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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Fearless 23 Fed Com

#507H

OH

Design: OH

Final PVA Report

21 June, 2019



Final PVA Report

Company: EOG Resources - Midland Project: Lea County, NM (NAD 83 NME) Site: Fearless 23 Fed Com Well: #507H Wellbore: OH Design: OH		Local Co-ordinate Reference: Well #507H TVD Reference: KB = 25' @ 3456.0usft MD Reference: KB = 25' @ 3456.0usft North Reference: Grid Survey Calculation Method: Minimum Curvature Database: EDM 5000.14													
Project Lea County, NM (NAD 83 NME)															
Map System: US State Plane 1983 Geo Datum: North American Datum 1983 Map Zone: New Mexico Eastern Zone		System Datum: Mean Sea Level													
Site Fearless 23 Fed Com															
Site Position: From: Map Position Uncertainty: 0.0 usft		Northing: 408,599.00 usft Eastng: 753,585.00 usft Slot Radius: 13-3/16 "													
		Latitude: 32° 7' 17.261 N Longitude: 103° 38' 51.862 W Grid Convergence: 0.36 "													
Well #507H															
Well Position +N-S 0.0 usft +E-W 0.0 usft Position Uncertainty 0.0 usft		Northing: 408,945.00 usft Eastng: 752,235.00 usft Wellhead Elevation: usft													
		Latitude: 32° 7' 20.770 N Longitude: 103° 38' 7.534 W Ground Level: 3,431.0 usft													
Wellbore OH															
<table border="1"> <thead> <tr> <th>Magnetics</th> <th>Model Name</th> <th>Sample Date</th> <th>Declination (°)</th> <th>Dip Angle (°)</th> <th>Field Strength (nT)</th> </tr> </thead> <tbody> <tr> <td></td> <td>IGRF2015</td> <td>6/1/2019</td> <td>6.77</td> <td>59.93</td> <td>47,668.45793629</td> </tr> </tbody> </table>				Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)		IGRF2015	6/1/2019	6.77	59.93	47,668.45793629
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)										
	IGRF2015	6/1/2019	6.77	59.93	47,668.45793629										
Design OH															
Audit Notes: Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0															
<table border="1"> <thead> <tr> <th>Vertical Section:</th> <th>Depth From (TVD) (usft)</th> <th>+N-S (usft)</th> <th>+E-W (usft)</th> <th>Direction (°)</th> </tr> </thead> <tbody> <tr> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>177.57</td> </tr> </tbody> </table>				Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)		0.0	0.0	0.0	177.57		
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)											
	0.0	0.0	0.0	177.57											
Survey Program Date 6/21/2019															
<table border="1"> <thead> <tr> <th>From (usft)</th> <th>To (usft)</th> <th>Survey (Wellbore)</th> <th>Tool Name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>144.0</td> <td>20,480.0</td> <td>Intrepid MWD (OH)</td> <td>MWD</td> <td>OWSG MWD - Standard</td> </tr> </tbody> </table>				From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	144.0	20,480.0	Intrepid MWD (OH)	MWD	OWSG MWD - Standard		
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144.0	20,480.0	Intrepid MWD (OH)	MWD	OWSG MWD - Standard											



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Site:	Fearless 23 Fed Com	MD Reference:	KB = 25' @ 3456.0usft
Well:	#507H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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
144.0	1.20	37.00	144.0	1.2	0.9	0.83	0.83	0.00	-1.5	0.0
322.0	1.40	110.00	322.0	1.9	4.1	0.87	0.11	41.01	-3.2	3.2
500.0	1.30	141.50	499.9	-0.4	7.4	0.42	-0.06	17.70	-4.9	5.5
687.0	1.70	144.30	686.8	-4.3	10.3	0.22	0.21	1.50	-9.5	5.9
867.0	1.10	171.60	866.8	-8.2	12.1	0.49	-0.33	15.17	-9.8	10.8
1,046.0	1.10	184.50	1,045.8	-11.6	12.2	0.14	0.00	7.21	-10.6	13.1
1,235.0	0.70	198.00	1,234.7	-14.5	11.7	0.24	-0.21	7.14	-10.1	15.6
1,424.0	0.70	189.80	1,423.7	-16.7	11.0	0.01	0.00	0.85	-12.0	16.0
1,612.0	0.70	203.50	1,611.7	-18.8	10.1	0.02	0.00	1.97	-13.2	16.8
1,801.0	0.90	45.00	1,800.7	-18.8	10.7	0.83	0.11	-83.86	5.7	-20.9
1,980.0	7.10	42.30	1,989.1	-9.1	19.7	3.28	3.28	-1.43	-6.4	-20.7
2,179.0	6.70	45.90	2,176.8	7.2	35.4	0.31	-0.21	1.90	-30.4	-19.6
2,368.0	5.80	49.80	2,364.7	21.0	50.6	0.53	-0.48	2.06	-52.2	-16.7
2,557.0	5.90	46.10	2,552.7	33.9	64.9	0.21	0.05	-1.96	-70.3	-20.7
2,747.0	6.90	40.20	2,741.5	49.4	79.3	0.63	0.53	-3.11	-88.9	-28.9
2,935.0	6.00	41.40	2,928.3	65.4	93.1	0.48	-0.48	0.64	-108.4	-26.2
3,124.0	5.40	40.10	3,116.4	79.6	105.4	0.32	-0.32	-0.69	-112.7	-25.5
3,313.0	5.70	44.80	3,304.5	83.1	117.7	0.29	0.16	2.49	-113.1	-12.7
3,502.0	6.40	47.10	3,492.4	106.9	132.1	0.39	0.37	1.22	-113.8	-5.8
3,691.0	5.30	54.70	3,680.4	118.1	146.9	0.71	-0.58	4.02	-113.0	10.0
3,879.0	4.90	50.70	3,867.7	129.2	160.2	0.28	-0.21	-2.13	-110.5	2.3
4,068.0	5.70	62.00	4,055.9	138.8	174.7	0.69	0.42	5.98	-105.7	22.3
4,257.0	4.40	72.60	4,244.2	145.3	189.9	0.84	-0.69	5.61	-97.7	36.3
4,446.0	3.70	100.50	4,432.7	146.4	202.9	1.09	-0.37	14.76	-68.6	68.5
4,588.0	3.30	104.50	4,574.4	144.5	211.3	0.33	-0.28	2.82	-63.2	59.8
4,726.0	2.40	96.70	4,712.3	143.2	218.0	0.71	-0.65	-5.65	-67.1	40.2



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 Wellbore: OH
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 MD Reference: KB = 25' @ 3456.0usft
 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)
4,915.0	5.00	48.90	4,800.9	148.2	228.2	2.02	1.38	-25.29	-66.1	-24.0
5,104.0	8.20	42.50	5,089.0	161.1	241.3	0.71	0.63	-3.39	-62.0	-28.5
5,282.0	5.90	42.20	5,275.9	175.7	254.6	0.16	-0.16	-0.16	-62.4	-25.2
5,481.0	5.80	42.40	5,464.0	190.0	267.6	0.05	-0.05	0.11	-62.3	-21.3
5,670.0	4.60	44.10	5,652.2	202.5	279.3	0.84	-0.83	0.90	-60.5	-16.2
5,859.0	3.50	44.00	5,840.7	212.1	288.6	0.58	-0.58	-0.05	-54.3	-13.2
6,047.0	3.10	41.70	6,028.4	220.0	298.0	0.22	-0.21	-1.22	-45.2	-11.8
6,236.0	2.80	39.80	6,217.1	227.4	302.3	0.17	-0.16	-1.01	-35.3	-9.0
6,425.0	2.50	39.40	6,405.9	234.1	307.9	0.16	-0.16	-0.21	-24.7	-4.6
6,613.0	1.80	41.40	6,593.8	239.5	312.4	0.37	-0.37	1.06	-12.7	0.3
6,803.0	1.30	36.80	6,783.7	243.4	315.7	0.27	-0.26	-2.42	1.3	4.6
6,991.0	1.00	31.00	6,971.7	246.6	317.8	0.17	-0.16	-3.09	11.2	10.1
7,180.0	1.10	32.60	7,160.7	249.5	319.7	0.08	0.05	0.85	11.2	11.0
7,369.0	1.10	58.00	7,349.6	252.0	322.2	0.26	0.00	13.44	11.4	5.9
7,558.0	0.60	75.20	7,538.6	253.2	324.7	0.29	-0.26	9.10	9.9	2.8
7,747.0	0.40	89.30	7,727.6	253.5	326.3	0.12	-0.11	7.46	8.7	0.6
7,937.0	0.00	42.50	7,917.6	253.5	326.9	0.21	-0.21	0.00	-0.5	8.1
8,125.0	0.70	190.90	8,105.6	252.3	326.7	0.37	0.37	0.00	-2.2	-8.0
8,314.0	1.20	203.80	8,294.6	249.4	325.7	0.29	0.26	6.83	-7.0	-7.0
8,503.0	1.50	209.30	8,483.5	245.4	323.7	0.17	0.16	2.91	-12.1	-6.2
8,691.0	1.70	223.80	8,671.4	241.3	320.6	0.24	0.11	7.71	-16.5	-2.3
8,880.0	1.70	229.90	8,860.4	237.4	316.5	0.10	0.00	3.23	-24.2	0.0
9,068.0	1.80	257.60	9,048.3	235.0	311.5	0.45	0.05	14.73	-26.8	12.5
9,257.0	2.80	268.80	9,237.1	234.3	303.9	0.58	0.53	5.83	-31.4	18.1
9,446.0	2.50	321.10	9,425.9	237.4	298.7	1.24	-0.16	27.67	-11.9	39.6
9,577.0	3.10	303.70	9,556.8	241.6	292.0	0.79	0.46	-13.28	-29.4	33.4
9,672.0	2.10	301.40	9,651.7	243.9	288.4	1.06	-1.05	-2.42	-35.0	32.1



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Well:	#507H	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)	Bulld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
9,766.0	2.10	209.80	9,745.6	243.3	286.1	3.20	0.00	-97.45	-32.7	-37.7	
9,813.0	8.30	166.30	9,792.4	239.3	286.4	14.74	13.19	-92.55	-1.8	-50.4	
9,832.9	10.58	166.30	9,812.1	236.1	287.2	11.46	11.46	0.00	-5.0	-50.5	
KOP (Fearless 23 Fed Com #507H)											
9,861.0	13.80	166.30	9,839.5	230.3	288.6	11.46	11.46	0.00	-10.3	-50.3	
9,908.0	20.50	168.70	9,884.4	216.8	291.6	14.33	14.26	5.11	-22.2	-48.9	
9,945.7	24.99	169.12	9,919.2	202.5	294.3	11.92	11.91	1.11	-31.3	-47.6	
HL Crossing, MD:9945.7', TVD:9919.2', N/S:202.5', E/W:294.3', INC:24.99											
9,955.0	26.10	169.20	9,927.8	198.6	295.1	11.92	11.92	0.88	-33.6	-47.3	
10,002.0	31.50	168.90	9,968.7	176.3	299.4	11.49	11.49	-0.64	-45.0	-45.3	
10,050.0	36.30	171.00	10,008.6	150.0	304.0	10.29	10.00	4.37	-58.4	-40.8	
10,097.0	40.30	171.10	10,045.4	121.2	308.6	8.51	8.51	0.21	-69.7	-37.4	
10,144.0	43.30	172.40	10,080.5	90.2	313.1	6.64	6.38	2.77	-80.2	-32.2	
10,191.0	45.50	173.80	10,114.1	57.6	317.0	5.12	4.68	2.98	-88.2	-26.8	
10,238.0	49.00	175.50	10,146.0	23.2	320.2	7.91	7.45	3.62	-93.8	-21.6	
10,285.0	51.60	174.20	10,176.0	-12.8	323.5	5.93	5.53	-2.77	-96.5	-18.7	
10,333.0	53.60	178.40	10,205.1	-50.8	325.9	8.10	4.17	8.75	-97.2	-12.9	
10,380.0	56.50	179.20	10,232.1	-89.3	326.7	6.33	6.17	1.70	-94.6	-11.7	
FTP (Fearless 23 Fed Com #507H)											
10,427.0	58.80	179.00	10,257.2	-128.0	327.3	4.91	4.89	-0.43	-89.5	-11.6	
10,474.0	60.80	177.50	10,280.9	-169.6	328.6	5.07	4.26	-3.19	-81.5	-11.4	
10,522.0	64.50	176.00	10,302.9	-212.2	331.0	8.19	7.71	-3.12	-71.3	-8.4	
10,569.0	70.20	176.00	10,321.0	-255.4	334.0	12.13	12.13	0.00	-60.9	-6.2	
10,616.0	68.50	179.20	10,337.6	-299.4	335.9	7.33	-3.62	6.81	-48.1	-4.4	
10,711.0	75.30	177.70	10,367.1	-389.6	338.3	7.31	7.16	-1.58	-19.1	-2.6	
10,727.0	78.20	177.80	10,370.7	-405.1	338.9	18.14	18.12	0.62	-15.4	-2.1	
10,803.0	86.80	180.30	10,380.7	-480.4	340.2	11.78	11.32	3.29	-5.6	-1.5	



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10,897.0	88.30	180.20	10,384.7	-574.3	339.8	1.60	1.60	-0.11	-1.7	-2.8	
10,992.0	88.50	179.80	10,387.3	-669.3	339.8	0.47	0.21	-0.42	0.8	-3.7	
11,086.0	88.90	180.10	10,389.5	-763.3	339.9	0.53	0.43	0.32	2.9	-4.4	
11,181.0	89.10	180.80	10,391.1	-858.2	339.1	0.77	0.21	0.74	4.4	-6.1	
11,275.0	90.00	180.90	10,391.9	-952.2	337.7	0.96	0.96	0.11	5.0	-8.3	
11,370.0	90.80	181.50	10,391.2	-1,047.2	335.7	1.05	0.84	0.63	4.3	-11.2	
11,433.9	89.64	180.62	10,390.9	-1,111.1	334.5	2.28	-1.81	-1.38	3.9	-12.9	
TGT 1 (Fearless 23 Fed Com #507H)											
11,464.0	89.10	180.20	10,391.3	-1,141.2	334.3	2.28	-1.81	-1.38	4.1	-13.4	
11,559.0	90.10	181.10	10,391.9	-1,236.2	333.2	1.42	1.05	0.95	3.8	-15.4	
11,653.0	90.20	179.10	10,391.7	-1,330.2	333.1	2.13	0.11	-2.13	2.7	-16.4	
11,747.0	91.60	179.10	10,390.2	-1,424.1	334.6	1.49	1.49	0.00	0.3	-15.8	
11,841.0	88.40	179.30	10,390.2	-1,518.1	335.9	3.41	-3.40	0.21	-0.6	-15.3	
11,936.0	87.70	179.60	10,393.4	-1,613.1	336.8	0.80	-0.74	0.32	1.7	-15.3	
12,030.0	90.30	178.70	10,395.1	-1,707.0	338.2	2.93	2.77	-0.96	2.5	-14.7	
12,124.0	90.70	179.20	10,394.3	-1,801.0	339.9	0.68	0.43	0.53	0.7	-13.9	
12,218.0	90.20	178.70	10,393.5	-1,895.0	341.6	0.75	-0.53	-0.53	-0.9	-13.0	
12,313.0	91.60	179.70	10,392.0	-1,990.0	343.0	1.81	1.47	1.05	-3.3	-12.6	
12,407.0	92.30	179.80	10,388.8	-2,083.9	343.4	0.75	0.74	0.11	-7.4	-13.0	
12,502.0	89.80	180.10	10,387.1	-2,178.9	343.4	2.65	-2.63	0.32	-10.0	-13.8	
12,596.0	87.50	179.90	10,389.3	-2,272.9	343.4	2.46	-2.45	-0.21	-8.7	-14.6	
12,691.0	87.30	178.60	10,393.6	-2,367.7	344.7	1.38	-0.21	-1.37	-5.3	-14.3	
12,786.0	90.80	178.20	10,395.4	-2,462.6	349.0	4.29	3.47	-2.53	-4.5	-10.8	
12,880.0	91.50	174.90	10,393.6	-2,556.3	356.3	1.68	0.96	-1.38	-7.1	-4.4	
12,975.0	90.80	177.70	10,391.7	-2,651.1	362.4	3.04	-0.74	2.95	-9.9	0.9	
13,070.0	90.70	177.60	10,390.5	-2,746.0	366.3	0.15	-0.11	-0.11	-12.1	3.9	
13,164.0	90.70	177.90	10,389.3	-2,839.9	370.0	0.32	0.00	0.32	-14.1	6.7	



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13,259.0	89.80	179.60	10,388.8	-2,934.9	372.1	2.02	-0.95	1.79	-15.5	7.9	
13,354.0	90.90	179.70	10,388.3	-3,029.9	372.7	1.16	1.16	0.11	-17.0	7.6	
13,448.0	88.50	180.60	10,388.8	-3,123.9	372.4	2.73	-2.55	0.96	-17.4	6.5	
13,530.9	88.67	180.51	10,390.9	-3,206.7	371.6	0.24	0.21	-0.11	-16.1	5.0	
TGT 2 (Fearless 23 Fed Com #507H)											
13,543.0	88.70	180.50	10,391.2	-3,218.8	371.5	0.24	0.21	-0.11	-16.0	4.8	
13,637.0	87.80	180.10	10,394.0	-3,312.8	371.0	1.05	-0.96	-0.43	-14.8	3.4	
13,731.0	88.70	179.90	10,396.9	-3,406.7	371.0	0.98	0.96	-0.21	-13.7	2.6	
13,826.0	90.80	180.30	10,397.3	-3,501.7	370.8	2.25	2.21	0.42	-15.0	1.5	
13,920.0	88.80	179.80	10,397.6	-3,595.7	370.7	2.07	-2.02	-0.43	-16.5	0.5	
14,014.0	89.50	179.70	10,398.9	-3,689.7	371.0	0.67	0.64	-0.21	-16.9	0.0	
14,108.0	88.90	179.60	10,400.2	-3,783.7	371.6	0.65	-0.64	-0.11	-17.3	-0.3	
14,203.0	89.00	179.40	10,401.9	-3,878.7	372.4	0.24	0.11	-0.21	-17.3	-0.4	
14,297.0	86.70	178.00	10,405.4	-3,972.8	374.5	2.88	-2.45	-1.49	-15.5	0.9	
14,391.0	87.60	179.50	10,410.1	-4,066.5	376.6	1.86	0.96	1.60	-12.5	2.1	
14,486.0	88.20	180.00	10,413.6	-4,161.4	377.0	0.82	0.63	0.53	-10.8	1.6	
14,580.0	91.10	179.60	10,414.2	-4,255.4	377.3	3.11	3.09	-0.43	-11.9	1.1	
14,674.0	93.40	180.00	10,410.5	-4,349.3	377.7	2.48	2.45	0.43	-17.3	0.8	
14,768.0	91.70	180.30	10,406.3	-4,443.2	377.4	1.84	-1.81	0.32	-23.2	-0.5	
14,863.0	89.50	180.30	10,405.3	-4,538.2	378.9	2.32	-2.32	0.00	-26.0	-1.9	
14,958.0	87.70	180.90	10,407.6	-4,633.2	375.9	2.00	-1.89	0.63	-25.4	-3.7	
15,052.0	87.60	180.10	10,411.5	-4,727.1	375.1	0.86	-0.11	-0.85	-23.2	-5.4	
15,147.0	87.60	180.10	10,415.5	-4,822.0	374.9	0.00	0.00	0.00	-21.0	-6.5	
15,241.0	87.20	179.60	10,419.7	-4,915.9	375.2	0.68	-0.43	-0.53	-18.5	-7.1	
15,336.0	89.00	179.50	10,422.9	-5,010.8	375.9	1.90	1.89	-0.11	-17.1	-7.2	
15,430.0	88.10	178.50	10,424.4	-5,104.8	377.6	1.07	0.11	-1.06	-17.2	-6.4	
15,525.0	89.00	178.30	10,426.0	-5,199.7	380.2	0.24	-0.11	-0.21	-17.4	-4.8	



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #507H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3456.0usft
Site:	Fearless 23 Fed Com	MD Reference:	KB = 25' @ 3456.0usft
Well:	#507H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)
15,619.0	89.00	178.00	10,427.7	-5,293.7	383.2	0.32	0.00	-0.32	-17.5	-2.5
15,714.0	89.30	177.20	10,428.1	-5,388.6	387.2	0.90	0.32	-0.84	-17.8	0.6
15,809.0	90.50	178.90	10,429.2	-5,483.5	380.5	2.19	1.28	1.79	-19.4	3.0
15,903.0	90.40	179.70	10,428.5	-5,577.5	391.6	0.88	-0.11	0.85	-21.8	3.3
15,997.0	89.50	180.10	10,428.8	-5,671.5	391.8	1.05	-0.96	0.43	-23.5	2.6
16,092.0	89.50	179.80	10,429.4	-5,766.5	391.9	0.32	0.00	-0.32	-24.4	1.8
16,186.0	87.30	180.30	10,432.0	-5,860.5	391.8	2.40	-2.34	0.53	-23.5	0.9
16,281.0	88.90	180.10	10,435.2	-5,955.4	391.4	1.70	1.68	-0.21	-22.1	-0.3
16,375.0	89.20	180.00	10,436.7	-6,049.4	391.4	0.34	0.32	-0.11	-22.2	-1.2
16,469.0	90.10	179.60	10,437.3	-6,143.4	391.7	1.05	0.96	-0.43	-23.4	-1.8
16,564.0	90.70	179.20	10,436.6	-6,238.4	392.7	0.76	0.63	-0.42	-25.8	-1.7
16,659.0	90.50	179.20	10,435.6	-6,333.4	394.0	0.21	-0.21	0.00	-28.5	-1.2
16,753.0	89.70	180.20	10,435.5	-6,427.4	394.5	1.36	-0.85	1.06	-30.4	-1.6
16,848.0	89.31	180.40	10,436.0	-6,489.3	394.2	0.71	-0.63	0.32	-31.0	-2.4
TGT 3 (Fearless 23 Fed Com #507H)										
16,848.0	89.10	180.50	10,436.5	-6,522.4	393.9	0.71	-0.63	0.32	-31.3	-3.0
16,942.0	88.10	181.00	10,438.8	-6,616.3	392.7	1.19	-1.06	0.53	-31.3	-5.1
17,037.0	88.50	181.20	10,441.6	-6,711.3	390.9	0.47	0.42	0.21	-30.9	-7.8
17,131.0	89.40	180.90	10,443.3	-6,805.2	389.1	1.01	0.96	-0.32	-31.5	-10.3
17,225.0	87.60	180.30	10,445.8	-6,899.2	388.2	2.02	-1.91	-0.64	-31.4	-12.2
17,320.0	87.50	179.50	10,449.8	-6,994.1	388.3	0.85	-0.11	-0.84	-29.7	-12.9
17,414.0	90.20	179.40	10,451.7	-7,088.1	389.2	2.87	2.87	-0.11	-30.1	-12.9
17,508.0	88.10	178.90	10,453.1	-7,182.0	390.6	2.30	-2.23	-0.53	-31.1	-12.3
17,603.0	89.10	178.40	10,455.4	-7,277.0	382.9	1.18	1.05	-0.53	-31.1	-11.0
17,697.0	88.90	178.20	10,458.7	-7,370.9	395.6	2.35	-2.34	-0.21	-30.2	-9.1
17,792.0	86.50	178.10	10,464.2	-7,465.7	398.7	0.43	-0.42	-0.11	-27.1	-6.9
17,886.0	87.50	178.00	10,469.1	-7,559.5	401.9	1.07	1.06	-0.11	-24.5	-4.5



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #507H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3456.0usft
Site:	Fearless 23 Fed Com	MD Reference:	KB = 25' @ 3456.0usft
Well:	#507H	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)	
17,980.0	88.20	177.80	10,472.6	-7,653.4	405.3	0.77	0.74	-0.21	-23.3	-1.9	
18,074.0	89.40	177.50	10,474.6	-7,747.3	409.2	1.32	1.28	-0.32	-23.7	1.1	
18,168.0	90.80	179.00	10,474.4	-7,841.2	412.1	2.18	1.49	1.60	-26.2	3.1	
18,263.0	89.10	179.20	10,474.5	-7,936.2	413.6	1.80	-1.79	0.21	-28.5	3.7	
18,358.0	88.90	179.50	10,478.2	-8,031.2	414.6	0.38	-0.21	0.32	-29.2	3.9	
18,452.0	89.90	180.10	10,477.2	-8,125.2	415.0	1.24	1.06	0.64	-30.6	3.4	
18,547.0	86.70	179.60	10,480.0	-8,220.1	415.2	3.41	-3.37	-0.53	-30.1	2.8	
18,641.0	86.60	179.80	10,485.5	-8,314.0	415.7	0.24	-0.11	0.21	-27.0	2.4	
18,735.0	87.40	179.40	10,490.4	-8,407.8	416.4	0.95	0.85	-0.43	-24.4	2.2	
18,830.0	88.00	179.60	10,494.2	-8,502.7	417.2	0.67	0.63	0.21	-22.9	2.2	
18,924.0	88.50	179.80	10,497.1	-8,596.7	417.7	0.57	0.53	0.21	-22.4	1.8	
19,019.0	88.90	179.60	10,499.2	-8,691.7	418.2	0.47	0.42	-0.21	-22.6	1.4	
19,113.0	88.40	179.30	10,501.4	-8,785.6	419.1	0.62	-0.53	-0.32	-22.7	1.5	
19,207.0	90.00	179.40	10,502.8	-8,879.6	420.1	1.71	1.70	0.11	-23.8	1.7	
19,301.0	87.20	178.20	10,505.1	-8,973.6	422.1	3.24	-2.98	-1.28	-23.8	2.8	
19,396.0	89.80	178.70	10,507.5	-9,068.5	424.7	2.79	2.74	0.53	-23.7	4.5	
19,490.0	91.00	179.00	10,508.9	-9,162.5	426.6	1.32	1.28	0.32	-26.7	5.5	
19,585.0	90.00	179.70	10,506.1	-9,257.5	427.6	1.28	-1.05	0.74	-29.9	5.7	
19,680.0	88.10	181.00	10,507.6	-9,352.4	427.1	2.42	-2.00	1.37	-30.7	4.3	
19,774.0	88.70	180.90	10,510.3	-9,448.4	425.5	0.65	0.84	-0.11	-30.4	1.9	
19,869.0	87.50	181.00	10,513.4	-9,541.3	423.9	1.27	-1.28	0.11	-29.6	-0.6	
19,964.0	87.70	180.30	10,517.4	-9,636.2	422.9	0.77	0.21	-0.74	-28.0	-2.5	
20,058.0	88.70	179.80	10,520.3	-9,730.2	422.8	1.19	1.06	-0.53	-27.4	-3.5	
20,153.0	89.80	179.20	10,521.7	-9,825.2	423.6	1.14	0.95	-0.63	-28.4	-3.5	
20,247.0	90.80	178.30	10,521.3	-9,919.1	425.7	1.68	1.38	-0.96	-31.1	-2.3	
20,342.0	91.80	177.30	10,519.1	-10,014.0	429.3	1.42	0.95	-1.05	-35.7	0.4	



Final PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Fearless 23 Fed Com
Well: #507H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #507H
TVD Reference: KB = 25' @ 3456.0usft
MD Reference: KB = 25' @ 3456.0usft
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)	EA (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
20,402.0	92.70	177.10	10,516.7	-10,073.9	432.2	1.54	1.50	-0.33	-39.6	2.8
Final MWD Survey (MD=20402.0')										
20,480.0	92.70	177.10	10,514.0	-10,131.8	435.2	0.00	0.00	0.00	-43.7	5.2
Final Projection to Bit (MD=20460.0') - PBHL (Fearless 23 Fed Com #507H)										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+EAW (usft)	
9,945.7	9,919.2	202.5	294.3	HL Crossing, MD:9945.7', TVD:9919.2', N/S:202.5', EAW:294.3', INC:24.99
20,402.0	10,516.7	-10,073.9	432.2	Final MWD Survey (MD=20402.0')
20,480.0	10,514.0	-10,131.8	435.2	Final Projection to Bit (MD=20460.0')

Checked By: _____

Approved By: _____

Date: _____

I certify this survey to be true and correct to the best of my belief and knowledge.

Signed Kay Maddox Date 12/10/2019



Lea County, NM (NAD 83 NME)

Fearless 23 Fed Com #507H

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: #507H

KB = 25' @ 3458.0usf 3431.0
Northing 408945.00 Easting 752235.00 Latitude 32° 7' 20.770 N Longitude 103° 39' 7.534 W

To convert a Magnetic Direction to a Grid Direction, Add 6.41°
To convert a Magnetic Direction to a True Direction, Add 6.77° East
To convert a True Direction to a Grid Direction, Subtract 0.36°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2815.0	0.00	0.00	2815.0	0.0	0.0	0.00	0.00	0.0	
3	3114.9	8.00	52.94	3114.3	9.5	12.5	2.00	52.94	-8.9	
4	6832.8	8.00	52.94	6811.7	243.5	322.5	0.00	0.00	-229.7	
5	7132.4	0.00	0.00	7111.0	253.0	335.0	2.00	180.00	-236.6	
6	8834.5	0.00	0.00	8813.1	253.0	335.0	0.00	0.00	-236.6	
7	10733.9	89.93	179.48	10386.1	-319.3	340.2	10.00	179.48	333.4	KOP (Fearless 23 Fed Com #507H)
8	11525.9	89.93	179.48	10387.0	-1111.3	347.5	0.00	0.00	1125.0	TGT 1 (Fearless 23 Fed Com #507H)
9	11550.0	89.45	179.48	10387.1	-1135.4	347.7	2.00	180.00	1149.1	
10	13621.1	89.45	179.48	10407.0	-3206.3	368.6	0.00	0.00	3219.0	TGT 2 (Fearless 23 Fed Com #507H)
11	13646.1	88.95	179.48	10407.3	-3231.3	368.8	2.00	-180.00	3243.9	
12	16904.5	88.95	179.48	10487.0	-6489.0	396.6	0.00	0.00	6500.0	TGT 3 (Fearless 23 Fed Com #507H)
13	16923.5	88.57	179.48	10467.4	-6508.0	396.8	2.00	180.00	6518.9	
14	20557.8	88.57	179.48	10558.0	-10141.0	430.0	0.00	0.00	10150.1	PBHL (Fearless 23 Fed Com #507H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
KOP (Fearless 23 Fed Com #507H)	8813.1	253.0	335.0	408945.00	752235.00
TGT 1 (Fearless 23 Fed Com #507H)	10387.0	-1111.3	347.5	407933.70	752235.00
TGT 2 (Fearless 23 Fed Com #507H)	10407.0	-3206.3	368.6	407728.70	752235.00
TGT 3 (Fearless 23 Fed Com #507H)	10487.0	-6489.0	396.6	407438.70	752235.00
PBHL (Fearless 23 Fed Com #507H)	10558.0	-10141.0	430.0	406948.00	752235.00
FTP (Fearless 23 Fed Com #507H)	10688.0	253.0	335.0	409148.00	752235.00

