



Lea County, NM (NAD 83 NME)

Philly 31 Fed Com #704H

H&P 642

Plan #2

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: #704H

KB = 25' @ 3390.0ust (H&P 642) 3385.0
Northing 365096.00 Easting 796290.00 Latitude 32° 0' 3.827 N Longitude 103° 30' 39.158 W

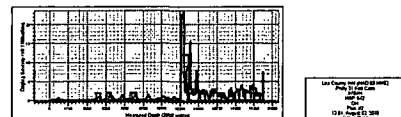
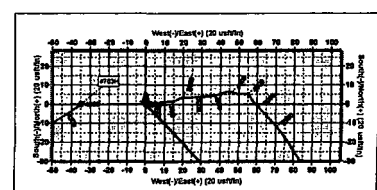
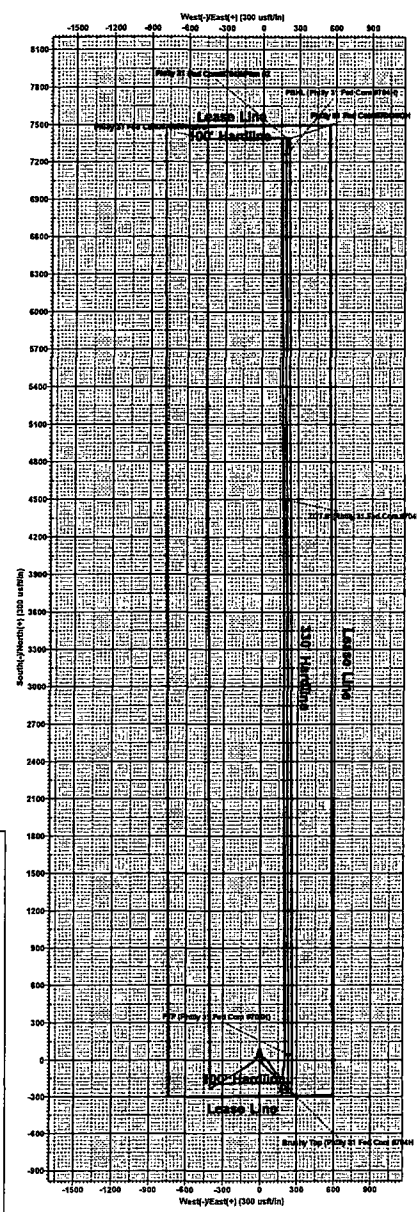
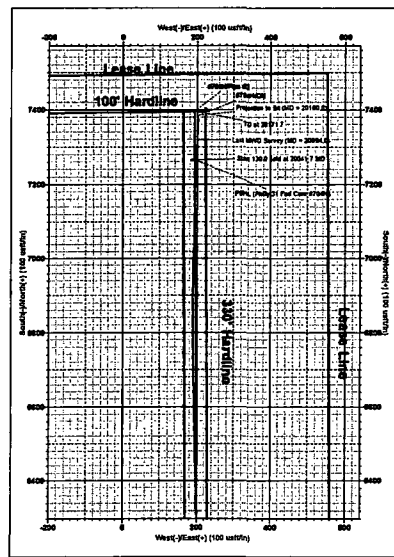
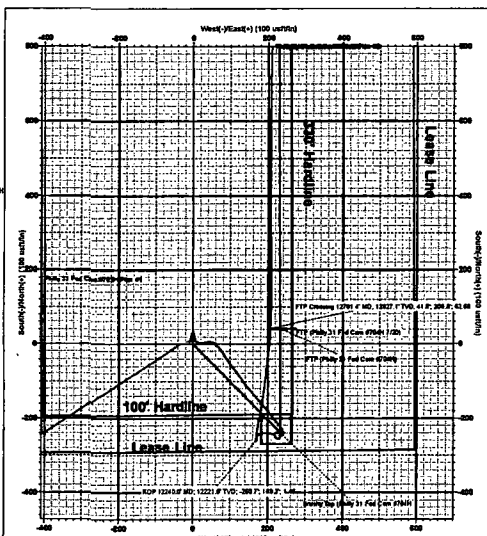
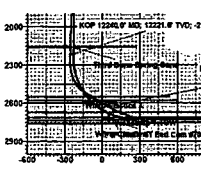
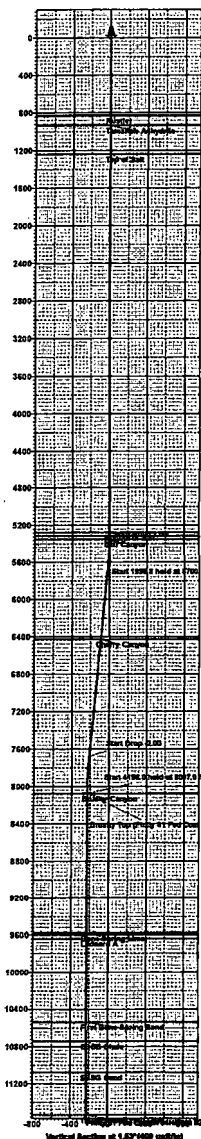
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5300.0	0.00	0.00	5300.0	0.0	0.0	0.00	0.00	0.0	
3	5700.1	8.00	135.49	5698.8	-19.9	19.5	2.00	135.49	-19.4	
4	7698.9	8.00	135.49	7676.2	-218.1	214.4	0.00	0.00	-212.3	
5	8097.0	0.00	0.00	8075.0	-238.0	234.0	2.00	180.00	-231.7	Brushy Top (Philly 31 Fed Com #704H)
6	12265.0	0.00	0.00	12243.0	-238.0	234.0	0.00	0.00	-231.7	
7	13014.0	89.87	359.69	12720.5	238.4	231.5	12.00	359.69	244.5	
8	17271.7	89.87	359.69	12730.0	4496.0	208.8	0.00	0.00	4500.0	TGT #1 (Philly 31 Fed Com #704H)
9	17281.2	90.06	359.69	12730.0	4505.5	208.7	2.00	0.00	4509.5	
10	20041.7	90.06	359.69	12727.0	7266.0	194.0	0.00	0.00	7268.6	PBHL (Philly 31 Fed Com #704H)
11	20171.7	90.06	359.69	12726.9	7396.0	193.3	0.00	0.00	7398.5	

CASINGS DETAILS
No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Brushy Top (Philly 31 Fed Com #704H)	8076.0	-238.0	234.0	364950.00	796324.00
FTP (Philly 31 Fed Com #704H 7/20)	12702.0	42.0	264.0	365138.00	796554.00
PBHL (Philly 31 Fed Com #704H 7/20)	12702.0	7386.0	223.0	372452.00	796513.00
FTP (Philly 31 Fed Com #704H)	12720.0	42.0	234.0	365138.00	796524.00
PBHL (Philly 31 Fed Com #704H)	12727.0	7266.0	194.0	372382.00	796484.00
TGT #1 (Philly 31 Fed Com #704H)	12730.0	4496.0	208.8	369592.00	796498.77



HOBBS OCD
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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Philly 31 Fed Com

#704H

OH

Design: OH

Midland PVA

02 August, 2018



Midland PVA

Company: EOG Resources - Midland		Local Co-ordinate Reference: Well #704H	
Project: Lea County, NM (NAD 83 NME)		TVD Reference: KB = 25' @ 3390.0usft (H&P 642)	
Site: Philly 31 Fed Com		MD Reference: KB = 25' @ 3390.0usft (H&P 642)	
Well: #704H		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 Philly 31 Fed Com			
Site Position:	From: Map	Northing: 365,084.00 usft	Latitude: 32° 0' 3.819 N
		Easting: 794,820.00 usft	Longitude: 103° 30' 56.229 W
Position Uncertainty: 0.0 usft		Slot Radius: 13-3/16 "	Grid Convergence: 0.43 °

Well #704H			
Well Position	+N-S 0.0 usft	Northing: 365,096.00 usft	Latitude: 32° 0' 3.827 N
	+E-W 0.0 usft	Easting: 796,290.00 usft	Longitude: 103° 30' 39.158 W
Position Uncertainty 0.0 usft		Wellhead Elevation: usft	Ground Level: 3,365.0 usft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/19/2017	6.88	59.86	47,785.86156761

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	1.53	

Survey Program Date 8/2/2018				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
150.0	20,160.0	Gordon MWD (OH)	MWD	OWSG MWD - Standard



Midland PVA

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Site:	Philly 31 Fed Com	MD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Bjld (°/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
150.0	0.39	97.28	150.0	-0.1	0.5	0.26	0.26	0.00	-0.5	0.0	
331.0	0.76	106.98	331.0	-0.5	2.3	0.21	0.20	5.36	-2.3	0.2	
512.0	1.02	68.67	512.0	-0.3	4.9	0.35	0.14	-21.06	-4.5	-2.0	
693.0	0.67	49.56	692.9	1.0	7.2	0.25	-0.19	-10.67	-6.1	-3.9	
790.0	0.12	185.52	789.9	1.3	7.6	0.78	-0.57	140.16	2.0	7.5	
926.0	0.39	103.61	925.9	1.0	8.1	0.29	0.20	-60.23	-7.6	2.9	
1,078.0	0.87	80.83	1,077.9	1.1	9.7	0.35	0.32	-14.99	-9.8	-0.5	
1,266.0	0.68	84.11	1,265.9	1.4	12.2	0.10	-0.10	1.74	-12.3	0.2	
1,454.0	0.76	88.55	1,453.9	1.6	14.6	0.05	0.04	2.36	-14.6	1.2	
1,641.0	0.79	58.39	1,640.9	2.3	16.9	0.22	0.02	-16.13	-15.6	-6.9	
1,829.0	0.53	60.95	1,828.9	3.4	18.8	0.14	-0.14	1.36	-18.1	-6.2	
2,016.0	0.39	108.11	2,015.9	3.6	20.2	0.21	-0.07	25.22	-18.0	9.7	
2,204.0	0.45	95.52	2,203.9	3.3	21.5	0.06	0.03	-6.70	-21.1	5.4	
2,392.0	0.43	82.58	2,391.9	3.4	22.9	0.05	-0.01	-6.88	-23.2	0.4	
2,486.0	0.56	79.22	2,485.9	3.5	23.7	0.14	0.14	-3.57	-24.0	-1.0	
2,674.0	0.81	85.80	2,673.8	3.8	26.0	0.14	0.13	3.50	-26.2	1.8	
2,861.0	0.80	91.17	2,860.8	3.8	28.6	0.04	-0.01	2.87	-28.5	4.4	
3,049.0	0.84	86.93	3,048.8	3.9	31.3	0.04	0.02	-2.26	-31.4	2.2	
3,237.0	0.97	82.60	3,236.8	4.1	34.2	0.08	0.07	-2.30	-34.5	-0.3	
3,425.0	1.41	76.68	3,424.7	4.9	38.1	0.24	0.23	-3.15	-38.2	-4.0	
3,613.0	0.93	72.51	3,612.7	5.9	41.8	0.26	-0.26	-2.22	-41.6	-6.9	
3,800.0	0.72	78.54	3,799.7	6.6	44.4	0.12	-0.11	3.22	-44.6	-2.4	
3,988.0	0.65	124.93	3,987.7	6.2	46.4	0.29	-0.04	24.68	-34.5	31.6	
4,177.0	1.01	98.07	4,176.6	5.3	48.9	0.28	0.19	-14.21	-47.7	12.2	
4,364.0	1.52	78.97	4,363.6	5.6	53.0	0.35	0.27	-10.21	-53.1	-4.7	
4,551.0	0.82	165.45	4,550.6	4.8	55.8	0.90	-0.37	46.25	-9.4	55.2	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Site:	Philly 31 Fed Com	MD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	NS (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
4,739.0	1.07	137.48	4,738.6	2.2	57.3	0.28	0.13	-14.88	-37.1	43.7	
4,927.0	1.14	136.42	4,926.5	-0.5	59.8	0.04	0.04	-0.56	-41.5	43.0	
5,114.0	1.89	135.08	5,113.4	-4.0	63.2	0.40	0.40	-0.72	-47.5	42.0	
5,158.0	1.73	136.57	5,157.4	-5.0	64.2	0.38	-0.36	3.39	-47.8	43.2	
5,278.0	1.47	140.48	5,278.4	-7.5	66.4	0.23	-0.21	3.23	-48.1	46.5	
5,467.0	1.54	131.91	5,466.3	-11.1	69.9	0.13	0.04	-4.56	-54.5	38.7	
5,654.0	5.74	144.32	5,652.9	-20.4	77.2	2.27	2.25	6.64	-39.7	47.4	
5,840.0	6.92	147.36	5,837.8	-37.3	88.6	0.66	0.63	1.63	-32.5	44.6	
6,027.0	6.80	143.16	6,023.4	-55.7	101.4	0.28	-0.06	-2.25	-32.2	37.8	
6,215.0	6.89	142.76	6,210.1	-73.6	114.9	0.05	0.05	-0.21	-28.8	34.2	
6,403.0	6.18	143.42	6,396.9	-90.7	127.7	0.38	-0.38	0.35	-23.9	31.1	
6,591.0	5.40	145.31	6,583.9	-106.1	138.8	0.43	-0.41	1.01	-15.9	27.7	
6,778.0	8.26	138.24	6,769.6	-123.3	152.7	1.59	1.53	-3.78	-15.4	23.2	
6,965.0	8.41	140.15	6,954.6	-143.9	170.4	0.17	0.08	1.02	-15.8	22.0	
7,153.0	7.52	139.97	7,140.8	-163.8	187.2	0.47	-0.47	-0.10	-15.8	19.9	
7,340.0	6.96	140.37	7,326.3	-181.9	202.3	0.30	-0.30	0.21	-13.2	17.9	
7,528.0	6.18	140.98	7,513.0	-198.6	215.9	0.42	-0.41	0.32	-8.5	15.6	
7,715.0	5.44	143.19	7,699.1	-213.5	227.6	0.41	-0.40	1.18	-1.0	12.8	
7,903.0	3.37	147.86	7,886.5	-225.3	235.8	1.12	-1.10	2.48	3.7	9.6	
8,090.0	0.98	187.62	8,073.4	-231.5	238.5	1.44	-1.28	21.26	7.0	3.6	
8,278.0	1.04	201.38	8,261.3	-234.7	237.7	0.13	0.03	7.32	4.4	2.3	
8,466.0	0.99	179.11	8,449.3	-237.9	237.1	0.21	-0.03	-11.85	0.0	3.1	
8,653.0	1.38	190.45	8,636.3	-241.8	236.7	0.24	0.21	6.06	-3.2	3.4	
8,840.0	1.63	195.30	8,823.2	-246.5	235.6	0.15	0.13	2.59	-7.8	3.8	
9,028.0	2.61	197.95	9,011.1	-253.2	233.6	0.52	0.52	1.41	-14.6	4.3	
9,215.0	0.99	312.63	9,198.0	-256.2	231.1	1.69	-0.87	61.33	10.2	15.3	
9,403.0	0.54	293.49	9,386.0	-254.7	229.1	0.27	-0.24	-10.18	2.1	17.3	



Midland PVA

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Site:	Philly 31 Fed Com	MD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	D Leg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
9,591.0	0.60	251.13	9,574.0	-254.7	227.3	0.22	0.03	-22.53	-11.7	13.6	
9,778.0	0.39	277.10	9,761.0	-254.9	225.8	0.16	-0.11	13.89	-6.1	17.8	
9,966.0	0.74	312.46	9,949.0	-254.0	224.3	0.25	0.19	18.81	3.6	18.4	
10,154.0	2.01	335.83	10,136.9	-250.2	222.0	0.72	0.68	12.43	6.2	15.9	
10,341.0	1.71	320.42	10,323.8	-245.0	218.9	0.31	-0.16	-8.24	-4.2	16.1	
10,529.0	1.07	267.23	10,511.8	-243.0	215.3	0.73	-0.34	-28.29	-18.9	4.0	
10,716.0	3.10	283.46	10,698.6	-241.9	208.7	1.12	1.09	8.68	-23.7	9.7	
10,904.0	3.55	278.93	10,886.3	-240.0	198.0	0.31	0.24	-3.47	-35.5	6.3	
11,091.0	2.26	263.36	11,073.1	-239.7	188.5	0.78	-0.69	-7.26	-45.3	-3.6	
11,278.0	1.74	244.85	11,260.0	-241.3	182.3	0.44	-0.28	-9.90	-48.2	-19.0	
11,466.0	2.14	258.19	11,447.9	-243.3	176.3	0.32	0.21	7.10	-57.6	-6.7	
11,654.0	1.14	179.72	11,635.8	-245.9	172.9	1.18	-0.53	-41.74	-7.6	-61.2	
11,841.0	2.01	177.63	11,822.7	-251.0	173.0	0.47	0.47	-1.12	-10.5	-61.5	
12,029.0	1.38	207.59	12,010.6	-256.3	172.1	0.57	-0.34	15.94	-44.9	-46.4	
12,058.0	1.39	211.71	12,039.6	-256.9	171.8	0.35	0.03	14.21	-48.8	-43.0	
12,238.0	1.49	216.95	12,219.6	-260.6	169.2	0.09	0.06	2.91	-57.0	-38.2	
12,240.0	1.46	216.40	12,221.6	-260.7	169.2	1.86	-1.72	-27.25	-56.7	-38.7	
KOP 12240.0 MD: 12221.6 TVD: -260.7; 169.2; 1.46											
12,269.0	0.98	204.30	12,250.6	-261.2	168.9	1.86	-1.64	-41.74	-48.0	-49.8	
12,332.0	3.57	359.49	12,313.5	-259.7	168.6	7.11	4.11	246.33	26.0	65.6	
12,363.0	10.25	4.83	12,344.3	-256.0	168.8	21.62	21.55	17.23	33.5	62.6	
12,426.0	24.42	9.15	12,404.3	-237.5	171.4	22.57	22.49	6.86	34.8	58.0	
12,473.0	35.22	10.68	12,445.0	-214.5	175.5	23.03	22.98	3.26	28.0	54.7	
12,520.0	46.12	10.82	12,480.6	-184.4	181.2	23.19	23.19	0.30	15.1	51.0	
12,562.0	54.28	7.78	12,507.5	-152.6	186.3	20.20	19.43	-7.24	-0.5	47.4	
12,609.0	56.86	6.93	12,534.0	-114.2	191.3	5.69	5.49	-1.81	-15.8	43.6	
12,658.0	58.07	6.26	12,560.4	-73.1	196.0	2.73	2.47	-1.37	-29.1	39.5	



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12,702.0	59.77	6.26	12,583.1	-35.7	200.1	3.86	3.86	0.00	-37.7	35.5
12,749.0	59.90	5.12	12,606.7	4.7	204.2	2.12	0.28	-2.43	-43.2	30.7
12,791.4	62.60	3.08	12,627.1	41.8	206.8	7.62	6.36	-4.80	-44.9	26.9
FTP Crossing 12791.4' MD; 12627.1' TVD; 41.8°; 206.8°; 62.60										
12,796.0	62.89	2.87	12,629.2	45.9	207.0	7.62	6.40	-4.67	-44.9	26.6
12,842.0	66.69	0.75	12,648.8	87.5	208.3	9.25	8.26	-4.61	-44.0	24.2
12,889.0	67.97	0.07	12,666.9	130.9	208.6	3.03	2.72	-1.45	-39.7	23.6
12,936.0	67.81	0.07	12,684.6	174.4	208.7	0.34	-0.34	0.00	-30.7	23.6
12,968.0	68.16	0.24	12,696.6	204.1	208.8	1.20	1.09	0.53	-21.9	23.4
12,999.0	69.49	359.67	12,707.8	233.0	208.8	4.62	4.29	-1.84	-12.0	23.0
13,030.0	70.27	358.83	12,718.5	262.1	208.4	3.58	2.52	-2.71	-2.0	23.0
13,062.0	73.82	358.21	12,728.3	292.5	207.6	11.25	11.09	-1.94	7.3	23.7
13,093.0	76.81	359.09	12,736.2	322.5	206.9	10.03	9.65	2.84	15.2	24.3
13,124.0	78.96	359.73	12,742.7	352.8	206.6	7.22	6.94	2.06	21.8	24.5
13,155.0	82.53	0.03	12,747.7	383.4	206.5	11.56	11.52	0.97	26.8	24.3
13,187.0	87.53	0.14	12,750.5	415.2	206.5	15.63	15.62	0.34	29.6	24.0
13,218.0	91.37	0.57	12,750.8	446.2	206.7	12.46	12.39	1.39	29.8	23.6
13,249.0	91.94	0.09	12,749.9	477.2	206.9	2.40	1.84	-1.55	28.8	23.3
13,280.0	92.41	359.84	12,748.7	508.2	206.9	1.72	1.52	-0.81	27.6	23.1
13,312.0	92.89	0.38	12,747.2	540.2	207.0	2.26	1.50	1.69	26.0	22.9
13,406.0	89.86	0.73	12,744.9	634.1	207.9	3.24	-3.22	0.37	23.6	21.5
13,499.0	88.71	0.12	12,746.1	727.1	208.6	1.40	-1.24	-0.66	24.5	20.3
13,593.0	90.00	2.07	12,747.2	821.1	210.4	2.49	1.37	2.07	25.4	18.0
13,687.0	90.90	3.39	12,746.4	915.0	214.8	1.70	0.96	1.40	24.5	13.0
13,781.0	87.98	356.55	12,747.3	1,008.9	214.8	7.91	-3.11	-7.28	25.2	12.6
13,874.0	89.97	357.08	12,749.0	1,101.7	209.6	2.21	2.14	0.57	26.6	17.2
13,968.0	90.53	359.79	12,748.6	1,195.7	207.1	2.94	0.60	2.88	26.0	19.3



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Site:	Philly 31 Fed Com	MD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	D Leg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
14,061.0	91.09	0.62	12,747.3	1,288.7	207.4	1.08	0.60	0.89	24.5	18.5	
14,155.0	89.41	358.76	12,746.9	1,382.7	206.9	2.67	-1.79	-1.98	23.8	18.5	
14,249.0	91.26	359.07	12,746.3	1,476.6	205.1	2.00	1.97	0.33	23.1	19.8	
14,343.0	92.30	0.31	12,743.4	1,570.6	204.6	1.72	1.11	1.32	19.9	19.8	
14,437.0	89.72	359.41	12,741.7	1,664.6	204.4	2.91	-2.74	-0.96	18.1	19.5	
14,530.0	90.56	1.37	12,741.5	1,757.6	205.0	2.29	0.90	2.11	17.7	18.4	
14,624.0	90.34	1.45	12,740.8	1,851.5	207.3	0.25	-0.23	0.09	16.7	15.6	
14,718.0	87.76	1.96	12,742.3	1,945.5	210.1	2.80	-2.74	0.54	18.1	12.2	
14,812.0	89.44	2.43	12,744.6	2,039.4	213.7	1.86	1.79	0.50	20.1	8.1	
14,905.0	89.47	2.31	12,745.5	2,132.3	217.5	0.13	0.03	-0.13	20.8	3.8	
14,999.0	89.83	1.40	12,746.1	2,226.2	220.6	1.04	0.38	-0.97	21.2	0.3	
15,092.0	90.28	1.77	12,746.0	2,319.2	223.2	0.63	0.48	0.40	20.9	-2.8	
15,186.0	88.01	1.19	12,747.4	2,413.2	225.6	2.49	-2.41	-0.62	22.1	-5.7	
15,311.0	90.59	358.23	12,748.9	2,538.1	225.0	3.14	2.06	-2.37	23.3	-5.8	
15,404.0	90.81	359.51	12,747.8	2,631.1	223.1	1.40	0.24	1.38	22.0	-4.4	
15,498.0	89.94	356.76	12,747.2	2,725.0	220.1	3.07	-0.93	-2.93	21.2	-1.9	
15,592.0	90.36	358.95	12,746.9	2,819.0	216.5	2.37	0.45	2.33	20.7	1.2	
15,686.0	88.29	358.63	12,748.0	2,912.9	214.6	2.23	-2.20	-0.34	21.6	2.6	
15,779.0	88.94	359.43	12,750.3	3,005.9	213.0	1.11	0.70	0.86	23.6	3.7	
15,873.0	90.11	359.70	12,751.1	3,099.9	212.3	1.28	1.24	0.29	24.2	3.9	
15,967.0	88.40	358.62	12,752.3	3,193.8	210.9	2.15	-1.82	-1.15	25.2	4.8	
16,060.0	89.52	359.38	12,754.0	3,286.8	209.3	1.46	1.20	0.82	26.7	5.9	
16,154.0	89.33	358.92	12,754.9	3,380.8	207.9	0.53	-0.20	-0.49	27.4	6.8	
16,248.0	90.65	0.26	12,754.9	3,474.8	207.2	2.00	1.40	1.43	27.2	7.0	
16,341.0	89.36	0.85	12,754.9	3,567.8	208.1	1.53	-1.39	0.63	27.0	5.6	
16,435.0	88.54	359.35	12,756.7	3,661.7	208.3	1.82	-0.87	-1.60	28.5	4.9	
16,529.0	88.91	358.69	12,758.8	3,755.7	206.7	0.80	0.39	-0.70	30.4	6.0	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #704H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Site:	Philly 31 Fed Com	MD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Bold (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
16,623.0	89.19	358.63	12,760.3	3,849.7	204.5	0.30	0.30	-0.06	31.8	7.7	
16,717.0	88.99	358.39	12,761.8	3,943.6	202.0	0.33	-0.21	-0.26	33.0	9.7	
16,810.0	88.88	358.44	12,763.5	4,036.6	199.4	0.13	-0.12	0.05	34.6	11.8	
16,904.0	91.40	359.19	12,763.3	4,130.5	197.5	2.80	2.68	0.80	34.1	13.2	
16,999.0	92.49	359.39	12,760.1	4,225.5	196.3	1.17	1.15	0.21	30.7	13.9	
17,092.0	89.44	358.74	12,758.5	4,318.4	194.8	3.35	-3.28	-0.70	28.9	14.9	
17,186.0	88.71	357.97	12,760.0	4,412.4	192.1	1.13	-0.78	-0.82	30.2	17.1	
17,279.0	89.69	359.38	12,761.3	4,505.3	190.0	1.85	1.05	1.52	31.3	18.8	
17,373.0	89.78	358.91	12,761.8	4,599.3	188.6	0.51	0.10	-0.50	31.9	19.7	
17,467.0	91.18	0.40	12,761.0	4,693.3	188.0	2.17	1.49	1.59	31.2	19.7	
17,561.0	89.19	359.89	12,760.7	4,787.3	188.2	2.19	-2.12	-0.54	31.0	19.0	
17,654.0	91.43	1.78	12,760.2	4,880.3	189.6	3.15	2.41	2.03	30.6	17.1	
17,748.0	89.66	1.25	12,759.3	4,974.3	192.1	1.97	-1.88	-0.56	29.8	14.1	
17,842.0	89.10	0.55	12,760.3	5,068.2	193.5	0.95	-0.60	-0.74	30.9	12.2	
17,936.0	91.21	2.21	12,760.0	5,162.2	195.8	2.86	2.24	1.77	30.7	9.4	
18,030.0	88.09	0.12	12,760.6	5,256.2	197.7	3.99	-3.32	-2.22	31.4	7.0	
18,123.0	91.34	2.19	12,761.1	5,349.1	199.6	4.14	3.49	2.23	32.0	4.6	
18,217.0	90.56	1.29	12,759.5	5,443.1	202.5	1.27	-0.83	-0.96	30.5	1.3	
18,311.0	88.01	0.07	12,760.7	5,537.0	203.6	3.01	-2.71	-1.30	31.8	-0.4	
18,405.0	88.26	0.53	12,763.7	5,631.0	204.1	0.56	0.27	0.49	35.0	-1.3	
18,499.0	90.73	1.42	12,764.6	5,725.0	205.7	2.79	2.63	0.95	35.9	-3.4	
18,593.0	90.95	358.97	12,763.2	5,818.9	206.0	2.62	0.23	-2.61	34.6	-4.3	
18,687.0	92.22	0.47	12,760.6	5,912.9	205.5	2.09	1.35	1.60	32.1	-4.3	
18,781.0	92.47	2.28	12,756.7	6,006.8	207.8	1.94	0.27	1.93	28.4	-7.1	
18,875.0	91.18	358.94	12,753.8	6,100.7	208.8	3.81	-1.37	-3.55	25.5	-8.6	
18,969.0	90.98	358.38	12,752.0	6,194.7	206.6	0.63	-0.21	-0.60	23.8	-6.9	
19,063.0	87.87	356.58	12,752.9	6,288.6	202.4	3.82	-3.31	-1.91	24.9	-3.2	



Midland PVA

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Site:	Philly 31 Fed Com	MD Reference:	KB = 25' @ 3390.0usft (H&P 642)
Well:	#704H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
19,157.0	91.40	358.32	12,753.5	6,382.5	198.3	4.19	3.76	1.85	25.6	0.4
19,251.0	91.29	358.72	12,751.3	6,476.4	195.8	0.44	-0.12	0.43	23.5	2.4
19,345.0	92.16	358.96	12,748.5	6,570.3	193.9	0.96	0.93	0.26	20.7	3.8
19,438.0	89.07	358.72	12,747.5	6,663.3	192.0	3.33	-3.32	-0.26	19.8	5.2
19,532.0	90.14	358.70	12,748.1	6,757.3	189.9	1.14	1.14	-0.02	20.6	6.8
19,625.0	90.95	0.36	12,747.3	6,850.3	189.2	1.99	0.87	1.78	19.8	7.0
19,710.0	89.97	1.23	12,746.6	6,935.2	190.4	1.54	-1.15	1.02	19.2	5.4
19,803.0	88.18	1.06	12,748.1	7,028.2	192.2	1.93	-1.92	-0.18	20.8	3.1
19,897.0	86.78	1.04	12,752.2	7,122.1	193.9	1.49	-1.49	-0.02	25.1	0.8
19,990.0	87.45	2.26	12,756.9	7,214.9	196.6	1.50	0.72	1.31	29.8	-2.3
20,085.0	87.53	2.47	12,761.0	7,309.8	200.5	0.24	0.08	0.22	34.1	-6.8
20,094.0	88.09	2.86	12,761.4	7,318.8	200.9	7.55	6.19	4.31	34.5	-7.2
Last MWD Survey (MD = 20094.0)										
20,160.0	88.09	2.86	12,763.6	7,384.7	204.2	0.00	0.00	0.00	36.7	-10.9
Projection to Bit (MD = 20160.0)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
12,240.0	12,221.6	-260.7	169.2	KOP 12240.0' MD; 12221.6' TVD; -260.7'; 169.2'; 1.46
12,791.4	12,627.1	41.8	206.8	FTP Crossing 12791.4' MD; 12627.1' TVD; 41.8'; 206.8'; 62.60
20,094.0	12,761.4	7,318.8	200.9	Last MWD Survey (MD = 20094.0)
20,160.0	12,763.6	7,384.7	204.2	Projection to Bit (MD = 20160.0)

Checked By: _____ Approved By: _____ Date: _____