

Revised Permit Information:

Well Name: Thor 21 No. 706H

Location:

SL: 765' FSL & 236' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

BHL: 230' FNL & 660' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

30-025-42728
HOBBS OCD
AUG 05 2015

RECEIVED

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
14.75"	0 - 1000'	10.75"	40.5#	J55	STC	1.125	1.25	1.60
9.875"	0-10,500'	7.625"	29.7#	HCP-110	LTC	1.125	1.25	1.60
6.75"	0'-17,105'	5.5"	17#	HCP-110	BTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Slurry Description
1000'	300	13.5	1.73	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
10,500' DV Tool w/ ECP @ 5,000'	315	10.8	3.68	Stage 1 Lead: Class C + 15.00 lbs/sk BA-90 + 4.00% MPA-5 + 3.00% SMS + 5.00% A-10 + 1.00% BA-10A + 0.80% ASA-301 + 2.90% R-21 + 8.00 lb/sk LCM-1 + 0.005 lb/sx Static Free
	250	15.6	1.19	Stage 1 Tail: Class H + 1.0% FL-52 + 0.6% CD-32 + 0.5% SMS + 1.0% Salt + 0.3% R-3
	550	12.7	2.22	Stage 2 Lead: Class 'C' + 2.0% SMS + 10.0% Slat + 0.55% R-21 + 0.25 pps Celloflake + 0.005 pps Static Free (TOC @ Surface)
	200	14.8	1.35	Stage 2 Tail: Class 'C' + 0.60% FL-62 + 0.7% CD-32 + 0.3% SMS + 2.0% Salt + 0.10% R-3 + 0.005 pps Static Free + 0.005 gps FP-6L
17,105'	625	14.2	1.35	50:50:2 Class H + 0.65% FL-52 + 0.70% CD-32 + 1.0% EC-1 + 0.40% SMS + 2.0% Salt + 0.05% R-3 + 0.005 pps Static Free + 0.005 gps FP-6L (TOC @ 11,000')

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 - 1000'	Fresh - Gel	8.6-8.8	28-34	N/c
1000' - 10,500'	Oil Base	8.7-9.4	58-68	N/c - 6
10,500' - 11,715'	Oil Base	8.7-9.4	58-68	N/c - 6
11,715' - 17,105' Lateral	Oil Base	9.0-9.5	58-68	N/c - 6

AUG 11 2015

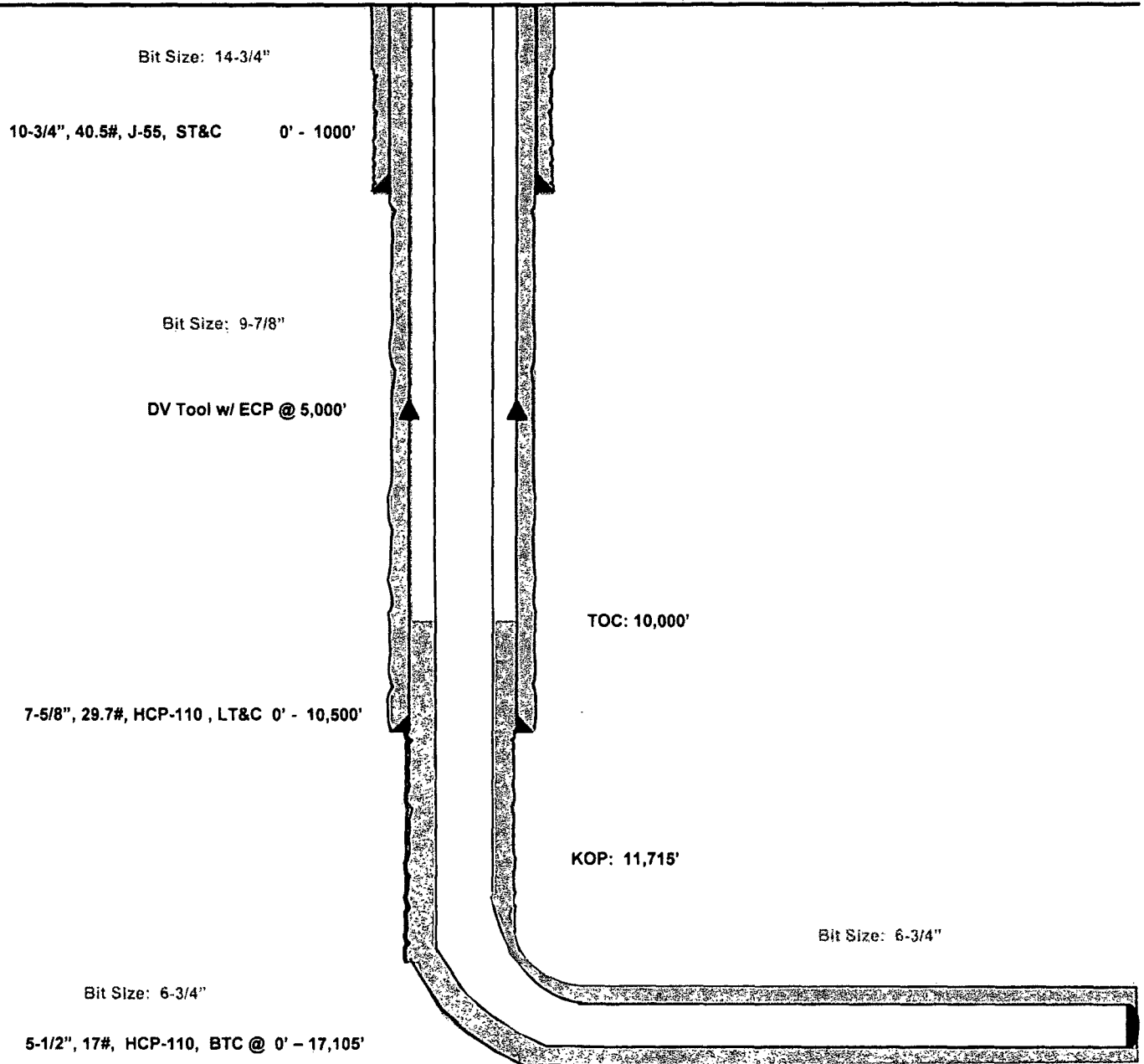
Thor 21 #706H

Lea County, New Mexico
Proposed Wellbore

KB: 3,283'
GL: 3,258'

765' FSL
236' FEL
Section 21
T-26-S, R-33-E

API: 30-025-*****



Lateral: 17,105' MD, 12,300' TVD

BH Location: 230' FNL & 660' FEL
Section 21
T-26-S, R-33-E



Lea County, NM (NAD 27 NME)

Thor 21 #706H

H&P 260

Plan #1

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: #706H

Ground Level: 3289.0
KB = 25 @ 3283.0m (H&P 260)
Nothing 373189.00
Easting 736878.00
Latitude 32° 1' 23.258 N
Longitude 103° 34' 8.440 W

SECTION DETAILS

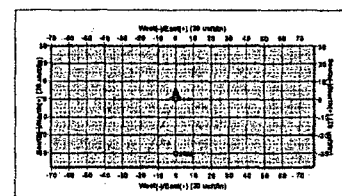
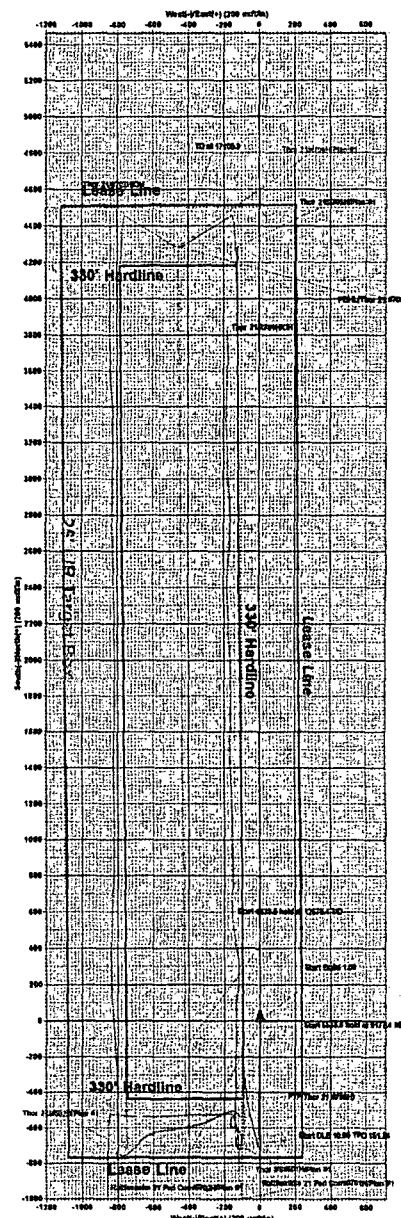
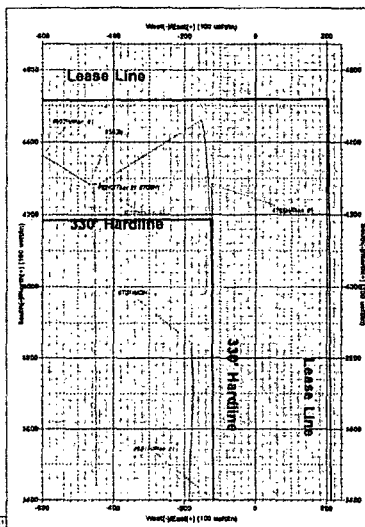
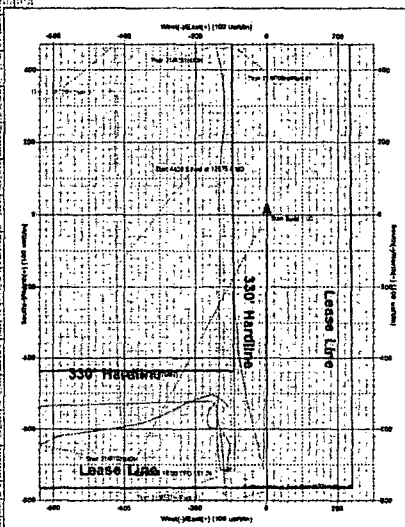
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	VSeal	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4500.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.0		
3	6177.4	6.77	258.18	6178.9	-48.3	-18.8	1.00	268.18	-33.1		
4	11719.8	6.77	258.18	11688.7	-718.0	-383.3	0.00	0.00	-470.7		
5	17878.4	90.00	328.80	12300.0	-148.4	-423.0	10.00	181.34	-100.0		
6	17108.8	90.00	328.80	12300.0	-428.0	-484.8	0.00	0.00	4309.9		PBH(Thor 21 #706H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	North	Easting
PBH(Thor 21 #706H)	12300.0	428.0	-484.0	377488.00	736434.00
FTP(Thor 21 #706H)	12300.0	-428.0	-421.0	377744.00	736487.00



Vertical Section of 330' H&P (200 m/ft)

Vertical Section of 330' H&P (200 m/ft)



EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Thor 21

#706H

OH

Plan: Plan #1

Standard Planning Report

05 August, 2015



EOG Resources, Inc.

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #706H
Company:	EOG Resources - Midland	TVD Reference:	KB = 25 @ 3283.0usft (H&P 260)
Project:	Lea County, NM (NAD 27 NME)	MD Reference:	KB = 25 @ 3283.0usft (H&P 260)
Site:	Thor 21	North Reference:	Grid
Well:	#706H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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:	Thor 21			
Site Position:	Northing:	372,644.00 usft	Latitude:	32° 1' 19.984 N
From:	Map	Easting:	736,738.00 usft	Longitude:
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:
				0.41 °

Well:	#706H					
Well Position	+N-S	536.0 usft	Northing:	373,180.00 usft	Latitude:	32° 1' 25.258 N
	+E-W	140.0 usft	Easting:	736,878.00 usft	Longitude:	103° 34' 8.440 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,258.0 usft	

Wellbore:	OH					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength	
			(°)	(°)	(nT)	
	IGRF2015	10/1/2015	7.12	59.90	47,996	

Design:	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	353.95

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,177.4	6.77	208.19	5,175.8	-35.3	-18.9	1.00	1.00	0.00	208.19	
11,715.9	6.77	208.19	11,668.7	-715.0	-383.2	0.00	0.00	0.00	0.00	
12,675.4	90.00	359.60	12,300.0	-145.4	-423.0	10.00	8.67	15.78	151.24	
17,105.9	90.00	359.60	12,300.0	4,285.0	-454.0	0.00	0.00	0.00	0.00	PBHL(Thor 21 #706H)



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
 Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27-NME)
 Site: Thor 21
 Well: #706H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well #706H
 TVD Reference: KB = 25 @ 3283.0usft (H&P 260)
 MD Reference: KB = 25 @ 3283.0usft (H&P 260)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	1.00	208.19	4,600.0	-0.8	-0.4	-0.7	1.00	1.00	0.00
4,700.0	2.00	208.19	4,700.0	-3.1	-1.6	-2.9	1.00	1.00	0.00
4,800.0	3.00	208.19	4,799.9	-6.9	-3.7	-6.5	1.00	1.00	0.00
4,900.0	4.00	208.19	4,899.7	-12.3	-6.6	-11.5	1.00	1.00	0.00
5,000.0	5.00	208.19	4,999.4	-19.2	-10.3	-18.0	1.00	1.00	0.00
5,100.0	6.00	208.19	5,098.9	-27.7	-14.8	-25.9	1.00	1.00	0.00
5,177.4	6.77	208.19	5,175.8	-35.3	-18.9	-33.1	1.00	1.00	0.00
5,200.0	6.77	208.19	5,198.3	-37.6	-20.2	-35.3	0.00	0.00	0.00



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Wellbore: OH
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MD Reference: KB = 25 @ 3283.0usft (H&P 260)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	6.77	208.19	5,297.6	-48.0	-25.7	-45.0	0.00	0.00	0.00
5,400.0	6.77	208.19	5,396.9	-58.4	-31.3	-54.8	0.00	0.00	0.00
5,500.0	6.77	208.19	5,496.2	-68.8	-36.9	-64.5	0.00	0.00	0.00
5,600.0	6.77	208.19	5,595.5	-79.2	-42.4	-74.3	0.00	0.00	0.00
5,700.0	6.77	208.19	5,694.8	-89.6	-48.0	-84.0	0.00	0.00	0.00
5,800.0	6.77	208.19	5,794.1	-100.0	-53.6	-93.8	0.00	0.00	0.00
5,900.0	6.77	208.19	5,893.4	-110.4	-59.2	-103.5	0.00	0.00	0.00
6,000.0	6.77	208.19	5,992.7	-120.8	-64.7	-113.3	0.00	0.00	0.00
6,100.0	6.77	208.19	6,092.0	-131.2	-70.3	-123.0	0.00	0.00	0.00
6,200.0	6.77	208.19	6,191.3	-141.6	-75.9	-132.8	0.00	0.00	0.00
6,300.0	6.77	208.19	6,290.6	-152.0	-81.4	-142.5	0.00	0.00	0.00
6,400.0	6.77	208.19	6,389.9	-162.4	-87.0	-152.3	0.00	0.00	0.00
6,500.0	6.77	208.19	6,489.2	-172.8	-92.6	-162.0	0.00	0.00	0.00
6,600.0	6.77	208.19	6,588.5	-183.1	-98.1	-171.8	0.00	0.00	0.00
6,700.0	6.77	208.19	6,687.8	-193.5	-103.7	-181.5	0.00	0.00	0.00
6,800.0	6.77	208.19	6,787.1	-203.9	-109.3	-191.3	0.00	0.00	0.00
6,900.0	6.77	208.19	6,886.4	-214.3	-114.9	-201.0	0.00	0.00	0.00
7,000.0	6.77	208.19	6,985.7	-224.7	-120.4	-210.8	0.00	0.00	0.00
7,100.0	6.77	208.19	7,085.0	-235.1	-126.0	-220.5	0.00	0.00	0.00
7,200.0	6.77	208.19	7,184.3	-245.5	-131.6	-230.3	0.00	0.00	0.00
7,300.0	6.77	208.19	7,283.6	-255.9	-137.1	-240.0	0.00	0.00	0.00
7,400.0	6.77	208.19	7,382.9	-266.3	-142.7	-249.8	0.00	0.00	0.00
7,500.0	6.77	208.19	7,482.2	-276.7	-148.3	-259.6	0.00	0.00	0.00
7,600.0	6.77	208.19	7,581.5	-287.1	-153.9	-269.3	0.00	0.00	0.00
7,700.0	6.77	208.19	7,680.8	-297.5	-159.4	-279.1	0.00	0.00	0.00
7,800.0	6.77	208.19	7,780.1	-307.9	-165.0	-288.8	0.00	0.00	0.00
7,900.0	6.77	208.19	7,879.4	-318.3	-170.6	-298.6	0.00	0.00	0.00
8,000.0	6.77	208.19	7,978.7	-328.7	-176.1	-308.3	0.00	0.00	0.00
8,100.0	6.77	208.19	8,078.0	-339.1	-181.7	-318.1	0.00	0.00	0.00
8,200.0	6.77	208.19	8,177.3	-349.5	-187.3	-327.8	0.00	0.00	0.00
8,300.0	6.77	208.19	8,276.6	-359.9	-192.9	-337.6	0.00	0.00	0.00
8,400.0	6.77	208.19	8,375.9	-370.3	-198.4	-347.3	0.00	0.00	0.00
8,500.0	6.77	208.19	8,475.2	-380.7	-204.0	-357.1	0.00	0.00	0.00
8,600.0	6.77	208.19	8,574.5	-391.1	-209.6	-366.8	0.00	0.00	0.00
8,700.0	6.77	208.19	8,673.8	-401.5	-215.1	-376.6	0.00	0.00	0.00
8,800.0	6.77	208.19	8,773.1	-411.9	-220.7	-386.3	0.00	0.00	0.00
8,900.0	6.77	208.19	8,872.4	-422.3	-226.3	-396.1	0.00	0.00	0.00
9,000.0	6.77	208.19	8,971.7	-432.7	-231.9	-405.8	0.00	0.00	0.00
9,100.0	6.77	208.19	9,071.0	-443.0	-237.4	-415.6	0.00	0.00	0.00
9,200.0	6.77	208.19	9,170.3	-453.4	-243.0	-425.3	0.00	0.00	0.00
9,300.0	6.77	208.19	9,269.6	-463.8	-248.6	-435.1	0.00	0.00	0.00
9,400.0	6.77	208.19	9,368.9	-474.2	-254.1	-444.8	0.00	0.00	0.00
9,500.0	6.77	208.19	9,468.3	-484.6	-259.7	-454.6	0.00	0.00	0.00
9,600.0	6.77	208.19	9,567.6	-495.0	-265.3	-464.3	0.00	0.00	0.00
9,700.0	6.77	208.19	9,666.9	-505.4	-270.9	-474.1	0.00	0.00	0.00
9,800.0	6.77	208.19	9,766.2	-515.8	-276.4	-483.8	0.00	0.00	0.00
9,900.0	6.77	208.19	9,865.5	-526.2	-282.0	-493.6	0.00	0.00	0.00
10,000.0	6.77	208.19	9,964.8	-536.6	-287.6	-503.3	0.00	0.00	0.00
10,100.0	6.77	208.19	10,064.1	-547.0	-293.1	-513.1	0.00	0.00	0.00
10,200.0	6.77	208.19	10,163.4	-557.4	-298.7	-522.8	0.00	0.00	0.00
10,300.0	6.77	208.19	10,262.7	-567.8	-304.3	-532.6	0.00	0.00	0.00
10,400.0	6.77	208.19	10,362.0	-578.2	-309.9	-542.3	0.00	0.00	0.00
10,500.0	6.77	208.19	10,461.3	-588.6	-315.4	-552.1	0.00	0.00	0.00
10,600.0	6.77	208.19	10,560.6	-599.0	-321.0	-561.8	0.00	0.00	0.00



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Thor 21
Well: #706H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference
TVD Reference: KB = 25 @ 3283.0usft (H&P 260)
MD Reference: KB = 25 @ 3283.0usft (H&P 260)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,700.0	6.77	208.19	10,659.9	-609.4	-326.6	-571.6	0.00	0.00	0.00
10,800.0	6.77	208.19	10,759.2	-619.8	-332.1	-581.3	0.00	0.00	0.00
10,900.0	6.77	208.19	10,858.5	-630.2	-337.7	-591.1	0.00	0.00	0.00
11,000.0	6.77	208.19	10,957.8	-640.6	-343.3	-600.8	0.00	0.00	0.00
11,100.0	6.77	208.19	11,057.1	-651.0	-348.9	-610.6	0.00	0.00	0.00
11,200.0	6.77	208.19	11,156.4	-661.4	-354.4	-620.3	0.00	0.00	0.00
11,300.0	6.77	208.19	11,255.7	-671.8	-360.0	-630.1	0.00	0.00	0.00
11,400.0	6.77	208.19	11,355.0	-682.2	-365.6	-639.9	0.00	0.00	0.00
11,500.0	6.77	208.19	11,454.3	-692.6	-371.1	-649.8	0.00	0.00	0.00
11,600.0	6.77	208.19	11,553.6	-703.0	-376.7	-659.4	0.00	0.00	0.00
11,700.0	6.77	208.19	11,652.9	-713.3	-382.3	-669.1	0.00	0.00	0.00
11,715.9	6.77	208.19	11,668.7	-715.0	-383.2	-670.7	0.00	0.00	0.00
11,750.0	4.13	231.60	11,702.6	-717.5	-385.1	-673.0	10.00	-7.78	68.73
11,800.0	4.08	306.75	11,752.5	-717.6	-387.9	-672.7	10.00	-0.09	150.30
11,850.0	8.14	336.17	11,802.2	-713.3	-390.8	-668.2	10.00	8.12	58.86
11,900.0	12.87	345.20	11,851.4	-704.7	-393.6	-659.3	10.00	9.47	18.05
11,950.0	17.75	349.37	11,899.6	-691.8	-396.5	-646.2	10.00	9.76	8.35
12,000.0	22.68	351.78	11,946.5	-674.7	-399.2	-628.9	10.00	9.86	4.82
12,050.0	27.64	353.37	11,991.8	-653.7	-402.0	-607.7	10.00	9.91	3.17
12,100.0	32.61	354.50	12,035.0	-628.7	-404.6	-582.6	10.00	9.94	2.27
12,150.0	37.58	355.36	12,075.9	-600.1	-407.1	-553.9	10.00	9.95	1.72
12,200.0	42.56	356.05	12,114.1	-568.0	-409.5	-521.7	10.00	9.96	1.37
12,250.0	47.55	356.62	12,149.5	-532.7	-411.8	-486.3	10.00	9.97	1.14
12,300.0	52.53	357.10	12,181.6	-494.4	-413.9	-448.1	10.00	9.97	0.97
12,350.0	57.52	357.53	12,210.2	-453.5	-415.8	-407.2	10.00	9.98	0.85
12,400.0	62.51	357.90	12,235.2	-410.3	-417.5	-364.0	10.00	9.98	0.76
12,404.2	62.93	357.93	12,237.1	-406.6	-417.6	-360.3	10.00	9.98	0.72
FTP(Thor 21 #706H)									
12,450.0	67.50	358.25	12,256.3	-365.0	-419.0	-318.8	10.00	9.98	0.69
12,500.0	72.49	358.57	12,273.4	-318.0	-420.3	-272.0	10.00	9.98	0.64
12,550.0	77.48	358.88	12,286.4	-269.8	-421.4	-223.9	10.00	9.98	0.61
12,600.0	82.47	359.17	12,295.1	-220.6	-422.2	-174.8	10.00	9.98	0.59
12,650.0	87.47	359.46	12,299.4	-170.8	-422.8	-125.3	10.00	9.98	0.57
12,675.4	90.00	359.60	12,300.0	-145.4	-423.0	-100.0	10.00	9.98	0.57
12,700.0	90.00	359.60	12,300.0	-120.8	-423.2	-75.5	0.00	0.00	0.00
12,800.0	90.00	359.60	12,300.0	-20.8	-423.9	24.0	0.00	0.00	0.00
12,900.0	90.00	359.60	12,300.0	79.2	-424.6	123.5	0.00	0.00	0.00
13,000.0	90.00	359.60	12,300.0	179.2	-425.3	223.0	0.00	0.00	0.00
13,100.0	90.00	359.60	12,300.0	279.2	-426.0	322.5	0.00	0.00	0.00
13,200.0	90.00	359.60	12,300.0	379.2	-426.7	422.1	0.00	0.00	0.00
13,300.0	90.00	359.60	12,300.0	479.2	-427.4	521.6	0.00	0.00	0.00
13,400.0	90.00	359.60	12,300.0	579.2	-428.1	621.1	0.00	0.00	0.00
13,500.0	90.00	359.60	12,300.0	679.2	-428.8	720.6	0.00	0.00	0.00
13,600.0	90.00	359.60	12,300.0	779.2	-429.5	820.1	0.00	0.00	0.00
13,700.0	90.00	359.60	12,300.0	879.2	-430.2	919.6	0.00	0.00	0.00
13,800.0	90.00	359.60	12,300.0	979.2	-430.9	1,019.1	0.00	0.00	0.00
13,900.0	90.00	359.60	12,300.0	1,079.2	-431.6	1,118.7	0.00	0.00	0.00
14,000.0	90.00	359.60	12,300.0	1,179.2	-432.3	1,218.2	0.00	0.00	0.00
14,100.0	90.00	359.60	12,300.0	1,279.2	-433.0	1,317.7	0.00	0.00	0.00
14,200.0	90.00	359.60	12,300.0	1,379.2	-433.7	1,417.2	0.00	0.00	0.00
14,300.0	90.00	359.60	12,300.0	1,479.2	-434.4	1,516.7	0.00	0.00	0.00
14,400.0	90.00	359.60	12,300.0	1,579.2	-435.1	1,616.2	0.00	0.00	0.00
14,500.0	90.00	359.60	12,300.0	1,679.2	-435.8	1,715.7	0.00	0.00	0.00



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Wellbore: OH
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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,600.0	90.00	359.60	12,300.0	1,779.2	-436.5	1,815.3	0.00	0.00	0.00
14,700.0	90.00	359.60	12,300.0	1,879.2	-437.2	1,914.8	0.00	0.00	0.00
14,800.0	90.00	359.60	12,300.0	1,979.2	-437.9	2,014.3	0.00	0.00	0.00
14,900.0	90.00	359.60	12,300.0	2,079.2	-438.6	2,113.8	0.00	0.00	0.00
15,000.0	90.00	359.60	12,300.0	2,179.2	-439.3	2,213.3	0.00	0.00	0.00
15,100.0	90.00	359.60	12,300.0	2,279.2	-440.0	2,312.8	0.00	0.00	0.00
15,200.0	90.00	359.60	12,300.0	2,379.2	-440.7	2,412.3	0.00	0.00	0.00
15,300.0	90.00	359.60	12,300.0	2,479.2	-441.4	2,511.9	0.00	0.00	0.00
15,400.0	90.00	359.60	12,300.0	2,579.2	-442.1	2,611.4	0.00	0.00	0.00
15,500.0	90.00	359.60	12,300.0	2,679.2	-442.8	2,710.9	0.00	0.00	0.00
15,600.0	90.00	359.60	12,300.0	2,779.2	-443.5	2,810.4	0.00	0.00	0.00
15,700.0	90.00	359.60	12,300.0	2,879.1	-444.2	2,909.9	0.00	0.00	0.00
15,800.0	90.00	359.60	12,300.0	2,979.1	-444.9	3,009.4	0.00	0.00	0.00
15,900.0	90.00	359.60	12,300.0	3,079.1	-445.6	3,109.0	0.00	0.00	0.00
16,000.0	90.00	359.60	12,300.0	3,179.1	-446.3	3,208.5	0.00	0.00	0.00
16,100.0	90.00	359.60	12,300.0	3,279.1	-447.0	3,308.0	0.00	0.00	0.00
16,200.0	90.00	359.60	12,300.0	3,379.1	-447.7	3,407.5	0.00	0.00	0.00
16,300.0	90.00	359.60	12,300.0	3,479.1	-448.4	3,507.0	0.00	0.00	0.00
16,400.0	90.00	359.60	12,300.0	3,579.1	-449.1	3,606.5	0.00	0.00	0.00
16,500.0	90.00	359.60	12,300.0	3,679.1	-449.8	3,706.0	0.00	0.00	0.00
16,600.0	90.00	359.60	12,300.0	3,779.1	-450.5	3,805.6	0.00	0.00	0.00
16,700.0	90.00	359.60	12,300.0	3,879.1	-451.2	3,905.1	0.00	0.00	0.00
16,800.0	90.00	359.60	12,300.0	3,979.1	-451.9	4,004.6	0.00	0.00	0.00
16,900.0	90.00	359.60	12,300.0	4,079.1	-452.6	4,104.1	0.00	0.00	0.00
17,000.0	90.00	359.60	12,300.0	4,179.1	-453.3	4,203.6	0.00	0.00	0.00
17,105.9	90.00	359.60	12,300.0	4,285.0	-454.0	4,309.0	0.00	0.00	0.00

PBHL(Thor 21 #706H)

Design Targets

Target Name	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(Thor 21 #706H)	0.00	0.00	12,300.0	4,285.0	-454.0	377,465.00	736,424.00	32° 2' 7.693 N	103° 34' 13.362 W
- plan hits target center									
- Point									
FTP(Thor 21 #706H)	0.00	0.00	12,300.0	-436.0	-421.0	372,744.00	736,457.00	32° 1' 20.973 N	103° 34' 13.366 W
- plan misses target center by 69.5usft at 12404.2usft MD (12237.1 TVD, -406.6 N, -417.6 E)									
- Point									