7.66	-1.91	-25.7	10.3	
12,457.0	68.70	358.20	12,225.4	-175.1	-347.9	10.94	10.43	3.62	-17.1	12.3	
12,503.0	74.50	0.90	12,239.9	-131.5	-348.2	13.78	12.61	5.87	-8.4	12.3	
12,551.0	81.60	3.50	12,249.8	-84.6	-346.4	15.71	14.79	5.42	-0.3	10.1	
12,598.0	88.80	4.50	12,253.7	-37.9	-343.1	15.46	15.32	2.13	3.4	6.4	
12,691.0	92.00	4.60	12,253.1	54.8	-335.8	3.44	3.44	0.11	2.5	-1.6	
12,785.0	88.20	4.80	12,252.9	148.4	-328.1	4.05	-4.04	0.21	2.0	-10.1	
12,879.0	88.70	2.40	12,255.5	242.2	-322.2	2.61	0.53	-2.55	4.3	-16.7	
12,973.0	90.20	358.20	12,256.4	336.2	-321.7	4.74	1.60	-4.47	4.9	-17.9	
13,067.0	91.70	358.60	12,254.8	430.1	-324.3	1.65	1.60	0.43	3.1	-16.0	
13,160.0	90.80	0.10	12,252.8	523.1	-325.4	1.88	-0.97	1.61	0.8	-15.6	
13,253.0	88.80	359.90	12,253.1	616.1	-325.4	2.16	-2.15	-0.22	0.8	-16.3	
13,347.0	88.70	0.90	12,255.2	710.0	-324.7	1.07	-0.11	1.06	2.6	-17.7	
13,440.0	88.40	1.60	12,257.5	803.0	-322.7	0.82	-0.32	0.75	4.6	-20.5	
13,533.0	90.00	358.00	12,258.8	896.0	-323.0	4.24	1.72	-3.87	5.7	-20.8	
13,626.0	90.50	358.00	12,258.4	988.9	-326.2	0.54	0.54	0.00	5.0	-18.3	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Site:	Neptune 10 State Com	MD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Well:	#602H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
13,720.0	91.50	359.00	12,256.8	1,082.9	-328.7	1.50	1.06	1.06	3.0	-16.6	
13,813.0	90.10	358.90	12,255.5	1,175.8	-330.4	1.51	-1.51	-0.11	1.5	-15.6	
13,907.0	91.10	359.50	12,254.5	1,269.8	-331.7	1.24	1.06	0.64	0.2	-15.0	
14,001.0	88.90	0.40	12,254.5	1,363.8	-331.8	2.53	-2.34	0.96	-0.1	-15.6	
14,095.0	89.40	1.50	12,255.9	1,457.8	-330.2	1.29	0.53	1.17	1.0	-17.9	
14,189.0	90.10	0.20	12,256.3	1,551.8	-328.8	1.57	0.74	-1.38	1.1	-20.0	
14,282.0	89.50	0.00	12,256.6	1,644.8	-328.7	0.68	-0.65	-0.22	1.2	-20.9	
14,376.0	88.20	359.40	12,258.5	1,738.7	-329.2	1.52	-1.38	-0.64	2.8	-21.1	
14,470.0	89.00	359.60	12,260.8	1,832.7	-330.0	0.88	0.85	0.21	4.8	-21.0	
14,572.0	88.50	357.80	12,263.0	1,934.7	-332.3	1.83	-0.49	-1.76	6.7	-19.4	
14,665.0	89.60	357.70	12,264.6	2,027.6	-336.0	1.19	1.18	-0.11	8.0	-16.5	
14,760.0	89.60	357.00	12,265.2	2,122.5	-340.4	0.74	0.00	-0.74	8.3	-12.8	
14,854.0	89.80	357.60	12,265.7	2,216.4	-344.8	0.67	0.21	0.64	8.5	-9.1	
14,948.0	89.80	358.30	12,266.0	2,310.3	-348.1	0.74	0.00	0.74	8.6	-6.5	
15,041.0	89.00	358.10	12,267.0	2,403.3	-351.1	0.89	-0.86	-0.22	9.3	-4.3	
15,130.9	87.65	358.00	12,269.7	2,493.1	-354.1	1.51	-1.51	-0.11	11.6	-1.9	
TGT 1(Neptune 10 St Com #602H)											
15,134.0	87.60	358.00	12,269.8	2,496.2	-354.2	1.51	-1.51	-0.11	11.7	-1.8	
15,228.0	87.50	359.30	12,273.8	2,590.0	-356.4	1.39	-0.11	1.38	15.5	-0.3	
15,322.0	88.70	359.10	12,276.9	2,684.0	-357.8	1.29	1.28	-0.21	18.3	0.3	
15,415.0	91.00	359.00	12,277.2	2,777.0	-359.3	2.48	2.47	-0.11	18.3	1.1	
15,509.0	91.50	0.60	12,275.1	2,870.9	-359.6	1.78	0.53	1.70	15.9	0.7	
15,603.0	90.90	0.70	12,273.1	2,964.9	-358.6	0.65	-0.64	0.11	13.7	-1.1	
15,696.0	90.70	1.10	12,271.8	3,057.9	-357.1	0.48	-0.22	0.43	12.1	-3.2	
15,790.0	90.10	1.20	12,271.2	3,151.9	-355.2	0.65	-0.64	0.11	11.1	-5.8	
15,884.0	89.30	1.60	12,271.7	3,245.8	-352.9	0.95	-0.85	0.43	11.3	-8.9	
15,978.0	89.20	0.20	12,272.9	3,339.8	-351.4	1.49	-0.11	-1.49	12.3	-11.1	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Site:	Neptune 10 State Com	MD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Well:	#602H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
16,072.0	88.80	0.00	12,274.5	3,433.8	-351.3	0.48	-0.43	-0.21	13.6	-11.9	
16,166.0	88.90	359.30	12,276.4	3,527.8	-351.8	0.75	0.11	-0.74	15.2	-12.1	
16,259.0	88.80	359.00	12,278.3	3,620.7	-353.2	0.34	-0.11	-0.32	16.8	-11.4	
16,354.0	90.90	359.40	12,278.5	3,715.7	-354.6	2.25	2.21	0.42	16.8	-10.8	
16,447.0	92.10	359.50	12,276.1	3,808.7	-355.4	1.29	1.29	0.11	14.1	-10.6	
16,541.0	91.70	0.10	12,273.0	3,902.6	-355.8	0.77	-0.43	0.64	10.7	-11.0	
16,635.0	90.40	0.20	12,271.3	3,996.6	-355.5	1.39	-1.38	0.11	8.7	-12.0	
16,729.0	89.50	0.40	12,271.4	4,090.6	-355.0	0.98	-0.96	0.21	8.5	-13.2	
16,823.0	86.50	0.40	12,274.6	4,184.5	-354.4	3.19	-3.19	0.00	11.4	-14.6	
16,916.0	88.70	0.00	12,278.5	4,277.5	-354.1	2.40	2.37	-0.43	15.1	-15.6	
17,010.0	88.00	359.40	12,281.2	4,371.4	-354.5	0.98	-0.74	-0.64	17.5	-15.8	
17,104.0	89.40	358.60	12,283.4	4,465.4	-356.2	1.72	1.49	-0.85	19.3	-14.9	
17,197.0	88.60	358.30	12,285.0	4,558.3	-358.7	0.92	-0.86	-0.32	20.7	-13.1	
17,291.0	89.10	358.90	12,286.9	4,652.3	-361.0	0.83	0.53	0.64	22.3	-11.5	
17,384.0	89.40	358.30	12,288.1	4,745.2	-363.3	0.72	0.32	-0.65	23.2	-9.9	
17,432.9	89.45	358.40	12,288.6	4,794.1	-364.7	0.24	0.11	0.21	23.5	-8.9	
TGT 2(Neptune 10 St Com #602H)											
17,478.0	89.50	358.50	12,289.0	4,839.2	-365.9	0.24	0.11	0.21	23.8	-8.0	
17,572.0	89.70	357.90	12,289.7	4,933.2	-368.8	0.67	0.21	-0.64	24.2	-5.8	
17,666.0	88.60	357.90	12,291.1	5,027.1	-372.3	1.17	-1.17	0.00	25.3	-3.1	
17,759.0	89.60	359.00	12,292.5	5,120.0	-374.8	1.60	1.08	1.18	26.5	-1.3	
17,853.0	90.20	358.70	12,292.7	5,214.0	-376.7	0.71	0.64	-0.32	26.3	-0.1	
17,947.0	90.90	358.20	12,291.8	5,308.0	-379.2	0.92	0.74	-0.53	25.2	1.7	
18,041.0	91.90	357.90	12,289.5	5,401.9	-382.4	1.11	1.06	-0.32	22.6	4.2	
18,134.0	90.10	357.50	12,287.9	5,494.8	-386.2	1.98	-1.94	-0.43	20.7	7.2	
18,228.0	91.30	358.80	12,286.7	5,588.7	-389.2	1.88	1.28	1.38	19.2	9.5	
18,322.0	91.30	359.40	12,284.6	5,682.7	-390.7	0.64	0.00	0.64	16.8	10.3	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Site:	Neptune 10 State Com	MD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Well:	#602H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
18,416.0	90.40	359.10	12,283.2	5,776.7	-391.9	1.01	-0.96	-0.32	15.1	10.8	
18,510.0	88.70	358.90	12,283.9	5,870.7	-393.5	1.82	-1.81	-0.21	15.6	11.7	
18,597.0	89.90	358.90	12,285.0	5,957.6	-395.2	1.38	1.38	0.00	16.4	12.7	
18,691.0	90.80	358.30	12,284.6	6,051.6	-397.5	0.98	0.74	-0.64	15.7	14.3	
18,785.0	91.20	359.80	12,283.1	6,145.6	-399.1	1.72	0.64	1.60	13.9	15.2	
18,879.0	91.70	0.70	12,280.7	6,239.5	-398.7	1.10	0.53	0.96	11.2	14.0	
18,972.0	92.30	0.90	12,277.5	6,332.5	-397.4	0.68	0.65	0.22	7.7	12.0	
19,066.0	92.10	2.30	12,273.9	6,426.4	-394.7	1.50	-0.21	1.49	3.8	8.7	
19,160.0	89.50	2.30	12,272.5	6,520.3	-391.0	2.77	-2.77	0.00	2.2	4.2	
19,254.0	88.30	2.40	12,274.4	6,614.2	-387.1	1.28	-1.28	0.11	3.7	-0.4	
19,347.0	89.70	3.10	12,276.0	6,707.1	-382.7	1.68	1.51	0.75	5.1	-5.5	
19,441.0	90.90	1.30	12,275.5	6,801.0	-379.0	2.30	1.28	-1.91	4.3	-9.9	
19,534.0	88.40	0.10	12,276.1	6,894.0	-377.9	2.98	-2.69	-1.29	4.6	-11.7	
19,628.0	88.60	359.60	12,278.5	6,987.9	-378.2	0.57	0.21	-0.53	6.8	-12.2	
19,722.0	88.70	359.30	12,280.7	7,081.9	-379.1	0.34	0.11	-0.32	8.7	-12.0	
19,816.0	89.80	0.20	12,282.0	7,175.9	-379.5	1.51	1.17	0.96	9.6	-12.3	
19,909.0	91.70	0.90	12,280.7	7,268.9	-378.6	2.18	2.04	0.75	8.1	-13.9	
20,003.0	90.40	1.00	12,279.0	7,362.8	-377.0	1.39	-1.38	0.11	6.1	-16.2	
20,097.0	88.80	1.00	12,279.7	7,456.8	-375.4	1.70	-1.70	0.00	6.5	-18.5	
20,134.2	88.88	0.84	12,280.4	7,494.0	-374.8	0.48	0.21	-0.43	7.1	-19.4	
TGT 3(Neptune 10 St Com #602H)											
20,191.0	89.00	0.60	12,281.5	7,550.8	-374.1	0.48	0.21	-0.43	8.0	-20.6	
20,285.0	92.00	2.10	12,280.7	7,644.7	-371.8	3.57	3.19	1.60	6.9	-23.5	
20,378.0	88.70	359.00	12,280.1	7,737.7	-371.0	4.87	-3.55	-3.33	6.1	-25.1	
20,473.0	89.20	357.40	12,281.8	7,832.7	-373.9	1.76	0.53	-1.68	7.5	-22.8	
20,565.0	88.60	357.60	12,283.6	7,924.5	-378.0	0.69	-0.65	0.22	9.0	-19.5	
20,659.0	88.10	358.00	12,286.3	8,018.4	-381.6	0.68	-0.53	0.43	11.4	-16.6	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Site:	Neptune 10 State Com	MD Reference:	KB = 25 @ 3631.0usft (H&P 647)
Well:	#602H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
20,752.0	90.30	359.60	12,287.6	8,111.4	-383.5	2.92	2.37	1.72	12.4	-15.4	
20,846.0	91.10	359.60	12,286.5	8,205.4	-384.2	0.85	0.85	0.00	11.0	-15.5	
20,939.0	89.00	358.00	12,286.4	8,298.4	-386.1	2.84	-2.26	-1.72	10.6	-14.2	
21,033.0	88.30	358.40	12,288.6	8,392.3	-389.1	0.86	-0.74	0.43	12.6	-12.0	
21,126.0	89.10	358.70	12,290.7	8,485.2	-391.4	0.92	0.86	0.32	14.4	-10.3	
21,221.0	86.90	358.50	12,294.0	8,580.1	-393.7	2.33	-2.32	-0.21	17.4	-8.8	
21,314.0	88.20	359.20	12,298.0	8,673.0	-395.6	1.59	1.40	0.75	21.1	-7.6	
21,408.0	89.10	359.30	12,300.2	8,767.0	-396.8	0.96	0.96	0.11	23.0	-7.1	
21,501.0	89.20	359.20	12,301.6	8,860.0	-398.0	0.15	0.11	-0.11	24.1	-6.6	
21,596.0	91.70	359.40	12,300.8	8,955.0	-399.2	2.64	2.63	0.21	23.1	-6.1	
21,689.0	91.70	359.00	12,298.1	9,047.9	-400.5	0.43	0.00	-0.43	20.1	-5.6	
21,783.0	92.70	358.90	12,294.5	9,141.8	-402.2	1.07	1.06	-0.11	16.2	-4.5	
21,877.0	91.50	358.20	12,291.0	9,235.7	-404.6	1.48	-1.28	-0.74	12.4	-2.9	
21,970.0	92.00	358.00	12,288.2	9,328.6	-407.7	0.58	0.54	-0.22	9.3	-0.5	
22,063.0	92.60	358.60	12,284.5	9,421.5	-410.4	0.91	0.65	0.65	5.3	1.5	
22,157.0	93.50	358.40	12,279.4	9,515.4	-412.9	0.98	0.96	-0.21	0.0	3.3	
22,236.9	93.87	357.95	12,274.3	9,595.0	-415.4	0.73	0.47	-0.56	-5.4	5.2	
HL Crossing, MD:22236.9', TVD:12274.3', N/S:9595.0', E/W:-415.4', INC:93.87											
22,264.0	94.00	357.80	12,272.5	9,622.1	-416.4	0.73	0.47	-0.56	-7.3	6.0	
Final MWD Survey (MD= 22264.0')											
22,337.0	94.00	357.80	12,267.4	9,694.8	-419.2	0.00	0.00	0.00	-12.6	8.3	
PBHL(Neptune 10 St Com #602H)											
22,338.0	94.00	357.80	12,267.3	9,695.8	-419.3	0.00	0.00	0.00	-12.7	8.3	
Final Bit Projection (MD= 22338.0')											



PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Neptune 10 State Com
Well: #602H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #602H
TVD Reference: KB = 25 @ 3631.0usft (H&P 647)
MD Reference: KB = 25 @ 3631.0usft (H&P 647)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

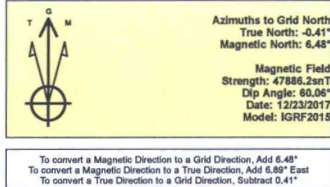
Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,312.6	12,157.3	-302.0	-342.7	HL Crossing, MD:12312.6', TVD:12157.3', N/S:-302.0', E/W:-342.7', INC:54.74
22,236.9	12,274.3	9,595.0	-415.4	HL Crossing, MD:22236.9', TVD:12274.3', N/S:9595.0', E/W:-415.4', INC:93.87
22,264.0	12,272.5	9,622.1	-416.4	Final MWD Survey (MD= 22264.0')
22,338.0	12,267.3	9,695.8	-419.3	Final Bit Projection (MD= 22338.0')

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)
Neptune 10 State Com #602H
H&P 647
Plan #3



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: #602H
KB = 25 @ 3631.0usft (H&P 647) 3606.0
Northing 447029.00 Easting 779975.00 Latitude 32° 13' 35.771 N Longitude 103° 33' 41.801 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2520.0	0.00	0.00	2520.0	0.0	0.0	0.00	0.00	0.0
2919.8	8.00	210.02	2918.5	-24.1	-13.9	2.00	210.02	-23.5
7299.4	8.00	210.02	7255.5	-551.6	-332.6	0.00	0.00	-537.6
7699.2	0.00	0.00	7654.0	-575.7	-332.6	2.00	180.00	-561.1
11782.4	0.00	0.00	11737.2	-575.7	-332.6	0.00	0.00	-561.1
12000.4	21.80	359.56	11950.0	-534.7	-332.9	10.00	359.56	-520.1
12567.3	89.83	359.56	12250.1	-92.9	-336.3	12.00	0.00	-78.6
22356.5	89.83	359.56	12280.0	9696.0	-411.0	0.00	0.00	9704.7

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP(Neptune 10 St Com #602H)	11782.5	-875.7	-332.6	446453.30	779642.40
TOT 1(Neptune 10 St Com #602H)	12066.0	2485.1	-356.2	446822.10	779618.75
TOT 2(Neptune 10 St Com #602H)	12271.0	4794.0	-373.7	451823.00	779601.26
TOT 3(Neptune 10 St Com #602H)	12273.0	7484.4	-384.3	454523.40	779580.74
FTN(Neptune 10 St Com #602H)	12280.0	-357.0	-335.0	446727.00	779640.00
PBHL(Neptune 10 St Com #602H)	12280.0	9696.0	-411.0	456725.00	779564.00

