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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Red Raider 25 State Com

#501H

OH

Design: OH

Final PVA Report

26 August, 2019



Final PVA Report

Company: EOG Resources - Midland Project: Lea County, NM (NAD 83 NME) Site: Red Raider 25 State Com Well: #501H Wellbore: OH Design: OH		Local Co-ordinate Reference: TVD Reference: KB = 32 @ 3537.0usft MD Reference: KB = 32 @ 3537.0usft 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 Red Raider 25 State Com			
Site Position: From: Map Position Uncertainty: 0.0 usft		Northing: 430,888.00 usft Easting: 792,872.00 usft Slot Radius: 13-3/16 "	
		Latitude: 32° 10' 54.895 N Longitude: 103° 31' 13.091 W Grid Convergence: 0.43 °	
Well #501H			
Well Position +N-S 0.0 usft +E-W 0.0 usft Position Uncertainty 0.0 usft		Northing: 430,851.00 usft Easting: 792,741.00 usft Wellhead Elevation: usft	
		Latitude: 32° 10' 54.756 N Longitude: 103° 31' 14.616 W Ground Level: 3,505.0 usft	
Wellbore OH			
Magnetics			
Model Name	Sample Date	Declination (°)	Dip Angle (°)
IGRF2015	1/30/2019	6.75	60.01
Field Strength (nT) 47,751.09633705			
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	353.46
Survey Program			
Date 8/28/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
243.0	21,378.0	Leam MWD #1 (OH)	MWD
		Description	
		OWSG MWD - Standard	



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Site:	Red Raider 25 State Com	MD Reference:	KB = 32 @ 3537.0usft
Well:	#501H	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)	DLog ("/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
243.0	0.50	218.00	243.0	-0.8	-0.7	0.21	0.21	0.00	-1.1	0.0	
423.0	0.50	181.10	423.0	-2.2	-1.2	0.18	0.00	-20.50	-2.3	-1.1	
605.0	0.50	134.20	605.0	-3.6	-0.6	0.22	0.00	-25.77	-2.1	-3.0	
786.0	0.10	123.60	786.0	-4.3	0.1	0.21	-0.21	-5.55	-2.5	-3.5	
983.0	0.10	320.50	983.0	-4.2	0.2	0.11	0.00	-87.22	3.4	2.6	
1,173.0	0.30	15.20	1,173.0	-3.6	0.2	0.13	0.11	28.79	3.4	-1.1	
1,268.0	0.20	58.50	1,268.0	-3.3	0.4	0.21	-0.11	44.41	1.5	-3.0	
1,349.0	0.40	326.60	1,349.0	-3.0	0.4	0.54	0.24	-108.31	2.7	1.3	
1,443.0	2.40	285.20	1,442.9	-2.2	-1.7	2.25	2.13	-44.04	-0.4	2.3	
1,537.0	4.60	282.50	1,536.8	-0.8	-7.3	2.35	2.34	-2.87	-2.9	1.0	
1,630.0	6.90	273.60	1,629.3	0.3	-16.5	2.65	2.47	-9.57	-5.8	-1.1	
1,724.0	8.70	269.30	1,722.4	0.6	-29.3	2.01	1.91	-4.57	-8.7	-2.9	
1,817.0	9.80	265.10	1,814.2	-0.2	-44.2	1.39	1.18	-4.52	-10.8	-4.2	
1,911.0	9.60	268.40	1,908.9	-1.4	-60.0	0.32	-0.21	1.38	-11.1	-4.5	
2,005.0	9.30	267.20	1,999.6	-2.2	-75.4	0.35	-0.32	0.85	-10.3	-5.1	
2,100.0	10.40	266.40	2,093.2	-3.1	-91.6	1.17	1.16	-0.84	-10.0	-6.1	
2,287.0	10.60	262.30	2,277.1	-6.5	-125.5	0.41	0.11	-2.19	-11.1	-7.0	
2,475.0	10.50	262.00	2,461.9	-11.2	-159.6	0.06	-0.05	-0.16	-12.9	-8.0	
2,663.0	9.80	263.00	2,646.9	-15.5	-192.4	0.38	-0.37	0.53	-13.5	-5.0	
2,852.0	9.30	267.40	2,833.3	-18.2	-223.7	0.47	-0.28	2.33	-12.3	-4.7	
3,041.0	9.40	262.70	3,019.8	-20.8	-254.2	0.41	0.05	-2.49	-9.7	-6.2	
3,229.0	9.50	263.20	3,205.3	-24.6	-284.9	0.07	0.05	0.27	-8.0	-5.5	
3,417.0	11.30	262.30	3,390.2	-28.9	-318.5	0.96	0.96	-0.48	-9.2	-4.9	
3,606.0	9.70	258.80	3,576.0	-34.5	-352.5	0.91	-0.85	-1.85	-10.6	-3.8	
3,794.0	9.70	268.90	3,781.3	-38.4	-383.9	0.73	0.00	4.31	-9.9	-1.6	
3,983.0	9.50	265.80	3,947.7	-40.4	-415.3	0.14	-0.11	-0.58	-8.6	-3.1	



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Site:	Red Raider 25 State Com	MD Reference:	KB = 32 @ 3537.0usft
Well:	#501H	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)	
4,170.0	11.70	260.00	4,131.5	-44.9	-449.4	1.31	1.18	-3.10	-10.1	-3.2	
4,358.0	9.30	261.10	4,316.3	-50.5	-483.2	1.28	-1.28	0.59	-11.9	-1.0	
4,546.0	6.00	254.90	4,502.6	-55.4	-507.7	1.81	-1.78	-3.30	-4.3	1.2	
4,734.0	7.80	250.50	4,689.2	-62.3	-529.2	1.00	0.96	-2.34	4.9	7.7	
4,922.0	6.20	240.00	4,875.8	-71.6	-550.0	1.09	-0.85	-5.59	10.7	19.5	
5,109.0	4.30	220.80	5,062.1	-82.0	-563.3	1.37	-1.02	-10.27	11.0	40.8	
5,208.0	3.90	215.00	5,160.8	-87.5	-567.7	0.58	-0.40	-5.86	11.1	54.3	
5,302.0	5.60	239.50	5,254.5	-92.5	-573.5	2.78	1.81	26.06	40.0	52.9	
5,335.9	7.53	246.99	5,288.2	-94.2	-576.9	6.21	5.68	22.07	48.4	49.2	
AC Tgt(RR 25 St Com #501H)											
5,396.0	11.10	253.70	5,347.5	-97.3	-586.1	6.21	5.95	11.17	54.9	45.3	
5,489.0	13.50	264.40	5,438.3	-100.9	-605.5	3.55	2.58	11.51	61.2	34.4	
5,583.0	14.30	272.00	5,529.6	-101.6	-628.0	2.12	0.85	8.09	61.5	22.9	
5,677.0	14.30	271.10	5,620.7	-101.0	-651.2	0.24	0.00	-0.96	56.8	19.3	
5,865.0	13.80	270.00	5,803.1	-100.5	-696.9	0.30	-0.27	-0.59	48.8	11.8	
6,054.0	15.00	264.40	5,986.1	-102.9	-743.8	0.97	0.63	-2.96	39.2	9.8	
6,242.0	14.70	263.40	6,167.9	-108.0	-791.7	0.21	-0.16	-0.53	29.4	6.3	
6,430.0	13.60	260.70	6,350.1	-114.3	-837.2	0.68	-0.59	-1.44	21.9	4.7	
6,617.0	12.90	260.00	6,532.2	-121.5	-879.4	0.38	-0.37	-0.37	17.6	3.3	
6,807.0	12.40	259.30	6,717.6	-129.0	-920.4	0.28	-0.26	-0.37	15.2	2.4	
6,994.0	12.30	259.30	6,900.2	-136.4	-959.7	0.05	-0.05	0.00	13.9	1.5	
7,182.0	11.30	259.50	7,084.3	-143.5	-997.5	0.53	-0.53	0.11	14.5	0.4	
7,370.0	7.00	265.10	7,269.8	-147.8	-1,027.0	2.33	-2.29	2.98	22.2	-3.8	
7,559.0	5.70	263.00	7,457.7	-149.9	-1,047.8	0.70	-0.69	-1.11	28.7	-5.9	
7,746.0	2.50	295.40	7,644.2	-149.3	-1,060.7	2.05	-1.71	17.33	20.9	-24.4	
7,877.7	1.69	280.69	7,775.7	-147.7	-1,065.2	0.73	-0.62	-11.17	24.5	-20.2	
Brushy Top(RR 25 St Com #501H)											



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Well:	#501H	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)	
7,935.0	1.40	269.30	7,833.1	-147.6	-1,068.7	0.73	-0.51	-19.86	28.5	-15.1	
8,123.0	1.80	251.90	8,021.0	-148.5	-1,071.8	0.33	0.21	-9.28	24.6	-7.2	
8,311.0	1.60	241.00	8,208.9	-150.7	-1,076.9	0.20	-0.11	-5.80	20.0	-3.0	
8,499.0	1.60	243.50	8,396.8	-153.2	-1,081.6	0.04	0.00	1.33	14.6	-3.7	
8,688.0	1.80	234.50	8,585.8	-155.9	-1,086.1	0.13	0.00	-4.78	9.8	-1.8	
8,876.0	1.40	230.50	8,773.7	-158.9	-1,090.0	0.12	-0.11	-2.13	5.0	-1.3	
9,064.0	1.50	235.60	8,961.8	-161.7	-1,093.8	0.09	0.05	2.71	0.1	-1.5	
9,251.0	1.40	246.50	9,148.6	-164.0	-1,097.9	0.16	-0.05	5.83	-4.9	-1.0	
9,438.0	1.10	246.70	9,333.5	-165.6	-1,101.6	0.16	-0.16	0.11	-8.9	-1.0	
9,624.0	1.40	253.80	9,521.5	-166.9	-1,105.5	0.18	0.16	3.83	-13.1	0.3	
9,812.0	1.10	327.40	9,709.5	-168.1	-1,108.7	0.81	-0.16	39.10	-5.9	14.8	
10,000.0	1.00	323.00	9,897.4	-163.2	-1,110.6	0.07	-0.05	-2.34	-10.4	14.2	
10,188.0	1.20	335.30	10,085.4	-160.1	-1,112.4	0.16	0.11	6.54	-10.7	16.5	
10,376.0	1.30	351.80	10,273.3	-156.2	-1,113.6	0.20	0.05	8.78	-9.6	19.4	
10,564.0	2.10	313.30	10,461.3	-151.8	-1,116.4	0.72	0.43	-20.48	-24.7	7.9	
10,677.0	7.80	356.00	10,573.8	-142.7	-1,118.4	5.68	5.04	37.79	-21.9	24.0	
10,771.0	14.80	355.10	10,665.9	-124.3	-1,119.9	7.56	7.55	-0.96	-32.8	24.2	
10,810.2	17.34	356.70	10,703.6	-113.4	-1,120.7	6.32	6.22	4.09	-35.0	25.7	
HL Crossing, MD:10810.2', TVD:10703.6', N/S:-113.4', E/W:-1120.7', INC:17.34											
10,864.0	20.70	358.30	10,754.4	-95.9	-1,121.4	6.32	6.25	2.97	-36.3	27.1	
10,859.0	27.90	353.70	10,841.0	-57.0	-1,124.3	7.83	7.58	-4.84	-37.3	27.3	
11,006.0	30.90	351.60	10,881.9	-34.1	-1,127.3	6.75	6.38	-4.47	-35.8	28.4	
11,052.0	32.40	356.40	10,921.1	-10.1	-1,129.8	6.37	3.26	10.43	-29.0	34.5	
11,099.0	38.50	357.40	10,959.4	17.1	-1,131.3	13.04	12.98	2.13	-23.0	36.3	
11,145.0	45.50	357.10	10,993.5	47.8	-1,132.8	15.22	15.22	-0.65	-19.2	37.6	
FTP(RR 25 St Com #501H)											
11,192.0	52.10	358.50	11,024.5	83.2	-1,134.1	14.22	14.04	2.98	-16.1	39.0	



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Well:	#501H	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)		
11,239.0	57.50	2.30	11,051.5	121.5	-1,133.8	13.25	11.49	8.09	-13.2	38.9		
11,286.0	60.60	5.10	11,075.7	161.7	-1,131.2	8.34	6.60	5.98	-10.6	36.2		
11,332.0	68.10	2.90	11,095.6	203.1	-1,128.3	16.86	16.30	-4.78	-10.1	32.7		
11,379.0	74.50	0.90	11,110.7	247.5	-1,126.8	14.20	13.62	-4.26	-11.0	30.7		
11,426.0	76.90	0.80	11,122.3	293.1	-1,126.2	5.11	5.11	-0.21	-11.1	29.7		
11,473.0	78.80	3.40	11,131.8	339.1	-1,124.5	8.21	6.17	5.53	-9.2	27.7		
11,519.0	80.90	3.40	11,139.5	384.3	-1,121.8	2.39	2.39	0.00	-5.4	24.6		
11,566.0	82.70	2.70	11,146.2	430.8	-1,119.3	4.10	3.83	-1.49	0.9	21.7		
11,614.0	85.50	2.70	11,151.1	478.5	-1,117.1	5.83	5.83	0.00	6.5	19.1		
11,709.0	93.00	1.30	11,152.4	573.3	-1,113.7	8.03	7.89	-1.47	9.4	15.1		
11,803.0	94.10	0.60	11,146.6	667.2	-1,112.2	1.39	1.17	-0.74	5.2	12.8		
11,898.0	93.00	2.50	11,140.7	761.9	-1,109.6	2.31	-1.16	2.00	1.0	9.5		
11,992.0	89.40	4.80	11,138.7	855.7	-1,103.6	4.54	-3.83	2.45	0.7	2.8		
12,086.0	88.90	4.30	11,140.1	949.4	-1,098.2	0.75	-0.53	-0.53	3.7	-5.4		
12,180.0	88.20	3.90	11,142.5	1,043.1	-1,089.5	0.86	-0.74	-0.43	7.7	-12.8		
12,273.0	90.90	3.20	11,143.2	1,135.9	-1,083.7	3.00	2.90	-0.75	10.1	-19.3		
12,367.0	88.50	2.50	11,142.9	1,229.8	-1,079.0	1.67	-1.49	-0.74	11.4	-24.7		
12,461.0	90.80	0.20	11,142.6	1,323.8	-1,076.8	2.81	1.38	-2.45	12.8	-27.6		
12,555.0	91.50	359.30	11,140.7	1,417.7	-1,077.2	1.21	0.74	-0.96	12.5	-27.9		
12,649.0	91.10	359.50	11,138.8	1,511.7	-1,078.2	0.48	-0.43	0.21	12.1	-27.7		
12,743.0	90.80	358.60	11,137.1	1,605.7	-1,079.8	1.01	-0.32	-0.96	12.1	-26.8		
12,838.0	92.50	357.90	11,134.3	1,700.6	-1,082.7	1.94	1.79	-0.74	11.0	-24.7		
12,932.0	92.60	358.10	11,130.1	1,794.5	-1,085.9	0.24	0.11	0.21	8.5	-22.1		
13,024.6	92.21	357.90	11,126.2	1,886.9	-1,089.2	0.47	-0.42	-0.21	6.2	-19.6		
TOT#1(RR 25 St Com #501H)												
13,027.0	92.20	357.90	11,126.2	1,889.3	-1,089.3	0.47	-0.42	-0.21	6.2	-19.5		
13,120.0	92.00	357.90	11,122.7	1,982.2	-1,092.7	0.22	-0.22	0.00	4.2	-16.8		



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Well:	#501H	North Reference:	Grid
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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)
13,213.0	91.10	357.20	11,120.2	2,075.1	-1,098.6	1.23	-0.97	-0.75	3.1	-13.6
13,307.0	90.40	357.10	11,119.0	2,168.9	-1,101.3	0.75	-0.74	-0.11	3.2	-9.6
13,402.0	89.60	356.70	11,119.0	2,263.8	-1,106.5	0.94	-0.84	-0.42	4.6	-5.2
13,496.0	91.00	357.10	11,118.5	2,357.7	-1,111.5	1.55	1.49	0.43	5.6	-0.8
13,590.0	92.30	357.90	11,115.8	2,451.5	-1,115.6	1.62	1.38	0.85	4.2	2.5
13,684.0	92.60	359.30	11,111.8	2,545.4	-1,117.9	1.52	0.32	1.49	1.6	4.1
13,778.0	92.00	359.30	11,109.0	2,639.3	-1,119.1	0.84	-0.64	0.00	-0.7	4.5
13,870.0	91.60	359.30	11,105.1	2,731.3	-1,120.2	0.43	-0.43	0.00	-2.3	4.9
13,965.0	91.80	359.30	11,102.3	2,826.2	-1,121.4	0.21	0.21	0.00	-3.7	5.4
14,059.0	91.50	359.30	11,099.6	2,920.2	-1,122.5	0.32	-0.32	0.00	-5.0	5.8
14,154.0	91.00	359.20	11,097.5	3,015.2	-1,123.7	0.54	-0.53	-0.11	-5.6	6.3
14,249.0	90.20	358.60	11,096.5	3,110.1	-1,125.6	1.05	-0.84	-0.63	-5.2	7.4
14,343.0	89.30	357.90	11,096.9	3,204.1	-1,128.4	1.21	-0.96	-0.74	-3.4	9.5
14,437.0	88.20	358.50	11,099.0	3,298.0	-1,131.4	1.33	-1.17	0.64	0.0	11.8
14,531.0	89.30	0.00	11,101.0	3,392.0	-1,132.6	1.98	1.17	1.60	3.5	12.3
14,624.0	88.50	0.90	11,102.8	3,485.0	-1,131.9	1.29	-0.86	0.97	6.7	10.8
14,718.0	90.20	0.90	11,103.9	3,579.9	-1,130.4	1.79	1.79	0.00	9.2	8.6
14,814.0	91.60	0.40	11,102.4	3,674.9	-1,129.3	1.58	1.47	-0.53	9.1	6.8
14,907.0	93.30	359.70	11,098.4	3,767.8	-1,129.2	1.98	1.83	-0.75	6.5	6.0
15,002.0	92.80	359.00	11,093.4	3,862.7	-1,130.3	0.90	-0.53	-0.74	2.9	6.3
15,036.5	92.36	358.56	11,091.8	3,897.2	-1,131.1	1.79	-1.26	-1.26	1.8	6.8
TOT#2(RR 25 St Com #501H)										
15,097.0	91.60	357.80	11,089.7	3,957.6	-1,133.0	1.79	-1.26	-1.26	0.3	8.3
15,191.0	91.00	357.40	11,087.6	4,051.5	-1,136.9	0.77	-0.84	-0.43	-1.2	11.5
15,285.0	91.50	357.80	11,085.6	4,145.4	-1,140.8	0.68	0.53	0.43	-2.5	14.7
15,378.0	92.60	358.30	11,082.2	4,238.2	-1,144.0	1.30	1.18	0.54	-5.1	17.1
15,472.0	92.10	0.40	11,078.4	4,332.2	-1,145.1	2.29	-0.53	2.23	-8.3	17.5



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #501H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 32 @ 3537.0usft
Site:	Red Raider 25 State Com	MD Reference:	KB = 32 @ 3537.0usft
Well:	#501H	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)	
15,567.0	91.90	0.40	11,075.1	4,427.1	-1,144.4	0.21	-0.21	0.00	-10.9	16.1	
15,661.0	91.00	0.00	11,072.7	4,521.1	-1,144.1	1.05	-0.96	-0.43	-12.6	15.0	
15,755.0	90.50	359.70	11,071.4	4,615.1	-1,144.3	0.82	-0.53	-0.32	-13.1	14.6	
15,850.0	91.00	1.10	11,070.2	4,710.0	-1,143.7	1.56	0.53	1.47	-13.7	13.2	
15,944.0	90.70	1.10	11,068.6	4,804.0	-1,141.9	0.32	-0.32	0.00	-14.4	10.6	
16,038.0	90.10	1.10	11,068.2	4,898.0	-1,140.1	0.64	-0.64	0.00	-14.3	8.1	
16,132.0	91.60	1.10	11,066.8	4,992.0	-1,138.2	1.60	1.60	0.00	-15.0	5.6	
16,225.0	91.40	1.10	11,064.3	5,084.9	-1,136.5	0.22	-0.22	0.00	-16.8	3.1	
16,319.0	90.70	1.50	11,062.6	5,178.9	-1,134.3	0.86	-0.74	0.43	-17.8	0.2	
16,413.0	90.40	1.50	11,061.7	5,272.8	-1,131.9	0.32	-0.32	0.00	-18.0	-3.0	
16,508.0	89.60	1.50	11,061.7	5,367.8	-1,129.4	0.84	-0.84	0.00	-17.3	-6.2	
16,601.0	89.90	0.40	11,062.1	5,460.8	-1,127.8	1.23	0.32	-1.18	-16.2	-8.4	
16,695.0	90.30	0.00	11,061.9	5,554.8	-1,127.5	0.60	0.43	-0.43	-15.7	-9.5	
16,788.0	91.80	358.60	11,060.2	5,647.8	-1,128.6	2.21	1.61	-1.51	-16.7	-9.1	
16,882.0	91.40	358.10	11,057.6	5,741.7	-1,131.4	0.68	-0.43	-0.53	-16.6	-7.1	
16,976.0	91.70	358.10	11,055.1	5,835.6	-1,134.5	0.32	0.32	0.00	-20.5	-4.7	
17,048.7	91.39	358.80	11,053.1	5,908.2	-1,136.4	1.06	-0.43	0.97	-21.9	-3.3	
TGT#3(RR 25 St Com #501H)											
17,069.0	91.30	359.00	11,052.6	5,928.5	-1,136.8	1.06	-0.43	0.97	-22.2	-3.0	
17,164.0	90.50	358.80	11,051.1	6,023.5	-1,138.6	0.87	-0.84	-0.21	-22.7	-2.0	
17,258.0	90.30	359.00	11,050.5	6,117.5	-1,140.5	0.30	-0.21	0.21	-22.4	-0.9	
17,352.0	91.50	359.00	11,049.0	6,211.5	-1,142.1	1.28	1.28	0.00	-23.0	0.0	
17,446.0	91.90	358.60	11,046.2	6,305.4	-1,144.1	0.60	0.43	-0.43	-24.8	1.3	
17,540.0	91.60	358.50	11,043.4	6,399.3	-1,146.4	0.34	-0.32	-0.11	-26.8	2.9	
17,634.0	91.20	358.10	11,041.1	6,493.2	-1,149.2	0.60	-0.43	-0.43	-28.1	5.0	
17,728.0	90.90	358.50	11,039.3	6,587.2	-1,152.0	0.53	-0.32	0.43	-28.9	7.1	
17,822.0	91.60	358.50	11,037.3	6,681.1	-1,154.5	0.74	0.74	0.00	-30.0	8.8	



Final PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Red Raider 25 State Com
 Well: #501H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #501H
 TVD Reference: KB = 32 @ 3537.0usft
 MD Reference: KB = 32 @ 3537.0usft
 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)	EW (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
17,917.0	91.30	359.00	11,034.9	6,778.1	-1,156.5	0.61	-0.32	0.53	-31.5	10.2
18,010.0	91.10	359.70	11,032.9	6,869.1	-1,157.8	0.78	-0.22	0.75	-32.5	10.5
18,104.0	90.50	359.50	11,031.6	6,963.0	-1,158.3	0.67	-0.64	-0.21	-32.9	10.4
18,199.0	92.60	359.30	11,029.0	7,058.0	-1,159.2	2.22	2.21	-0.21	-34.5	10.7
18,293.0	91.30	359.50	11,025.8	7,151.9	-1,160.2	1.40	-1.38	0.21	-36.8	10.9
18,387.0	90.50	359.70	11,024.4	7,245.9	-1,160.9	0.88	-0.85	0.21	-37.3	10.9
18,481.0	92.80	359.90	11,021.7	7,339.9	-1,161.2	2.46	2.45	0.21	-39.1	10.5
18,576.0	92.20	0.20	11,017.5	7,434.8	-1,161.1	0.71	-0.63	0.32	-42.3	9.7
18,670.0	91.90	0.40	11,014.2	7,529.7	-1,160.8	0.38	-0.32	0.21	-44.7	8.5
18,764.0	91.40	0.40	11,011.5	7,622.7	-1,160.0	0.53	-0.53	0.00	-46.5	7.1
18,858.0	91.20	0.00	11,009.3	7,716.7	-1,159.7	0.48	-0.21	-0.43	-47.7	6.0
18,953.0	90.60	0.60	11,007.8	7,811.6	-1,159.2	0.89	-0.63	0.63	-48.2	4.8
19,047.0	89.50	0.80	11,007.7	7,905.6	-1,158.0	1.19	-1.17	0.21	-47.4	2.9
19,061.0	89.79	0.82	11,007.8	7,919.7	-1,157.8	2.05	2.04	0.11	-47.2	2.6
TGT#4(RR 25 St Com #501H)										
19,140.0	91.40	0.90	11,007.0	7,998.6	-1,156.6	2.05	2.04	0.11	-46.7	0.8
19,235.0	90.70	1.30	11,005.3	8,093.6	-1,154.8	0.85	-0.74	0.42	-46.8	-1.7
19,328.0	91.10	1.50	11,003.8	8,186.5	-1,152.5	0.48	0.43	0.22	-46.6	-4.7
19,423.0	90.60	1.60	11,002.4	8,281.5	-1,150.0	0.54	-0.53	0.11	-46.4	-8.0
19,517.0	90.00	1.60	11,001.9	8,375.5	-1,147.3	0.64	-0.64	0.00	-45.3	-11.4
19,611.0	91.90	0.80	11,000.4	8,469.4	-1,145.4	2.19	2.02	-0.85	-45.2	-14.1
19,705.0	91.60	0.90	10,997.5	8,563.4	-1,144.0	0.34	-0.32	0.11	-46.4	-16.2
19,799.0	91.20	1.10	10,995.2	8,657.3	-1,142.3	0.48	-0.43	0.21	-47.1	-18.5
19,894.0	90.40	0.60	10,993.9	8,752.3	-1,140.9	0.99	-0.84	-0.53	-46.8	-20.7
19,988.0	90.50	359.90	10,993.1	8,846.3	-1,140.5	0.75	0.11	-0.74	-45.9	-21.8
20,082.0	89.60	0.40	10,993.0	8,940.3	-1,140.3	1.10	-0.96	0.53	-44.4	-22.8
20,176.0	91.20	359.20	10,992.4	9,034.3	-1,140.6	2.13	1.70	-1.28	-43.4	-23.2



Final PVA Report

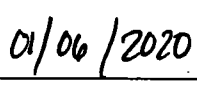
Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #501H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 32 @ 3537.0usft
Site:	Red Raider 25 State Com	MD Reference:	KB = 32 @ 3537.0usft
Well:	#501H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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)
20,270.0	91.10	358.60	10,990.5	9,128.3	-1,142.4	0.65	-0.11	-0.64	-43.7	-22.1
20,365.0	93.10	357.90	10,987.0	9,223.1	-1,145.3	2.23	2.11	-0.74	-45.5	-19.9
20,459.0	91.50	357.40	10,983.2	9,317.0	-1,149.2	1.78	-1.70	-0.53	-47.6	-16.7
20,553.0	90.70	357.20	10,981.4	9,410.9	-1,153.6	0.88	-0.85	-0.21	-47.8	-13.0
20,646.0	92.50	357.40	10,978.8	9,503.7	-1,158.0	1.95	1.94	0.22	-48.8	-9.4
20,740.0	92.20	357.60	10,975.0	9,597.5	-1,162.1	0.38	-0.32	0.21	-51.0	-6.0
20,833.0	91.60	357.80	10,971.9	9,690.4	-1,165.8	0.88	-0.65	0.22	-52.5	-3.0
20,927.0	90.70	357.60	10,970.0	9,784.3	-1,169.6	0.98	-0.96	-0.21	-52.8	0.1
21,021.0	90.60	357.80	10,969.0	9,878.2	-1,173.3	0.24	-0.11	0.21	-52.2	3.1
21,115.0	89.60	357.40	10,968.8	9,972.2	-1,177.3	1.15	-1.06	-0.43	-50.7	6.3
21,209.0	88.80	356.80	10,970.1	10,066.0	-1,181.9	1.00	-0.85	-0.53	-47.8	10.3
21,303.0	88.10	356.70	10,972.6	10,159.9	-1,187.2	0.77	-0.74	-0.21	-43.6	14.8
21,324.0	88.10	356.70	10,973.3	10,180.8	-1,188.4	0.00	0.00	0.00	-42.6	15.8
Final MWD Survey (MD=21324.0)										
21,376.0	88.10	356.70	10,975.1	10,232.7	-1,191.4	0.00	0.00	0.00	-39.9	18.4
Final Projection to Bit (MD=21376.0) - PBHL(RR 25 St Com #501H)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
10,810.2	10,703.6	-113.4	-1,120.7	HL Crossing, MD:10810.2, TVD:10703.6, N/S:-113.4, E/W:-1120.7, INC:17.34
21,324.0	10,973.3	10,180.8	-1,188.4	Final MWD Survey (MD=21324.0)
21,376.0	10,975.1	10,232.7	-1,191.4	Final Projection to Bit (MD=21376.0)

Checked By: _____ Approved By: _____ Date: _____

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

Signed _____ Date _____



Lea County, NM (NAD 83 NME)
Red Raider 25 State Com #501H
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: #501H

KB = 32 @ 3537.00ft
Northing 430851.00 Easting 792741.00
Latitude 32° 10' 54.758 N Longitude 103° 31' 14.816 W

SECTION DETAILS

Soc	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dlog	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1380.0	0.00	0.00	1380.0	0.0	0.0	0.00	0.00	0.0	
3	1880.2	10.00	263.98	1877.6	-4.8	-43.3	2.00	263.98	0.4	
4	5336.1	10.00	263.98	5281.0	-67.8	-640.3	0.00	0.00	5.8	AC Tgt(RR 25 St Com #501H)
5	5449.2	11.98	257.97	5392.1	-71.0	-681.5	2.00	-33.32	4.8	
6	7278.2	11.98	257.97	7181.4	-150.0	-1032.2	0.00	0.00	-31.5	Brushy Top(RR 25 St Com #501H)
7	7876.2	0.00	0.00	7775.0	-163.0	-1093.0	2.00	180.00	-37.5	
8	10674.0	0.00	0.00	10572.8	-163.0	-1093.0	0.00	0.00	-37.5	
9	11584.0	91.00	359.56	11145.7	-420.0	-1097.5	10.00	359.56	542.2	
10	13050.3	91.00	359.56	11120.0	1588.0	-1108.8	0.00	0.00	2000.0	
11	13057.7	90.85	359.56	11119.9	1893.4	-1108.8	2.00	180.00	2007.4	TGT#1(RR 25 St Com #501H)
12	15081.9	90.85	359.56	11080.0	3897.3	-1124.2	0.00	0.00	4000.0	TGT#2(RR 25 St Com #501H)
13	15083.3	90.42	359.56	11089.8	3918.8	-1124.2	2.00	-180.00	4021.3	
14	17073.4	90.42	359.56	11075.0	5908.7	-1139.7	0.00	0.00	6000.0	TGT#3(RR 25 St Com #501H)
15	17080.6	90.57	359.56	11074.9	5915.9	-1139.8	2.00	0.00	6007.3	
16	19084.9	90.57	359.56	11055.0	7920.0	-1155.2	0.00	0.00	8000.0	TGT#4(RR 25 St Com #501H)
17	19106.0	90.99	359.56	11054.7	7941.1	-1155.4	2.00	0.00	8021.0	
18	21399.3	90.99	359.56	11015.0	10234.0	-1173.0	0.00	0.00	10301.0	PBHL(RR 25 St Com #501H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
AC Tgt(RR 25 St Com #501H)	5281.0	-47.8	-440.3	430783.44	792100.70
Brushy Top(RR 25 St Com #501H)	7776.0	-163.0	-1093.0	430688.00	791848.00
PBHL(RR 25 St Com #501H)	11015.0	10234.0	-1173.0	441086.00	791809.20
TGT#1(RR 25 St Com #501H)	11080.0	7920.0	-1155.2	438771.00	791803.81
TGT#2(RR 25 St Com #501H)	11075.0	5908.7	-1139.7	438709.70	791801.28
TGT#3(RR 25 St Com #501H)	11080.0	3897.3	-1124.2	434748.30	791814.78
TGT#4(RR 25 St Com #501H)	11120.0	1898.0	-1108.8	432737.00	791822.23
FTP(RR 25 St Com #501H)	11185.0	-118.0	-1093.0	430738.00	791848.00

