



Lea County, NM (NAD 27 NME)

Antietam 9 Fed Com #701H

H&P 620

Plan #2

PROJECT DETAILS: Lea County, NM (NAD 27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

WELL DETAILS: #701H

Ground Level: 3438.0
KB = 28 @ 3463.0usft (H&P 620)
Northing 419852.00 Easting 731857.00 Latitude 32° 9' 7.460 N Longitude 103° 35' 2.994 W

SECTION DETAILS

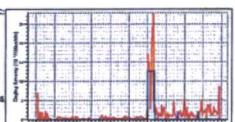
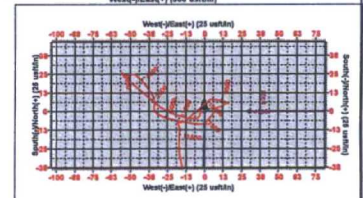
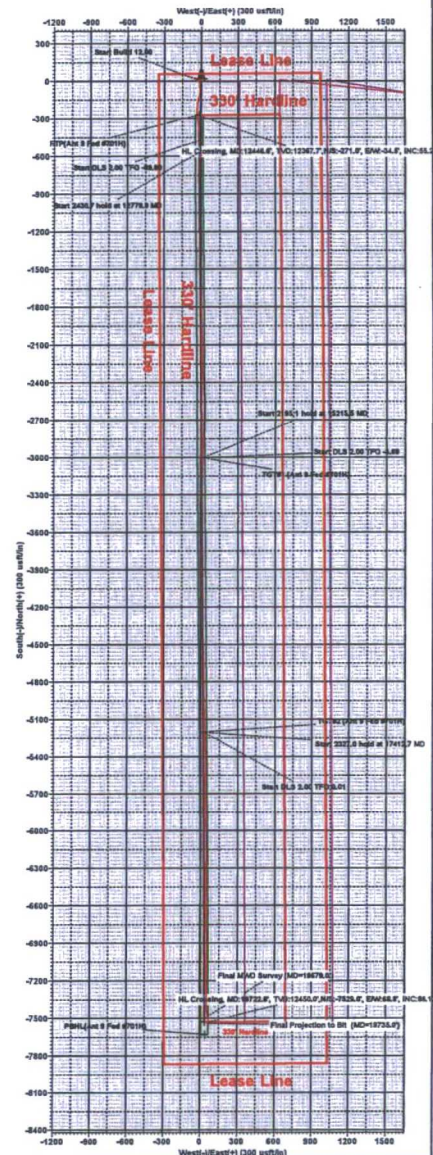
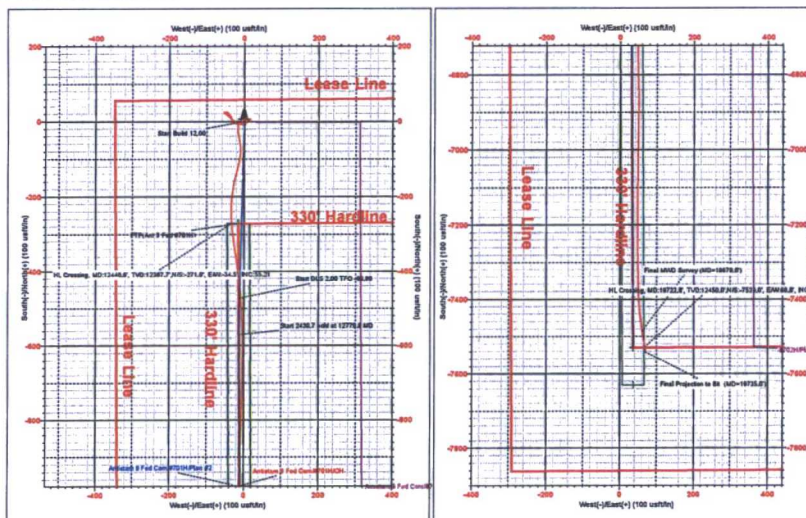
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	11937.6	0.00	0.00	11937.6	0.0	0.0	0.00	0.00	0.0
3	12683.0	89.45	181.53	12415.0	-472.7	-12.6	12.00	181.53	472.6
4	12779.8	89.46	179.59	12416.0	-569.5	-13.6	2.00	-89.80	569.4
5	15210.5	89.46	179.59	12439.0	-3000.0	3.7	0.00	0.00	3000.0
6	15215.5	89.56	179.59	12439.0	-3005.0	3.7	2.00	-3.59	3005.0
7	17410.6	89.56	179.59	12456.0	-5200.0	19.5	0.00	0.00	5200.0
8	17412.7	89.60	179.59	12456.0	-5202.1	19.5	2.00	0.01	5202.1
9	19739.7	89.60	179.59	12472.3	-7529.0	36.3	0.00	0.00	7529.1

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
TGT#1 (Ant 9 Fed #701H)	12439.0	-3000.0	3.7	416852.00	731860.66
TGT#2 (Ant 9 Fed #701H)	12456.0	-5200.0	19.5	414652.00	731876.50
Interp @ 12472.3 (701H OH Plan #2)	12472.3	-7529.0	36.3	412223.00	731862.28
FTPL (Ant 9 Fed #701H)	12415.0	-271.0	-16.0	419881.00	731841.00
PBL (Ant 9 Fed #701H)	12473.0	-7629.0	37.0	412223.00	731894.00



Lea County, NM (NAD 27 NME)
Antietam 9 Fed Com #701H
H&P 620
Plan #2
10/10/2017

EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Antietam 9 Fed Com

#701H

OH

Design: OH

PVA Report

29 June, 2017

PVA Report

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 27 NME)			TVD Reference:	KB = 25 @ 3463.0usft (H&P 620)
Site:	Antietam 9 Fed Com			MD Reference:	KB = 25 @ 3463.0usft (H&P 620)
Well:	#701H			North Reference:	Grid
Wellbore:	OH			Survey Calculation Method:	Minimum Curvature
Design:	OH			Database:	EDM 5000.14

Project				Lea County, NM (NAD 27 NME)	
Map System:	US State Plane 1927 (Exact solution)		System Datum:	Mean Sea Level	
Geo Datum:	NAD 1927 (NADCON CONUS)				
Map Zone:	New Mexico East 3001				

Site				Antietam 9 Fed Com	
Site Position:		Northing:	414,873.00 usft	Latitude:	32° 8' 17.894 N
From:	Map	Easting:	736,116.00 usft	Longitude:	103° 34' 13.866 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well				#701H		
Well Position	+N/-S	0.0 usft	Northing:	419,852.00 usft	Latitude:	32° 9' 7.460 N
	+E/-W	0.0 usft	Easting:	731,857.00 usft	Longitude:	103° 35' 2.994 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,438.0 usft

Wellbore				OH	
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/26/2016	7.06	60.01	47,994.07168016

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	179.72	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Antietam 9 Fed Com
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB = 25 @ 3463.0usft (H&P 620)
 MD Reference: KB = 25 @ 3463.0usft (H&P 620)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey Program Date 6/29/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
121.0	1,149.0	Wildfire MWD (OH)	MWD	MWD - Standard
1,332.0	17,408.0	Firethorne MWD (OH)	MWD	MWD - Standard
17,498.0	19,735.0	Intrepid MWD #1 (OH)	MWD	MWD - Standard

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
121.0	0.40	279.98	121.0	0.1	-0.4	0.33	0.33	0.00	-0.4	0.0
131.0	0.50	185.98	131.0	0.0	-0.5	6.62	1.00	-940.00	0.0	-0.5
157.0	0.70	257.98	157.0	-0.1	-0.6	2.78	0.77	276.92	-0.6	0.0
187.0	0.50	285.98	187.0	-0.1	-0.9	1.16	-0.67	93.33	-0.9	0.4
247.0	0.60	273.98	247.0	0.0	-1.5	0.25	0.17	-20.00	-1.5	0.1
276.0	0.50	277.98	276.0	0.0	-1.8	0.37	-0.34	13.79	-1.8	0.2
304.0	0.70	225.98	304.0	-0.1	-2.0	1.99	0.71	-185.71	-1.5	-1.3
333.0	0.30	280.98	333.0	-0.2	-2.2	2.01	-1.38	189.66	-2.1	0.6
396.0	0.30	272.98	396.0	-0.2	-2.5	0.07	0.00	-12.70	-2.5	0.3
426.0	0.30	283.98	426.0	-0.1	-2.7	0.19	0.00	36.67	-2.6	0.8
458.0	0.20	170.98	458.0	-0.2	-2.8	1.31	-0.31	-353.12	0.3	-2.8
490.0	0.60	250.98	490.0	-0.3	-2.9	1.87	1.25	250.00	-2.9	-0.7
521.0	0.60	202.98	521.0	-0.5	-3.1	1.57	0.00	-154.84	-1.7	-2.7
553.0	0.50	160.98	553.0	-0.8	-3.2	1.27	-0.31	-131.25	0.3	-3.2
583.0	0.70	217.98	583.0	-1.0	-3.2	2.00	0.67	190.00	-2.8	-1.9
614.0	0.60	205.98	614.0	-1.3	-3.4	0.54	-0.32	-38.71	-2.7	-2.5
646.0	0.20	135.98	646.0	-1.5	-3.4	1.76	-1.25	-218.75	1.3	-3.5
676.0	0.00	260.98	676.0	-1.6	-3.4	0.67	-0.67	0.00	1.6	3.4
708.0	0.20	124.98	708.0	-1.6	-3.4	0.62	0.62	0.00	1.8	-3.2

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 25 @ 3463.0usft (H&P 620)
Site:	Antietam 9 Fed Com	MD Reference:	KB = 25 @ 3463.0usft (H&P 620)
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)	
739.0	0.30	115.98	739.0	-1.7	-3.2	0.35	0.32	-29.03	2.2	-2.9	
867.0	0.90	212.98	867.0	-2.7	-3.5	0.77	0.47	75.78	-4.1	-1.5	
899.0	0.50	197.98	899.0	-3.0	-3.7	1.36	-1.25	-46.87	-4.0	-2.6	
930.0	0.60	188.98	930.0	-3.3	-3.7	0.43	0.32	-29.03	-3.8	-3.2	
961.0	0.80	244.98	961.0	-3.5	-4.0	2.20	0.65	180.65	-5.1	1.5	
1,056.0	0.70	225.98	1,056.0	-4.2	-5.0	0.28	-0.11	-20.00	-6.5	-0.4	
1,087.0	0.80	240.98	1,087.0	-4.5	-5.3	0.71	0.32	48.39	-6.8	1.3	
1,118.0	1.00	272.98	1,118.0	-4.5	-5.8	1.72	0.65	103.23	-5.5	4.8	
1,149.0	0.50	274.98	1,149.0	-4.5	-6.2	1.61	-1.61	6.45	-5.8	5.0	
1,332.0	1.19	264.78	1,331.9	-4.6	-8.9	0.38	0.38	-5.57	-9.2	3.8	
1,520.0	0.97	289.04	1,519.9	-4.3	-12.3	0.27	-0.12	12.90	-10.2	8.1	
1,708.0	1.01	290.80	1,707.9	-3.2	-15.4	0.03	0.02	0.94	-13.2	8.4	
1,896.0	1.27	281.92	1,895.8	-2.2	-18.9	0.17	0.14	-4.72	-18.1	6.0	
2,082.0	1.32	293.35	2,081.8	-0.9	-22.9	0.14	0.03	6.15	-20.7	9.9	
2,176.0	1.23	295.54	2,175.8	0.0	-24.8	0.11	-0.10	2.33	-22.4	10.7	
2,363.0	2.59	303.28	2,362.7	3.2	-30.2	0.74	0.73	4.14	-27.0	13.9	
2,550.0	3.65	314.18	2,549.4	9.6	-38.0	0.65	0.57	5.83	-33.9	19.6	
2,738.0	2.64	306.88	2,737.1	16.4	-45.7	0.58	-0.54	-3.88	-46.4	14.3	
2,925.0	1.89	313.91	2,923.9	21.1	-51.4	0.43	-0.40	3.76	-51.7	20.4	
3,113.0	0.75	312.86	3,111.9	24.1	-54.5	0.61	-0.61	-0.56	-56.4	19.4	
3,300.0	0.70	4.71	3,298.9	26.1	-55.3	0.34	-0.03	27.73	-21.4	57.3	
3,488.0	0.35	189.20	3,486.9	26.7	-55.3	0.56	-0.19	-93.36	17.5	-58.9	
3,675.0	0.44	190.08	3,673.9	25.4	-55.6	0.05	0.05	0.47	15.3	-59.1	
3,862.0	1.41	89.70	3,860.9	24.7	-53.4	0.83	0.52	-53.68	53.2	25.0	
4,050.0	1.41	79.95	4,048.8	25.1	-48.8	0.13	0.00	-5.19	43.7	33.2	
4,237.0	0.26	167.22	4,235.8	25.1	-46.4	0.76	-0.61	46.67	34.7	-39.7	
4,425.0	1.80	131.54	4,423.7	22.7	-44.1	0.85	0.82	-18.98	48.1	-12.3	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Antietam 9 Fed Com
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB = 25 @ 3463.0usft (H&P 620)
 MD Reference: KB = 25 @ 3463.0usft (H&P 620)
 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)	
4,610.0	1.58	144.28	4,608.7	18.7	-40.5	0.23	-0.12	6.89	38.8	-21.9	
4,797.0	1.63	144.46	4,795.6	14.5	-37.4	0.03	0.03	0.10	33.5	-22.0	
4,985.0	1.23	155.01	4,983.5	10.5	-35.0	0.25	-0.21	5.61	24.3	-27.3	
5,173.0	1.05	180.76	5,171.5	6.9	-34.2	0.29	-0.10	13.70	6.5	-34.3	
5,360.0	0.92	181.73	5,358.5	3.7	-34.2	0.07	-0.07	0.52	2.7	-34.3	
5,548.0	1.01	171.79	5,546.4	0.6	-34.1	0.10	0.05	-5.29	5.4	-33.6	
5,736.0	1.23	111.50	5,734.4	-1.8	-31.9	0.61	0.12	-32.07	29.0	-13.4	
5,924.0	1.32	111.80	5,922.4	-3.4	-28.0	0.05	0.05	0.16	24.8	-13.5	
6,111.0	1.54	104.12	6,109.3	-4.8	-23.6	0.16	0.12	-4.11	21.7	-10.4	
6,299.0	1.54	100.16	6,297.2	-5.8	-18.7	0.06	0.00	-2.11	17.4	-9.1	
6,487.0	1.63	101.57	6,485.2	-6.8	-13.6	0.05	0.05	0.75	11.9	-9.4	
6,674.0	1.71	102.89	6,672.1	-8.0	-8.2	0.05	0.04	0.71	6.3	-9.6	
6,862.0	2.07	85.49	6,860.0	-8.3	-2.1	0.36	0.19	-9.26	2.8	-8.2	
7,049.0	0.13	250.63	7,046.9	-8.1	1.0	1.17	-1.04	88.31	-1.7	8.0	
7,237.0	0.48	236.04	7,234.9	-8.7	0.2	0.19	0.19	-7.76	-4.7	7.3	
7,424.0	1.23	30.91	7,421.9	-7.4	0.6	0.90	0.40	82.82	6.0	-4.3	
7,612.0	1.71	44.70	7,609.9	-3.6	3.6	0.32	0.26	7.34	0.1	-5.1	
7,800.0	0.48	30.11	7,797.8	-1.0	5.9	0.67	-0.65	-7.76	-2.1	-5.6	
7,990.0	0.13	55.34	7,987.8	-0.2	6.5	0.19	-0.18	13.28	-5.3	-3.8	
8,178.0	1.23	35.21	8,175.8	1.6	7.9	0.59	0.59	-10.71	-5.8	-5.5	
8,366.0	0.26	105.00	8,363.8	3.1	9.4	0.62	-0.52	37.12	-8.3	5.5	
8,553.0	0.57	73.44	8,550.8	3.3	10.7	0.20	0.17	-16.88	-11.2	0.1	
8,741.0	0.66	44.79	8,738.8	4.3	12.4	0.17	0.05	-15.24	-11.8	-5.7	
8,928.0	0.66	80.92	8,925.8	5.3	14.2	0.22	0.00	19.32	-14.9	3.0	
9,116.0	0.35	86.98	9,113.8	5.5	15.9	0.17	-0.16	3.22	-16.1	4.6	
9,305.0	0.57	319.19	9,302.8	6.2	15.8	0.44	0.12	-67.61	5.6	-16.0	
9,492.0	2.07	278.67	9,489.7	7.4	11.9	0.90	0.80	-21.67	10.6	-9.1	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Antietam 9 Fed Com
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB = 25 @ 3463.0usft (H&P 620)
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9,680.0	1.58	278.41	9,677.6	8.3	6.0	0.26	-0.26	-0.14	4.7	-9.1	
9,868.0	0.44	202.38	9,865.6	8.0	3.1	0.82	-0.61	-40.44	8.6	-0.2	
10,053.0	1.05	224.53	10,050.6	6.2	1.7	0.36	0.33	11.97	5.6	-3.1	
10,241.0	1.36	235.52	10,238.5	3.7	-1.4	0.20	0.16	5.85	0.9	-3.8	
10,429.0	1.76	228.75	10,426.5	0.5	-5.4	0.23	0.21	-3.60	-3.7	-3.9	
10,616.0	2.51	229.10	10,613.3	-4.1	-10.7	0.40	0.40	0.19	-10.7	-3.9	
10,804.0	1.01	254.24	10,801.2	-7.2	-15.4	0.88	-0.80	13.37	-16.7	2.8	
10,992.0	0.79	294.93	10,989.2	-7.1	-18.1	0.35	-0.12	21.64	-13.4	14.1	
11,180.0	1.05	133.65	11,177.2	-7.8	-18.1	0.97	0.14	-85.79	7.7	-18.1	
11,367.0	1.67	178.21	11,364.2	-11.7	-16.7	0.63	0.33	23.83	-11.1	-17.1	
11,556.0	1.36	191.66	11,553.1	-16.6	-17.1	0.25	-0.16	7.12	-19.7	-13.4	
11,646.0	1.45	183.13	11,643.1	-18.8	-17.4	0.25	0.10	-9.48	-19.7	-16.3	
11,758.0	1.63	175.84	11,755.0	-21.8	-17.3	0.24	0.16	-6.51	-20.5	-18.9	
11,852.0	1.49	184.19	11,849.0	-24.4	-17.3	0.28	-0.15	8.88	-25.6	-15.5	
11,945.0	4.44	170.92	11,941.8	-29.1	-16.9	3.24	3.17	-14.27	-26.0	-21.3	
11,991.0	11.87	169.77	11,987.4	-35.5	-15.7	16.16	16.15	-2.50	-29.4	-21.2	
12,039.0	17.89	169.95	12,033.7	-47.7	-13.6	12.54	12.54	0.37	-34.2	-19.4	
12,085.0	23.82	172.76	12,076.7	-63.9	-11.2	13.07	12.89	6.11	-39.5	-15.4	
12,133.0	27.91	185.51	12,119.9	-84.7	-11.0	14.34	8.52	26.56	-45.1	-5.9	
12,179.0	32.66	191.39	12,159.6	-107.6	-14.5	12.16	10.33	12.78	-47.6	-4.7	
12,227.0	33.41	195.35	12,199.9	-133.0	-20.6	4.76	1.56	8.25	-47.4	-8.0	
12,273.0	32.92	193.24	12,238.4	-157.4	-26.8	2.73	-1.07	-4.59	-41.7	-16.5	
12,321.0	36.57	188.76	12,277.8	-184.2	-31.9	9.28	7.60	-9.33	-30.9	-24.6	
12,366.0	40.22	183.66	12,313.1	-212.0	-34.9	10.73	8.11	-11.33	-18.5	-29.0	
12,414.0	48.22	179.18	12,347.5	-245.4	-35.6	17.88	16.67	-9.33	-6.0	-29.3	
12,446.6	55.21	175.63	12,367.7	-271.0	-34.5	23.08	21.44	-10.90	0.9	-27.2	
HL Crossing, MD:12446.6', TVD:12367.7', N/S:-271.0', E/W:-34.5', INC:55.21											

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Antietam 9 Fed Com
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB = 25 @ 3463.0usft (H&P 620)
 MD Reference: KB = 25 @ 3463.0usft (H&P 620)
 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)	
12,460.0	58.11	174.34	12,375.0	-282.1	-33.5	23.08	21.64	-9.59	3.0	-25.8	
12,507.0	67.08	171.18	12,396.6	-323.5	-28.2	19.99	19.09	-6.72	7.9	-19.0	
12,553.0	79.21	171.18	12,410.0	-366.9	-21.4	26.37	26.37	0.00	8.1	-11.3	
12,601.0	88.57	172.85	12,415.1	-414.1	-14.8	19.80	19.50	3.48	4.2	-3.7	
12,647.0	89.49	174.87	12,415.8	-459.8	-9.9	4.82	2.00	4.39	1.1	2.4	
12,695.0	89.58	177.07	12,416.2	-507.7	-6.5	4.59	0.19	4.58	0.8	6.8	
12,759.0	90.59	179.00	12,416.1	-571.7	-4.3	3.40	1.58	3.02	0.1	9.2	
12,818.0	90.55	179.79	12,415.5	-630.6	-3.7	1.34	-0.07	1.34	-1.0	9.4	
12,912.0	89.14	182.08	12,415.8	-724.6	-5.2	2.86	-1.50	2.44	-1.6	7.2	
13,005.0	87.65	182.17	12,418.4	-817.5	-8.7	1.61	-1.60	0.10	0.1	3.1	
13,099.0	87.38	182.25	12,422.5	-911.4	-12.3	0.30	-0.29	0.09	3.3	-1.2	
13,191.0	86.95	180.67	12,427.0	-1,003.2	-14.7	1.78	-0.47	-1.72	6.9	-4.2	
13,284.0	87.96	179.88	12,431.2	-1,096.1	-15.1	1.38	1.09	-0.85	10.2	-5.3	
13,377.0	88.22	179.18	12,434.3	-1,189.1	-14.3	0.80	0.28	-0.75	12.4	-5.2	
13,470.0	91.43	178.21	12,434.5	-1,282.0	-12.2	3.61	3.45	-1.04	11.8	-3.7	
13,564.0	91.34	177.33	12,432.3	-1,375.9	-8.6	0.94	-0.10	-0.94	8.7	-0.7	
13,658.0	88.84	178.03	12,432.1	-1,469.8	-4.8	2.76	-2.66	0.74	7.6	2.4	
13,752.0	91.69	179.09	12,431.7	-1,563.8	-2.4	3.23	3.03	1.13	6.3	4.1	
13,846.0	90.42	178.91	12,430.0	-1,657.8	-0.8	1.36	-1.35	-0.19	3.7	5.1	
13,939.0	90.29	178.91	12,429.4	-1,750.8	1.0	0.14	-0.14	0.00	2.2	6.2	
14,033.0	91.25	179.62	12,428.1	-1,844.7	2.2	1.27	1.02	0.76	0.1	6.8	
14,126.0	90.15	178.47	12,427.0	-1,937.7	3.8	1.71	-1.18	-1.24	-2.0	7.6	
14,220.0	89.76	178.39	12,427.1	-2,031.7	6.3	0.42	-0.41	-0.09	-2.8	9.6	
14,314.0	90.99	178.39	12,426.4	-2,125.6	9.0	1.31	1.31	0.00	-4.3	11.5	
14,408.0	90.11	178.12	12,425.5	-2,219.6	11.9	0.98	-0.94	-0.29	-6.1	13.7	
14,501.0	89.14	177.60	12,426.1	-2,312.5	15.3	1.18	-1.04	-0.56	-6.4	16.5	
14,595.0	88.79	176.98	12,427.8	-2,406.4	19.8	0.76	-0.37	-0.66	-5.6	20.3	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Antietam 9 Fed Com
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB = 25 @ 3463.0usft (H&P 620)
 MD Reference: KB = 25 @ 3463.0usft (H&P 620)
 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)	
14,689.0	89.80	177.16	12,429.0	-2,500.3	24.6	1.09	1.07	0.19	-5.3	24.5	
14,783.0	92.22	180.50	12,427.3	-2,594.2	26.5	4.39	2.57	3.55	-7.8	25.7	
14,876.0	92.22	181.81	12,423.7	-2,687.1	24.6	1.41	0.00	1.41	-12.3	23.2	
14,970.0	91.12	182.34	12,421.0	-2,781.0	21.2	1.30	-1.17	0.56	-15.9	19.1	
15,063.0	90.90	182.25	12,419.4	-2,873.9	17.5	0.26	-0.24	-0.10	-18.4	14.7	
15,157.0	91.16	182.43	12,417.7	-2,967.8	13.7	0.34	0.28	0.19	-21.0	10.2	
15,251.0	90.95	181.11	12,415.9	-3,061.8	10.8	1.42	-0.22	-1.40	-23.5	6.7	
15,345.0	90.02	182.17	12,415.1	-3,155.7	8.1	1.50	-0.99	1.13	-25.1	3.3	
15,438.0	88.18	181.02	12,416.6	-3,248.7	5.5	2.33	-1.98	-1.24	-24.3	0.0	
15,532.0	87.34	181.20	12,420.3	-3,342.6	3.7	0.91	-0.89	0.19	-21.4	-2.5	
15,625.0	86.73	180.94	12,425.1	-3,435.4	1.9	0.71	-0.66	-0.28	-17.3	-4.9	
15,719.0	87.47	179.27	12,429.8	-3,529.3	1.7	1.94	0.79	-1.78	-13.2	-5.7	
15,813.0	88.40	178.83	12,433.2	-3,623.2	3.3	1.09	0.99	-0.47	-10.6	-4.8	
15,906.0	92.70	180.76	12,432.3	-3,716.2	3.6	5.07	4.62	2.08	-12.2	-5.2	
16,000.0	93.41	180.67	12,427.3	-3,810.1	2.5	0.76	0.76	-0.10	-17.9	-7.0	
16,094.0	92.44	180.23	12,422.5	-3,903.9	1.7	1.13	-1.03	-0.47	-23.4	-8.4	
16,188.0	90.42	178.30	12,420.2	-3,997.9	2.9	2.97	-2.15	-2.05	-26.5	-7.9	
16,281.0	90.07	178.39	12,419.8	-4,090.9	5.6	0.39	-0.38	0.10	-27.6	-5.9	
16,375.0	88.66	177.86	12,420.8	-4,184.8	8.7	1.60	-1.50	-0.56	-27.3	-3.5	
16,469.0	88.48	177.68	12,423.2	-4,278.7	12.4	0.27	-0.19	-0.19	-25.7	-0.5	
16,563.0	87.96	178.47	12,426.1	-4,372.6	15.5	1.01	-0.55	0.84	-23.5	2.0	
16,656.0	89.63	179.18	12,428.1	-4,465.6	17.4	1.95	1.80	0.76	-22.3	3.2	
16,750.0	89.19	178.47	12,429.0	-4,559.5	19.3	0.89	-0.47	-0.76	-22.0	4.4	
16,844.0	90.33	179.44	12,429.4	-4,653.5	21.1	1.59	1.21	1.03	-22.4	5.5	
16,938.0	89.80	179.53	12,429.3	-4,747.5	21.9	0.57	-0.56	0.10	-23.2	5.7	
17,032.0	89.01	179.00	12,430.3	-4,841.5	23.1	1.01	-0.84	-0.56	-22.9	6.2	
17,126.0	88.79	178.21	12,432.1	-4,935.4	25.4	0.87	-0.23	-0.84	-21.9	7.8	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Antietam 9 Fed Com
 Well: #701H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB = 25 @ 3463.0usft (H&P 620)
 MD Reference: KB = 25 @ 3463.0usft (H&P 620)
 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)
17,218.0	89.49	178.83	12,433.5	-5,027.4	27.8	1.02	0.76	0.67	-21.2	9.5
17,312.0	88.97	178.39	12,434.7	-5,121.4	30.1	0.72	-0.55	-0.47	-20.7	11.1
17,498.0	89.10	177.90	12,437.9	-5,307.2	36.1	0.27	0.07	-0.26	-18.9	15.8
17,592.0	88.60	179.80	12,439.8	-5,401.2	38.0	2.09	-0.53	2.02	-17.7	17.0
17,686.0	90.30	180.90	12,440.7	-5,495.2	37.4	2.15	1.81	1.17	-17.4	15.8
17,780.0	86.30	178.90	12,443.4	-5,589.1	37.5	4.76	-4.26	-2.13	-15.3	15.2
17,874.0	87.50	179.30	12,448.5	-5,683.0	39.0	1.35	1.28	0.43	-10.9	16.0
17,967.0	89.40	179.90	12,451.0	-5,775.9	39.7	2.14	2.04	0.65	-9.0	16.0
18,061.0	88.50	178.60	12,452.8	-5,869.9	40.9	1.68	-0.96	-1.38	-7.9	16.6
18,155.0	90.40	177.80	12,453.7	-5,963.9	43.9	2.19	2.02	-0.85	-7.7	18.8
18,248.0	92.40	179.50	12,451.4	-6,056.8	46.0	2.82	2.15	1.83	-10.6	20.4
18,342.0	92.40	179.00	12,447.5	-6,150.7	47.3	0.53	0.00	-0.53	-15.2	20.9
18,436.0	91.30	182.30	12,444.4	-6,244.6	46.2	3.70	-1.17	3.51	-18.9	19.2
18,529.0	88.40	180.70	12,444.7	-6,337.6	43.8	3.56	-3.12	-1.72	-19.3	16.1
18,624.0	87.50	179.20	12,448.1	-6,432.5	43.9	1.84	-0.95	-1.58	-16.6	15.5
18,718.0	90.90	180.10	12,449.4	-6,526.5	44.4	3.74	3.62	0.96	-15.9	15.4
18,811.0	91.50	179.30	12,447.4	-6,619.5	44.9	1.08	0.65	-0.86	-18.5	15.2
18,905.0	92.90	178.80	12,443.8	-6,713.4	46.5	1.58	1.49	-0.53	-22.8	16.1
18,999.0	92.00	178.20	12,439.8	-6,807.3	48.9	1.15	-0.96	-0.64	-27.4	17.9
19,092.0	93.60	180.70	12,435.3	-6,900.1	49.8	3.19	1.72	2.69	-32.6	18.1
19,186.0	91.80	180.50	12,430.8	-6,994.0	48.8	1.93	-1.91	-0.21	-37.7	16.4
19,280.0	89.60	180.60	12,429.7	-7,088.0	47.9	2.34	-2.34	0.11	-39.5	14.8
19,374.0	87.90	180.00	12,431.7	-7,182.0	47.4	1.92	-1.81	-0.64	-38.1	13.7
19,468.0	87.00	179.30	12,435.9	-7,275.9	48.0	1.21	-0.96	-0.74	-34.6	13.6
19,562.0	88.80	178.90	12,439.4	-7,369.8	49.5	1.96	1.91	-0.43	-31.8	14.4
19,656.0	86.50	171.60	12,443.2	-7,463.3	57.3	8.14	-2.45	-7.77	-28.8	21.2

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 25 @ 3463.0usft (H&P 620)
Site:	Antietam 9 Fed Com	MD Reference:	KB = 25 @ 3463.0usft (H&P 620)
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)	
19,679.0	86.10	170.60	12,444.7	-7,486.0	60.8	4.67	-1.74	-4.35	-27.6	24.6	
Final MWD Survey (MD=19679.0')											
19,722.8	86.10	170.60	12,447.7	-7,529.1	67.9	0.00	0.00	0.00	-25.0	31.4	
HL Crossing, MD:19722.8', TVD:12450.0', N/S:-7529.0', E/W:68.8', INC:86.10											
19,735.0	86.10	170.60	12,448.5	-7,541.1	69.9	0.00	0.00	0.00	-26.8	33.6	
Final Projection to Bit (MD=19735.0')											

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
12,446.6	12,367.7	-271.0	-34.5	HL Crossing, MD:12446.6', TVD:12367.7', N/S:-271.0', E/W:-34.5', INC:55.21	
19,679.0	12,444.7	-7,486.0	60.8	Final MWD Survey (MD=19679.0')	
19,722.8	12,447.7	-7,529.1	67.9	HL Crossing, MD:19722.8', TVD:12450.0', N/S:-7529.0', E/W:68.8', INC:86.10	
19,735.0	12,448.5	-7,541.1	69.9	Final Projection to Bit (MD=19735.0')	

Checked By: _____	Approved By: _____	Date: _____
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