

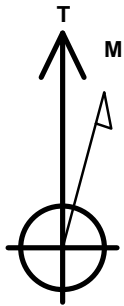
Caerus Oil and Gas LLC

Well Name: **Riggs 35-761-0662XCH2**

Surface Location: Riggs OP 35-761 Pad Sec.35-T7N-R61W
 North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4769.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1436868.51 3369128.63 40.525018 -104.172134
 RKB - 30' WELL @ 4799.0ft (RKB - 30')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 250'FSL, 1453'FEL, SEC.35	1.0	0.0	0.0	Point
BHL 460'FSL, 1451'FEL, SEC.11	6264.0	-10281.8	112.1	Point
LPL 460'FNL, 1451'FEL, SEC.2	6419.0	-710.0	10.0	Point



Azimuths to True North
 Magnetic North: 7.83°

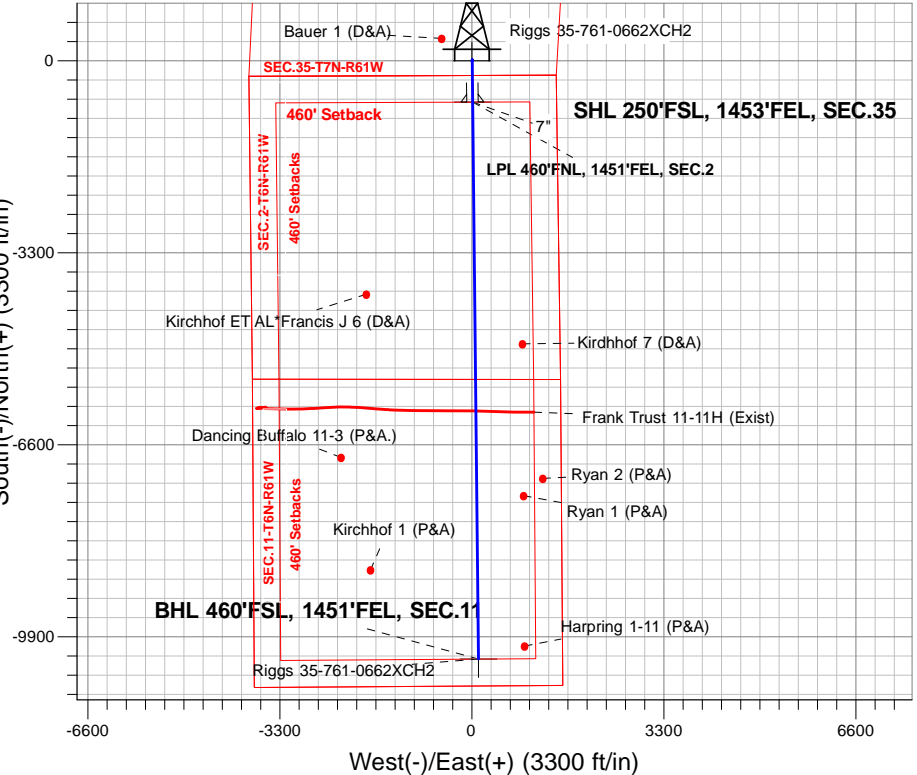
Magnetic Field
 Strength: 52697.1snT
 Dip Angle: 67.06°
 Date: 10/4/2016
 Model: IGRF2010

Riggs OP 35-761 Pad Sec.35-T7N-R61W
 Riggs 35-761-0662XCH2
 Plan #1 (9-29-16)
 11:48, October 04 2016

ANNOTATIONS

TVD	MD	Annotation
3000.0	3000.0	KOP - Start Build 1.50
3337.3	3337.6	Start Drop -2.00
5703.2	5703.6	Start Build 8.00
6419.0	6839.8	Start DLS 0.50 TFO 120.44
6419.0	6840.7	Start 9572.6 hold at 6840.7 MD
6264.0	16413.3	TD at 16413.3

South(-)/North(+) (3300 ft/in)

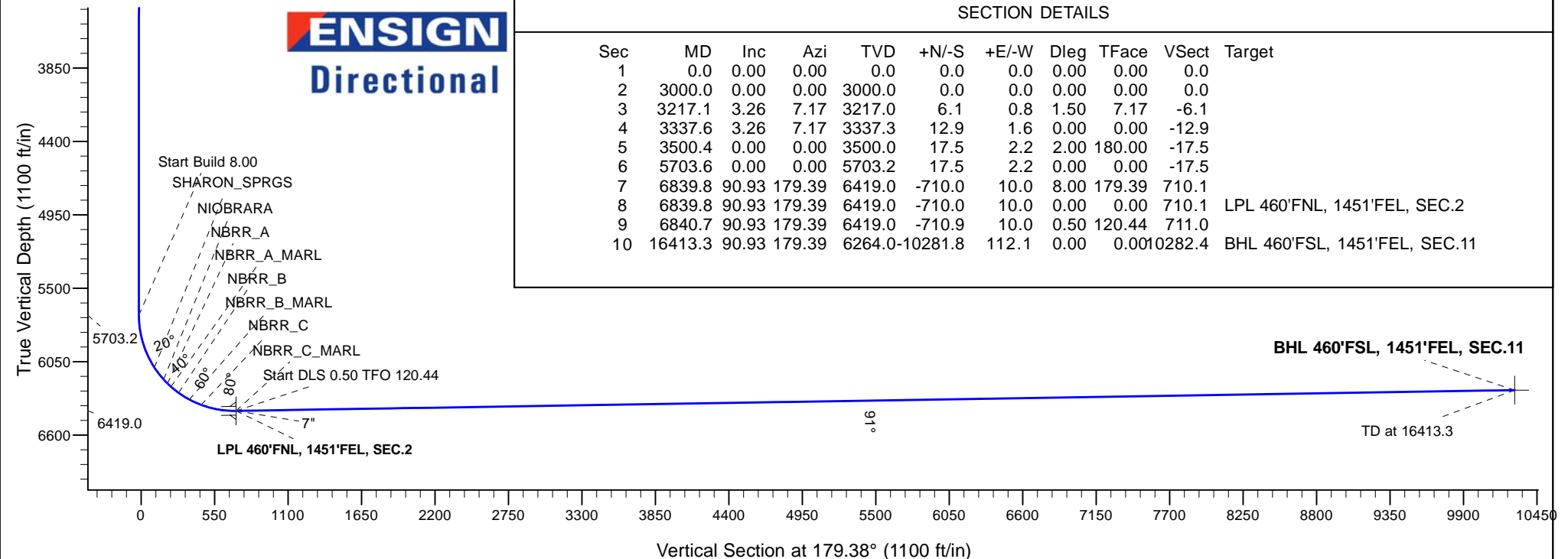


West(-)/East(+) (3300 ft/in)

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	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	
3	3217.1	3.26	7.17	3217.0	6.1	0.8	1.50	7.17	-6.1	
4	3337.6	3.26	7.17	3337.3	12.9	1.6	0.00	0.00	-12.9	
5	3500.4	0.00	0.00	3500.0	17.5	2.2	2.00	180.00	-17.5	
6	5703.6	0.00	0.00	5703.2	17.5	2.2	0.00	0.00	-17.5	
7	6839.8	90.93	179.39	6419.0	-710.0	10.0	8.00	179.39	710.1	
8	6839.8	90.93	179.39	6419.0	-710.0	10.0	0.00	0.00	710.1	LPL 460'FNL, 1451'FEL, SEC.2
9	6840.7	90.93	179.39	6419.0	-710.9	10.0	0.50	120.44	711.0	
10	16413.3	90.93	179.39	6264.0-10281.8	112.1	0.00	0.00	10282.4		BHL 460'FSL, 1451'FEL, SEC.11

ENSIGN
 Directional





Caerus Oil and Gas LLC

SEC.35-T7N-R61W

Riggs OP 35-761 Pad Sec.35-T7N-R61W

Riggs 35-761-0662XCH2

Wellbore #1

Plan: Plan #1 (9-29-16)

Standard Planning Report

04 October, 2016

Database:	US_EDM	Local Co-ordinate Reference:	Well Riggs 35-761-0662XCH2
Company:	Caerus Oil and Gas LLC	TVD Reference:	WELL @ 4799.0ft (RKB - 30')
Project:	SEC.35-T7N-R61W	MD Reference:	WELL @ 4799.0ft (RKB - 30')
Site:	Riggs OP 35-761 Pad Sec.35-T7N-R61W	North Reference:	True
Well:	Riggs 35-761-0662XCH2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-29-16)		

Project	SEC.35-T7N-R61W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Riggs OP 35-761 Pad Sec.35-T7N-R61W				
Site Position:		Northing:	1,436,866.61 usft	Latitude:	40.525017
From:	Lat/Long	Easting:	3,369,023.84 usft	Longitude:	-104.172511
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.86

Well	Riggs 35-761-0662XCH2					
Well Position	+N/-S	0.3 ft	Northing:	1,436,868.51 usft	Latitude:	40.525018
	+E/-W	104.8 ft	Easting:	3,369,128.63 usft	Longitude:	-104.172134
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,769.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/4/2016	7.83	67.06	52,697

Design	Plan #1 (9-29-16)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	179.38

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	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,217.1	3.26	7.17	3,217.0	6.1	0.8	1.50	1.50	0.00	7.17	
3,337.6	3.26	7.17	3,337.3	12.9	1.6	0.00	0.00	0.00	0.00	
3,500.4	0.00	0.00	3,500.0	17.5	2.2	2.00	-2.00	0.00	180.00	
5,703.6	0.00	0.00	5,703.2	17.5	2.2	0.00	0.00	0.00	0.00	
6,839.8	90.93	179.39	6,419.0	-710.0	10.0	8.00	8.00	0.00	179.39	
6,839.8	90.93	179.39	6,419.0	-710.0	10.0	0.00	0.00	0.00	0.00	LPL 460'FNL, 1451'FI
6,840.7	90.93	179.39	6,419.0	-710.9	10.0	0.50	-0.25	0.43	120.44	
16,413.3	90.93	179.39	6,264.0	-10,281.8	112.1	0.00	0.00	0.00	0.00	BHL 460'FSL, 1451'FI

Database:	US_EDM	Local Co-ordinate Reference:	Well Riggs 35-761-0662XCH2
Company:	Caerus Oil and Gas LLC	TVD Reference:	WELL @ 4799.0ft (RKB - 30')
Project:	SEC.35-T7N-R61W	MD Reference:	WELL @ 4799.0ft (RKB - 30')
Site:	Riggs OP 35-761 Pad Sec.35-T7N-R61W	North Reference:	True
Well:	Riggs 35-761-0662XCH2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-29-16)		

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
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
KOP - Start Build 1.50									
3,100.0	1.50	7.17	3,100.0	1.3	0.2	-1.3	1.50	1.50	0.00
3,189.1	2.84	7.17	3,189.0	4.6	0.6	-4.6	1.50	1.50	0.00
RICHARD_SD									
3,200.0	3.00	7.17	3,199.9	5.2	0.7	-5.2	1.50	1.50	0.00
3,217.1	3.26	7.17	3,217.0	6.1	0.8	-6.1	1.50	1.50	0.00
3,300.0	3.26	7.17	3,299.7	10.8	1.4	-10.8	0.00	0.00	0.00
3,337.6	3.26	7.17	3,337.3	12.9	1.6	-12.9	0.00	0.00	0.00
Start Drop -2.00									
3,400.0	2.01	7.17	3,399.6	15.8	2.0	-15.7	2.00	-2.00	0.00
3,500.0	0.01	7.17	3,499.6	17.5	2.2	-17.5	2.00	-2.00	0.00
3,500.4	0.00	0.00	3,500.0	17.5	2.2	-17.5	2.00	-2.00	0.00
3,600.0	0.00	0.00	3,599.6	17.5	2.2	-17.5	0.00	0.00	0.00
3,700.0	0.00	0.00	3,699.6	17.5	2.2	-17.5	0.00	0.00	0.00
3,800.0	0.00	0.00	3,799.6	17.5	2.2	-17.5	0.00	0.00	0.00
3,900.0	0.00	0.00	3,899.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,000.0	0.00	0.00	3,999.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,100.0	0.00	0.00	4,099.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,200.0	0.00	0.00	4,199.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,300.0	0.00	0.00	4,299.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,400.0	0.00	0.00	4,399.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,500.0	0.00	0.00	4,499.6	17.5	2.2	-17.5	0.00	0.00	0.00

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Project:	SEC.35-T7N-R61W	MD Reference:	WELL @ 4799.0ft (RKB - 30')
Site:	Riggs OP 35-761 Pad Sec.35-T7N-R61W	North Reference:	True
Well:	Riggs 35-761-0662XCH2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-29-16)		

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)
4,600.0	0.00	0.00	4,599.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,700.0	0.00	0.00	4,699.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,800.0	0.00	0.00	4,799.6	17.5	2.2	-17.5	0.00	0.00	0.00
4,900.0	0.00	0.00	4,899.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,000.0	0.00	0.00	4,999.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,100.0	0.00	0.00	5,099.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,199.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,300.0	0.00	0.00	5,299.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,399.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,500.0	0.00	0.00	5,499.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,599.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,700.0	0.00	0.00	5,699.6	17.5	2.2	-17.5	0.00	0.00	0.00
5,703.6	0.00	0.00	5,703.2	17.5	2.2	-17.5	0.00	0.00	0.00
Start Build 8.00									
5,800.0	7.72	179.39	5,799.3	11.0	2.3	-11.0	8.00	8.00	0.00
5,900.0	15.72	179.39	5,897.1	-9.3	2.5	9.3	8.00	8.00	0.00
6,000.0	23.72	179.39	5,991.2	-43.0	2.8	43.0	8.00	8.00	0.00
6,100.0	31.73	179.39	6,079.7	-89.5	3.3	89.5	8.00	8.00	0.00
6,117.0	33.09	179.39	6,094.0	-98.6	3.4	98.6	8.00	8.00	0.00
SHARON_SPRGS									
6,200.0	39.73	179.39	6,160.8	-147.8	4.0	147.8	8.00	8.00	0.00
6,230.8	42.19	179.39	6,184.0	-168.0	4.2	168.0	8.00	8.00	0.00
NIOBRARA									
6,272.4	45.52	179.39	6,214.0	-196.8	4.5	196.8	8.00	8.00	0.00
NBRR_A									
6,300.0	47.73	179.39	6,233.0	-216.9	4.7	216.9	8.00	8.00	0.00
6,307.5	48.33	179.39	6,238.0	-222.5	4.8	222.5	8.00	8.00	0.00
NBRR_A_MARL									
6,381.1	54.22	179.39	6,284.0	-279.8	5.4	279.9	8.00	8.00	0.00
NBRR_B									
6,400.0	55.74	179.39	6,294.8	-295.3	5.6	295.4	8.00	8.00	0.00
6,475.5	61.78	179.39	6,334.0	-359.9	6.3	359.9	8.00	8.00	0.00
NBRR_B_MARL									
6,500.0	63.74	179.39	6,345.2	-381.6	6.5	381.7	8.00	8.00	0.00
6,572.7	69.56	179.39	6,374.0	-448.3	7.2	448.4	8.00	8.00	0.00
NBRR_C									
6,600.0	71.74	179.39	6,383.1	-474.1	7.5	474.1	8.00	8.00	0.00
6,700.0	79.75	179.39	6,407.7	-570.9	8.5	571.0	8.00	8.00	0.00
6,800.0	87.75	179.39	6,418.5	-670.2	9.6	670.3	8.00	8.00	0.00
6,839.8	90.93	179.39	6,419.0	-710.0	10.0	710.1	8.00	8.00	0.00
Start DLS 0.50 TFO 120.44 - NBRR_C_MARL									
6,840.7	90.93	179.39	6,419.0	-710.9	10.0	711.0	0.76	-0.62	0.43
Start 9572.6 hold at 6840.7 MD									
6,900.0	90.93	179.39	6,418.0	-770.2	10.7	770.3	0.00	0.00	0.00
7,000.0	90.93	179.39	6,416.4	-870.2	11.7	870.3	0.00	0.00	0.00
7,100.0	90.93	179.39	6,414.8	-970.2	12.8	970.3	0.00	0.00	0.00
7,200.0	90.93	179.39	6,413.2	-1,070.2	13.8	1,070.3	0.00	0.00	0.00
7,300.0	90.93	179.39	6,411.5	-1,170.1	14.9	1,170.2	0.00	0.00	0.00
7,400.0	90.93	179.39	6,409.9	-1,270.1	16.0	1,270.2	0.00	0.00	0.00
7,500.0	90.93	179.39	6,408.3	-1,370.1	17.0	1,370.2	0.00	0.00	0.00
7,600.0	90.93	179.39	6,406.7	-1,470.1	18.1	1,470.2	0.00	0.00	0.00
7,700.0	90.93	179.39	6,405.1	-1,570.1	19.2	1,570.2	0.00	0.00	0.00
7,800.0	90.93	179.39	6,403.5	-1,670.1	20.2	1,670.2	0.00	0.00	0.00

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Project:	SEC.35-T7N-R61W	MD Reference:	WELL @ 4799.0ft (RKB - 30')
Site:	Riggs OP 35-761 Pad Sec.35-T7N-R61W	North Reference:	True
Well:	Riggs 35-761-0662XCH2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-29-16)		

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)
7,900.0	90.93	179.39	6,401.8	-1,770.0	21.3	1,770.2	0.00	0.00	0.00
8,000.0	90.93	179.39	6,400.2	-1,870.0	22.4	1,870.1	0.00	0.00	0.00
8,100.0	90.93	179.39	6,398.6	-1,970.0	23.4	1,970.1	0.00	0.00	0.00
8,200.0	90.93	179.39	6,397.0	-2,070.0	24.5	2,070.1	0.00	0.00	0.00
8,300.0	90.93	179.39	6,395.4	-2,170.0	25.6	2,170.1	0.00	0.00	0.00
8,400.0	90.93	179.39	6,393.7	-2,269.9	26.6	2,270.1	0.00	0.00	0.00
8,500.0	90.93	179.39	6,392.1	-2,369.9	27.7	2,370.1	0.00	0.00	0.00
8,600.0	90.93	179.39	6,390.5	-2,469.9	28.8	2,470.1	0.00	0.00	0.00
8,700.0	90.93	179.39	6,388.9	-2,569.9	29.8	2,570.1	0.00	0.00	0.00
8,800.0	90.93	179.39	6,387.3	-2,669.9	30.9	2,670.0	0.00	0.00	0.00
8,900.0	90.93	179.39	6,385.6	-2,769.8	32.0	2,770.0	0.00	0.00	0.00
9,000.0	90.93	179.39	6,384.0	-2,869.8	33.0	2,870.0	0.00	0.00	0.00
9,100.0	90.93	179.39	6,382.4	-2,969.8	34.1	2,970.0	0.00	0.00	0.00
9,200.0	90.93	179.39	6,380.8	-3,069.8	35.2	3,070.0	0.00	0.00	0.00
9,300.0	90.93	179.39	6,379.2	-3,169.8	36.2	3,170.0	0.00	0.00	0.00
9,400.0	90.93	179.39	6,377.5	-3,269.8	37.3	3,270.0	0.00	0.00	0.00
9,500.0	90.93	179.39	6,375.9	-3,369.7	38.4	3,370.0	0.00	0.00	0.00
9,600.0	90.93	179.39	6,374.3	-3,469.7	39.4	3,469.9	0.00	0.00	0.00
9,700.0	90.93	179.39	6,372.7	-3,569.7	40.5	3,569.9	0.00	0.00	0.00
9,800.0	90.93	179.39	6,371.1	-3,669.7	41.6	3,669.9	0.00	0.00	0.00
9,900.0	90.93	179.39	6,369.5	-3,769.7	42.6	3,769.9	0.00	0.00	0.00
10,000.0	90.93	179.39	6,367.8	-3,869.6	43.7	3,869.9	0.00	0.00	0.00
10,100.0	90.93	179.39	6,366.2	-3,969.6	44.8	3,969.9	0.00	0.00	0.00
10,200.0	90.93	179.39	6,364.6	-4,069.6	45.8	4,069.9	0.00	0.00	0.00
10,300.0	90.93	179.39	6,363.0	-4,169.6	46.9	4,169.8	0.00	0.00	0.00
10,400.0	90.93	179.39	6,361.4	-4,269.6	48.0	4,269.8	0.00	0.00	0.00
10,500.0	90.93	179.39	6,359.7	-4,369.5	49.0	4,369.8	0.00	0.00	0.00
10,600.0	90.93	179.39	6,358.1	-4,469.5	50.1	4,469.8	0.00	0.00	0.00
10,700.0	90.93	179.39	6,356.5	-4,569.5	51.2	4,569.8	0.00	0.00	0.00
10,800.0	90.93	179.39	6,354.9	-4,669.5	52.2	4,669.8	0.00	0.00	0.00
10,900.0	90.93	179.39	6,353.3	-4,769.5	53.3	4,769.8	0.00	0.00	0.00
11,000.0	90.93	179.39	6,351.6	-4,869.5	54.4	4,869.8	0.00	0.00	0.00
11,100.0	90.93	179.39	6,350.0	-4,969.4	55.4	4,969.7	0.00	0.00	0.00
11,200.0	90.93	179.39	6,348.4	-5,069.4	56.5	5,069.7	0.00	0.00	0.00
11,300.0	90.93	179.39	6,346.8	-5,169.4	57.6	5,169.7	0.00	0.00	0.00
11,400.0	90.93	179.39	6,345.2	-5,269.4	58.6	5,269.7	0.00	0.00	0.00
11,500.0	90.93	179.39	6,343.5	-5,369.4	59.7	5,369.7	0.00	0.00	0.00
11,600.0	90.93	179.39	6,341.9	-5,469.3	60.8	5,469.7	0.00	0.00	0.00
11,700.0	90.93	179.39	6,340.3	-5,569.3	61.8	5,569.7	0.00	0.00	0.00
11,800.0	90.93	179.39	6,338.7	-5,669.3	62.9	5,669.7	0.00	0.00	0.00
11,900.0	90.93	179.39	6,337.1	-5,769.3	64.0	5,769.6	0.00	0.00	0.00
12,000.0	90.93	179.39	6,335.5	-5,869.3	65.0	5,869.6	0.00	0.00	0.00
12,100.0	90.93	179.39	6,333.8	-5,969.2	66.1	5,969.6	0.00	0.00	0.00
12,200.0	90.93	179.39	6,332.2	-6,069.2	67.2	6,069.6	0.00	0.00	0.00
12,300.0	90.93	179.39	6,330.6	-6,169.2	68.2	6,169.6	0.00	0.00	0.00
12,400.0	90.93	179.39	6,329.0	-6,269.2	69.3	6,269.6	0.00	0.00	0.00
12,500.0	90.93	179.39	6,327.4	-6,369.2	70.4	6,369.6	0.00	0.00	0.00
12,600.0	90.93	179.39	6,325.7	-6,469.2	71.4	6,469.5	0.00	0.00	0.00
12,700.0	90.93	179.39	6,324.1	-6,569.1	72.5	6,569.5	0.00	0.00	0.00
12,800.0	90.93	179.39	6,322.5	-6,669.1	73.6	6,669.5	0.00	0.00	0.00
12,900.0	90.93	179.39	6,320.9	-6,769.1	74.6	6,769.5	0.00	0.00	0.00
13,000.0	90.93	179.39	6,319.3	-6,869.1	75.7	6,869.5	0.00	0.00	0.00
13,100.0	90.93	179.39	6,317.6	-6,969.1	76.8	6,969.5	0.00	0.00	0.00
13,200.0	90.93	179.39	6,316.0	-7,069.0	77.8	7,069.5	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Riggs 35-761-0662XCH2
Company:	Caerus Oil and Gas LLC	TVD Reference:	WELL @ 4799.0ft (RKB - 30')
Project:	SEC.35-T7N-R61W	MD Reference:	WELL @ 4799.0ft (RKB - 30')
Site:	Riggs OP 35-761 Pad Sec.35-T7N-R61W	North Reference:	True
Well:	Riggs 35-761-0662XCH2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-29-16)		

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)	
13,300.0	90.93	179.39	6,314.4	-7,169.0	78.9	7,169.5	0.00	0.00	0.00	
13,400.0	90.93	179.39	6,312.8	-7,269.0	80.0	7,269.4	0.00	0.00	0.00	
13,500.0	90.93	179.39	6,311.2	-7,369.0	81.0	7,369.4	0.00	0.00	0.00	
13,600.0	90.93	179.39	6,309.5	-7,469.0	82.1	7,469.4	0.00	0.00	0.00	
13,700.0	90.93	179.39	6,307.9	-7,568.9	83.2	7,569.4	0.00	0.00	0.00	
13,800.0	90.93	179.39	6,306.3	-7,668.9	84.2	7,669.4	0.00	0.00	0.00	
13,900.0	90.93	179.39	6,304.7	-7,768.9	85.3	7,769.4	0.00	0.00	0.00	
14,000.0	90.93	179.39	6,303.1	-7,868.9	86.4	7,869.4	0.00	0.00	0.00	
14,100.0	90.93	179.39	6,301.5	-7,968.9	87.4	7,969.3	0.00	0.00	0.00	
14,200.0	90.93	179.39	6,299.8	-8,068.9	88.5	8,069.3	0.00	0.00	0.00	
14,300.0	90.93	179.39	6,298.2	-8,168.8	89.6	8,169.3	0.00	0.00	0.00	
14,400.0	90.93	179.39	6,296.6	-8,268.8	90.6	8,269.3	0.00	0.00	0.00	
14,500.0	90.93	179.39	6,295.0	-8,368.8	91.7	8,369.3	0.00	0.00	0.00	
14,600.0	90.93	179.39	6,293.4	-8,468.8	92.7	8,469.3	0.00	0.00	0.00	
14,700.0	90.93	179.39	6,291.7	-8,568.8	93.8	8,569.3	0.00	0.00	0.00	
14,800.0	90.93	179.39	6,290.1	-8,668.7	94.9	8,669.3	0.00	0.00	0.00	
14,900.0	90.93	179.39	6,288.5	-8,768.7	95.9	8,769.2	0.00	0.00	0.00	
15,000.0	90.93	179.39	6,286.9	-8,868.7	97.0	8,869.2	0.00	0.00	0.00	
15,100.0	90.93	179.39	6,285.3	-8,968.7	98.1	8,969.2	0.00	0.00	0.00	
15,200.0	90.93	179.39	6,283.6	-9,068.7	99.1	9,069.2	0.00	0.00	0.00	
15,300.0	90.93	179.39	6,282.0	-9,168.6	100.2	9,169.2	0.00	0.00	0.00	
15,400.0	90.93	179.39	6,280.4	-9,268.6	101.3	9,269.2	0.00	0.00	0.00	
15,500.0	90.93	179.39	6,278.8	-9,368.6	102.3	9,369.2	0.00	0.00	0.00	
15,600.0	90.93	179.39	6,277.2	-9,468.6	103.4	9,469.2	0.00	0.00	0.00	
15,700.0	90.93	179.39	6,275.5	-9,568.6	104.5	9,569.1	0.00	0.00	0.00	
15,800.0	90.93	179.39	6,273.9	-9,668.5	105.5	9,669.1	0.00	0.00	0.00	
15,900.0	90.93	179.39	6,272.3	-9,768.5	106.6	9,769.1	0.00	0.00	0.00	
16,000.0	90.93	179.39	6,270.7	-9,868.5	107.7	9,869.1	0.00	0.00	0.00	
16,100.0	90.93	179.39	6,269.1	-9,968.5	108.7	9,969.1	0.00	0.00	0.00	
16,200.0	90.93	179.39	6,267.5	-10,068.5	109.8	10,069.1	0.00	0.00	0.00	
16,300.0	90.93	179.39	6,265.8	-10,168.5	110.9	10,169.1	0.00	0.00	0.00	
16,400.0	90.93	179.39	6,264.2	-10,268.4	111.9	10,269.0	0.00	0.00	0.00	
16,413.3	90.93	179.39	6,264.0	-10,281.7	112.1	10,282.3	0.00	0.00	0.00	
TD at 16413.3										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude		Longitude
SHL 250'FSL, 1453'FEL - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,436,868.54	3,369,128.63	40.525018		-104.172134
BHL 460'FSL, 1451'FEL - plan hits target center - Point	0.00	0.00	6,264.0	-10,281.8	112.1	1,426,589.92	3,369,394.65	40.496796		-104.171731
LPL 460'FNL, 1451'FEL, - plan hits target center - Point	0.00	0.00	6,419.0	-710.0	10.0	1,436,158.73	3,369,149.27	40.523069		-104.172098

Database:	US_EDM	Local Co-ordinate Reference:	Well Riggs 35-761-0662XCH2
Company:	Caerus Oil and Gas LLC	TVD Reference:	WELL @ 4799.0ft (RKB - 30')
Project:	SEC.35-T7N-R61W	MD Reference:	WELL @ 4799.0ft (RKB - 30')
Site:	Riggs OP 35-761 Pad Sec.35-T7N-R61W	North Reference:	True
Well:	Riggs 35-761-0662XCH2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-29-16)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,839.8	6,419.0	7"	7	8-3/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,189.1	3,189.0	RICHARD_SD		0.00	
6,117.0	6,094.0	SHARON_SPRGS		0.00	
6,230.8	6,184.0	NIOBRARA		0.00	
6,272.4	6,214.0	NBRR_A		0.00	
6,307.5	6,238.0	NBRR_A_MARL		0.00	
6,381.1	6,284.0	NBRR_B		0.00	
6,475.5	6,334.0	NBRR_B_MARL		0.00	
6,572.7	6,374.0	NBRR_C		0.00	
6,839.8	6,419.0	NBRR_C_MARL		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
3,000.0	3,000.0	0.0	0.0	KOP - Start Build 1.50	
3,337.6	3,337.3	12.9	1.6	Start Drop -2.00	
5,703.6	5,703.2	17.5	2.2	Start Build 8.00	
6,839.8	6,419.0	-710.0	10.0	Start DLS 0.50 TFO 120.44	
6,840.7	6,419.0	-710.9	10.0	Start 9572.6 hold at 6840.7 MD	
16,413.3	6,264.0	-10,281.7	112.1	TD at 16413.3	