eog resources

Lea County, NM (NAD 83 NME)

Thor 21 #770H

Plan #0.1

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

Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.42°

Magnetic Field
Strength: 47709.8nT
Dip Angle: 59.86°
Date: 7/15/2018
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.42°
To convert a Magnetic Direction to a True Direction, Add 6.82° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

WELL DETAILS: #770H

3259.0
KB= 25 @ 3284.0usft

Northing	Easting	Latitude	Longitude
373142.00	778127.00	32° 1' 34.785 N	103° 34' 8.413 W

SECTION DETAILS

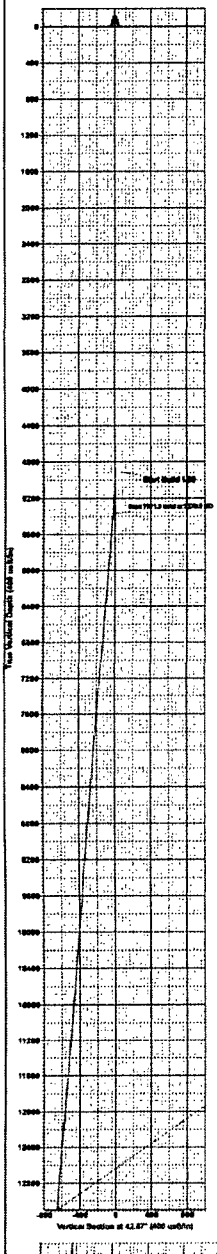
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4900.0	0.00	0.00	4900.0	0.0	0.0	0.00	0.00	0.0	
3	5370.5	4.71	222.87	5370.0	-14.2	-13.1	1.00	222.87	-12.5	
4	13241.9	4.71	222.87	13214.8	-487.4	-452.4	0.00	0.00	-431.1	
5	14020.4	90.00	359.59	13720.0	-11.0	-484.4	12.00	136.62	45.8	
6	18411.5	90.00	359.59	13720.0	4380.0	-516.0	0.00	0.00	4410.3	PBHL (Thor 21 #770)

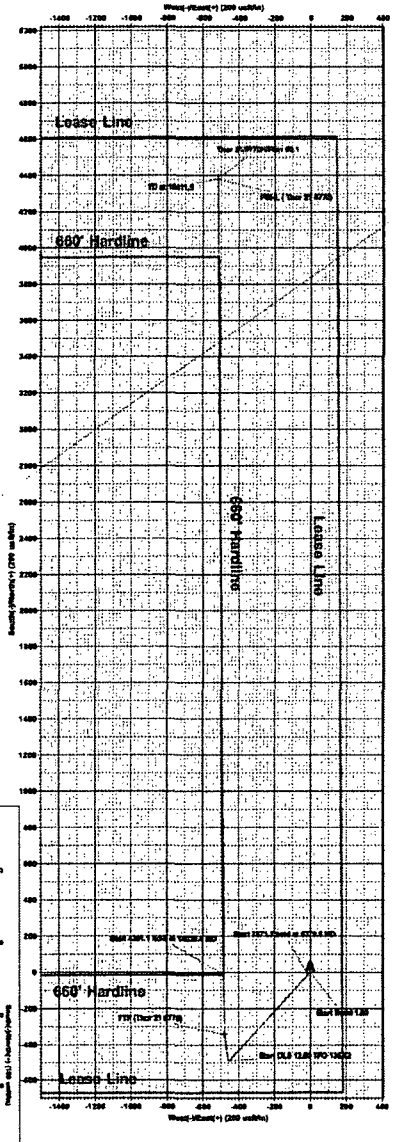
CASING DETAILS

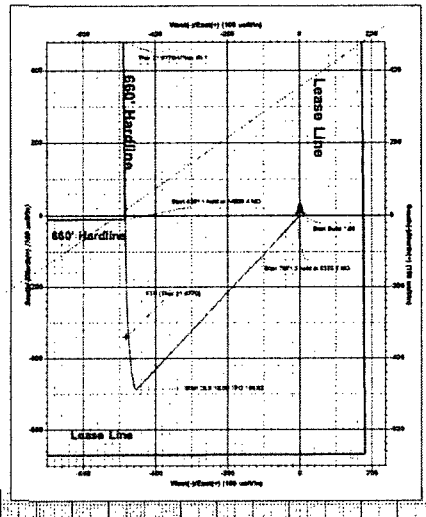
No casing data is available

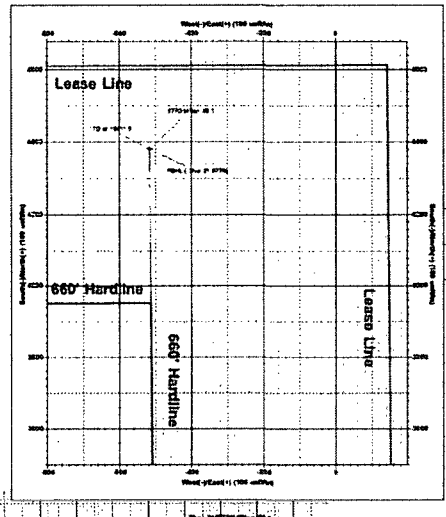
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

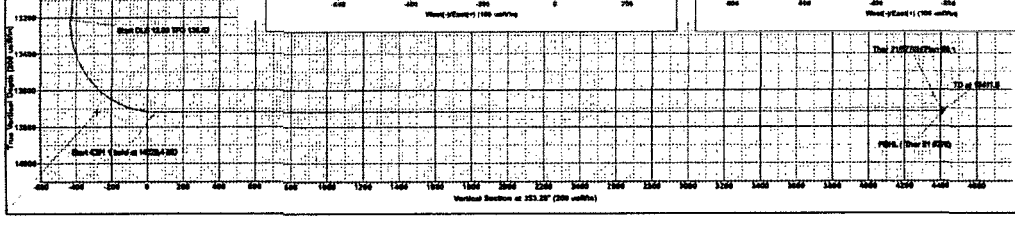
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (Thor 21 #770)	13720.0	4380.0	-516.0	377522.00	777611.00
FTP (Thor 21 #770)	13720.0	-341.9	-462.0	372801.00	777645.00

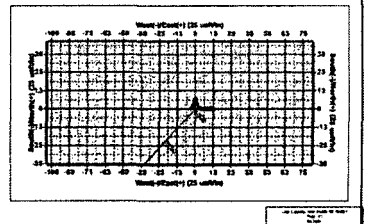












EOG Resources - Midland

Lea County, NM (NAD 83 NME)
Thor 21
#770H

OH

Plan: Plan #0.1

Standard Planning Report

09 May, 2018

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #770H
Company:	EOG Resources - Midland	**TVD Reference:**	KB= 25 @ 3284.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB= 25 @ 3284.0usft
Site:	Thor 21	**North Reference:**	Grid
Well:	#770H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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	Thor 21				
Site Position:		**Northing:**	372,646.00 usft	**Latitude:**	32° 1' 19.875 N
From:	Map	**Easting:**	777,866.00 usft	**Longitude:**	103° 34' 12.486 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.40 °

Well	#770H					
Well Position	**+N/-S**	496.0 usft	**Northing:**	373,142.00 usft	**Latitude:**	32° 1' 24.765 N
	+E/-W	261.0 usft	**Easting:**	778,127.00 usft	**Longitude:**	103° 34' 9.413 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,259.0 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	7/15/2018	6.82	59.86	47,709.89646221

Design	Plan #0.1				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	353.28	

Plan Survey Tool Program **Date** 5/9/2018

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	18,411.5	Plan #0.1 (OH)	MWD	
				OWSG MWD - Standard	

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	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,370.5	4.71	222.87	5,370.0	-14.2	-13.1	1.00	1.00	0.00	222.87	
13,241.9	4.71	222.87	13,214.8	-487.4	-452.4	0.00	0.00	0.00	0.00	
14,020.4	90.00	359.59	13,720.0	-11.0	-484.4	12.00	10.96	17.56	136.62	
18,411.5	90.00	359.59	13,720.0	4,380.0	-516.0	0.00	0.00	0.00	0.00	PBHL (Thor 21 #770)

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #770H
Company:	EOG Resources - Midland	**TVD Reference:**	KB= 25 @ 3284.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB= 25 @ 3284.0usft
Site:	Thor 21	**North Reference:**	Grid
Well:	#770H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	1.00	222.87	5,000.0	-0.6	-0.6	-0.6	1.00	1.00	0.00
5,100.0	2.00	222.87	5,100.0	-2.6	-2.4	-2.3	1.00	1.00	0.00
5,200.0	3.00	222.87	5,199.9	-5.8	-5.3	-5.1	1.00	1.00	0.00
5,300.0	4.00	222.87	5,299.7	-10.2	-9.5	-9.0	1.00	1.00	0.00

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Site:	Thor 21	**North Reference:**	Grid
Well:	#770H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
5,370.5	4.71	222.87	5,370.0	-14.2	-13.1	-12.5	1.00	1.00	0.00
5,400.0	4.71	222.87	5,399.4	-15.9	-14.8	-14.1	0.00	0.00	0.00
5,500.0	4.71	222.87	5,499.0	-21.9	-20.4	-19.4	0.00	0.00	0.00
5,600.0	4.71	222.87	5,598.7	-27.9	-25.9	-24.7	0.00	0.00	0.00
5,700.0	4.71	222.87	5,698.4	-34.0	-31.5	-30.0	0.00	0.00	0.00
5,800.0	4.71	222.87	5,798.0	-40.0	-37.1	-35.4	0.00	0.00	0.00
5,900.0	4.71	222.87	5,897.7	-46.0	-42.7	-40.7	0.00	0.00	0.00
6,000.0	4.71	222.87	5,997.3	-52.0	-48.3	-46.0	0.00	0.00	0.00
6,100.0	4.71	222.87	6,097.0	-58.0	-53.8	-51.3	0.00	0.00	0.00
6,200.0	4.71	222.87	6,196.7	-64.0	-59.4	-56.6	0.00	0.00	0.00
6,300.0	4.71	222.87	6,296.3	-70.0	-65.0	-61.9	0.00	0.00	0.00
6,400.0	4.71	222.87	6,396.0	-76.0	-70.6	-67.3	0.00	0.00	0.00
6,500.0	4.71	222.87	6,495.7	-82.1	-76.2	-72.6	0.00	0.00	0.00
6,600.0	4.71	222.87	6,595.3	-88.1	-81.8	-77.9	0.00	0.00	0.00
6,700.0	4.71	222.87	6,695.0	-94.1	-87.3	-83.2	0.00	0.00	0.00
6,800.0	4.71	222.87	6,794.7	-100.1	-92.9	-88.5	0.00	0.00	0.00
6,900.0	4.71	222.87	6,894.3	-106.1	-98.5	-93.9	0.00	0.00	0.00
7,000.0	4.71	222.87	6,994.0	-112.1	-104.1	-99.2	0.00	0.00	0.00
7,100.0	4.71	222.87	7,093.6	-118.1	-109.7	-104.5	0.00	0.00	0.00
7,200.0	4.71	222.87	7,193.3	-124.1	-115.2	-109.8	0.00	0.00	0.00
7,300.0	4.71	222.87	7,293.0	-130.2	-120.8	-115.1	0.00	0.00	0.00
7,400.0	4.71	222.87	7,392.6	-136.2	-126.4	-120.4	0.00	0.00	0.00
7,500.0	4.71	222.87	7,492.3	-142.2	-132.0	-125.8	0.00	0.00	0.00
7,600.0	4.71	222.87	7,592.0	-148.2	-137.6	-131.1	0.00	0.00	0.00
7,700.0	4.71	222.87	7,691.6	-154.2	-143.1	-136.4	0.00	0.00	0.00
7,800.0	4.71	222.87	7,791.3	-160.2	-148.7	-141.7	0.00	0.00	0.00
7,900.0	4.71	222.87	7,890.9	-166.2	-154.3	-147.0	0.00	0.00	0.00
8,000.0	4.71	222.87	7,990.6	-172.2	-159.9	-152.3	0.00	0.00	0.00
8,100.0	4.71	222.87	8,090.3	-178.2	-165.5	-157.7	0.00	0.00	0.00
8,200.0	4.71	222.87	8,189.9	-184.3	-171.0	-163.0	0.00	0.00	0.00
8,300.0	4.71	222.87	8,289.6	-190.3	-176.6	-168.3	0.00	0.00	0.00
8,400.0	4.71	222.87	8,389.3	-196.3	-182.2	-173.6	0.00	0.00	0.00
8,500.0	4.71	222.87	8,488.9	-202.3	-187.8	-178.9	0.00	0.00	0.00
8,600.0	4.71	222.87	8,588.6	-208.3	-193.4	-184.3	0.00	0.00	0.00
8,700.0	4.71	222.87	8,688.2	-214.3	-199.0	-189.6	0.00	0.00	0.00
8,800.0	4.71	222.87	8,787.9	-220.3	-204.5	-194.9	0.00	0.00	0.00
8,900.0	4.71	222.87	8,887.6	-226.3	-210.1	-200.2	0.00	0.00	0.00
9,000.0	4.71	222.87	8,987.2	-232.4	-215.7	-205.5	0.00	0.00	0.00
9,100.0	4.71	222.87	9,086.9	-238.4	-221.3	-210.8	0.00	0.00	0.00
9,200.0	4.71	222.87	9,186.6	-244.4	-226.9	-216.2	0.00	0.00	0.00
9,300.0	4.71	222.87	9,286.2	-250.4	-232.4	-221.5	0.00	0.00	0.00
9,400.0	4.71	222.87	9,385.9	-256.4	-238.0	-226.8	0.00	0.00	0.00
9,500.0	4.71	222.87	9,485.6	-262.4	-243.6	-232.1	0.00	0.00	0.00
9,600.0	4.71	222.87	9,585.2	-268.4	-249.2	-237.4	0.00	0.00	0.00
9,700.0	4.71	222.87	9,684.9	-274.4	-254.8	-242.7	0.00	0.00	0.00
9,800.0	4.71	222.87	9,784.5	-280.5	-260.3	-248.1	0.00	0.00	0.00
9,900.0	4.71	222.87	9,884.2	-286.5	-265.9	-253.4	0.00	0.00	0.00
10,000.0	4.71	222.87	9,983.9	-292.5	-271.5	-258.7	0.00	0.00	0.00
10,100.0	4.71	222.87	10,083.5	-298.5	-277.1	-264.0	0.00	0.00	0.00
10,200.0	4.71	222.87	10,183.2	-304.5	-282.7	-269.3	0.00	0.00	0.00
10,300.0	4.71	222.87	10,282.9	-310.5	-288.3	-274.7	0.00	0.00	0.00
10,400.0	4.71	222.87	10,382.5	-316.5	-293.8	-280.0	0.00	0.00	0.00
10,500.0	4.71	222.87	10,482.2	-322.5	-299.4	-285.3	0.00	0.00	0.00
10,600.0	4.71	222.87	10,581.8	-328.5	-305.0	-290.6	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #770H
Company:	EOG Resources - Midland	**TVD Reference:**	KB= 25 @ 3284.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB= 25 @ 3284.0usft
Site:	Thor 21	**North Reference:**	Grid
Well:	#770H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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	4.71	222.87	10,681.5	-334.6	-310.6	-295.9	0.00	0.00	0.00
10,800.0	4.71	222.87	10,781.2	-340.6	-316.2	-301.2	0.00	0.00	0.00
10,900.0	4.71	222.87	10,880.8	-346.6	-321.7	-306.6	0.00	0.00	0.00
11,000.0	4.71	222.87	10,980.5	-352.6	-327.3	-311.9	0.00	0.00	0.00
11,100.0	4.71	222.87	11,080.2	-358.6	-332.9	-317.2	0.00	0.00	0.00
11,200.0	4.71	222.87	11,179.8	-364.6	-338.5	-322.5	0.00	0.00	0.00
11,300.0	4.71	222.87	11,279.5	-370.6	-344.1	-327.8	0.00	0.00	0.00
11,400.0	4.71	222.87	11,379.2	-376.6	-349.6	-333.2	0.00	0.00	0.00
11,500.0	4.71	222.87	11,478.8	-382.7	-355.2	-338.5	0.00	0.00	0.00
11,600.0	4.71	222.87	11,578.5	-388.7	-360.8	-343.8	0.00	0.00	0.00
11,700.0	4.71	222.87	11,678.1	-394.7	-366.4	-349.1	0.00	0.00	0.00
11,800.0	4.71	222.87	11,777.8	-400.7	-372.0	-354.4	0.00	0.00	0.00
11,900.0	4.71	222.87	11,877.5	-406.7	-377.5	-359.7	0.00	0.00	0.00
12,000.0	4.71	222.87	11,977.1	-412.7	-383.1	-365.1	0.00	0.00	0.00
12,100.0	4.71	222.87	12,076.8	-418.7	-388.7	-370.4	0.00	0.00	0.00
12,200.0	4.71	222.87	12,176.5	-424.7	-394.3	-375.7	0.00	0.00	0.00
12,300.0	4.71	222.87	12,276.1	-430.8	-399.9	-381.0	0.00	0.00	0.00
12,400.0	4.71	222.87	12,375.8	-436.8	-405.5	-386.3	0.00	0.00	0.00
12,500.0	4.71	222.87	12,475.4	-442.8	-411.0	-391.6	0.00	0.00	0.00
12,600.0	4.71	222.87	12,575.1	-448.8	-416.6	-397.0	0.00	0.00	0.00
12,700.0	4.71	222.87	12,674.8	-454.8	-422.2	-402.3	0.00	0.00	0.00
12,800.0	4.71	222.87	12,774.4	-460.8	-427.8	-407.6	0.00	0.00	0.00
12,900.0	4.71	222.87	12,874.1	-466.8	-433.4	-412.9	0.00	0.00	0.00
13,000.0	4.71	222.87	12,973.8	-472.8	-438.9	-418.2	0.00	0.00	0.00
13,100.0	4.71	222.87	13,073.4	-478.9	-444.5	-423.6	0.00	0.00	0.00
13,200.0	4.71	222.87	13,173.1	-484.9	-450.1	-428.9	0.00	0.00	0.00
13,241.9	4.71	222.87	13,214.8	-487.4	-452.4	-431.1	0.00	0.00	0.00
13,250.0	4.05	232.38	13,222.9	-487.8	-452.9	-431.5	12.00	-8.04	117.14
13,275.0	3.28	279.26	13,247.9	-488.2	-454.3	-431.7	12.00	-3.11	187.54
13,300.0	4.80	317.35	13,272.8	-487.3	-455.7	-430.7	12.00	6.09	152.33
13,325.0	7.30	333.45	13,297.7	-485.2	-457.1	-428.3	12.00	10.01	64.42
13,350.0	10.08	341.07	13,322.4	-481.7	-458.5	-424.7	12.00	11.11	30.49
13,375.0	12.95	345.38	13,346.9	-476.9	-460.0	-419.8	12.00	11.50	17.25
13,400.0	15.87	348.14	13,371.1	-470.8	-461.4	-413.6	12.00	11.69	11.03
13,425.0	18.82	350.06	13,395.0	-463.5	-462.8	-406.2	12.00	11.78	7.66
13,450.0	21.78	351.47	13,418.4	-454.9	-464.2	-397.5	12.00	11.84	5.65
13,475.0	24.75	352.56	13,441.4	-445.2	-465.5	-387.6	12.00	11.88	4.35
13,500.0	27.72	353.42	13,463.8	-434.2	-466.9	-376.6	12.00	11.90	3.47
13,525.0	30.70	354.13	13,485.6	-422.1	-468.2	-364.4	12.00	11.92	2.85
13,550.0	33.69	354.73	13,506.8	-408.8	-469.5	-351.1	12.00	11.93	2.39
13,575.0	36.67	355.24	13,527.2	-394.5	-470.7	-336.7	12.00	11.94	2.04
13,600.0	39.66	355.68	13,546.8	-379.1	-472.0	-321.2	12.00	11.95	1.77
13,625.0	42.65	356.08	13,565.7	-362.7	-473.1	-304.8	12.00	11.96	1.56
13,650.0	45.64	356.42	13,583.6	-345.3	-474.3	-287.4	12.00	11.96	1.40
13,675.0	48.63	356.74	13,600.6	-327.0	-475.4	-269.1	12.00	11.96	1.26
13,700.0	51.62	357.03	13,616.6	-307.8	-476.4	-250.0	12.00	11.97	1.15
13,725.0	54.62	357.29	13,631.6	-287.9	-477.4	-230.0	12.00	11.97	1.06
13,730.4	55.26	357.34	13,634.7	-283.5	-477.6	-225.6	12.00	11.97	1.01
FTP (Thor 21 #770)									
13,750.0	57.61	357.54	13,645.6	-267.1	-478.3	-209.3	12.00	11.97	0.97
13,775.0	60.60	357.77	13,658.4	-245.7	-479.2	-187.9	12.00	11.97	0.92
13,800.0	63.60	357.98	13,670.1	-223.6	-480.0	-165.9	12.00	11.98	0.87
13,825.0	66.59	358.19	13,680.6	-201.0	-480.8	-143.3	12.00	11.98	0.82

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #770H
Company:	EOG Resources - Midland	**TVD Reference:**	KB= 25 @ 3284.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB= 25 @ 3284.0usft
Site:	Thor 21	**North Reference:**	Grid
Well:	#770H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
13,850.0	69.58	358.38	13,690.0	-177.8	-481.5	-120.2	12.00	11.98	0.79
13,875.0	72.58	358.57	13,698.1	-154.1	-482.1	-96.7	12.00	11.98	0.76
13,900.0	75.57	358.76	13,704.9	-130.1	-482.7	-72.8	12.00	11.98	0.73
13,925.0	78.57	358.93	13,710.5	-105.8	-483.2	-48.5	12.00	11.98	0.71
13,950.0	81.56	359.11	13,714.8	-81.1	-483.6	-24.0	12.00	11.98	0.70
13,975.0	84.56	359.28	13,717.8	-56.3	-483.9	0.7	12.00	11.98	0.69
14,000.0	87.55	359.45	13,719.6	-31.4	-484.2	25.5	12.00	11.98	0.68
14,020.4	90.00	359.59	13,720.0	-11.0	-484.4	45.8	12.00	11.98	0.68
14,100.0	90.00	359.59	13,720.0	68.6	-484.9	124.9	0.00	0.00	0.00
14,200.0	90.00	359.59	13,720.0	168.6	-485.7	224.3	0.00	0.00	0.00
14,300.0	90.00	359.59	13,720.0	268.6	-486.4	323.7	0.00	0.00	0.00
14,400.0	90.00	359.59	13,720.0	368.6	-487.1	423.1	0.00	0.00	0.00
14,500.0	90.00	359.59	13,720.0	468.6	-487.8	522.4	0.00	0.00	0.00
14,600.0	90.00	359.59	13,720.0	568.6	-488.6	621.8	0.00	0.00	0.00
14,700.0	90.00	359.59	13,720.0	668.6	-489.3	721.2	0.00	0.00	0.00
14,800.0	90.00	359.59	13,720.0	768.6	-490.0	820.6	0.00	0.00	0.00
14,900.0	90.00	359.59	13,720.0	868.6	-490.7	920.0	0.00	0.00	0.00
15,000.0	90.00	359.59	13,720.0	968.6	-491.4	1,019.4	0.00	0.00	0.00
15,100.0	90.00	359.59	13,720.0	1,068.6	-492.2	1,118.8	0.00	0.00	0.00
15,200.0	90.00	359.59	13,720.0	1,168.6	-492.9	1,218.2	0.00	0.00	0.00
15,300.0	90.00	359.59	13,720.0	1,268.6	-493.6	1,317.6	0.00	0.00	0.00
15,400.0	90.00	359.59	13,720.0	1,368.6	-494.3	1,417.0	0.00	0.00	0.00
15,500.0	90.00	359.59	13,720.0	1,468.6	-495.0	1,516.4	0.00	0.00	0.00
15,600.0	90.00	359.59	13,720.0	1,568.6	-495.8	1,615.8	0.00	0.00	0.00
15,700.0	90.00	359.59	13,720.0	1,668.6	-496.5	1,715.2	0.00	0.00	0.00
15,800.0	90.00	359.59	13,720.0	1,768.6	-497.2	1,814.6	0.00	0.00	0.00
15,900.0	90.00	359.59	13,720.0	1,868.6	-497.9	1,914.0	0.00	0.00	0.00
16,000.0	90.00	359.59	13,720.0	1,968.5	-498.6	2,013.4	0.00	0.00	0.00
16,100.0	90.00	359.59	13,720.0	2,068.5	-499.4	2,112.8	0.00	0.00	0.00
16,200.0	90.00	359.59	13,720.0	2,168.5	-500.1	2,212.2	0.00	0.00	0.00
16,300.0	90.00	359.59	13,720.0	2,268.5	-500.8	2,311.6	0.00	0.00	0.00
16,400.0	90.00	359.59	13,720.0	2,368.5	-501.5	2,410.9	0.00	0.00	0.00
16,500.0	90.00	359.59	13,720.0	2,468.5	-502.2	2,510.3	0.00	0.00	0.00
16,600.0	90.00	359.59	13,720.0	2,568.5	-503.0	2,609.7	0.00	0.00	0.00
16,700.0	90.00	359.59	13,720.0	2,668.5	-503.7	2,709.1	0.00	0.00	0.00
16,800.0	90.00	359.59	13,720.0	2,768.5	-504.4	2,808.5	0.00	0.00	0.00
16,900.0	90.00	359.59	13,720.0	2,868.5	-505.1	2,907.9	0.00	0.00	0.00
17,000.0	90.00	359.59	13,720.0	2,968.5	-505.8	3,007.3	0.00	0.00	0.00
17,100.0	90.00	359.59	13,720.0	3,068.5	-506.6	3,106.7	0.00	0.00	0.00
17,200.0	90.00	359.59	13,720.0	3,168.5	-507.3	3,206.1	0.00	0.00	0.00
17,300.0	90.00	359.59	13,720.0	3,268.5	-508.0	3,305.5	0.00	0.00	0.00
17,400.0	90.00	359.59	13,720.0	3,368.5	-508.7	3,404.9	0.00	0.00	0.00
17,500.0	90.00	359.59	13,720.0	3,468.5	-509.4	3,504.3	0.00	0.00	0.00
17,600.0	90.00	359.59	13,720.0	3,568.5	-510.2	3,603.7	0.00	0.00	0.00
17,700.0	90.00	359.59	13,720.0	3,668.5	-510.9	3,703.1	0.00	0.00	0.00
17,800.0	90.00	359.59	13,720.0	3,768.5	-511.6	3,802.5	0.00	0.00	0.00
17,900.0	90.00	359.59	13,720.0	3,868.5	-512.3	3,901.9	0.00	0.00	0.00
18,000.0	90.00	359.59	13,720.0	3,968.5	-513.0	4,001.3	0.00	0.00	0.00
18,100.0	90.00	359.59	13,720.0	4,068.5	-513.8	4,100.7	0.00	0.00	0.00
18,200.0	90.00	359.59	13,720.0	4,168.5	-514.5	4,200.1	0.00	0.00	0.00
18,300.0	90.00	359.59	13,720.0	4,268.5	-515.2	4,299.5	0.00	0.00	0.00
18,400.0	90.00	359.59	13,720.0	4,368.5	-515.9	4,398.8	0.00	0.00	0.00
18,411.5	90.00	359.59	13,720.0	4,380.0	-516.0	4,410.3	0.00	0.00	0.00

PBHL (Thor 21 #770)

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #770H
Company:	EOG Resources - Midland	**TVD Reference:**	KB= 25 @ 3284.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB= 25 @ 3284.0usft
Site:	Thor 21	**North Reference:**	Grid
Well:	#770H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (Thor 21 #770) - plan hits target center - Point	0.00	0.00	13,720.0	4,380.0	-516.0	377,522.00	777,611.00	32° 2' 8.143 N	103° 34' 15.048 W
FTP (Thor 21 #770) - plan misses target center by 103.0usft at 13730.4usft MD (13634.7 TVD, -283.5 N, -477.6 E) - Point	0.00	0.01	13,720.0	-341.0	-482.0	372,801.00	777,645.00	32° 1' 21.424 N	103° 34' 15.040 W

EOG RESOURCES, INC.
THOR 21 #770H

Hydrogen Sulfide Plan Summary

A. All personnel shall receive proper H2S training in accordance with Onshore Order III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun.
  b. Choke manifold with a remotely operated choke.
  c. Mud/gas separator

- Protective equipment for essential personnel.

  Breathing apparatus:
  a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  b. Work/Escape packs —4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
  c. Emergency Escape Packs —4 packs shall be stored in the doghouse for emergency evacuation.

  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harness
  c. 100 ft 5/8 inch OSHA approved rope
  d. 1-20# class ABC fire extinguisher

- H2S detection and monitoring equipment:
  The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
  (Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
  a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  c. Two wind socks will be placed in strategic locations, visible from all angles.

EOG RESOURCES, INC.
THOR 21 #770H

- Mud program:
  The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

- Metallurgy:
  All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

- Communication:
  Communication will be via cell phones and land lines where available.

EOG RESOURCES, INC.
THOR 21 #770H

Emergency Assistance Telephone List

PUBLIC SAFETY:	**911 or**
Lea County Sheriff's Department	(575) 396-3611
Rod Coffman	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174

EOG Resources, Inc.	
EOG / Midland	Office (432) 686-3600

Company Drilling Consultants:	
David Dominque	Cell (985) 518-5839
Mike Vann	Cell (817) 980-5507

Drilling Engineer	
Steve Munsell	Office (432) 686-3609
	Cell (432) 894-1256

Drilling Manager	
Floyd Hernandez	Office (432) 686-3716
	Cell (817) 682-4569

Drilling Superintendent	
Jason Fitzgerald	Office (432) 848-9029
	Cell (318) 347-3916

H&P Drilling	
H&P Drilling	Office (432) 563-5757
H&P 651 Drilling Rig	Rig (903) 509-7131

Tool Pusher:	
Johnathan Craig	Cell (817) 760-6374
Brad Garrett	

Safety	
Brian Chandler (HSE Manager)	Office (432) 686-3695
	Cell (817) 239-0251