



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Lobo Blanco 9 Fed

#702H

OH

Design: OH

Final PVA Report

30 August, 2019



Final PVA Report

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 22' @ 3358.0usft
Site:	Lobo Blanco 9 Fed			MD Reference:	KB = 22' @ 3358.0usft
Well:	#702H			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	Lobo Blanco 9 Fed		
Site Position:	Map	Northing:	383,514.00 usft
From:		Easting:	805,018.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 5.410 N
		Longitude:	103° 28' 56.122 W
		Grid Convergence:	0.45 °

Well	#702H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 3' 5.737 N
		Longitude:	103° 28' 56.119 W
		Ground Level:	3,336.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	12/17/2018	6.74
			Dip Angle
			(°)
			59.90
			Field Strength
			(nT)
			47,591.48001082

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			3.14

Survey Program	Date	8/30/2019		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
186.0	22,983.0	Learn MWD #1 (OH)	MWD	OWSG MWD - Standard



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Well:	#702H	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
186.0	1.06	167.53	186.0	-1.7	0.4	0.57	0.57	0.00	-1.7	0.0	
325.0	1.41	152.59	325.0	-4.5	1.4	0.34	0.25	-10.75	-4.6	-0.8	
510.0	1.23	181.24	509.9	-8.5	2.4	0.37	-0.10	15.49	-8.4	2.6	
695.0	1.67	175.98	694.9	-13.1	2.6	0.25	0.24	-2.85	-13.3	1.7	
784.0	1.76	176.84	783.8	-15.8	2.8	0.11	0.10	0.99	-15.9	1.9	
973.0	2.55	69.97	972.7	-17.3	8.9	1.85	0.42	-56.54	-0.5	-18.6	
1,163.0	2.55	71.20	1,162.5	-14.4	14.8	0.03	0.00	0.65	-9.4	-18.5	
1,354.0	2.11	69.27	1,353.4	-11.8	22.1	0.23	-0.23	-1.01	-16.5	-18.9	
1,545.0	2.02	66.45	1,544.3	-9.2	28.5	0.07	-0.05	-1.48	-22.5	-19.9	
1,735.0	1.14	106.18	1,734.2	-8.4	33.4	0.71	-0.46	20.91	-34.4	1.2	
1,926.0	1.41	131.32	1,925.1	-10.5	37.0	0.32	0.14	13.16	-34.7	16.5	
2,117.0	1.85	128.22	2,116.1	-13.9	41.3	0.24	0.23	-2.67	-41.4	13.2	
2,307.0	2.55	134.30	2,305.9	-18.6	46.7	0.40	0.37	4.25	-39.6	16.3	
2,498.0	3.08	123.58	2,496.7	-24.4	54.1	0.39	0.28	-5.61	-31.8	3.5	
2,688.0	3.78	115.50	2,688.4	-30.0	64.0	0.45	0.37	-4.25	-20.2	-3.6	
2,879.0	5.63	106.71	2,876.7	-35.4	78.6	1.04	0.87	-4.60	-11.7	-5.9	
3,070.0	7.30	102.14	3,066.5	-40.6	99.5	0.91	0.87	-2.39	-9.6	-4.0	
3,261.0	10.11	98.62	3,255.3	-45.7	127.9	1.50	1.47	-1.84	-15.6	-0.4	
3,451.0	8.97	91.41	3,442.6	-48.8	159.2	0.87	-0.60	-3.79	-25.0	3.3	
3,642.0	8.53	97.39	3,631.4	-50.7	188.1	0.53	-0.23	3.13	-30.9	12.8	
3,833.0	8.53	108.82	3,820.3	-57.1	215.6	0.89	0.00	5.98	-32.6	22.3	
4,023.0	9.50	108.11	4,008.0	-68.6	243.8	0.51	0.51	-0.37	-38.5	22.9	
4,214.0	10.46	107.94	4,196.1	-76.8	275.3	0.50	0.50	-0.09	-49.5	23.9	
4,405.0	9.85	119.01	4,384.1	-80.1	306.1	1.07	-0.32	5.80	-54.5	32.9	
4,596.0	11.61	114.44	4,571.8	-105.9	337.9	1.02	0.92	-2.39	-69.3	25.8	
4,786.0	7.12	112.33	4,759.2	-118.3	366.2	2.37	-2.36	-1.11	-78.1	21.9	



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Well:	#702H	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)	
4,977.0	11.08	97.57	4,947.8	-125.2	395.4	2.39	2.07	-7.73	-88.3	3.8	
5,167.0	8.09	119.89	5,135.2	-134.3	425.1	2.48	-1.57	11.75	-87.8	40.1	
5,358.0	4.48	107.06	5,325.0	-143.2	443.9	2.02	-1.89	-6.72	-91.8	18.4	
5,549.0	4.22	101.96	5,515.4	-146.8	457.9	0.24	-0.14	-2.67	-84.5	13.1	
5,740.0	4.40	98.09	5,705.9	-149.3	472.0	0.18	0.09	-2.03	-76.8	12.1	
5,930.0	3.52	93.87	5,895.4	-150.8	485.0	0.49	-0.46	-2.22	-68.4	12.7	
6,121.0	3.10	100.73	6,086.1	-152.1	498.0	0.30	-0.22	3.59	-54.4	25.5	
6,312.0	4.48	104.60	6,276.7	-155.0	508.2	0.73	0.72	2.03	-42.0	32.0	
6,502.0	4.40	102.31	6,466.1	-158.4	522.5	0.10	-0.04	-1.21	-35.0	33.4	
6,693.0	4.13	126.04	6,656.6	-164.0	535.3	0.93	-0.14	12.42	-9.7	41.5	
6,884.0	3.87	124.99	6,847.2	-171.7	546.1	0.14	-0.14	-0.55	-1.1	35.5	
7,074.0	3.78	125.34	7,036.7	-179.0	556.5	0.05	-0.05	0.18	8.9	29.8	
7,265.0	3.17	130.09	7,227.4	-186.1	565.6	0.35	-0.32	2.49	21.8	21.8	
7,456.0	3.43	124.46	7,418.1	-192.7	574.4	0.22	0.14	-2.95	31.2	17.9	
7,647.0	3.34	133.07	7,608.7	-199.7	583.2	0.27	-0.05	4.51	43.9	5.1	
7,837.0	2.81	132.20	7,798.5	-206.6	590.7	0.28	-0.28	-0.46	54.5	-2.5	
8,028.0	2.46	134.83	7,989.3	-212.7	597.0	0.19	-0.18	1.38	56.4	-9.7	
8,219.0	1.76	140.46	8,180.1	-217.8	601.8	0.38	-0.37	2.95	49.2	-15.4	
8,409.0	1.58	160.67	8,370.0	-222.6	604.5	0.32	-0.09	10.64	35.5	-30.4	
8,600.0	1.58	148.02	8,561.0	-227.3	606.8	0.18	0.00	-6.62	36.1	-22.5	
8,791.0	1.49	159.62	8,751.9	-231.8	609.1	0.17	-0.05	6.07	25.8	-28.8	
8,981.0	1.76	173.86	8,941.8	-237.1	610.2	0.25	0.14	7.49	12.6	-33.6	
9,172.0	1.76	188.09	9,132.7	-242.9	610.1	0.23	0.00	7.45	-1.8	-35.0	
9,363.0	1.85	199.70	9,323.6	-248.7	608.7	0.20	0.05	6.08	-14.8	-33.3	
9,554.0	1.32	207.25	9,514.6	-253.5	606.6	0.30	-0.28	3.95	-24.3	-30.7	
9,744.0	0.44	67.68	9,704.6	-255.2	606.3	0.88	-0.46	-73.46	39.3	6.2	
9,934.0	0.82	40.44	9,894.6	-254.1	607.7	0.16	0.09	-14.34	30.4	23.1	



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10,125.0	0.82	214.99	10,085.5	-254.2	607.7	0.65	0.00	91.39	-28.1	-25.8	
10,316.0	2.20	269.83	10,276.5	-255.1	603.5	1.00	0.83	28.71	-41.5	8.9	
10,506.0	2.11	248.04	10,466.4	-256.4	596.6	0.43	-0.05	-11.47	-48.8	-8.5	
10,697.0	1.41	257.00	10,657.3	-258.2	591.0	0.39	-0.37	4.69	-55.3	-0.2	
10,888.0	2.29	270.18	10,848.2	-258.7	584.9	0.51	0.46	6.90	-60.0	12.9	
11,078.0	2.81	265.09	11,038.0	-259.1	576.5	0.30	0.27	-2.68	-69.4	7.2	
11,269.0	1.85	289.70	11,228.8	-258.5	568.9	0.72	-0.50	12.88	-67.4	37.4	
11,460.0	1.23	262.10	11,419.8	-257.7	564.0	0.50	-0.32	-14.45	-81.9	0.5	
11,651.0	1.49	268.95	11,610.7	-258.1	559.5	0.16	0.14	3.59	-85.7	10.5	
11,842.0	1.41	225.36	11,801.6	-259.8	555.3	0.57	-0.04	-22.82	-73.5	-53.2	
11,995.0	0.88	247.16	11,954.6	-261.5	552.9	0.44	-0.35	14.25	-90.9	-21.4	
12,097.0	1.14	282.14	12,058.6	-261.8	551.2	0.64	0.25	34.28	-88.4	35.0	
12,161.0	2.29	4.40	12,120.6	-260.2	550.7	3.78	1.80	128.53	21.4	93.0	
12,256.0	6.33	24.97	12,215.3	-253.6	553.0	4.49	4.25	21.65	45.5	80.3	
12,351.0	5.98	25.14	12,309.7	-244.3	557.3	0.37	-0.37	0.18	35.6	80.1	
12,354.1	6.42	24.85	12,312.9	-244.0	557.5	14.12	14.08	-9.35	34.9	80.3	
KOP (LB 9 Fed #702H)											
12,447.0	19.52	22.16	12,403.2	-224.9	565.5	14.12	14.10	-2.89	18.3	78.0	
12,458.0	20.10	21.12	12,413.5	-221.4	566.9	6.19	5.30	-9.45	15.4	77.4	
HL Crossing, MD:12458.0', TVD:12413.5', N/S:-221.4', EW:566.9', INC:20.10											
12,542.0	24.71	14.77	12,491.2	-190.9	576.6	6.19	5.49	-7.56	0.1	69.9	
12,638.0	39.13	11.96	12,572.4	-141.6	588.1	15.10	15.02	-2.93	-9.5	58.4	
12,733.0	52.58	7.57	12,638.5	-74.6	599.3	14.53	14.16	-4.62	-21.6	46.3	
FTP (LB 9 Fed #702H)											
12,828.0	56.89	5.46	12,693.3	2.4	608.1	4.89	4.54	-2.22	-25.4	36.2	
12,875.0	61.91	3.70	12,717.2	42.8	611.3	11.16	10.68	-3.74	-23.7	32.0	
12,924.0	69.91	2.47	12,737.2	87.4	613.7	16.49	16.33	-2.51	-22.0	28.8	



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12,971.0	71.58	2.29	12,752.7	131.7	615.5	3.57	3.55	-0.38	-19.0	26.5	
13,019.0	74.30	1.41	12,766.8	177.6	617.0	5.93	5.67	-1.83	-12.9	24.5	
13,066.0	80.90	0.18	12,778.9	223.5	617.6	14.27	14.04	-2.62	-6.0	23.3	
13,115.0	85.03	358.95	12,782.9	272.1	617.2	8.79	8.43	-2.51	0.1	23.3	
13,211.0	88.72	359.13	12,788.1	367.9	615.6	3.85	3.84	0.19	6.2	24.1	
13,306.0	88.46	359.30	12,790.4	462.9	614.3	0.33	-0.27	0.18	9.3	24.5	
13,401.0	88.99	359.66	12,792.6	557.8	613.5	0.67	0.56	0.38	12.2	24.6	
13,497.0	89.96	359.30	12,793.4	653.8	612.6	1.08	1.01	-0.37	13.9	24.6	
13,582.0	91.10	0.01	12,792.6	748.8	612.0	1.41	1.20	0.75	13.8	24.4	
13,687.0	92.24	0.89	12,789.8	843.8	612.8	1.52	1.20	0.93	11.8	22.8	
13,783.0	90.22	0.89	12,787.7	938.7	614.3	2.10	-2.10	0.00	10.5	20.5	
13,878.0	89.69	2.29	12,787.8	1,034.7	616.9	1.58	-0.56	1.47	11.4	17.0	
13,974.0	90.75	1.94	12,787.4	1,130.6	620.4	1.16	1.10	-0.38	11.8	12.6	
14,069.0	89.78	1.41	12,787.0	1,225.6	623.2	1.16	-1.02	-0.56	12.2	9.0	
14,164.0	90.13	2.12	12,787.1	1,320.5	626.1	0.83	0.37	0.75	13.0	5.3	
14,260.0	90.48	2.47	12,786.6	1,416.5	630.0	0.52	0.36	0.36	13.3	0.6	
14,355.0	89.34	2.47	12,786.7	1,511.4	634.1	1.20	-1.20	0.00	14.2	-4.3	
14,411.1	89.29	2.67	12,787.4	1,587.4	636.6	0.38	-0.09	0.36	15.4	-7.3	
TOT 1 (LB 9 Fed #702H)											
14,451.0	89.25	2.82	12,787.9	1,607.3	638.5	0.38	-0.09	0.36	16.2	-9.6	
14,546.0	89.87	2.82	12,788.6	1,702.1	643.2	0.65	0.65	0.00	17.7	-15.0	
14,641.0	88.64	0.54	12,789.9	1,797.1	646.0	2.73	-1.29	-2.40	19.7	-18.7	
14,737.0	88.46	359.48	12,792.3	1,893.0	646.0	1.12	-0.19	-1.10	22.9	-19.5	
14,832.0	90.40	0.01	12,793.2	1,988.0	645.6	2.12	2.04	0.56	24.6	-19.9	
14,927.0	91.63	0.89	12,791.5	2,083.0	646.3	1.59	1.29	0.93	23.7	-21.5	
15,023.0	91.19	0.54	12,789.2	2,179.0	647.5	0.59	-0.46	-0.36	22.1	-23.5	
15,118.0	89.16	0.36	12,788.9	2,274.0	648.3	2.15	-2.14	-0.19	22.6	-25.1	



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15,214.0	90.22	0.54	12,789.4	2,370.0	649.0	1.12	1.10	0.19	23.9	-26.7	
15,309.0	89.34	0.54	12,789.8	2,465.0	649.9	0.93	-0.93	0.00	25.0	-28.4	
15,404.0	87.49	359.83	12,792.4	2,559.8	650.2	2.09	-1.95	-0.75	28.4	-29.5	
15,499.0	88.20	357.02	12,796.0	2,654.8	647.6	3.05	0.75	-2.96	32.8	-27.7	
15,595.0	88.72	357.20	12,798.6	2,750.6	642.8	0.57	0.54	0.19	36.1	-23.7	
15,690.0	88.64	357.90	12,800.7	2,845.5	638.7	0.74	-0.08	0.74	39.0	-20.5	
15,786.0	90.48	358.78	12,801.5	2,941.5	635.9	2.12	1.92	0.92	40.6	-18.5	
15,881.0	91.63	0.01	12,799.7	3,036.5	634.9	1.77	1.21	1.29	39.6	-18.4	
15,976.0	91.45	0.01	12,797.2	3,131.4	634.9	0.19	-0.19	0.00	37.8	-19.2	
16,072.0	90.40	359.66	12,795.6	3,227.4	634.7	1.15	-1.09	-0.36	37.0	-19.7	
16,167.0	90.22	359.83	12,795.1	3,322.4	634.2	0.28	-0.19	0.18	37.3	-20.1	
16,262.0	90.92	359.83	12,794.2	3,417.4	634.0	0.74	0.74	0.00	37.1	-20.7	
16,358.0	92.33	1.06	12,791.5	3,513.4	634.7	1.95	1.47	1.28	35.1	-22.2	
16,453.0	93.83	1.41	12,788.3	3,608.2	636.7	1.62	1.58	0.37	30.8	-25.1	
16,548.0	93.21	0.71	12,780.5	3,703.0	638.5	0.98	-0.65	-0.74	25.7	-27.7	
16,644.0	91.01	359.66	12,777.0	3,798.9	638.8	2.54	-2.29	-1.09	23.0	-28.8	
16,739.0	87.58	358.78	12,778.1	3,893.9	637.5	3.73	-3.61	-0.93	24.9	-28.4	
16,834.0	88.72	358.95	12,781.2	3,988.8	635.6	1.21	1.20	0.18	28.7	-27.3	
16,892.9	88.56	358.41	12,782.6	4,047.7	634.3	0.98	-0.27	-0.92	30.6	-26.5	
TOT 2 (LB 9 Fed #702H)											
16,930.0	88.46	358.07	12,783.6	4,084.8	633.1	0.98	-0.27	-0.92	31.9	-25.7	
17,025.0	88.29	357.55	12,786.3	4,179.7	629.5	0.58	-0.18	-0.55	35.6	-22.8	
17,121.0	88.11	357.20	12,789.3	4,275.5	625.1	0.41	-0.19	-0.36	39.6	-19.3	
17,216.0	88.37	357.55	12,792.2	4,370.4	620.8	0.46	0.27	0.37	43.5	-15.8	
17,311.0	88.81	357.20	12,794.5	4,465.2	616.4	0.59	0.46	-0.37	46.8	-12.2	
17,407.0	89.08	357.20	12,796.3	4,561.1	611.7	0.28	0.28	0.00	49.5	-8.4	
17,502.0	90.31	358.84	12,798.8	4,656.0	606.8	1.35	1.29	-0.38	51.0	-4.3	



Final PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Lobo Blanco 9 Fed
 Well: #702H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #702H
 TVD Reference: KB = 22' @ 3358.0usft
 MD Reference: KB = 22' @ 3358.0usft
 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)	Bulld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
17,597.0	91.89	356.84	12,795.0	4,750.8	601.6	1.66	1.66	0.00	50.2	0.1
17,693.0	92.68	355.61	12,791.2	4,846.5	595.2	1.52	0.82	-1.28	47.3	5.6
17,788.0	91.89	0.36	12,787.4	4,941.4	591.9	5.06	-0.83	5.00	44.5	8.2
17,883.0	92.24	0.18	12,784.0	5,036.3	592.3	0.41	0.37	-0.19	42.0	6.9
17,979.0	92.51	1.06	12,780.0	5,132.2	593.4	0.96	0.28	0.92	39.0	5.0
18,074.0	90.66	0.71	12,777.3	5,227.2	584.9	1.98	-1.95	-0.37	37.4	2.7
18,169.0	89.52	1.59	12,777.2	5,322.1	596.8	1.52	-1.20	0.93	36.2	0.0
18,265.0	90.04	1.77	12,777.6	5,418.1	599.6	0.57	0.54	0.19	39.5	-3.6
18,360.0	90.75	2.12	12,778.9	5,513.0	602.8	0.83	0.75	0.37	39.9	-7.7
18,456.0	90.66	2.47	12,775.7	5,608.9	606.6	0.38	-0.09	0.36	39.7	-12.3
18,551.0	89.60	1.94	12,775.5	5,703.9	610.3	1.25	-1.12	-0.56	40.4	-16.8
18,646.0	89.96	1.94	12,775.9	5,798.8	613.5	0.38	0.38	0.00	41.8	-20.8
18,742.0	91.45	0.71	12,774.7	5,894.8	615.7	2.01	1.55	-1.28	41.5	-23.9
18,837.0	92.68	0.54	12,771.3	5,989.7	616.8	1.31	1.29	-0.18	39.1	-25.8
18,856.9	92.75	0.32	12,770.3	6,009.6	616.9	1.16	0.36	-1.10	38.3	-26.1
TGT 3 (LB 9 Fed #702H)										
18,933.0	93.03	359.48	12,766.5	6,085.6	616.8	1.16	0.36	-1.10	35.5	-26.6
19,028.0	93.03	358.43	12,761.5	6,180.4	615.1	1.10	0.00	-1.11	31.8	-25.8
19,123.0	91.54	358.07	12,757.7	6,275.3	612.2	1.61	-1.57	-0.38	29.4	-23.7
19,219.0	91.10	356.67	12,755.5	6,371.2	607.8	1.53	-0.46	-1.46	28.5	-20.1
19,314.0	89.87	355.79	12,754.7	6,466.0	601.5	1.59	-1.29	-0.93	29.1	-14.6
19,409.0	92.24	355.61	12,752.9	6,560.7	594.4	2.50	2.49	-0.19	28.6	-8.4
19,505.0	92.77	356.14	12,748.7	6,656.3	587.5	0.78	0.55	0.55	25.8	-2.3
19,600.0	92.33	356.67	12,744.5	6,751.1	581.5	0.72	-0.46	0.56	22.9	2.8
19,695.0	92.68	355.79	12,740.3	6,845.8	575.3	1.00	0.37	-0.93	20.1	8.2
19,791.0	92.15	358.07	12,736.3	6,941.5	570.2	2.44	-0.55	2.37	17.3	12.6
19,886.0	90.22	359.83	12,734.3	7,036.5	568.4	2.75	-2.03	1.85	16.7	13.5



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 22' @ 3358.0usft
Site:	Lobo Blanco 9 Fed	MD Reference:	KB = 22' @ 3358.0usft
Well:	#702H	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)	
19,982.0	90.57	0.18	12,733.7	7,132.5	568.4	0.52	0.38	0.36	17.4	12.7	
20,077.0	89.08	359.48	12,734.0	7,227.5	568.1	1.73	-1.57	-0.74	19.0	12.1	
20,172.0	88.64	358.85	12,735.9	7,322.5	566.8	0.73	-0.46	-0.56	22.2	12.6	
20,268.0	89.08	359.13	12,737.8	7,418.4	565.2	0.50	0.46	0.19	25.5	13.4	
20,288.4	89.08	359.05	12,738.1	7,438.8	564.9	0.37	0.00	-0.37	28.1	13.5	
TGT 4 (LB 9 Fed #702H)											
20,363.0	89.08	358.78	12,739.3	7,513.4	563.5	0.37	0.00	-0.37	28.2	14.3	
20,458.0	89.34	358.43	12,740.8	7,608.4	561.2	0.46	0.27	-0.37	30.6	15.8	
20,554.0	90.04	358.07	12,741.1	7,704.3	558.3	0.82	0.73	-0.37	32.3	17.9	
20,649.0	90.48	358.25	12,740.7	7,799.3	555.2	0.50	0.46	0.19	33.0	20.1	
20,744.0	91.19	359.30	12,739.3	7,894.2	553.2	1.33	0.75	1.11	32.8	21.3	
20,840.0	90.82	358.95	12,737.5	7,990.2	551.7	0.46	-0.28	-0.36	32.2	21.9	
20,967.0	91.71	0.36	12,734.6	8,117.2	550.9	1.27	0.62	1.11	30.8	21.6	
21,062.0	92.77	0.36	12,730.9	8,212.1	551.5	1.12	1.12	0.00	28.2	20.2	
21,157.0	93.91	0.18	12,725.4	8,308.9	552.0	1.21	1.20	-0.19	23.8	18.9	
21,253.0	90.66	359.83	12,721.5	8,402.8	552.0	3.40	-3.39	-0.36	21.2	18.1	
21,348.0	91.19	0.01	12,720.0	8,497.8	551.9	0.59	0.58	0.19	20.8	17.4	
21,444.0	91.45	359.30	12,717.8	8,593.8	551.3	0.79	0.27	-0.74	19.7	17.1	
21,539.0	91.63	359.66	12,715.2	8,688.8	550.4	0.42	0.19	0.38	18.3	17.2	
21,634.0	92.33	359.83	12,712.0	8,783.7	550.0	0.78	0.74	0.18	16.2	16.8	
21,730.0	90.31	359.30	12,709.8	8,879.7	549.3	2.18	-2.10	-0.55	15.1	16.7	
21,825.0	90.57	358.25	12,709.0	8,974.6	547.2	1.14	0.27	-1.11	15.5	17.9	
21,920.0	91.01	358.78	12,707.7	9,069.6	544.8	0.73	0.46	0.56	15.4	19.5	
21,949.1	91.20	358.78	12,707.1	9,098.7	544.2	0.65	0.65	0.00	15.2	19.9	
TGT 5 (LB 9 Fed #702H)											
22,016.0	91.63	358.78	12,705.5	9,165.5	542.7	0.65	0.65	0.00	14.8	20.7	
22,111.0	91.88	358.43	12,702.5	9,260.5	540.4	0.52	0.37	-0.37	14.0	22.2	



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #702H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 22' @ 3358.0usft
Site:	Lobo Blanco 9 Fed	MD Reference:	KB = 22' @ 3358.0usft
Well:	#702H	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)
22,207.0	92.51	358.78	12,698.7	9,358.4	538.1	0.68	0.55	0.36	12.4	23.7
22,302.0	92.15	359.66	12,694.9	9,451.3	536.8	1.00	-0.38	0.93	10.6	24.2
22,397.0	91.10	359.30	12,692.2	9,546.2	535.9	1.17	-1.11	-0.38	10.1	24.2
22,493.0	90.31	358.25	12,691.0	9,642.2	533.9	1.37	-0.82	-1.09	11.0	25.5
22,588.0	90.84	3.00	12,690.1	9,737.2	534.9	5.03	0.56	5.00	12.2	23.6
22,684.0	91.28	2.47	12,688.3	9,833.0	539.5	0.72	0.46	-0.55	12.6	18.2
22,779.0	91.19	3.52	12,686.2	9,927.9	544.5	1.11	-0.09	1.11	12.7	12.4
22,874.0	91.10	6.86	12,684.3	10,022.5	553.1	3.52	-0.09	3.52	12.9	3.0
22,929.0	88.55	5.46	12,684.5	10,077.1	559.0	5.29	-4.64	-2.55	14.3	-3.3
Final MWD Survey (MD=22929.0')										
22,982.8	88.55	5.46	12,685.9	10,130.7	564.1	0.00	0.00	0.00	16.9	-8.9
PBHL (LB 9 Fed #702H)										
22,983.0	88.55	5.46	12,685.9	10,130.9	564.1	0.00	0.00	0.00	16.9	-8.9
Final Projection to Bit (MD=22983.0')										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,458.0	12,413.5	-221.4	566.9	HL Crossing, MD:12458.0', TVD:12413.5', N/S:-221.4', E/W:566.9', INC:20.10
22,929.0	12,684.5	10,077.1	559.0	Final MWD Survey (MD=22929.0')
22,983.0	12,685.9	10,130.9	564.1	Final Projection to Bit (MD=22983.0')

Checked By: _____	Approved By: _____	Date: _____
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I certify this survey to be true and correct to the best of my belief and knowledge.


 Signed _____ Date 11/19/2019



Lea County, NM (NAD 83 NME)

Lobo Blanco 9 Fed #702H

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: #702H

KB = 22' @ 3358.0ust
Northing 383547.00 Easting 805018.00 Longitude 103° 28' 58.119 W

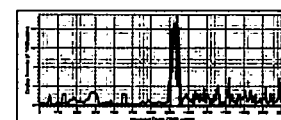
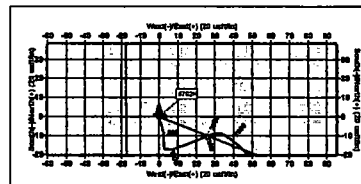
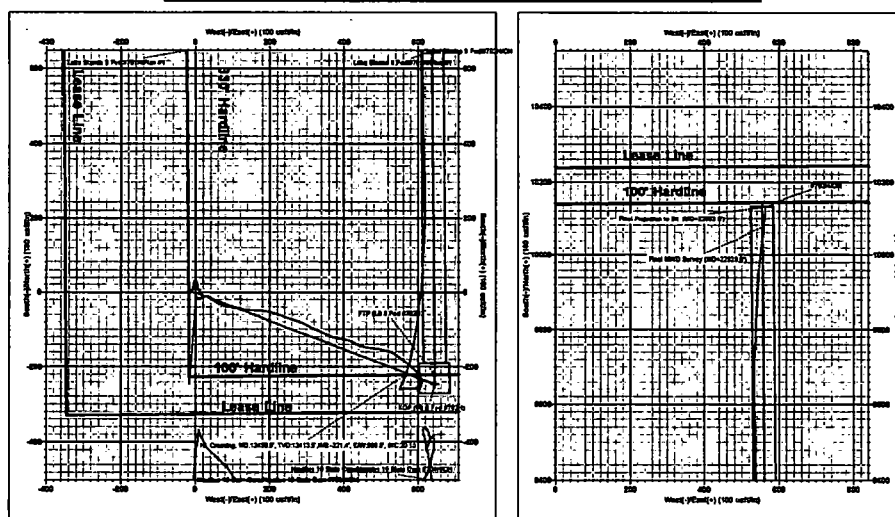
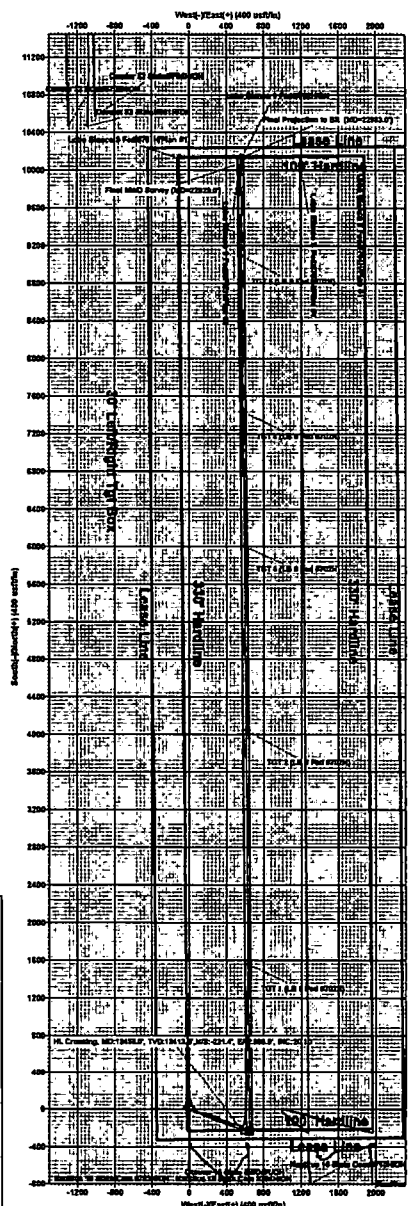
To convert a Magnetic Direction to a Grid Direction, Add 6.28°
To convert a Magnetic Direction to a True Direction, Add 6.74° East
To convert a True Direction to a Grid Direction, Subtract 0.45°

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	0.0	0.00	0.0	
2	2100.0	0.00	0.00	2100.0	0.0	0.0	0.00	0.00	0.0	
3	2450.2	7.00	110.88	2449.3	-7.6	20.0	2.00	110.88	-6.5	
4	7781.2	7.00	110.88	7770.7	-238.4	825.0	0.00	0.00	-203.8	
5	8111.4	0.00	0.00	8070.0	-248.0	845.0	2.00	180.00	-210.3	
6	12347.0	0.00	0.00	12305.8	-248.0	845.0	0.00	0.00	-210.3	KOP (LB 9 Fed #702H)
7	13100.9	90.48	359.50	12783.0	235.4	840.8	12.00	359.50	270.1	
8	14433.5	90.48	359.50	12772.0	1587.9	829.3	0.00	0.00	1600.0	
9	14434.2	90.48	359.50	12772.0	1568.5	829.3	2.00	-180.00	1600.0	TGT 1 (LB 9 Fed #702H)
10	16913.6	90.48	359.50	12752.0	4047.8	807.6	0.00	0.00	4075.0	TGT 2 (LB 9 Fed #702H)
11	16919.7	90.58	359.50	12751.9	4053.9	807.8	2.00	0.00	4081.1	
12	18873.7	90.58	359.50	12732.0	6007.7	590.8	0.00	0.00	6031.0	TGT 3 (LB 9 Fed #702H)
13	18884.5	90.80	359.50	12731.9	6018.5	590.7	2.00	0.00	6041.8	
14	20305.7	90.80	359.50	12712.0	7439.5	578.4	0.00	0.00	7480.0	TGT 4 (LB 9 Fed #702H)
15	20311.2	90.69	359.50	12711.9	7445.0	578.4	2.00	180.00	7465.5	
16	21965.1	90.69	359.50	12692.0	9098.8	564.1	0.00	0.00	9118.0	TGT 5 (LB 9 Fed #702H)
17	21994.8	91.28	359.50	12691.5	9128.5	563.8	2.00	0.00	9145.6	
18	22998.6	91.28	359.50	12669.0	10132.0	555.1	0.00	0.00	10147.2	PBHL (LB 9 Fed #702H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/S	+E/W	Northing	Easting
KOP (LB 9 Fed #702H)	12305.8	-248.0	845.0	383501.00	805053.10
PBHL (LB 9 Fed #702H)	12669.0	10132.0	555.1	383279.00	805073.10
TGT 6 (LB 9 Fed #702H)	12892.0	9098.8	564.1	382945.00	805032.08
TGT 4 (LB 9 Fed #702H)	12712.0	7439.5	578.4	382982.50	805036.42
TGT 3 (LB 9 Fed #702H)	12732.0	6007.7	590.8	382954.70	805028.83
TGT 2 (LB 9 Fed #702H)	12752.0	4047.8	807.6	382784.00	805026.80
TGT 1 (LB 9 Fed #702H)	12772.0	1587.9	829.3	382514.80	805047.29
FTP (LB 9 Fed #702H)	12783.0	-221.0	840.8	383328.00	805083.00



Lea County, NM (NAD 83 NME)
Lobo Blanco 9 Fed #702H
Plan #1