

HOBBS OCD

MAY 29 2018

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Convoy 28 State Com

#601H

OH

Design: OH

PVA Report

26 March, 2018



PVA Report

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #601H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 25 @ 3550.0usft (HP 642)
Site:	Convoy 28 State Com			MD Reference:	KB = 25 @ 3550.0usft (HP 642)
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 Convoy 28 State Com					
Site Position:		Northing:	435,221.00 usft	Latitude:	32° 11' 39.126 N
From:	Map	Easting:	777,172.00 usft	Longitude:	103° 34' 15.406 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well #601H					
Well Position	+N/-S	0.0 usft	Northing:	435,286.00 usft	Latitude:
	+E/-W	0.0 usft	Easting:	776,680.00 usft	Longitude:
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:
					3,525.0 usft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/30/2017	6.90	60.03	47,872.94537558

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	51.73	

Survey Program Date 3/26/2018					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.0	22,210.0	Intrepid MWD #1 (OH)	MWD	OWSG MWD - Standard	



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Survey											
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0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	
122.0	0.40	352.90	122.0	0.4	-0.1	0.33	0.33	0.00	0.0	0.0	
320.0	1.20	146.00	320.0	-0.6	1.0	0.79	0.40	77.32	0.0	0.0	
510.0	1.10	151.50	509.9	-3.9	3.0	0.08	-0.05	2.89	0.0	0.0	
684.0	1.60	152.60	683.9	-7.5	4.9	0.29	0.29	0.63	0.0	0.0	
869.0	1.20	138.10	868.8	-11.2	7.4	0.29	-0.22	-7.84	0.0	0.0	
1,055.0	0.60	275.90	1,054.8	-12.6	7.7	0.91	-0.32	74.09	0.0	0.0	
1,262.0	1.70	341.90	1,261.8	-9.5	5.7	0.75	0.53	31.88	0.0	0.0	
1,431.0	2.50	357.20	1,430.7	-3.5	4.7	0.57	0.47	9.05	0.0	0.0	
1,617.0	2.10	358.30	1,616.5	4.0	4.4	0.22	-0.22	0.59	0.0	0.0	
1,804.0	2.90	34.30	1,803.4	11.3	7.0	0.92	0.43	19.25	0.0	0.0	
1,991.0	2.20	49.00	1,990.2	17.6	12.4	0.51	-0.37	7.86	0.0	0.0	
2,179.0	2.60	50.40	2,178.0	22.7	18.4	0.22	0.21	0.74	0.0	0.0	
2,367.0	2.30	56.70	2,365.8	27.5	24.8	0.21	-0.16	3.35	0.0	0.0	
2,555.0	2.40	48.60	2,553.7	32.1	30.9	0.18	0.05	-4.31	0.0	0.0	
2,742.0	2.10	39.70	2,740.5	37.4	36.1	0.25	-0.16	-4.76	0.0	0.0	
2,929.0	2.60	42.20	2,927.4	43.1	41.1	0.27	0.27	1.34	0.0	0.0	
3,115.0	4.70	48.90	3,113.0	51.3	49.7	1.15	1.13	3.60	0.0	0.0	
3,303.0	6.30	42.50	3,300.1	63.9	62.4	0.91	0.85	-3.40	0.0	0.0	
3,490.0	6.80	52.60	3,485.9	78.2	78.2	0.67	0.27	5.40	0.0	0.0	
3,677.0	5.90	54.30	3,671.8	90.6	94.8	0.49	-0.48	0.91	0.0	0.0	
3,864.0	4.80	52.50	3,857.9	100.9	108.8	0.59	-0.59	-0.96	0.0	0.0	
4,051.0	4.20	40.70	4,044.4	110.9	119.5	0.59	-0.32	-6.31	0.0	0.0	
4,239.0	4.40	45.30	4,231.8	121.2	129.1	0.21	0.11	2.45	0.0	0.0	
4,427.0	4.70	57.50	4,419.3	130.4	140.7	0.54	0.16	6.49	0.0	0.0	
4,615.0	4.70	70.00	4,606.6	137.2	154.4	0.54	0.00	6.65	0.0	0.0	
4,802.0	5.50	86.70	4,792.9	140.3	170.6	0.90	0.43	8.93	0.0	0.0	



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Site:	Convoy 28 State Corn	MD Reference:	KB = 25 @ 3550.0usft (HP 642)
Well:	#601H	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)	
4,990.0	5.80	93.60	4,980.0	140.2	189.1	0.39	0.16	3.67	0.0	0.0	
5,036.0	5.20	88.80	5,025.8	140.1	193.5	1.64	-1.30	-10.43	0.0	0.0	
5,152.0	5.30	85.70	5,141.3	140.6	204.1	0.26	0.09	-2.67	0.0	0.0	
5,338.0	8.70	51.40	5,325.9	150.1	223.6	2.82	1.83	-18.44	0.0	0.0	
5,525.0	10.50	40.90	5,510.3	171.8	245.8	1.34	0.96	-5.61	0.0	0.0	
5,712.0	11.20	40.60	5,694.0	198.4	268.8	0.38	0.37	-0.16	0.0	0.0	
5,899.0	12.20	48.80	5,877.1	225.2	295.5	1.04	0.53	4.39	0.0	0.0	
6,086.0	11.90	49.50	6,060.0	250.8	325.0	0.18	-0.16	0.37	0.0	0.0	
6,273.0	11.80	48.20	6,243.0	276.0	353.9	0.15	-0.05	-0.70	0.0	0.0	
6,460.0	11.60	48.10	6,426.1	301.3	382.2	0.11	-0.11	-0.05	0.0	0.0	
6,648.0	12.80	47.50	6,609.9	328.0	411.6	0.64	0.64	-0.32	0.0	0.0	
6,835.0	14.00	47.10	6,791.8	357.4	443.5	0.64	0.64	-0.21	0.0	0.0	
7,022.0	13.60	46.80	6,973.4	387.9	476.1	0.22	-0.21	-0.16	0.0	0.0	
7,209.0	13.70	46.10	7,155.1	418.3	508.0	0.10	0.05	-0.37	0.0	0.0	
7,397.0	11.50	45.10	7,338.6	446.9	537.4	1.18	-1.17	-0.53	0.0	0.0	
7,584.0	9.40	53.90	7,522.5	469.1	562.9	1.41	-1.12	4.71	0.0	0.0	
7,771.0	7.50	58.10	7,707.4	484.6	585.6	1.07	-1.02	2.25	0.0	0.0	
7,959.0	3.60	59.50	7,894.5	494.0	601.1	2.08	-2.07	0.74	0.0	0.0	
8,146.0	1.60	103.40	8,081.3	496.4	608.7	1.44	-1.07	23.48	0.0	0.0	
8,334.0	0.90	194.60	8,269.3	494.4	610.9	0.99	-0.37	48.51	0.0	0.0	
8,521.0	1.10	193.00	8,456.3	491.2	610.1	0.11	0.11	-0.86	0.0	0.0	
8,709.0	1.10	191.60	8,644.2	487.7	609.4	0.01	0.00	-0.74	0.0	0.0	
8,896.0	1.10	203.10	8,831.2	484.3	608.3	0.12	0.00	6.15	0.0	0.0	
9,084.0	1.10	203.90	9,019.2	481.0	606.9	0.01	0.00	0.43	0.0	0.0	
9,270.0	0.50	188.30	9,205.1	478.5	606.0	0.34	-0.32	-8.39	0.0	0.0	
9,458.0	0.80	162.20	9,393.1	476.5	606.3	0.22	0.16	-13.88	-2.4	-0.2	
9,645.0	0.50	251.90	9,580.1	475.0	605.9	0.50	-0.16	47.97	-0.9	4.4	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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9,833.0	0.40	155.10	9,768.1	474.1	605.4	0.36	-0.05	-51.49	-5.6	-2.3	
10,021.0	1.00	165.50	9,956.1	471.9	606.1	0.32	0.32	5.53	-9.0	-1.0	
10,206.0	2.10	161.40	10,141.0	467.2	607.6	0.60	0.59	-2.22	-14.6	-1.7	
10,394.0	2.00	166.70	10,328.9	460.7	609.4	0.11	-0.05	2.82	-22.2	0.1	
10,582.0	0.70	196.80	10,516.9	456.4	609.9	0.76	-0.69	16.01	-23.7	13.3	
10,769.0	2.20	334.30	10,703.8	458.5	608.0	1.47	0.80	73.53	24.5	7.0	
10,956.0	2.10	312.90	10,890.7	464.1	603.9	0.43	-0.05	-11.44	14.1	14.5	
11,142.0	1.80	290.20	11,076.6	467.4	598.7	0.44	-0.16	-12.20	1.9	18.0	
11,331.0	2.10	260.00	11,265.5	467.9	592.5	0.56	0.16	-15.98	-13.3	15.8	
11,518.0	2.80	226.20	11,452.3	464.1	585.8	0.84	0.37	-18.07	-27.5	4.5	
11,636.0	1.50	283.90	11,570.2	462.5	582.2	2.01	-1.10	48.90	-13.7	28.5	
11,739.0	2.60	295.70	11,673.2	463.8	578.8	1.14	1.07	11.46	-10.9	31.2	
11,813.4	5.34	196.26	11,747.4	461.2	576.3	8.49	3.69	-133.74	-32.4	-17.5	
KOP(Con 28 ST Com #601H)											
11,833.0	6.90	190.60	11,766.9	459.2	575.8	8.49	7.92	-28.80	-32.2	-20.7	
11,927.0	15.20	172.30	11,859.1	441.4	576.5	9.48	8.83	-19.47	-28.6	-30.7	
12,021.0	31.90	164.60	11,945.0	405.0	584.8	18.03	17.77	-8.19	-30.9	-29.0	
12,068.0	43.30	162.70	11,982.2	377.5	592.9	24.38	24.26	-4.04	-37.6	-24.8	
12,097.0	48.60	163.00	12,002.4	357.6	599.0	18.29	18.28	1.03	-44.1	-20.8	
12,141.0	50.00	165.50	12,031.0	325.5	608.1	5.35	3.18	5.68	-53.3	-13.0	
12,173.0	51.00	166.30	12,051.4	301.6	614.1	3.67	3.12	2.50	-57.5	-8.0	
12,205.0	51.90	167.20	12,071.3	277.2	619.8	3.57	2.81	2.81	-59.6	-3.1	
12,236.0	52.20	168.20	12,090.4	253.3	625.0	2.72	0.97	3.23	-59.5	1.5	
12,267.0	53.20	168.80	12,109.2	229.2	629.9	3.57	3.23	1.94	-57.4	5.6	
12,290.8	54.20	169.34	12,123.3	210.3	633.6	4.57	4.19	2.27	-54.7	8.7	
HL Crossing, MD:12290.8', TVD:12123.3', N/S:210.3', E/W:633.6', INC:54.20											
12,298.0	54.50	169.50	12,127.5	204.6	634.7	4.57	4.20	2.23	-53.6	9.6	



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12,330.0	55.90	170.60	12,145.7	178.7	639.2	5.21	4.37	3.44	-48.0	13.3	
12,347.8	57.35	170.85	12,155.6	164.0	641.6	8.19	8.11	1.37	-44.3	15.1	
FTP(Con 28 ST Com #601H)											
12,367.0	58.90	171.10	12,165.7	147.9	644.1	8.19	8.11	1.33	-40.1	16.9	
12,398.0	62.80	172.10	12,180.8	121.1	648.1	12.89	12.58	3.23	-32.9	19.4	
12,429.0	69.50	175.70	12,193.3	93.0	651.1	24.08	21.61	11.61	-26.3	20.8	
12,461.0	74.00	177.80	12,203.3	62.6	652.8	15.38	14.06	6.56	-20.6	20.5	
12,492.0	73.80	178.30	12,211.9	32.9	653.8	1.68	-0.65	1.61	-14.2	19.4	
12,523.0	75.50	177.80	12,220.1	3.0	654.8	5.70	5.48	-1.61	-6.5	18.1	
12,551.0	80.30	178.00	12,226.0	-24.4	655.8	17.16	17.14	0.71	-0.9	17.3	
12,613.0	88.10	178.30	12,232.3	-86.0	657.8	12.59	12.58	0.48	5.3	16.3	
12,706.0	89.80	178.80	12,234.0	-178.9	660.2	1.91	1.83	0.54	7.0	16.6	
12,800.0	90.30	179.20	12,233.9	-272.9	661.8	0.68	0.53	0.43	6.9	17.6	
12,893.0	90.80	179.40	12,233.0	-365.9	663.0	0.58	0.54	0.22	6.0	18.1	
12,986.0	90.80	178.80	12,231.7	-458.9	664.4	0.65	0.00	-0.65	4.7	18.8	
13,081.0	90.20	178.90	12,230.9	-553.8	666.3	0.64	-0.63	0.11	3.9	20.0	
13,174.0	90.00	180.10	12,230.7	-646.8	667.1	1.31	-0.22	1.29	3.7	20.2	
13,268.0	90.60	181.10	12,230.2	-740.8	666.1	1.24	0.64	1.06	3.2	18.5	
13,362.0	92.40	180.80	12,227.7	-834.8	664.6	1.94	1.91	-0.32	0.8	16.2	
13,456.0	91.20	180.30	12,224.8	-928.7	663.7	1.38	-1.28	-0.53	-2.2	14.7	
13,550.0	89.50	179.30	12,224.2	-1,022.7	664.0	2.10	-1.81	-1.06	-2.8	14.3	
13,643.0	90.10	178.60	12,224.5	-1,115.7	665.7	0.99	0.65	-0.75	-2.4	15.3	
13,737.0	89.50	178.00	12,224.9	-1,209.7	668.5	0.90	-0.64	-0.64	-2.1	17.4	
13,831.0	88.50	177.90	12,226.5	-1,303.6	671.9	1.07	-1.06	-0.11	-0.5	20.1	
13,924.0	86.90	177.90	12,230.2	-1,396.4	675.3	1.72	-1.72	0.00	3.2	22.8	
14,018.0	88.60	178.70	12,233.9	-1,490.3	678.1	2.00	1.81	0.85	7.0	24.9	
14,111.0	95.50	181.30	12,230.6	-1,583.2	678.1	7.93	7.42	2.80	3.6	24.2	



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14,206.0	95.60	181.60	12,221.4	-1,677.7	675.7	0.33	0.11	0.32	-5.6	21.1	
14,300.0	93.00	182.50	12,214.4	-1,771.4	672.3	2.93	-2.77	0.96	-12.6	17.1	
14,393.0	90.30	181.90	12,211.7	-1,864.3	668.8	2.97	-2.90	-0.65	-15.3	12.8	
14,487.0	88.10	181.60	12,213.0	-1,958.2	665.9	2.36	-2.34	-0.32	-14.0	9.3	
14,581.0	89.40	180.40	12,215.1	-2,052.2	664.2	1.88	1.38	-1.28	-11.9	7.0	
14,674.0	89.40	179.90	12,216.0	-2,145.2	664.0	0.54	0.00	-0.54	-10.9	6.0	
14,768.0	90.50	180.10	12,216.1	-2,239.2	664.0	1.19	1.17	0.21	-10.9	5.4	
14,863.0	93.30	181.70	12,213.0	-2,334.1	662.5	3.39	2.95	1.68	-14.0	3.2	
14,957.0	89.40	180.00	12,210.7	-2,428.0	661.1	4.53	-4.15	-1.81	-16.2	1.1	
15,050.0	87.30	178.30	12,213.4	-2,521.0	662.5	2.90	-2.26	-1.83	-13.5	1.8	
15,145.0	87.50	178.90	12,217.7	-2,615.9	664.8	0.67	0.21	0.63	-9.2	3.4	
15,238.0	88.80	179.70	12,220.7	-2,708.8	665.9	1.64	1.40	0.86	-6.2	3.9	
15,333.0	84.10	178.80	12,226.6	-2,803.6	667.2	5.04	-4.95	-0.95	-0.4	4.4	
15,427.0	88.60	177.90	12,232.6	-2,897.3	669.9	4.88	4.79	-0.96	5.6	6.4	
15,520.0	88.30	177.60	12,235.1	-2,990.2	673.5	0.46	-0.32	-0.32	8.1	9.4	
15,613.0	89.50	177.40	12,236.9	-3,083.1	677.6	1.31	1.29	-0.22	9.9	12.8	
15,708.0	90.40	176.80	12,237.0	-3,178.0	682.4	1.14	0.95	-0.63	10.0	16.9	
15,802.0	93.70	179.50	12,233.6	-3,271.9	685.4	4.53	3.51	2.87	6.6	19.2	
15,895.0	93.80	180.70	12,227.5	-3,364.7	685.3	1.29	0.11	1.29	0.5	18.4	
15,989.0	89.90	181.80	12,224.5	-3,458.6	683.2	4.31	-4.15	1.17	-2.5	15.6	
16,083.0	86.90	180.90	12,227.1	-3,552.5	681.0	3.33	-3.19	-0.96	0.2	12.7	
16,177.0	83.00	180.80	12,235.4	-3,646.1	679.6	4.15	-4.15	-0.11	8.4	10.7	
16,270.0	85.70	175.80	12,244.6	-3,738.6	682.4	6.09	2.90	-5.38	17.6	12.8	
16,364.0	88.90	172.60	12,249.0	-3,832.0	691.9	4.81	3.40	-3.40	22.1	21.5	
16,458.0	91.40	175.70	12,248.7	-3,925.4	701.4	4.24	2.66	3.30	21.8	30.4	
16,551.0	92.40	178.00	12,245.7	-4,018.2	706.6	2.70	1.08	2.47	18.7	34.8	
16,646.0	93.20	177.90	12,241.0	-4,113.1	709.9	0.85	0.84	-0.11	14.1	37.5	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3550.0usft (HP 642)
Site:	Convoy 28 State Com	MD Reference:	KB = 25 @ 3550.0usft (HP 642)
Well:	#601H	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)	
16,739.0	91.80	180.30	12,237.0	-4,206.0	711.4	2.99	-1.51	2.58	10.0	38.3	
16,833.0	91.60	179.30	12,234.2	-4,299.9	711.7	1.08	-0.21	-1.06	7.2	38.0	
16,927.0	95.20	181.50	12,228.6	-4,393.7	711.1	4.49	3.83	2.34	1.5	36.6	
17,021.0	94.40	183.40	12,220.7	-4,487.3	707.1	2.19	-0.85	2.02	-6.4	31.9	
17,115.0	91.60	181.20	12,215.8	-4,581.1	703.3	3.79	-2.98	-2.34	-11.2	27.5	
17,208.0	89.50	180.70	12,214.9	-4,674.1	701.8	2.32	-2.26	-0.54	-12.1	25.3	
17,302.0	88.10	180.90	12,216.9	-4,768.0	700.5	1.50	-1.49	0.21	-10.1	23.3	
17,395.0	87.40	180.60	12,220.5	-4,861.0	699.2	0.82	-0.75	-0.32	-6.4	21.4	
17,489.0	90.10	181.80	12,222.6	-4,954.9	697.3	3.14	2.87	1.28	-4.4	18.7	
17,583.0	89.70	181.60	12,222.8	-5,048.9	694.5	0.48	-0.43	-0.21	-4.2	15.2	
17,677.0	89.10	181.00	12,223.7	-5,142.8	692.3	0.90	-0.64	-0.64	-3.2	12.4	
17,770.0	90.60	180.80	12,224.0	-5,235.8	690.9	1.63	1.61	-0.22	-3.0	10.3	
17,864.0	90.30	180.80	12,223.2	-5,329.8	689.6	0.32	-0.32	0.00	-3.7	8.2	
17,958.0	89.90	180.50	12,223.1	-5,423.8	688.5	0.53	-0.43	-0.32	-3.9	6.5	
18,052.0	89.10	180.80	12,223.9	-5,517.8	687.4	0.91	-0.85	0.32	-3.1	4.7	
18,145.0	90.10	180.70	12,224.6	-5,610.8	686.2	1.08	1.08	-0.11	-2.4	2.8	
18,240.0	88.60	180.10	12,225.6	-5,705.8	685.6	1.70	-1.58	-0.63	-1.4	1.5	
18,333.0	87.20	179.70	12,229.0	-5,798.7	685.7	1.57	-1.51	-0.43	2.1	1.0	
18,427.0	87.80	178.60	12,233.1	-5,892.6	687.1	1.33	0.64	-1.17	6.2	1.7	
18,521.0	88.70	179.60	12,236.0	-5,986.5	688.6	1.43	0.96	1.06	9.0	2.4	
18,614.0	88.60	179.70	12,238.2	-6,079.5	689.2	0.15	-0.11	0.11	11.2	2.3	
18,708.0	87.10	177.80	12,241.7	-6,173.4	691.2	2.57	-1.60	-2.02	14.7	3.7	
18,801.0	89.00	178.90	12,244.9	-6,266.3	693.9	2.36	2.04	1.18	17.9	5.7	
18,894.0	97.10	181.50	12,239.9	-6,359.1	693.6	9.15	8.71	2.80	12.9	4.7	
18,988.0	96.40	182.00	12,228.9	-6,452.4	690.7	0.91	-0.74	0.53	1.9	1.2	
19,081.0	92.00	180.60	12,222.1	-6,545.1	688.6	4.96	-4.73	-1.51	-4.9	-1.6	
19,175.0	90.80	179.50	12,219.8	-6,639.1	688.5	1.73	-1.28	-1.17	-7.2	-2.4	



PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Convoy 28 State Corn
Well: #601H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #601H
TVD Reference: KB = 25 @ 3550.0usft (HP 642)
MD Reference: KB = 25 @ 3550.0usft (HP 642)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Bulld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
19,269.0	90.20	180.80	12,219.0	-6,733.1	688.3	1.52	-0.64	1.38	-8.0	-3.3	
19,364.0	91.00	180.90	12,218.0	-6,828.1	686.9	0.85	0.84	0.11	-9.0	-5.4	
19,457.0	88.90	178.90	12,218.1	-6,921.0	687.0	3.12	-2.26	-2.15	-8.9	-6.0	
19,551.0	87.70	175.00	12,220.8	-7,014.8	692.0	4.34	-1.28	-4.15	-6.1	-1.6	
19,644.0	88.40	176.30	12,224.0	-7,107.5	699.1	1.59	0.75	1.40	-3.0	4.7	
19,738.0	89.20	175.70	12,226.0	-7,201.3	705.6	1.06	0.85	-0.64	-1.0	10.6	
19,831.0	90.50	175.00	12,226.2	-7,294.0	713.2	1.59	1.40	-0.75	-0.8	17.4	
19,926.0	90.50	174.70	12,225.4	-7,388.6	721.7	0.32	0.00	-0.32	-1.6	25.3	
20,022.0	91.00	175.10	12,224.1	-7,484.2	730.2	0.67	0.52	0.42	-2.8	33.1	
20,116.0	89.80	179.40	12,223.5	-7,578.1	734.8	4.75	-1.28	4.57	-3.5	36.9	
20,209.0	89.80	174.30	12,223.8	-7,670.9	739.9	5.48	0.00	-5.48	-3.2	41.4	
20,303.0	88.80	182.30	12,225.0	-7,764.8	742.6	8.58	-1.06	8.51	-2.0	43.5	
20,397.0	87.40	183.20	12,228.1	-7,858.6	738.1	1.77	-1.49	0.96	1.2	38.3	
20,490.0	90.50	184.40	12,229.8	-7,951.4	732.0	3.57	3.33	1.29	2.8	31.4	
20,584.0	90.50	183.30	12,229.0	-8,045.1	725.7	1.17	0.00	-1.17	2.0	24.4	
20,677.0	90.90	181.70	12,227.8	-8,138.0	721.6	1.77	0.43	-1.72	0.8	19.7	
20,771.0	91.60	180.80	12,225.8	-8,232.0	719.6	1.21	0.74	-0.96	-1.2	16.9	
20,866.0	90.40	182.10	12,224.1	-8,326.9	717.2	1.86	-1.26	1.37	-2.9	13.8	
20,960.0	91.60	181.50	12,222.5	-8,420.9	714.2	1.43	1.28	-0.64	-4.5	10.2	
21,053.0	86.60	182.20	12,223.9	-8,513.8	711.2	5.43	-5.38	0.75	-3.0	6.5	
21,147.0	86.00	181.50	12,230.0	-8,607.5	708.2	0.98	-0.64	-0.74	3.0	2.8	
21,240.0	86.50	181.00	12,236.1	-8,700.3	706.2	0.76	0.54	-0.54	9.1	0.1	
21,334.0	87.40	179.60	12,241.1	-8,794.2	705.7	1.77	0.96	-1.49	14.1	-1.1	
21,428.0	87.10	178.00	12,245.6	-8,888.1	707.6	1.73	-0.32	-1.70	18.6	0.2	
21,521.0	87.50	177.20	12,250.0	-8,980.9	711.5	0.96	0.43	-0.86	23.0	3.4	
21,614.0	89.50	177.20	12,252.4	-9,073.7	716.1	2.15	2.15	0.00	25.4	7.3	
21,708.0	89.70	176.30	12,253.1	-9,167.6	721.4	0.98	0.21	-0.96	26.1	11.9	



PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Convoy 28 State Com
 Well: #601H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #601H
 TVD Reference: KB = 25 @ 3550.0usft (HP 642)
 MD Reference: KB = 25 @ 3550.0usft (HP 642)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 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)
21,802.0	91.40	177.20	12,252.2	-9,261.4	726.7	2.05	1.81	0.96	25.2	16.5
21,896.0	92.80	177.70	12,248.7	-9,355.3	730.9	1.58	1.49	0.53	21.7	20.0
21,990.0	91.40	177.10	12,245.3	-9,449.1	735.2	1.62	-1.49	-0.64	18.3	23.6
22,084.0	91.60	176.50	12,242.8	-9,542.9	740.4	0.67	0.21	-0.64	15.9	28.1
22,154.0	91.80	176.10	12,240.7	-9,612.7	744.9	0.64	0.29	-0.57	13.8	32.1
Final MWD Survey (MD= 22154.0')										
22,210.0	91.80	176.10	12,239.0	-9,668.6	748.7	0.00	0.00	0.00	12.1	35.5
Final Bit Projection (MD= 22210.0') - PBHL(Con 28 ST Com #601H)										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,290.8	12,123.3	210.3	633.6	HL Crossing, MD:12290.8', TVD:12123.3', N/S:210.3', E/W:633.6', INC:54.20
22,154.0	12,240.7	-9,612.7	744.9	Final MWD Survey (MD= 22154.0')
22,210.0	12,239.0	-9,668.6	748.7	Final Bit Projection (MD= 22210.0')

Checked By: _____ Approved By: _____ Date: _____

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Magnetic Field
Strength: 47872.9nT
Dip Angle: 60.03°
Date: 11/30/2017
Model: IGRF2015

The graph plots Output Energy (Joules) on the y-axis (0 to 12) against Frequency (Hz) on the x-axis (0 to 2000). The blue line represents the 1000 Hz case, showing a very sharp peak at 1000 Hz reaching approximately 11.5 Joules. The red line represents the 100 Hz case, showing a broader peak around 1000 Hz reaching approximately 10.5 Joules, with significant side lobes extending across the frequency range.

