



NPR 14C-9 596
 Plan #1 (1-15-18)
 11:22, January 18 2018

Azimuths to True North
 Magnetic North: 9.63°

Magnetic Field
 Strength: 51503.2snT
 Dip Angle: 65.85°
 Date: 1/18/2018
 Model: HDGM

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SHL 1748'FNL, 2372'FWL, SEC.9	1.0	0.0	0.0	39.632042	-108.174476	Point
BHL 921'FSL, 1325'FWL, SEC.9	9918.0	-2608.9	-1043.5	39.624880	-108.178180	Ellipse (Radii: L200.0 W100.0)

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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	300.0	3.00	180.00	300.0	-2.6	0.0	3.00	180.00	2.4	
4	1065.7	25.79	199.09	1036.9	-182.5	-55.2	3.00	21.38	189.9	
5	6380.2	25.79	199.09	5822.2	-2367.3	-811.2	0.00	0.00	2499.2	
6	7239.7	0.00	0.00	6653.0	-2547.0	-873.4	3.00	180.00	2689.2	
7	7574.1	3.34	250.00	6987.2	-2550.3	-882.6	1.00	250.00	2695.7	
8	10509.9	3.34	250.00	9918.0	-2608.9	-1043.5	0.00	0.00	2809.8	BHL 921'FSL, 1325'FWL, SEC.9



Directional

Caerus Oil and Gas LLC

SEC.9-T5S-R96W

NPR G09 596 Pad Sec.9-T5S-R96W

NPR 14C-9 596

Wellbore #1

Plan: Plan #1 (1-15-18)

Standard Planning Report

18 January, 2018

Database:	US_EDM	Local Co-ordinate Reference:	Well NPR 14C-9 596
Company:	Caerus Oil and Gas LLC	TVD Reference:	WELL @ 7670.0ft (Original Well Elev)
Project:	SEC.9-T5S-R96W	MD Reference:	WELL @ 7670.0ft (Original Well Elev)
Site:	NPR G09 596 Pad Sec.9-T5S-R96W	North Reference:	True
Well:	NPR 14C-9 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-15-18)		

Project	SEC.9-T5S-R96W, Garfield County, CO		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 - Western US		Using Well Reference Point
Map Zone:	Zone 12N (114 W to 108 W)		Using geodetic scale factor

Site	NPR G09 596 Pad Sec.9-T5S-R96W				
Site Position:	Northing:	14,404,590.33 usft	Latitude:	39.632067	
From: Lat/Long	Easting:	2,436,015.01 usft	Longitude:	-108.174492	
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	1.80 °

Well	NPR 14C-9 596					
Well Position	+N/-S	-9.2 ft	Northing:	14,404,581.29 usft	Latitude:	39.632042
	+E/-W	4.3 ft	Easting:	2,436,019.58 usft	Longitude:	-108.174477
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	7,640.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/18/2018	9.63	65.85	51,503

Design	Plan #1 (1-15-18)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	201.80

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	3.00	180.00	300.0	-2.6	0.0	3.00	3.00	0.00	180.00	
1,065.7	25.79	199.09	1,036.9	-182.5	-55.2	3.00	2.98	2.49	21.38	
6,380.2	25.79	199.09	5,822.2	-2,367.3	-811.2	0.00	0.00	0.00	0.00	
7,239.7	0.00	0.00	6,653.0	-2,547.0	-873.4	3.00	-3.00	0.00	180.00	
7,574.1	3.34	250.00	6,987.2	-2,550.3	-882.6	1.00	1.00	-32.90	250.00	
10,509.9	3.34	250.00	9,918.0	-2,608.9	-1,043.5	0.00	0.00	0.00	0.00	BHL 921'FSL, 1325'F

Database:	US_EDM	Local Co-ordinate Reference:	Well NPR 14C-9 596
Company:	Caerus Oil and Gas LLC	TVD Reference:	WELL @ 7670.0ft (Original Well Elev)
Project:	SEC.9-T5S-R96W	MD Reference:	WELL @ 7670.0ft (Original Well Elev)
Site:	NPR G09 596 Pad Sec.9-T5S-R96W	North Reference:	True
Well:	NPR 14C-9 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-15-18)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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	
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00	
SHL 1748'FNL, 2372'FWL, SEC.9										
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	3.00	180.00	300.0	-2.6	0.0	2.4	3.00	3.00	0.00	
400.0	5.90	190.70	399.6	-10.3	-1.0	9.9	3.00	2.90	10.70	
500.0	8.86	194.32	498.8	-22.8	-3.8	22.6	3.00	2.97	3.62	
600.0	11.84	196.13	597.2	-40.1	-8.6	40.4	3.00	2.98	1.81	
700.0	14.83	197.22	694.5	-62.2	-15.2	63.4	3.00	2.99	1.09	
800.0	17.83	197.95	790.4	-89.0	-23.7	91.4	3.00	2.99	0.73	
900.0	20.82	198.47	884.8	-120.4	-34.1	124.5	3.00	2.99	0.53	
1,000.0	23.82	198.87	977.3	-156.4	-46.2	162.4	3.00	3.00	0.40	
1,065.7	25.79	199.09	1,036.9	-182.5	-55.2	189.9	3.00	3.00	0.33	
1,100.0	25.79	199.09	1,067.8	-196.6	-60.1	204.8	0.00	0.00	0.00	
1,200.0	25.79	199.09	1,157.8	-237.7	-74.3	248.3	0.00	0.00	0.00	
1,300.0	25.79	199.09	1,247.9	-278.8	-88.5	291.7	0.00	0.00	0.00	
1,400.0	25.79	199.09	1,337.9	-319.9	-102.8	335.2	0.00	0.00	0.00	
1,500.0	25.79	199.09	1,428.0	-361.0	-117.0	378.6	0.00	0.00	0.00	
1,600.0	25.79	199.09	1,518.0	-402.1	-131.2	422.1	0.00	0.00	0.00	
1,700.0	25.79	199.09	1,608.0	-443.2	-145.4	465.5	0.00	0.00	0.00	
1,800.0	25.79	199.09	1,698.1	-484.3	-159.7	509.0	0.00	0.00	0.00	
1,900.0	25.79	199.09	1,788.1	-525.4	-173.9	552.4	0.00	0.00	0.00	
2,000.0	25.79	199.09	1,878.2	-566.6	-188.1	595.9	0.00	0.00	0.00	
2,100.0	25.79	199.09	1,968.2	-607.7	-202.3	639.4	0.00	0.00	0.00	
2,200.0	25.79	199.09	2,058.3	-648.8	-216.6	682.8	0.00	0.00	0.00	
2,300.0	25.79	199.09	2,148.3	-689.9	-230.8	726.3	0.00	0.00	0.00	
2,400.0	25.79	199.09	2,238.3	-731.0	-245.0	769.7	0.00	0.00	0.00	
2,500.0	25.79	199.09	2,328.4	-772.1	-259.2	813.2	0.00	0.00	0.00	
2,600.0	25.79	199.09	2,418.4	-813.2	-273.5	856.6	0.00	0.00	0.00	
2,700.0	25.79	199.09	2,508.5	-854.3	-287.7	900.1	0.00	0.00	0.00	
2,800.0	25.79	199.09	2,598.5	-895.4	-301.9	943.5	0.00	0.00	0.00	
2,900.0	25.79	199.09	2,688.5	-936.6	-316.1	987.0	0.00	0.00	0.00	
3,000.0	25.79	199.09	2,778.6	-977.7	-330.4	1,030.4	0.00	0.00	0.00	
3,100.0	25.79	199.09	2,868.6	-1,018.8	-344.6	1,073.9	0.00	0.00	0.00	
3,200.0	25.79	199.09	2,958.7	-1,059.9	-358.8	1,117.3	0.00	0.00	0.00	
3,300.0	25.79	199.09	3,048.7	-1,101.0	-373.0	1,160.8	0.00	0.00	0.00	
3,400.0	25.79	199.09	3,138.8	-1,142.1	-387.3	1,204.2	0.00	0.00	0.00	
3,500.0	25.79	199.09	3,228.8	-1,183.2	-401.5	1,247.7	0.00	0.00	0.00	
3,600.0	25.79	199.09	3,318.8	-1,224.3	-415.7	1,291.2	0.00	0.00	0.00	
3,700.0	25.79	199.09	3,408.9	-1,265.4	-429.9	1,334.6	0.00	0.00	0.00	
3,800.0	25.79	199.09	3,498.9	-1,306.5	-444.2	1,378.1	0.00	0.00	0.00	
3,900.0	25.79	199.09	3,589.0	-1,347.7	-458.4	1,421.5	0.00	0.00	0.00	
4,000.0	25.79	199.09	3,679.0	-1,388.8	-472.6	1,465.0	0.00	0.00	0.00	
4,100.0	25.79	199.09	3,769.0	-1,429.9	-486.8	1,508.4	0.00	0.00	0.00	
4,200.0	25.79	199.09	3,859.1	-1,471.0	-501.1	1,551.9	0.00	0.00	0.00	
4,300.0	25.79	199.09	3,949.1	-1,512.1	-515.3	1,595.3	0.00	0.00	0.00	
4,400.0	25.79	199.09	4,039.2	-1,553.2	-529.5	1,638.8	0.00	0.00	0.00	
4,500.0	25.79	199.09	4,129.2	-1,594.3	-543.7	1,682.2	0.00	0.00	0.00	
4,600.0	25.79	199.09	4,219.3	-1,635.4	-558.0	1,725.7	0.00	0.00	0.00	
4,700.0	25.79	199.09	4,309.3	-1,676.5	-572.2	1,769.1	0.00	0.00	0.00	
4,800.0	25.79	199.09	4,399.3	-1,717.7	-586.4	1,812.6	0.00	0.00	0.00	
4,900.0	25.79	199.09	4,489.4	-1,758.8	-600.6	1,856.0	0.00	0.00	0.00	
5,000.0	25.79	199.09	4,579.4	-1,799.9	-614.9	1,899.5	0.00	0.00	0.00	

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Site:	NPR G09 596 Pad Sec.9-T5S-R96W	North Reference:	True
Well:	NPR 14C-9 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-15-18)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,100.0	25.79	199.09	4,669.5	-1,841.0	-629.1	1,943.0	0.00	0.00	0.00	
5,200.0	25.79	199.09	4,759.5	-1,882.1	-643.3	1,986.4	0.00	0.00	0.00	
5,300.0	25.79	199.09	4,849.6	-1,923.2	-657.5	2,029.9	0.00	0.00	0.00	
5,400.0	25.79	199.09	4,939.6	-1,964.3	-671.8	2,073.3	0.00	0.00	0.00	
5,500.0	25.79	199.09	5,029.6	-2,005.4	-686.0	2,116.8	0.00	0.00	0.00	
5,600.0	25.79	199.09	5,119.7	-2,046.5	-700.2	2,160.2	0.00	0.00	0.00	
5,700.0	25.79	199.09	5,209.7	-2,087.6	-714.5	2,203.7	0.00	0.00	0.00	
5,800.0	25.79	199.09	5,299.8	-2,128.8	-728.7	2,247.1	0.00	0.00	0.00	
5,900.0	25.79	199.09	5,389.8	-2,169.9	-742.9	2,290.6	0.00	0.00	0.00	
6,000.0	25.79	199.09	5,479.8	-2,211.0	-757.1	2,334.0	0.00	0.00	0.00	
6,100.0	25.79	199.09	5,569.9	-2,252.1	-771.4	2,377.5	0.00	0.00	0.00	
6,200.0	25.79	199.09	5,659.9	-2,293.2	-785.6	2,420.9	0.00	0.00	0.00	
6,300.0	25.79	199.09	5,750.0	-2,334.3	-799.8	2,464.4	0.00	0.00	0.00	
6,380.2	25.79	199.09	5,822.2	-2,367.3	-811.2	2,499.2	0.00	0.00	0.00	
6,400.0	25.19	199.09	5,840.1	-2,375.3	-814.0	2,507.8	3.00	-3.00	0.00	
6,500.0	22.19	199.09	5,931.6	-2,413.3	-827.1	2,547.9	3.00	-3.00	0.00	
6,600.0	19.19	199.09	6,025.2	-2,446.7	-838.7	2,583.2	3.00	-3.00	0.00	
6,700.0	16.19	199.09	6,120.4	-2,475.4	-848.6	2,613.5	3.00	-3.00	0.00	
6,800.0	13.19	199.09	6,217.1	-2,499.4	-856.9	2,638.9	3.00	-3.00	0.00	
6,900.0	10.19	199.09	6,315.1	-2,518.5	-863.5	2,659.1	3.00	-3.00	0.00	
7,000.0	7.19	199.09	6,413.9	-2,532.8	-868.5	2,674.2	3.00	-3.00	0.00	
7,100.0	4.19	199.09	6,513.4	-2,542.2	-871.7	2,684.1	3.00	-3.00	0.00	
7,200.0	1.19	199.09	6,613.3	-2,546.6	-873.3	2,688.8	3.00	-3.00	0.00	
7,239.7	0.00	0.00	6,653.0	-2,547.0	-873.4	2,689.2	3.00	-3.00	0.00	
7,300.0	0.60	250.00	6,713.3	-2,547.1	-873.7	2,689.4	1.00	1.00	0.00	
7,400.0	1.60	250.00	6,813.2	-2,547.8	-875.5	2,690.7	1.00	1.00	0.00	
7,500.0	2.60	250.00	6,913.2	-2,549.0	-879.0	2,693.1	1.00	1.00	0.00	
7,574.1	3.34	250.00	6,987.2	-2,550.3	-882.6	2,695.7	1.00	1.00	0.00	
7,600.0	3.34	250.00	7,013.0	-2,550.9	-884.0	2,696.7	0.00	0.00	0.00	
7,700.0	3.34	250.00	7,112.9	-2,552.8	-889.5	2,700.6	0.00	0.00	0.00	
7,800.0	3.34	250.00	7,212.7	-2,554.8	-894.9	2,704.5	0.00	0.00	0.00	
7,900.0	3.34	250.00	7,312.5	-2,556.8	-900.4	2,708.4	0.00	0.00	0.00	
8,000.0	3.34	250.00	7,412.3	-2,558.8	-905.9	2,712.3	0.00	0.00	0.00	
8,100.0	3.34	250.00	7,512.2	-2,560.8	-911.4	2,716.1	0.00	0.00	0.00	
8,200.0	3.34	250.00	7,612.0	-2,562.8	-916.9	2,720.0	0.00	0.00	0.00	
8,300.0	3.34	250.00	7,711.8	-2,564.8	-922.4	2,723.9	0.00	0.00	0.00	
8,400.0	3.34	250.00	7,811.7	-2,566.8	-927.8	2,727.8	0.00	0.00	0.00	
8,500.0	3.34	250.00	7,911.5	-2,568.8	-933.3	2,731.7	0.00	0.00	0.00	
8,600.0	3.34	250.00	8,011.3	-2,570.8	-938.8	2,735.6	0.00	0.00	0.00	
8,700.0	3.34	250.00	8,111.2	-2,572.8	-944.3	2,739.5	0.00	0.00	0.00	
8,800.0	3.34	250.00	8,211.0	-2,574.8	-949.8	2,743.4	0.00	0.00	0.00	
8,900.0	3.34	250.00	8,310.8	-2,576.8	-955.2	2,747.2	0.00	0.00	0.00	
9,000.0	3.34	250.00	8,410.6	-2,578.8	-960.7	2,751.1	0.00	0.00	0.00	
9,100.0	3.34	250.00	8,510.5	-2,580.8	-966.2	2,755.0	0.00	0.00	0.00	
9,200.0	3.34	250.00	8,610.3	-2,582.8	-971.7	2,758.9	0.00	0.00	0.00	
9,300.0	3.34	250.00	8,710.1	-2,584.8	-977.2	2,762.8	0.00	0.00	0.00	
9,400.0	3.34	250.00	8,810.0	-2,586.8	-982.6	2,766.7	0.00	0.00	0.00	
9,500.0	3.34	250.00	8,909.8	-2,588.7	-988.1	2,770.6	0.00	0.00	0.00	
9,600.0	3.34	250.00	9,009.6	-2,590.7	-993.6	2,774.5	0.00	0.00	0.00	
9,700.0	3.34	250.00	9,109.5	-2,592.7	-999.1	2,778.3	0.00	0.00	0.00	
9,800.0	3.34	250.00	9,209.3	-2,594.7	-1,004.6	2,782.2	0.00	0.00	0.00	
9,900.0	3.34	250.00	9,309.1	-2,596.7	-1,010.0	2,786.1	0.00	0.00	0.00	
10,000.0	3.34	250.00	9,408.9	-2,598.7	-1,015.5	2,790.0	0.00	0.00	0.00	
10,100.0	3.34	250.00	9,508.8	-2,600.7	-1,021.0	2,793.9	0.00	0.00	0.00	

Database:	US_EDM	Local Co-ordinate Reference:	Well NPR 14C-9 596
Company:	Caerus Oil and Gas LLC	TVD Reference:	WELL @ 7670.0ft (Original Well Elev)
Project:	SEC.9-T5S-R96W	MD Reference:	WELL @ 7670.0ft (Original Well Elev)
Site:	NPR G09 596 Pad Sec.9-T5S-R96W	North Reference:	True
Well:	NPR 14C-9 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-15-18)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,200.0	3.34	250.00	9,608.6	-2,602.7	-1,026.5	2,797.8	0.00	0.00	0.00	
10,300.0	3.34	250.00	9,708.4	-2,604.7	-1,032.0	2,801.7	0.00	0.00	0.00	
10,400.0	3.34	250.00	9,808.3	-2,606.7	-1,037.5	2,805.6	0.00	0.00	0.00	
10,500.0	3.34	250.00	9,908.1	-2,608.7	-1,042.9	2,809.4	0.00	0.00	0.00	
10,509.9	3.34	250.00	9,918.0	-2,608.9	-1,043.5	2,809.8	0.00	0.00	0.00	
BHL 921'FSL, 1325'FWL, SEC.9										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 1748'FNL, 2372'FM - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	14,404,581.29	2,436,019.58	39.632042	-108.174477	
BHL 921'FSL, 1325'FWL - plan hits target center - Ellipse (radii L200.0 W100.0 on 250.00 azi)	0.00	0.00	9,918.0	-2,608.9	-1,043.5	14,401,940.01	2,435,058.41	39.624880	-108.178181	