



EOG Resources - Artesia

Eddy County (NAD83)

Thomas

Thomas #8H

30-015-45129

Lateral

Plan: Plan #1

**NM OIL CONSERVATION
ARTESIA DISTRICT**

JUL 30 2018

RECEIVED

Standard Planning Report

26 July, 2018



Planning Report

Database: EDM 5000.14
Company: EOG Resources - Artesia
Project: Eddy County (NAD83)
Site: Thomas
Well: Thomas #8H
Wellbore: Lateral
Design: Plan #1

Local Co-ordinate Reference: Well Thomas #8H
TVD Reference: KB @ 3597.000usft (Training Rig)
MD Reference: KB @ 3597.000usft (Training Rig)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Thomas			
Site Position:		Northing:	611,563.56 usft	Latitude: 32° 40' 51.955 N
From:	Map	Easting:	484,946.51 usft	Longitude: 104° 30' 59.812 W
Position Uncertainty:	0.000 usft	Slot Radius:	13-3/16 "	Grid Convergence: -0.10 °

Well	Thomas #8H			
Well Position	+N/-S	-1,711.630 usft	Northing:	609,851.93 usft
	+E/-W	-202.220 usft	Easting:	484,744.29 usft
Position Uncertainty	0.000 usft		Wellhead Elevation:	3,597.000 usft
			Ground Level:	3,579.000 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/20/2018	7.31	60.31	47,990.19778031

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.000
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.000	0.000	0.000	93.553

Plan Survey Tool Program	Date 7/26/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
0.000	7,753.336	Plan #1 (Lateral)	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
0.000	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	
1,250.000	0.00	0.000	1,250.000	0.000	0.000	0.00	0.00	0.00	0.00	
1,512.540	0.00	0.000	1,512.540	0.000	0.000	0.00	0.00	0.00	0.00	
2,179.207	60.00	131.000	2,063.869	-208.830	240.232	9.00	9.00	0.00	131.00	
2,254.207	60.00	131.000	2,101.369	-251.442	289.251	0.00	0.00	0.00	0.00	
2,652.430	87.65	89.833	2,215.801	-371.002	638.837	12.00	6.94	-10.34	-62.62	
7,754.295	87.65	89.833	2,425.000	-356.130	5,736.390	0.00	0.00	0.00	0.00	[THOMAS#8H]BHL1



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North Reference:
Survey Calculation Method:

Well Thomas #8H
KB @ 3597.000usft (Training Rig)
KB @ 3597.000usft (Training Rig)
Grid
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)
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00
100.000	0.00	0.000	100.000	0.000	0.000	0.000	0.00	0.00	0.00
200.000	0.00	0.000	200.000	0.000	0.000	0.000	0.00	0.00	0.00
300.000	0.00	0.000	300.000	0.000	0.000	0.000	0.00	0.00	0.00
400.000	0.00	0.000	400.000	0.000	0.000	0.000	0.00	0.00	0.00
500.000	0.00	0.000	500.000	0.000	0.000	0.000	0.00	0.00	0.00
600.000	0.00	0.000	600.000	0.000	0.000	0.000	0.00	0.00	0.00
700.000	0.00	0.000	700.000	0.000	0.000	0.000	0.00	0.00	0.00
800.000	0.00	0.000	800.000	0.000	0.000	0.000	0.00	0.00	0.00
900.000	0.00	0.000	900.000	0.000	0.000	0.000	0.00	0.00	0.00
1,000.000	0.00	0.000	1,000.000	0.000	0.000	0.000	0.00	0.00	0.00
1,100.000	0.00	0.000	1,100.000	0.000	0.000	0.000	0.00	0.00	0.00
1,200.000	0.00	0.000	1,200.000	0.000	0.000	0.000	0.00	0.00	0.00
1,250.000	0.00	0.000	1,250.000	0.000	0.000	0.000	0.00	0.00	0.00
1,300.000	0.00	0.000	1,300.000	0.000	0.000	0.000	0.00	0.00	0.00
1,400.000	0.00	0.000	1,400.000	0.000	0.000	0.000	0.00	0.00	0.00
1,500.000	0.00	0.000	1,500.000	0.000	0.000	0.000	0.00	0.00	0.00
1,512.540	0.00	0.000	1,512.540	0.000	0.000	0.000	0.00	0.00	0.00
KOP 8°/100' BUILD RATE									
1,550.000	3.37	131.000	1,549.978	-0.723	0.832	0.875	9.00	9.00	0.00
1,600.000	7.87	131.000	1,599.725	-3.935	4.527	4.762	9.00	9.00	0.00
1,650.000	12.37	131.000	1,648.934	-8.698	11.157	11.736	9.00	9.00	0.00
1,700.000	16.87	131.000	1,697.303	-17.977	20.680	21.754	9.00	9.00	0.00
1,750.000	21.37	131.000	1,744.532	-28.719	33.038	34.754	9.00	9.00	0.00
1,800.000	25.87	131.000	1,790.331	-41.860	48.154	50.655	9.00	9.00	0.00
1,850.000	30.37	131.000	1,834.417	-57.317	65.936	69.361	9.00	9.00	0.00
1,900.000	34.87	131.000	1,876.519	-74.996	86.273	90.754	9.00	9.00	0.00
1,950.000	39.37	131.000	1,916.376	-94.788	109.041	114.705	9.00	9.00	0.00
2,000.000	43.87	131.000	1,953.744	-116.570	134.099	141.064	9.00	9.00	0.00
2,050.000	48.37	131.000	1,988.392	-140.209	161.292	169.670	9.00	9.00	0.00
2,100.000	52.87	131.000	2,020.106	-165.558	190.453	200.345	9.00	9.00	0.00
2,150.000	57.37	131.000	2,048.690	-192.461	221.402	232.902	9.00	9.00	0.00
2,179.207	60.00	131.000	2,063.869	-208.830	240.232	252.710	9.00	9.00	0.00
START 75° TANGENT									
2,200.000	60.00	131.000	2,074.265	-220.644	253.822	267.006	0.00	0.00	0.00
2,254.207	60.00	131.000	2,101.369	-251.443	289.252	304.276	0.00	0.00	0.00
END 60° TANGENT									
2,275.000	61.17	128.471	2,111.582	-263.018	303.180	318.895	12.00	5.63	-12.16
2,300.000	62.64	125.506	2,123.357	-276.281	320.795	337.298	12.00	5.88	-11.86
2,325.000	64.17	122.620	2,134.550	-288.797	339.313	356.556	12.00	6.12	-11.54
2,350.000	65.76	119.809	2,145.131	-300.530	358.684	376.616	12.00	6.34	-11.24
2,375.000	67.39	117.068	2,155.071	-311.450	378.854	397.424	12.00	6.54	-10.96
2,400.000	69.07	114.393	2,164.343	-321.525	399.767	418.922	12.00	6.73	-10.70
2,425.000	70.80	111.777	2,172.921	-330.728	421.368	441.051	12.00	6.89	-10.46
2,450.000	72.56	109.217	2,180.781	-339.035	443.595	463.751	12.00	7.03	-10.24
2,475.000	74.35	106.706	2,187.903	-346.422	466.389	486.959	12.00	7.16	-10.04
2,500.000	76.16	104.239	2,194.267	-352.868	489.688	510.611	12.00	7.27	-9.87
2,525.000	78.01	101.810	2,199.854	-358.357	513.426	534.644	12.00	7.37	-9.71
2,550.000	79.87	99.414	2,204.651	-362.874	537.539	558.991	12.00	7.45	-9.58
2,575.000	81.75	97.047	2,208.644	-366.405	561.961	583.585	12.00	7.52	-9.47
2,600.000	83.65	94.701	2,211.821	-368.941	586.626	608.359	12.00	7.58	-9.38
2,625.000	85.55	92.373	2,214.174	-370.476	611.464	633.245	12.00	7.62	-9.31
2,635.148	86.33	91.432	2,214.893	-370.812	621.581	643.364	12.00	7.64	-9.28



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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)
[THOMAS#8H]FTPL1 2635" MD (2215' TVD)									
2,652.430	87.65	89.833	2,215.801	-371.002	638.837	660.598	12.00	7.65	-9.25
[THOMAS#8H]EOC1 2652" MD (2216' TVD)									
2,700.000	87.65	89.833	2,217.751	-370.864	686.367	708.028	0.00	0.00	0.00
2,800.000	87.65	89.833	2,221.852	-370.572	786.283	807.734	0.00	0.00	0.00
2,900.000	87.65	89.833	2,225.952	-370.281	886.198	907.439	0.00	0.00	0.00
3,000.000	87.65	89.833	2,230.053	-369.989	986.114	1,007.144	0.00	0.00	0.00
3,100.000	87.65	89.833	2,234.153	-369.698	1,086.029	1,106.850	0.00	0.00	0.00
3,200.000	87.65	89.833	2,238.254	-369.406	1,185.944	1,206.555	0.00	0.00	0.00
3,300.000	87.65	89.833	2,242.354	-369.115	1,285.860	1,306.261	0.00	0.00	0.00
3,400.000	87.65	89.833	2,246.454	-368.823	1,385.775	1,405.966	0.00	0.00	0.00
3,500.000	87.65	89.833	2,250.555	-368.532	1,485.691	1,505.671	0.00	0.00	0.00
3,600.000	87.65	89.833	2,254.655	-368.240	1,585.606	1,605.377	0.00	0.00	0.00
3,700.000	87.65	89.833	2,258.756	-367.949	1,685.522	1,705.082	0.00	0.00	0.00
3,800.000	87.65	89.833	2,262.856	-367.657	1,785.437	1,804.788	0.00	0.00	0.00
3,900.000	87.65	89.833	2,266.957	-367.366	1,885.353	1,904.493	0.00	0.00	0.00
4,000.000	87.65	89.833	2,271.057	-367.074	1,985.268	2,004.198	0.00	0.00	0.00
4,100.000	87.65	89.833	2,275.158	-366.783	2,085.184	2,103.904	0.00	0.00	0.00
4,200.000	87.65	89.833	2,279.258	-366.491	2,185.099	2,203.609	0.00	0.00	0.00
4,300.000	87.65	89.833	2,283.358	-366.200	2,285.015	2,303.315	0.00	0.00	0.00
4,400.000	87.65	89.833	2,287.459	-365.908	2,384.930	2,403.020	0.00	0.00	0.00
4,500.000	87.65	89.833	2,291.559	-365.617	2,484.846	2,502.726	0.00	0.00	0.00
4,600.000	87.65	89.833	2,295.660	-365.325	2,584.761	2,602.431	0.00	0.00	0.00
4,700.000	87.65	89.833	2,299.760	-365.034	2,684.676	2,702.136	0.00	0.00	0.00
4,800.000	87.65	89.833	2,303.861	-364.742	2,784.592	2,801.842	0.00	0.00	0.00
4,900.000	87.65	89.833	2,307.961	-364.450	2,884.507	2,901.547	0.00	0.00	0.00
5,000.000	87.65	89.833	2,312.062	-364.159	2,984.423	3,001.253	0.00	0.00	0.00
5,100.000	87.65	89.833	2,316.162	-363.867	3,084.338	3,100.958	0.00	0.00	0.00
5,200.000	87.65	89.833	2,320.262	-363.576	3,184.254	3,200.663	0.00	0.00	0.00
5,300.000	87.65	89.833	2,324.363	-363.284	3,284.169	3,300.369	0.00	0.00	0.00
5,400.000	87.65	89.833	2,328.463	-362.993	3,384.085	3,400.074	0.00	0.00	0.00
5,500.000	87.65	89.833	2,332.564	-362.701	3,484.000	3,499.780	0.00	0.00	0.00
5,600.000	87.65	89.833	2,336.664	-362.410	3,583.916	3,599.485	0.00	0.00	0.00
5,700.000	87.65	89.833	2,340.765	-362.118	3,683.831	3,699.190	0.00	0.00	0.00
5,800.000	87.65	89.833	2,344.865	-361.827	3,783.747	3,798.896	0.00	0.00	0.00
5,900.000	87.65	89.833	2,348.966	-361.535	3,883.662	3,898.601	0.00	0.00	0.00
6,000.000	87.65	89.833	2,353.066	-361.244	3,983.578	3,998.307	0.00	0.00	0.00
6,100.000	87.65	89.833	2,357.166	-360.952	4,083.493	4,098.012	0.00	0.00	0.00
6,200.000	87.65	89.833	2,361.267	-360.661	4,183.408	4,197.717	0.00	0.00	0.00
6,300.000	87.65	89.833	2,365.367	-360.369	4,283.324	4,297.423	0.00	0.00	0.00
6,400.000	87.65	89.833	2,369.468	-360.078	4,383.239	4,397.128	0.00	0.00	0.00
6,500.000	87.65	89.833	2,373.568	-359.786	4,483.155	4,496.834	0.00	0.00	0.00
6,600.000	87.65	89.833	2,377.669	-359.495	4,583.070	4,596.539	0.00	0.00	0.00
6,700.000	87.65	89.833	2,381.769	-359.203	4,682.986	4,696.245	0.00	0.00	0.00
6,800.000	87.65	89.833	2,385.870	-358.912	4,782.901	4,795.950	0.00	0.00	0.00
6,900.000	87.65	89.833	2,389.970	-358.620	4,882.817	4,895.655	0.00	0.00	0.00
7,000.000	87.65	89.833	2,394.070	-358.329	4,982.732	4,995.361	0.00	0.00	0.00
7,100.000	87.65	89.833	2,398.171	-358.037	5,082.648	5,095.066	0.00	0.00	0.00
7,200.000	87.65	89.833	2,402.271	-357.746	5,182.563	5,194.772	0.00	0.00	0.00
7,300.000	87.65	89.833	2,406.372	-357.454	5,282.479	5,294.477	0.00	0.00	0.00
7,400.000	87.65	89.833	2,410.472	-357.163	5,382.394	5,394.182	0.00	0.00	0.00
7,500.000	87.65	89.833	2,414.573	-356.871	5,482.310	5,493.888	0.00	0.00	0.00
7,600.000	87.65	89.833	2,418.673	-356.580	5,582.225	5,593.593	0.00	0.00	0.00



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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)
7,700.000	87.65	89.833	2,422.774	-356.288	5,682.140	5,693.299	0.00	0.00	0.00
7,754.295	87.65	89.833	2,425.000	-356.130	5,736.390	5,747.434	0.00	0.00	0.00

[THOMAS#8H]BHL1 7754' MD (2425' TVD)

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
[THOMAS#8H]FTP1 - plan misses target center by 0.265usft at 2635.150usft MD (2214.893 TVD, -370.812 N, 621.583 E) - Point	0.00	0.000	2,215.000	-370.570	621.580	609,481.36	485,365.87	32° 40' 31.358 N	104° 30' 54.863 W
[THOMAS#8H]BHL1 - plan hits target center - Point	0.00	0.000	2,425.000	-356.130	5,736.390	609,495.80	490,480.68	32° 40' 31.584 N	104° 28' 55.021 W

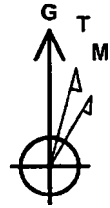
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,512.540	1,512.540	0.000	0.000	KOP 9°/100' BUILD RATE
2,179.207	2,063.869	-208.830	240.232	START 75' TANGENT
2,254.207	2,101.369	-251.443	289.252	END 60° TANGENT
2,635.148	2,214.893	-370.812	621.581	[THOMAS#8H]FTP1 2635' MD (2215' TVD)
2,652.430	2,215.801	-371.002	638.837	[THOMAS#8H]EOC1 2852' MD (2216' TVD)
7,754.295	2,425.000	-356.130	5,736.390	[THOMAS#8H]BHL1 7754' MD (2425' TVD)

Project: Eddy County (NAD83)
 Site: Thomas
 Well: Thomas #8H
 Wellbore: Lateral
 Design: Plan #1
 Ground Elevation 3579.000
 Northing 609851.93
 Easting 484744.29

PROJECT DETAILS: Eddy County (NAD83)

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: 0.10°
 Magnetic North: 7.41°
 Magnetic Field
 Strength: 47990.2snT
 Dip Angle: 60.31°
 Date: 7/20/2018
 Model: IGRF2015

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.000	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.000
2	1250.000	0.00	0.000	1250.000	0.000	0.000	0.00	0.00	0.000
3	1512.540	0.00	0.000	1512.540	0.000	0.000	0.00	0.00	0.000
4	2179.207	60.00	131.000	2063.869	-208.830	240.232	9.00	131.00	252.710
5	2254.207	60.00	131.000	2101.369	-251.442	289.251	0.00	0.00	304.276
6	2652.430	87.65	89.833	2215.801	-371.002	638.837	12.00	-62.62	660.598
7	7754.295	87.65	89.833	2425.000	-356.130	5736.390	0.00	0.00	5747.434

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
[THOMAS#8H]FTP1	2215.000	-370.570	621.580	609481.36	485365.87
[THOMAS#8H]BHL1	2425.000	-356.130	5736.390	609495.80	490480.68

- plan misses target center by 0.265usft at 2635.148usft MD (2214.893 TVD, -370.812 N, 621.581 E)
 - plan hits target center

