

HOBBS OCD
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)
Dogwood 23 Fed Com
#701H
OH

Design: OH

PVA Report

27 December, 2017



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft (HP 642)
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft (HP 642)
Well:	#701H	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	Dogwood 23 Fed Com		
Site Position:		Northing:	372,741.00 usft
From:	Map	Easting:	788,311.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 20.069 N
		Longitude:	103° 32' 11.158 W
		Grid Convergence:	0.42 °

Well	#701H		
Well Position	+N/-S	0.0 usft	Northing: 372,741.00 usft
	+E/-W	0.0 usft	Easting: 788,311.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 1' 20.069 N
		Longitude:	103° 32' 11.158 W
		Ground Level:	3,331.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	2/16/2017	6.96
			Dip Angle (°)
			59.89
			Field Strength (nT)
			47,856.45664542

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)
	0.0	0.0	0.0
			Direction (°)
			0.76



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Survey Program	Date	12/27/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
173.0	1,005.0	Olebrook MWD (OH)	MWD	MWD - Standard	
1,054.0	22,551.0	Intrepid MWD (OH)	MWD	MWD - Standard	

MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Bulid (°/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
173.0	0.35	15.66	173.0	0.5	0.1	0.20	0.20	0.00	-0.5	0.0
234.0	0.53	128.78	234.0	0.5	0.4	1.21	0.30	185.44	0.0	0.7
299.0	0.70	290.15	299.0	0.5	0.3	1.87	0.26	248.26	0.1	-0.5
329.0	0.79	250.86	329.0	0.5	-0.1	1.69	0.30	-130.97	0.1	-0.5
389.0	0.79	241.98	389.0	0.1	-0.8	0.20	0.00	-14.80	-0.7	-0.5
421.0	0.70	285.22	421.0	0.1	-1.2	1.74	-0.28	135.12	-1.2	0.3
484.0	0.44	112.34	484.0	0.1	-1.4	1.81	-0.41	-274.41	1.3	-0.4
610.0	0.97	178.44	610.0	-1.2	-0.9	0.70	0.42	52.46	-1.1	-0.9
642.0	1.06	186.00	642.0	-1.7	-0.9	0.50	0.28	23.62	-1.8	-0.7
673.0	0.79	131.33	673.0	-2.2	-0.8	2.85	-0.87	-176.35	-0.8	-2.1
705.0	0.09	74.99	705.0	-2.3	-0.6	2.32	-2.19	-176.06	1.2	-2.1
737.0	0.88	151.81	737.0	-2.5	-0.5	2.70	2.47	240.06	-2.0	-1.6
799.0	0.88	141.79	799.0	-3.3	0.1	0.25	0.00	-16.16	-2.6	-2.0
830.0	0.97	162.62	830.0	-3.7	0.3	1.12	0.29	67.19	-3.7	-0.9
862.0	0.62	84.31	862.0	-4.0	0.5	3.25	-1.09	-244.72	-0.1	-4.0
987.0	0.88	113.84	986.9	-4.3	2.1	0.37	0.21	23.62	-3.6	-3.1
1,005.0	0.79	106.46	1,004.9	-4.4	2.3	0.78	-0.50	-41.00	-3.5	-3.6
1,054.0	0.90	194.10	1,053.9	-4.9	2.6	2.39	0.22	178.86	-4.1	3.7
1,241.0	1.70	124.80	1,240.9	-7.9	4.5	0.87	0.43	-37.06	-8.2	-3.9
1,426.0	0.90	184.80	1,425.9	-10.9	6.6	0.80	-0.43	32.43	-10.3	7.5



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Well: #701H		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)	
1,611.0	1.10	192.60	1,610.8	-14.1	6.1	0.13	0.11	4.22	-12.4		9.0
1,798.0	1.30	195.40	1,797.8	-17.9	5.1	0.11	0.11	1.50	-15.9		9.7
1,985.0	1.10	192.60	1,984.7	-21.7	4.2	0.11	-0.11	-1.50	-20.2		8.8
2,172.0	0.40	161.40	2,171.7	-24.0	4.0	0.42	-0.37	-16.68	-24.1		-3.9
2,359.0	0.20	192.70	2,358.7	-25.0	4.1	0.13	-0.11	16.74	-23.4		9.5
2,547.0	0.20	181.50	2,546.7	-25.6	4.1	0.02	0.00	-5.96	-25.5		4.7
2,734.0	0.30	138.20	2,733.7	-26.3	4.4	0.11	0.05	-23.16	-22.5		-14.3
2,921.0	0.70	126.20	2,920.7	-27.3	5.6	0.22	0.21	-6.42	-20.7		-18.7
3,108.0	1.40	115.00	3,107.7	-29.0	8.6	0.39	0.37	-5.99	-20.1		-22.6
3,296.0	2.30	110.20	3,295.6	-31.3	14.2	0.49	0.48	-2.55	-24.2		-24.4
3,484.0	2.60	107.80	3,483.4	-33.9	21.8	0.17	0.16	-1.28	-31.1		-25.6
3,671.0	2.90	107.60	3,670.2	-36.6	30.4	0.16	0.16	-0.11	-40.0		-25.7
3,858.0	4.20	101.30	3,856.8	-39.4	41.6	0.72	0.70	-3.37	-48.5		-30.5
4,045.0	3.90	105.70	4,043.4	-42.4	54.5	0.23	-0.16	2.35	-63.9		-26.2
4,233.0	3.50	110.50	4,231.0	-46.2	66.0	0.27	-0.21	2.55	-78.0		-20.2
4,420.0	3.70	108.30	4,417.6	-50.1	77.1	0.13	0.11	-1.18	-88.9		-23.4
4,607.0	4.40	109.60	4,604.1	-54.4	89.5	0.38	0.37	0.70	-102.6		-21.2
4,795.0	4.80	118.20	4,791.5	-60.5	103.3	0.42	0.21	4.57	-119.6		-4.5
4,957.0	3.60	126.00	4,953.1	-66.7	113.4	0.82	-0.74	4.81	-130.9		12.7
5,056.0	3.80	123.30	5,051.9	-70.3	118.6	0.27	0.20	-2.73	-137.7		6.4
5,244.0	3.30	121.80	5,239.5	-76.6	128.4	0.27	-0.27	-0.80	-144.5		2.9
5,431.0	3.60	116.50	5,426.2	-82.0	138.3	0.23	0.16	-2.83	-138.7		-8.4
5,619.0	3.70	119.70	5,613.8	-87.7	148.8	0.12	0.05	1.70	-131.3		1.5
5,807.0	3.80	116.30	5,801.4	-93.4	159.7	0.13	0.05	-1.81	-124.0		-3.7
5,994.0	4.00	112.30	5,988.0	-98.7	171.2	0.18	0.11	-2.14	-117.0		-8.4
6,183.0	3.70	111.80	6,176.5	-103.4	183.0	0.16	-0.16	-0.26	-110.4		-5.0
6,371.0	3.40	111.40	6,364.2	-107.7	193.8	0.16	-0.16	-0.21	-102.9		-1.2



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6,558.0	3.20	110.60	6,550.9	-111.6	203.9	0.11	-0.11	-0.43	-94.6	2.2	
6,746.0	2.90	128.30	6,738.6	-116.4	212.5	0.52	-0.16	9.41	-79.6	31.2	
6,932.0	2.00	171.50	6,924.5	-122.5	216.7	1.07	-0.48	23.23	-30.1	66.3	
7,119.0	1.90	170.80	7,111.3	-128.8	217.7	0.05	-0.05	-0.37	-23.6	51.9	
7,307.0	2.20	173.60	7,299.2	-135.5	218.6	0.17	0.16	1.49	-14.7	38.4	
7,495.0	2.20	176.70	7,487.1	-142.6	219.2	0.06	0.00	1.65	-7.6	23.9	
7,682.0	2.20	176.30	7,674.0	-149.8	219.6	0.01	0.00	-0.21	-6.1	12.8	
7,870.0	1.50	223.80	7,861.9	-155.2	218.2	0.86	-0.37	25.27	0.0	13.1	
8,058.0	1.50	219.10	8,049.8	-158.9	214.9	0.07	0.00	-2.50	-6.0	12.8	
8,246.0	1.50	219.80	8,237.7	-162.7	211.8	0.01	0.00	0.37	-10.7	12.9	
8,433.0	1.40	206.30	8,424.7	-166.6	209.2	0.19	-0.05	-7.22	-18.1	9.5	
8,621.0	1.40	202.40	8,612.6	-170.8	207.3	0.05	0.00	-2.07	-23.3	8.1	
8,808.0	1.10	274.20	8,799.6	-172.8	204.6	0.79	-0.16	38.40	-2.1	26.8	
8,997.0	1.10	282.00	8,988.5	-172.3	201.1	0.08	0.00	4.13	-2.1	27.1	
9,185.0	1.10	278.40	9,176.5	-171.6	197.5	0.04	0.00	-1.91	-7.4	26.8	
9,372.0	0.90	273.70	9,363.5	-171.3	194.3	0.12	-0.11	-2.51	-12.8	26.0	
9,560.0	0.50	257.60	9,551.5	-171.3	192.0	0.24	-0.21	-8.56	-21.7	21.0	
9,746.0	0.70	293.50	9,737.5	-171.1	190.2	0.22	0.11	19.30	-7.1	30.2	
9,936.0	0.80	214.90	9,927.4	-171.7	188.3	0.50	0.05	-41.37	-32.6	-2.1	
10,124.0	0.60	310.70	10,115.4	-172.1	186.8	0.56	-0.11	50.96	0.3	34.0	
10,312.0	2.40	293.80	10,303.4	-169.9	182.5	0.98	0.96	-8.99	-14.4	32.3	
10,499.0	1.80	278.30	10,490.2	-167.9	176.0	0.44	-0.32	-8.29	-29.2	26.2	
10,687.0	1.70	238.10	10,678.2	-168.9	170.7	0.64	-0.05	-21.38	-44.3	-0.7	
10,875.0	0.40	294.50	10,866.1	-170.1	167.7	0.81	-0.69	30.00	-27.3	38.8	
11,062.0	2.20	317.90	11,053.1	-167.2	164.7	0.98	0.96	12.51	-13.8	46.7	
11,249.0	1.90	17.90	11,240.0	-161.6	163.3	1.10	-0.16	32.09	28.6	38.5	
11,437.0	2.10	7.10	11,427.9	-155.2	164.7	0.23	0.11	-5.74	14.4	42.6	



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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)	
11,625.0	2.40	21.80	11,615.7	-148.1	166.6	0.34	0.16	7.82	17.5	38.4	
11,784.0	0.60	39.60	11,774.7	-144.4	168.3	1.16	-1.13	11.19	24.4	32.2	
11,943.0	1.10	70.10	11,933.6	-143.2	170.3	0.41	0.31	19.18	35.1	15.8	
12,037.0	1.30	78.70	12,027.6	-142.7	172.2	0.29	0.21	9.15	35.1	10.5	
12,051.6	1.44	63.27	12,042.2	-142.6	172.5	2.69	0.97	-105.50	30.7	19.4	
KOP (Dogwood 23 Fed Com #701H)											
12,131.0	3.10	26.00	12,121.6	-140.2	174.3	2.69	2.09	-46.96	15.8	30.5	
12,178.0	7.20	14.20	12,168.4	-136.2	175.6	8.96	8.72	-25.11	14.7	30.3	
12,225.0	12.00	8.10	12,214.7	-128.5	177.0	10.43	10.21	-12.98	18.0	29.3	
12,272.0	17.70	2.20	12,260.1	-116.5	178.0	12.53	12.13	-12.55	21.8	29.7	
12,318.0	19.80	3.00	12,303.7	-101.8	178.7	4.60	4.57	1.74	29.9	28.4	
12,367.0	27.70	2.60	12,348.5	-82.1	179.6	16.13	16.12	-0.82	38.3	27.2	
12,414.0	35.20	5.20	12,388.5	-57.6	181.4	16.21	15.96	5.53	45.5	23.5	
12,460.0	44.30	2.80	12,423.9	-28.3	183.3	20.06	19.78	-5.22	48.3	22.7	
12,507.0	52.50	0.30	12,455.1	6.8	184.2	17.89	17.45	-5.32	48.3	23.0	
12,554.0	60.80	359.20	12,480.9	46.0	184.1	17.77	17.66	-2.34	46.2	23.5	
12,601.0	64.70	359.20	12,502.4	87.8	183.5	8.30	8.30	0.00	43.6	23.7	
12,646.5	71.96	359.59	12,519.2	130.0	183.0	15.98	15.96	0.85	40.8	23.7	
HL Crossing, MD:12646.5', TVD:12519.2', N/S:130.0', E/W:183.0', INC:71.96											
12,648.0	72.20	359.60	12,519.6	131.5	183.0	15.98	15.96	0.81	40.7	23.7	
12,648.5	72.30	359.61	12,519.8	131.9	183.0	20.36	20.21	2.66	40.6	23.7	
FTP (Dogwood 23 Fed Com #701H)											
12,695.0	81.70	0.80	12,530.2	177.2	183.2	20.36	20.21	2.55	34.9	23.2	
12,752.0	88.00	1.70	12,535.3	233.9	184.4	11.16	11.05	1.58	25.8	21.6	
12,788.0	89.90	2.60	12,536.0	269.9	185.8	5.84	5.28	2.50	20.8	19.9	
12,889.0	91.90	2.80	12,534.4	370.8	190.5	1.99	1.98	0.20	15.4	14.4	
12,982.0	89.10	3.00	12,533.6	463.6	195.2	3.02	-3.01	0.22	14.6	9.0	
13,076.0	91.00	3.00	12,533.5	557.5	200.2	2.02	2.02	0.00	14.5	3.5	



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13,170.0	88.30	2.00	12,534.1	651.4	204.3	3.06	-2.87	-1.06	15.0	-1.3	
13,264.0	90.50	0.40	12,535.1	745.3	206.2	2.89	2.34	-1.70	15.9	-4.0	
13,356.0	92.80	0.60	12,532.4	837.3	207.0	2.51	2.50	0.22	13.2	-5.4	
13,450.0	89.80	0.70	12,530.3	931.3	208.1	3.19	-3.19	0.11	11.1	-7.2	
13,545.0	90.10	1.20	12,530.4	1,026.2	209.7	0.61	0.32	0.53	11.1	-9.4	
13,638.0	86.90	0.30	12,532.8	1,119.2	210.9	3.57	-3.44	-0.97	13.5	-11.3	
13,731.0	94.00	1.40	12,532.1	1,212.1	212.3	7.73	7.63	1.18	12.7	-13.4	
13,825.0	91.70	0.90	12,527.4	1,306.0	214.2	2.50	-2.45	-0.53	8.0	-15.9	
13,918.0	89.00	359.80	12,526.9	1,399.0	214.7	3.13	-2.90	-1.18	7.4	-17.2	
14,013.0	87.40	359.50	12,529.8	1,493.9	214.1	1.71	-1.68	-0.32	10.3	-17.3	
14,107.0	86.90	359.80	12,534.5	1,587.8	213.6	0.62	-0.53	0.32	14.9	-17.4	
14,200.0	92.00	0.20	12,535.4	1,680.8	213.6	5.50	5.48	0.43	15.8	-18.1	
14,294.0	92.40	1.00	12,531.8	1,774.7	214.5	0.95	0.43	0.85	12.1	-19.7	
14,388.0	90.10	0.80	12,529.7	1,868.6	216.0	2.46	-2.45	-0.21	10.0	-21.9	
14,482.0	87.90	359.90	12,531.4	1,962.6	216.6	2.53	-2.34	-0.96	11.6	-23.1	
14,575.0	92.80	1.40	12,530.8	2,055.6	217.7	5.51	5.27	1.61	11.1	-24.8	
14,669.0	90.60	1.20	12,528.0	2,149.5	219.8	2.35	-2.34	-0.21	8.2	-27.7	
14,763.0	89.10	358.70	12,528.3	2,243.5	219.7	3.10	-1.60	-2.66	8.4	-28.3	
14,857.0	88.30	356.10	12,530.4	2,337.4	215.4	2.89	-0.85	-2.77	10.5	-24.7	
14,950.0	91.30	357.30	12,530.7	2,430.2	210.1	3.47	3.23	1.29	10.8	-20.0	
15,018.9	92.18	358.03	12,528.6	2,499.0	207.3	1.66	1.28	1.06	8.6	-17.7	
TGT 1 (Dogwood 23 Fed Com #701H)											
15,044.0	92.50	358.30	12,527.6	2,524.1	206.5	1.66	1.28	1.06	7.5	-17.1	
15,137.0	91.30	358.40	12,524.5	2,617.0	203.8	1.29	-1.29	0.11	4.3	-15.1	
15,231.0	88.20	357.90	12,524.9	2,710.9	200.8	3.34	-3.30	-0.53	4.5	-12.7	
15,325.0	87.40	357.20	12,528.5	2,804.8	196.8	1.13	-0.85	-0.74	7.9	-9.3	
15,418.0	90.20	357.80	12,530.5	2,897.7	192.7	3.08	3.01	0.65	9.7	-6.0	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft (HP 642)
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft (HP 642)
Well:	#701H	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)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
15,512.0	92.40	359.00	12,528.4	2,991.6	190.1	2.67	2.34	1.28	7.4	-4.0	
15,606.0	90.40	358.50	12,526.1	3,085.5	188.0	2.19	-2.13	-0.53	4.9	-2.6	
15,700.0	89.70	358.50	12,526.0	3,179.5	185.6	0.74	-0.74	0.00	4.6	-0.8	
15,794.0	89.00	358.70	12,527.1	3,273.5	183.3	0.77	-0.74	0.21	5.5	0.8	
15,888.0	88.10	358.50	12,529.4	3,367.4	181.0	0.98	-0.96	-0.21	7.7	2.4	
15,982.0	89.80	358.50	12,531.2	3,461.3	178.5	1.81	1.81	0.00	9.2	4.2	
16,075.0	91.60	358.30	12,530.0	3,554.3	175.9	1.95	1.94	-0.22	7.9	6.1	
16,169.0	92.40	358.80	12,526.7	3,648.2	173.5	1.00	0.85	0.53	4.4	7.8	
16,283.0	88.90	357.80	12,525.4	3,762.1	170.2	3.19	-3.07	-0.88	2.9	10.4	
16,377.0	89.00	357.70	12,527.2	3,856.0	166.5	0.15	0.11	-0.11	4.4	13.4	
16,472.0	89.00	356.90	12,528.8	3,950.9	162.0	0.84	0.00	-0.84	5.9	17.2	
16,565.0	88.90	357.00	12,530.5	4,043.8	157.0	0.15	-0.11	0.11	7.4	21.5	
16,659.0	88.10	356.50	12,533.0	4,137.6	151.7	1.00	-0.85	-0.53	9.7	26.2	
16,752.0	92.90	0.70	12,532.2	4,230.5	149.4	6.86	5.16	4.52	8.7	27.8	
16,846.0	92.80	0.30	12,527.5	4,324.4	150.3	0.44	-0.11	-0.43	3.8	26.3	
16,940.0	90.20	0.30	12,525.0	4,418.4	150.8	2.77	-2.77	0.00	1.2	25.1	
17,033.0	89.10	1.20	12,525.6	4,511.3	152.0	1.53	-1.18	0.97	1.6	23.2	
17,127.0	89.80	2.00	12,526.5	4,605.3	154.6	1.13	0.74	0.85	2.3	19.9	
17,220.0	89.90	2.80	12,526.8	4,698.2	158.5	0.87	0.11	0.86	2.4	15.4	
17,314.0	90.60	3.50	12,526.3	4,792.1	163.7	1.05	0.74	0.74	1.8	9.5	
17,408.0	88.40	2.00	12,527.2	4,886.0	168.2	2.83	-2.34	-1.60	2.4	4.3	
17,502.0	88.20	1.70	12,530.0	4,979.9	171.2	0.38	-0.21	-0.32	5.0	0.6	
17,520.3	88.75	1.60	12,530.4	4,998.2	171.7	3.06	3.01	-0.54	5.4	0.0	
TGT 2 (Dogwood 23 Fed Com #701H)											
17,595.0	91.00	1.20	12,530.6	5,072.8	173.6	3.06	3.01	-0.54	5.4	-2.4	
17,688.0	92.70	1.40	12,527.6	5,165.7	175.7	1.84	1.83	0.22	2.1	-5.2	
17,782.0	91.60	359.70	12,524.1	5,259.7	176.6	2.15	-1.17	-1.81	-1.8	-6.7	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft (HP 642)
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft (HP 642)
Well:	#701H	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)	
17,875.0	90.60	359.00	12,522.3	5,352.6	175.5	1.31	-1.08	-0.75	-3.8	-6.3	
17,969.0	89.60	358.30	12,522.1	5,446.6	173.3	1.30	-1.06	-0.74	-4.3	-4.8	
18,062.0	90.10	358.70	12,522.4	5,539.6	170.9	0.69	0.54	0.43	-4.4	-3.0	
18,155.0	88.50	358.30	12,523.5	5,632.5	168.4	1.77	-1.72	-0.43	-3.5	-1.3	
18,249.0	88.70	358.50	12,525.8	5,726.5	165.8	0.30	0.21	0.21	-1.5	0.7	
18,342.0	89.80	359.20	12,527.0	5,819.5	163.9	1.40	1.18	0.75	-0.6	1.9	
18,437.0	86.80	358.60	12,529.8	5,914.4	162.1	3.22	-3.16	-0.63	1.9	3.0	
18,530.0	91.10	358.80	12,531.5	6,007.3	160.0	4.63	4.62	0.22	3.3	4.5	
18,624.0	90.40	359.40	12,530.3	6,101.3	158.5	0.98	-0.74	0.64	1.8	5.3	
18,717.0	91.00	359.30	12,529.2	6,194.3	157.5	0.65	0.65	-0.11	0.4	5.7	
18,811.0	90.40	358.50	12,528.0	6,288.3	155.7	1.06	-0.64	-0.85	-1.1	6.8	
18,905.0	90.40	358.70	12,527.4	6,382.2	153.4	0.21	0.00	0.21	-2.1	8.4	
18,998.0	90.90	359.90	12,526.3	6,475.2	152.2	1.40	0.54	1.29	-3.4	8.9	
19,091.0	88.60	359.60	12,526.7	6,568.2	151.8	2.49	-2.47	-0.32	-3.3	8.6	
19,185.0	88.60	0.60	12,529.0	6,662.2	152.0	1.06	0.00	1.06	-1.3	7.8	
19,278.0	89.80	0.90	12,530.3	6,755.2	153.2	1.33	1.29	0.32	-0.3	5.9	
19,371.0	89.50	1.20	12,530.9	6,848.1	154.9	0.46	-0.32	0.32	0.0	3.6	
19,465.0	90.40	0.40	12,531.0	6,942.1	156.2	1.28	0.96	-0.85	-0.3	1.6	
19,559.0	90.10	359.70	12,530.6	7,036.1	156.3	0.81	-0.32	-0.74	-1.0	0.8	
19,652.0	89.90	359.00	12,530.6	7,129.1	155.3	0.78	-0.22	-0.75	-1.3	1.2	
19,745.0	90.90	357.90	12,529.9	7,222.1	152.7	1.60	1.08	-1.18	-2.2	3.1	
19,839.0	85.10	357.20	12,533.2	7,315.9	148.7	6.21	-6.17	-0.74	0.7	6.4	
19,933.0	86.80	356.60	12,539.8	7,409.5	143.7	1.92	1.81	-0.64	7.1	10.8	
20,021.6	88.78	357.92	12,543.2	7,497.9	139.4	2.68	2.23	1.49	10.2	14.4	
TGT 3 (Dogwood 23 Fed Com #701H)											
20,027.0	88.90	358.00	12,543.4	7,503.3	139.2	2.68	2.23	1.49	10.3	14.5	
20,121.0	90.20	2.20	12,544.1	7,597.3	139.4	4.68	1.38	4.47	10.6	13.7	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft (HP 642)
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft (HP 642)
Well:	#701H	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)	
20,214.0	90.90	0.50	12,543.2	7,690.3	141.6	1.98	0.75	-1.83	9.3	10.9	
20,309.0	91.20	4.90	12,541.5	7,785.1	146.1	4.64	0.32	4.63	7.2	5.7	
20,403.0	92.30	359.90	12,538.6	7,879.0	150.0	5.44	1.17	-5.32	3.9	1.1	
20,495.0	90.10	359.90	12,536.7	7,971.0	149.8	2.39	-2.39	0.00	1.5	0.6	
20,588.0	89.70	358.60	12,536.8	8,063.9	148.6	1.46	-0.43	-1.40	1.2	1.2	
20,682.0	90.00	357.10	12,537.1	8,157.9	145.1	1.63	0.32	-1.60	1.1	4.0	
20,776.0	89.50	355.60	12,537.5	8,251.7	139.1	1.68	-0.53	-1.60	1.0	9.3	
20,869.0	90.80	357.20	12,537.2	8,344.5	133.3	2.22	1.40	1.72	0.4	14.5	
20,963.0	88.40	355.40	12,537.9	8,438.3	127.2	3.19	-2.55	-1.91	0.6	19.9	
21,057.0	89.80	356.20	12,539.4	8,532.0	120.3	1.72	1.49	0.85	1.6	26.1	
21,151.0	92.50	358.60	12,537.5	8,625.9	116.1	3.84	2.87	2.55	-0.6	29.7	
21,245.0	90.60	357.00	12,534.9	8,719.8	112.5	2.64	-2.02	-1.70	-3.6	32.6	
21,338.0	88.00	0.10	12,536.1	8,812.7	110.1	4.35	-2.80	3.33	-2.9	34.3	
21,433.0	91.30	2.80	12,536.7	8,907.7	112.5	4.49	3.47	2.84	-2.8	31.2	
21,525.0	92.30	3.10	12,533.8	8,999.5	117.2	1.13	1.09	0.33	-6.2	25.8	
21,619.0	92.40	2.90	12,529.9	9,093.3	122.1	0.24	0.11	-0.21	-10.4	20.2	
21,713.0	91.60	2.70	12,526.6	9,187.1	126.7	0.88	-0.85	-0.21	-14.1	15.0	
21,807.0	88.70	4.40	12,526.4	9,280.9	132.6	3.58	-3.09	1.81	-14.8	8.5	
21,900.0	88.60	4.80	12,528.6	9,373.6	140.0	0.44	-0.11	0.43	-13.0	0.4	
21,994.0	86.90	4.40	12,532.3	9,467.2	147.5	1.86	-1.81	-0.43	-9.7	-7.8	
22,088.0	86.00	3.60	12,538.1	9,560.8	154.1	1.28	-0.96	-0.85	-4.4	-15.0	
22,182.0	88.10	2.30	12,542.9	9,654.6	158.9	2.63	2.23	-1.38	0.1	-20.5	
22,275.0	93.60	3.10	12,541.5	9,747.4	163.3	5.98	5.91	0.86	-1.6	-25.6	
22,370.0	92.30	0.90	12,536.7	9,842.2	166.6	2.69	-1.37	-2.32	-7.0	-29.6	
22,464.0	92.80	358.80	12,532.5	9,936.1	166.4	2.29	0.53	-2.23	-11.7	-30.0	
22,493.0	93.70	358.50	12,530.8	9,965.1	165.7	3.27	3.10	-1.03	-13.4	-29.5	
Final MWD Survey (MD= 22493.0')											



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3356.0usft (HP 642)
Site:	Dogwood 23 Fed Com	MD Reference:	KB = 25' @ 3356.0usft (HP 642)
Well:	#701H	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)
22,551.0	93.70	358.50	12,527.1	10,022.9	164.2	0.00	0.00	0.00	-17.4	-28.4
Final Bit Projection (MD= 22551.0') - PBHL (Dogwood 23 Fed Com #701H)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,646.5	12,519.2	130.0	183.0	HL Crossing, MD:12646.5', TVD:12519.2', N/S:130.0', E/W:183.0', INC:71.96
22,493.0	12,530.8	9,965.1	165.7	Final MWD Survey (MD= 22493.0')
22,551.0	12,527.1	10,022.9	164.2	Final Bit Projection (MD= 22551.0')

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

Dogwood 23 Fed Com #701H

HP 642

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: #701H

Ground Level: 3331.0
KB = 25' @ 3358.0usft (HP 642)
Northing: 372741.00 Easting: 788311.00 Latitude: 32° 1' 20.069 N Longitude: 103° 32' 11.155 W



Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.54°

Magnetic Field
Strength: 47856.5nT
Dip Angle: 59.89°
Date: 2/16/2017
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.54°
To convert a Magnetic Direction to a True Direction, Add 6.96° East
To convert a True Direction to a Grid Direction, Subtract 0.42°

SECTION DETAILS

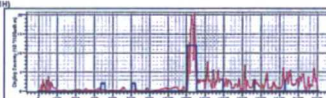
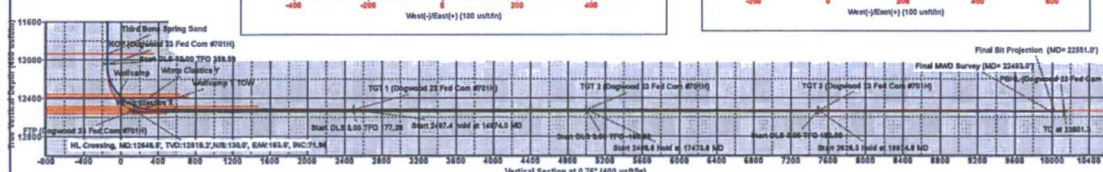
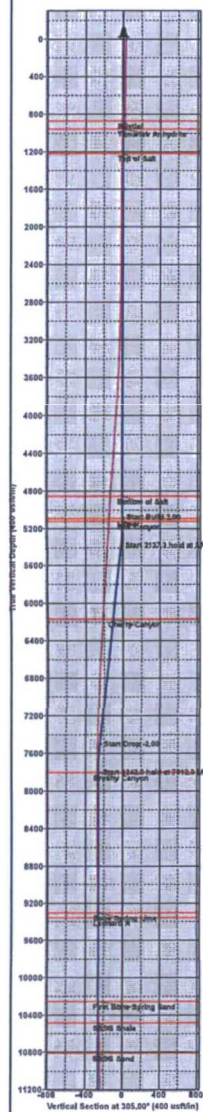
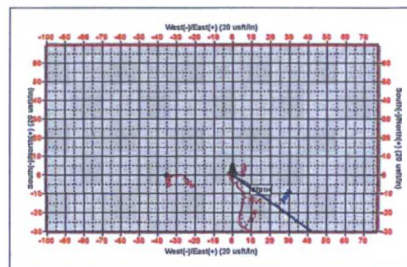
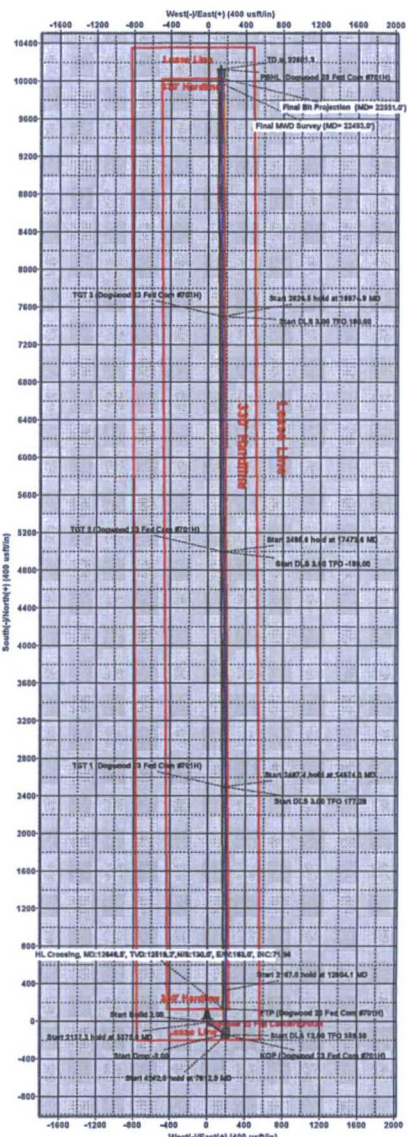
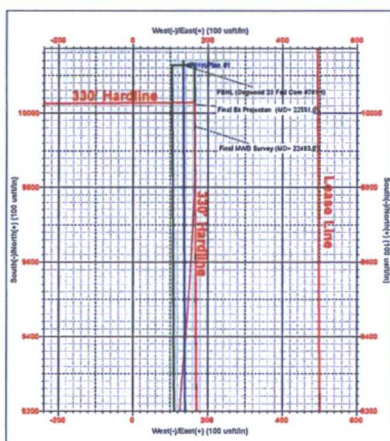
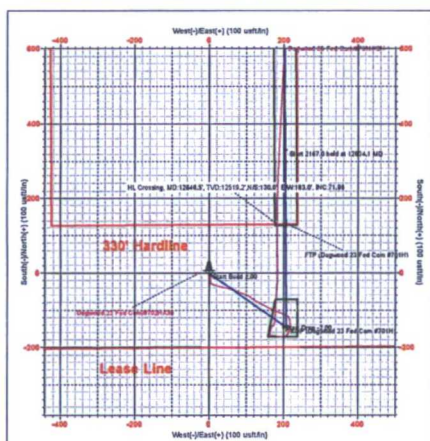
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSeet	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5075.0	0.00	0.00	5075.0	0.0	0.0	0.00	0.00	0.0	
3	5375.0	6.00	125.00	5374.5	-9.0	12.9	2.00	125.00	-8.8	
4	7512.3	6.00	125.00	7500.0	-137.1	195.9	0.00	0.00	-134.5	
5	7812.3	0.00	0.00	7799.5	-146.1	208.7	2.00	180.00	-143.3	
6	12054.3	0.00	0.00	12041.5	-146.1	208.7	0.00	0.00	-143.3	
7	12804.1	89.97	359.59	12519.0	331.1	205.3	12.00	359.59	333.8	
8	14971.1	89.97	359.59	12520.0	2498.0	189.6	0.00	0.00	2500.3	TGT 1 (Dogwood 23 Fed Com #701H)
9	14974.0	89.89	359.59	12520.0	2500.9	189.6	3.00	177.28	2503.2	TGT 2 (Dogwood 23 Fed Com #701H)
10	17471.3	89.89	359.59	12525.0	4998.2	171.7	0.00	0.00	5000.0	TGT 3 (Dogwood 23 Fed Com #701H)
11	17473.6	89.82	359.59	12525.0	5000.5	171.7	3.00	-180.00	5002.3	
12	19972.2	89.82	359.59	12533.0	7499.0	153.8	0.00	0.00	7500.4	
13	19974.8	89.74	359.59	12533.0	7501.6	153.8	3.00	180.00	7503.0	
14	22601.3	89.74	359.59	12545.0	10128.0	135.0	0.00	0.00	10128.9	PBHL (Dogwood 23 Fed Com #701H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
KOP (Dogwood 23 Fed Com #701H)	12041.5	-146.1	208.7	372594.86	788519.71
FTP (Dogwood 23 Fed Com #701H)	12519.0	132.0	208.0	372873.00	788519.00
TGT 1 (Dogwood 23 Fed Com #701H)	12620.0	2498.0	189.6	376238.00	788500.60
TGT 2 (Dogwood 23 Fed Com #701H)	12625.0	4998.2	171.7	377728.20	788482.71
TGT 3 (Dogwood 23 Fed Com #701H)	12533.0	7499.0	153.8	380240.00	788464.91
PBHL (Dogwood 23 Fed Com #701H)	12545.0	10128.0	135.0	382869.00	788446.00



Lea County, NM (NAD 83 NME)
Dogwood 23 Fed Com #701H
HP 642
Plan #1