



**NM OIL CONSERVATION
ARTESIA DISTRICT**

EOG Resources - Artesia

JUL 30 2018

Eddy County (NAD83)

Thomas

Thomas #9H

30.015.45130

RECEIVED

Lateral

Plan: Plan #1

Standard Planning Report

26 July, 2018



Planning Report

Database: EDM 5000.14
 Company: EOG Resources - Artesia
 Project: Eddy County (NAD83)
 Site: Thomas
 Well: Thomas #9H
 Wellbore: Lateral
 Design: Plan #1

Local Co-ordinate Reference: Well Thomas #9H
 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 #9H			
Well Position	+N/-S	-1,681.630 usft	Northing:	609,881.93 usft
	+E/-W	-202.130 usft	Easting:	484,744.38 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	47,990.24643117

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	85.754

Plan Survey Tool Program	Date 7/20/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.000	7,773.988 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)	Bulld 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	
1,504.500	0.00	0.000	1,504.500	0.000	0.000	0.00	0.00	0.00	0.00	
2,171.167	60.00	44.700	2,055.829	228.264	223.897	9.00	9.00	0.00	44.70	
2,246.167	60.00	44.700	2,093.329	272.422	269.584	0.00	0.00	0.00	0.00	
2,672.638	88.09	89.863	2,215.258	413.713	637.379	12.00	6.59	10.59	65.48	
7,773.988	88.09	89.863	2,385.000	425.870	5,735.890	0.00	0.00	0.00	0.00	[THOMAS#9H]BHL1



Planning Report

Database: EDM 5000.14
Company: EOG Resources - Artesia
Project: Eddy County (NAD83)
Site: Thomas
Well: Thomas #9H
Wellbore: Lateral
Design: Plan #1

Local Co-ordinate Reference: Well Thomas #9H
TVD Reference: KB @ 3597.000usft (Training Rig)
MD Reference: KB @ 3597.000usft (Training Rig)
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)
0.000	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
1,504.500	0.00	0.000	1,504.500	0.000	0.000	0.000	0.00	0.00	0.00
KOP 8°/100' BUILD RATE									
1,550.000	4.10	44.700	1,549.961	1.155	1.143	1.226	9.00	9.00	0.00
1,600.000	8.60	44.700	1,599.642	5.082	5.029	5.391	9.00	9.00	0.00
1,650.000	13.10	44.700	1,648.737	11.767	11.645	12.484	9.00	9.00	0.00
1,700.000	17.60	44.700	1,696.942	21.170	20.949	22.459	9.00	9.00	0.00
1,750.000	22.10	44.700	1,743.960	33.232	32.885	35.255	9.00	9.00	0.00
1,800.000	26.60	44.700	1,789.503	47.878	47.380	50.794	9.00	9.00	0.00
1,850.000	31.10	44.700	1,833.288	65.020	64.343	68.980	9.00	9.00	0.00
1,900.000	35.60	44.700	1,875.046	84.551	83.670	89.700	9.00	9.00	0.00
1,950.000	40.10	44.700	1,914.519	108.350	105.242	112.828	9.00	9.00	0.00
2,000.000	44.60	44.700	1,951.465	130.283	128.928	138.217	9.00	9.00	0.00
2,050.000	49.10	44.700	1,985.655	156.203	154.576	165.715	9.00	9.00	0.00
2,100.000	53.60	44.700	2,016.878	183.950	182.034	195.152	9.00	9.00	0.00
2,150.000	58.10	44.700	2,044.943	213.352	211.130	226.345	9.00	9.00	0.00
2,171.167	60.00	44.700	2,055.829	226.255	223.898	240.033	9.00	9.00	0.00
START 76° TANGENT									
2,200.000	60.00	44.700	2,070.245	244.003	241.462	258.863	0.00	0.00	0.00
2,246.167	60.00	44.700	2,093.329	272.422	269.585	289.012	0.00	0.00	0.00
END 60° TANGENT									
2,250.000	60.19	45.182	2,095.240	274.774	271.932	291.527	12.00	5.01	12.58
2,275.000	61.49	48.282	2,107.424	289.732	287.828	308.487	12.00	5.17	12.40
2,300.000	62.85	51.305	2,119.098	303.998	304.711	326.380	12.00	5.45	12.09
2,325.000	64.27	54.254	2,130.231	317.533	322.535	345.157	12.00	5.70	11.79
2,350.000	65.76	57.131	2,140.793	330.300	341.252	364.768	12.00	5.93	11.51
2,375.000	67.29	59.940	2,150.753	342.265	360.809	385.157	12.00	6.14	11.24
2,400.000	68.88	62.687	2,160.086	353.393	381.154	406.270	12.00	6.34	10.99
2,425.000	70.50	65.375	2,168.765	363.658	402.231	428.049	12.00	6.51	10.75
2,450.000	72.17	68.008	2,176.767	373.024	423.981	450.433	12.00	6.66	10.53
2,475.000	73.87	70.592	2,184.069	381.472	446.345	473.361	12.00	6.80	10.34
2,500.000	75.60	73.132	2,190.652	388.977	469.263	498.771	12.00	6.93	10.16
2,525.000	77.36	75.632	2,198.497	395.518	492.670	520.598	12.00	7.03	10.00
2,550.000	79.14	78.098	2,201.589	401.078	516.503	544.778	12.00	7.12	9.86
2,575.000	80.94	80.535	2,205.913	405.640	540.697	569.243	12.00	7.20	9.75
2,600.000	82.76	82.947	2,209.459	409.194	565.185	593.927	12.00	7.27	9.65
2,625.000	84.59	85.340	2,212.215	411.728	589.900	618.762	12.00	7.32	9.57
2,650.000	86.42	87.718	2,214.175	413.236	614.774	643.680	12.00	7.35	9.51



Planning Report

Database: EDM 5000.14
Company: EOG Resources - Artesia
Project: Eddy County (NAD83)
Site: Thomas
Well: Thomas #9H
Wellbore: Lateral
Design: Plan #1

Local Co-ordinate Reference: Well Thomas #9H
TVD Reference: KB @ 3597.000usft (Training Rig)
MD Reference: KB @ 3597.000usft (Training Rig)
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)
2,658.826	87.07	88.555	2,214.676	413.522	623.681	652.484	12.00	7.37	9.48
[THOMAS#9H]FTP1 2659' MD (2215' TVD)									
2,672.638	88.09	89.863	2,215.258	413.713	637.379	666.258	12.00	7.38	9.47
[THOMAS#9H]EOC1 2677' MD (2215' TVD)									
2,700.000	88.09	89.863	2,216.168	413.778	664.728	693.534	0.00	0.00	0.00
2,800.000	88.09	89.863	2,219.496	414.016	764.670	793.222	0.00	0.00	0.00
2,900.000	88.09	89.863	2,222.823	414.255	864.615	892.910	0.00	0.00	0.00
3,000.000	88.09	89.863	2,226.151	414.493	964.559	992.597	0.00	0.00	0.00
3,100.000	88.09	89.863	2,229.478	414.731	1,064.503	1,092.285	0.00	0.00	0.00
3,200.000	88.09	89.863	2,232.805	414.970	1,164.448	1,191.973	0.00	0.00	0.00
3,300.000	88.09	89.863	2,236.133	415.208	1,264.392	1,291.661	0.00	0.00	0.00
3,400.000	88.09	89.863	2,239.460	415.446	1,364.336	1,391.348	0.00	0.00	0.00
3,500.000	88.09	89.863	2,242.788	415.685	1,464.281	1,491.036	0.00	0.00	0.00
3,600.000	88.09	89.863	2,246.115	415.923	1,564.225	1,590.724	0.00	0.00	0.00
3,700.000	88.09	89.863	2,249.442	416.161	1,664.169	1,690.412	0.00	0.00	0.00
3,800.000	88.09	89.863	2,252.770	416.399	1,764.114	1,790.099	0.00	0.00	0.00
3,900.000	88.09	89.863	2,256.097	416.638	1,864.058	1,889.787	0.00	0.00	0.00
4,000.000	88.09	89.863	2,259.425	416.876	1,964.002	1,989.475	0.00	0.00	0.00
4,100.000	88.09	89.863	2,262.752	417.114	2,063.947	2,089.162	0.00	0.00	0.00
4,200.000	88.09	89.863	2,266.079	417.353	2,163.891	2,188.850	0.00	0.00	0.00
4,300.000	88.09	89.863	2,269.407	417.591	2,263.835	2,288.538	0.00	0.00	0.00
4,400.000	88.09	89.863	2,272.734	417.829	2,363.780	2,388.226	0.00	0.00	0.00
4,500.000	88.09	89.863	2,276.061	418.068	2,463.724	2,487.913	0.00	0.00	0.00
4,600.000	88.09	89.863	2,279.389	418.306	2,563.668	2,587.601	0.00	0.00	0.00
4,700.000	88.09	89.863	2,282.716	418.544	2,663.613	2,687.289	0.00	0.00	0.00
4,800.000	88.09	89.863	2,286.044	418.783	2,763.557	2,786.977	0.00	0.00	0.00
4,900.000	88.09	89.863	2,289.371	419.021	2,863.501	2,886.664	0.00	0.00	0.00
5,000.000	88.09	89.863	2,292.698	419.259	2,963.446	2,986.352	0.00	0.00	0.00
5,100.000	88.09	89.863	2,296.026	419.498	3,063.390	3,086.040	0.00	0.00	0.00
5,200.000	88.09	89.863	2,299.353	419.736	3,163.334	3,185.728	0.00	0.00	0.00
5,300.000	88.09	89.863	2,302.681	419.974	3,263.278	3,285.415	0.00	0.00	0.00
5,400.000	88.09	89.863	2,306.008	420.212	3,363.223	3,385.103	0.00	0.00	0.00
5,500.000	88.09	89.863	2,309.335	420.451	3,463.167	3,484.791	0.00	0.00	0.00
5,600.000	88.09	89.863	2,312.663	420.689	3,563.112	3,584.478	0.00	0.00	0.00
5,700.000	88.09	89.863	2,315.990	420.927	3,663.056	3,684.166	0.00	0.00	0.00
5,800.000	88.09	89.863	2,319.318	421.166	3,763.001	3,783.854	0.00	0.00	0.00
5,900.000	88.09	89.863	2,322.645	421.404	3,862.945	3,883.542	0.00	0.00	0.00
6,000.000	88.09	89.863	2,325.972	421.642	3,962.889	3,983.229	0.00	0.00	0.00
6,100.000	88.09	89.863	2,329.300	421.881	4,062.834	4,082.917	0.00	0.00	0.00
6,200.000	88.09	89.863	2,332.627	422.119	4,162.778	4,182.605	0.00	0.00	0.00
6,300.000	88.09	89.863	2,335.955	422.357	4,262.722	4,282.293	0.00	0.00	0.00
6,400.000	88.09	89.863	2,339.282	422.596	4,362.667	4,381.980	0.00	0.00	0.00
6,500.000	88.09	89.863	2,342.609	422.834	4,462.611	4,481.668	0.00	0.00	0.00
6,600.000	88.09	89.863	2,345.937	423.072	4,562.555	4,581.356	0.00	0.00	0.00
6,700.000	88.09	89.863	2,349.264	423.311	4,662.500	4,681.043	0.00	0.00	0.00
6,800.000	88.09	89.863	2,352.591	423.549	4,762.444	4,780.731	0.00	0.00	0.00
6,900.000	88.09	89.863	2,355.919	423.787	4,862.388	4,880.419	0.00	0.00	0.00
7,000.000	88.09	89.863	2,359.246	424.025	4,962.333	4,980.107	0.00	0.00	0.00
7,100.000	88.09	89.863	2,362.574	424.264	5,062.277	5,079.794	0.00	0.00	0.00
7,200.000	88.09	89.863	2,365.901	424.502	5,162.221	5,179.482	0.00	0.00	0.00
7,300.000	88.09	89.863	2,369.228	424.740	5,262.166	5,279.170	0.00	0.00	0.00
7,400.000	88.09	89.863	2,372.556	424.979	5,362.110	5,378.858	0.00	0.00	0.00
7,500.000	88.09	89.863	2,375.883	425.217	5,462.054	5,478.545	0.00	0.00	0.00
7,600.000	88.09	89.863	2,379.211	425.455	5,561.999	5,578.233	0.00	0.00	0.00



Planning Report

Database: EDM 5000.14
Company: EOG Resources - Artesia
Project: Eddy County (NAD83)
Site: Thomas
Well: Thomas #9H
Wellbore: Lateral
Design: Plan #1

Local Co-ordinate Reference: Well Thomas #9H
TVD Reference: KB @ 3597.000usft (Training Rig)
MD Reference: KB @ 3597.000usft (Training Rig)
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)
7,700.000	88.09	89.863	2,382.538	425.694	5,661.943	5,677.921	0.00	0.00	0.00
7,773.988	88.09	89.863	2,385.000	425.870	5,735.890	5,751.678	0.00	0.00	0.00

[THOMAS#9H]BHL1 7774' MD (2385' TVD)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Eastng (usft)	Latitude	Longitude
[THOMAS#9H]JUMP1 - plan misses target center by 2.108usft at 2658.805usft MD (2214.675 TVD, 413.522 N, 623.561 E) - Point	0.00	0.000	2,215.000	411.440	623.610	610,293.37	485,367.99	32° 40' 39.394 N	104° 30' 54.855 W
[THOMAS#9H]BHL1 - plan hits target center - Point	0.00	0.000	2,385.000	425.870	5,735.890	610,307.80	490,480.27	32° 40' 39.619 N	104° 29' 55.041 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,504.500	1,504.500	0.000	0.000	KOP 9°/100' BUILD RATE
2,171.167	2,055.829	226.255	223.898	START 75' TANGENT
2,246.167	2,093.329	272.422	269.585	END 60° TANGENT
2,658.826	2,214.676	413.522	623.581	[THOMAS#9H]FTP1 2659' MD (2215' TVD)
2,672.638	2,215.258	413.713	637.378	[THOMAS#9H]EOC1 2677' MD (2215' TVD)
7,773.988	2,385.000	425.870	5,735.890	[THOMAS#9H]BHL1 7774' MD (2385' TVD)