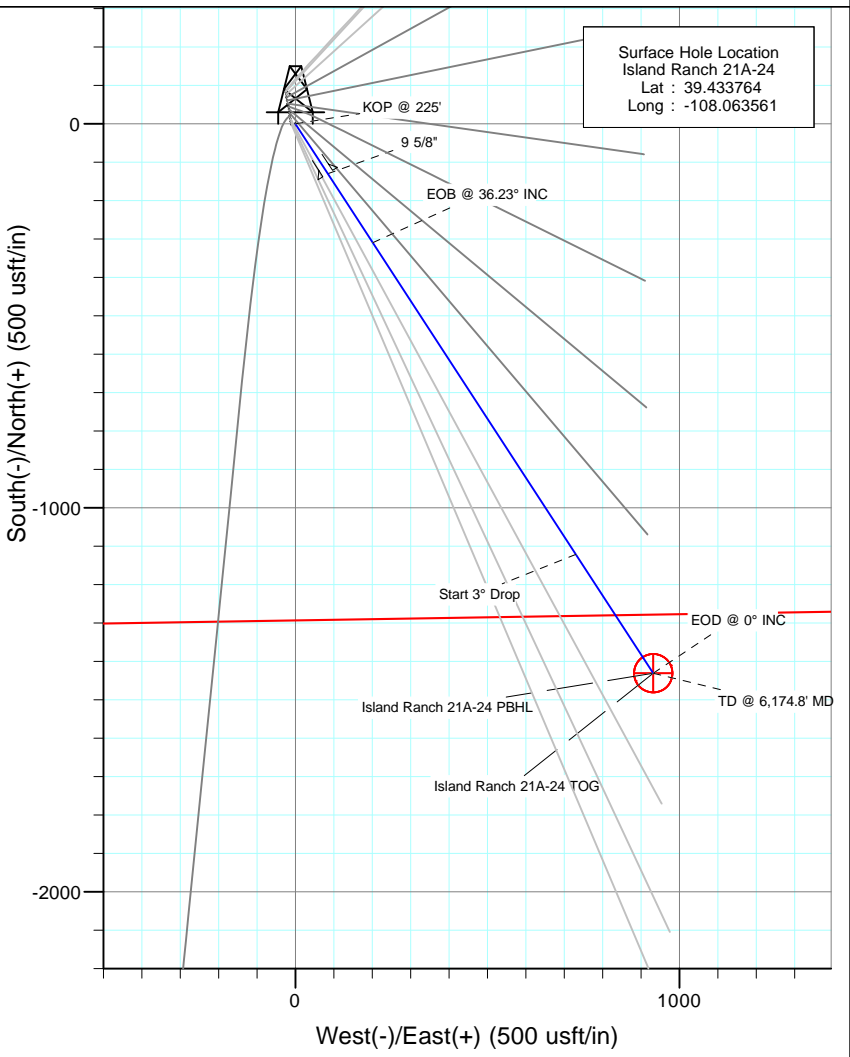


SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.0	
3	1432.7	36.23	146.91	1353.8	-309.4	201.6	3.00	146.91	369.3	
4	3072.1	36.23	146.91	2676.2	-1121.2	730.6	0.00	0.00	1338.2	
5	4279.8	0.00	0.00	3805.0	-1430.7	932.2	3.00	180.00	1707.5	Island Ranch 21A-24 TOG
6	6174.8	0.00	0.00	5700.0	-1430.7	932.2	0.00	0.00	1707.5	Island Ranch 21A-24 PBHL



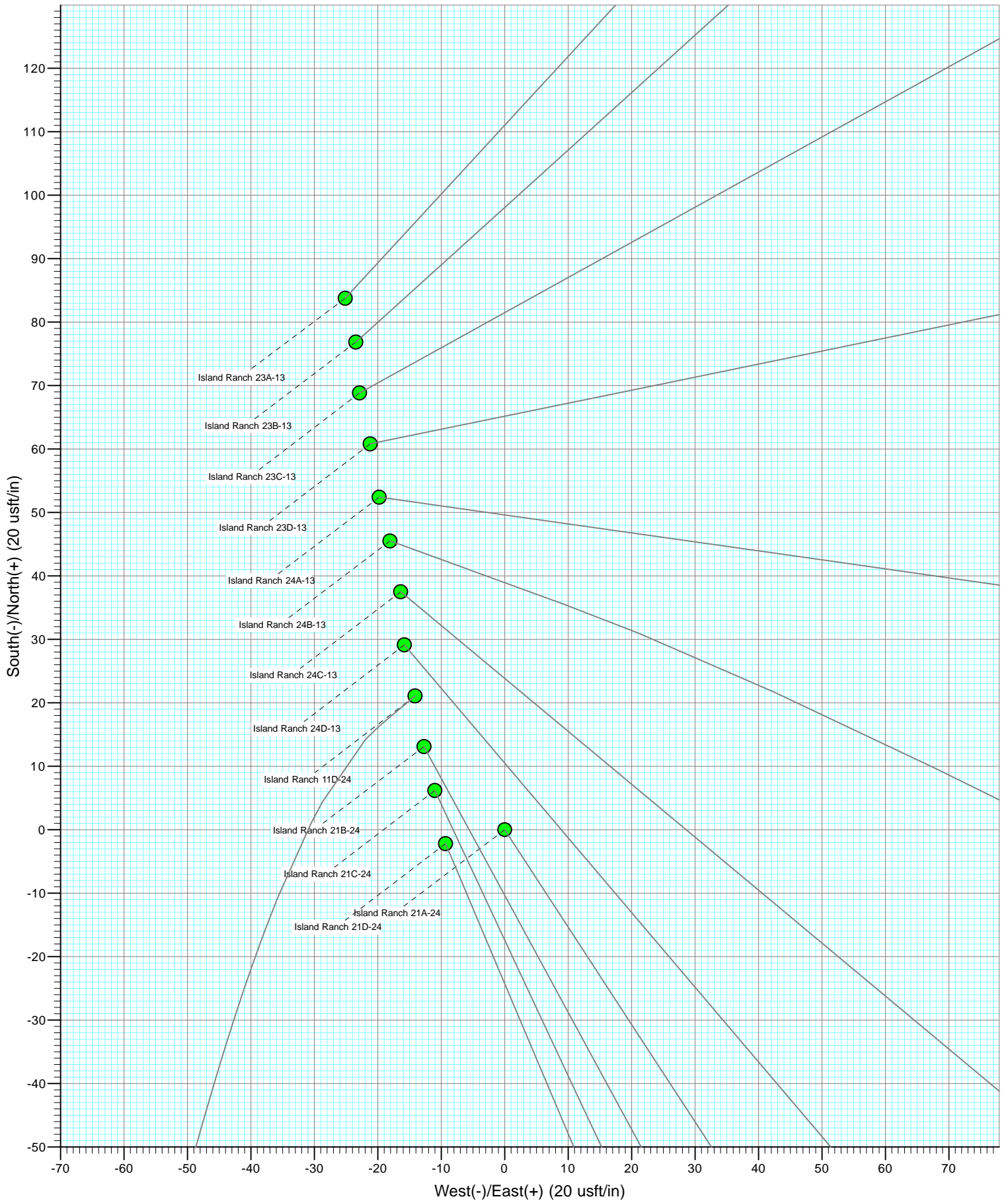
DESIGN TARGET DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Island Ranch 21A-24 TOG	-1430.7	932.2	591625.80	1276890.96	39.429836	-108.060261
Island Ranch 21A-24 PBHL	-1430.7	932.2	591625.80	1276890.96	39.429836	-108.060261

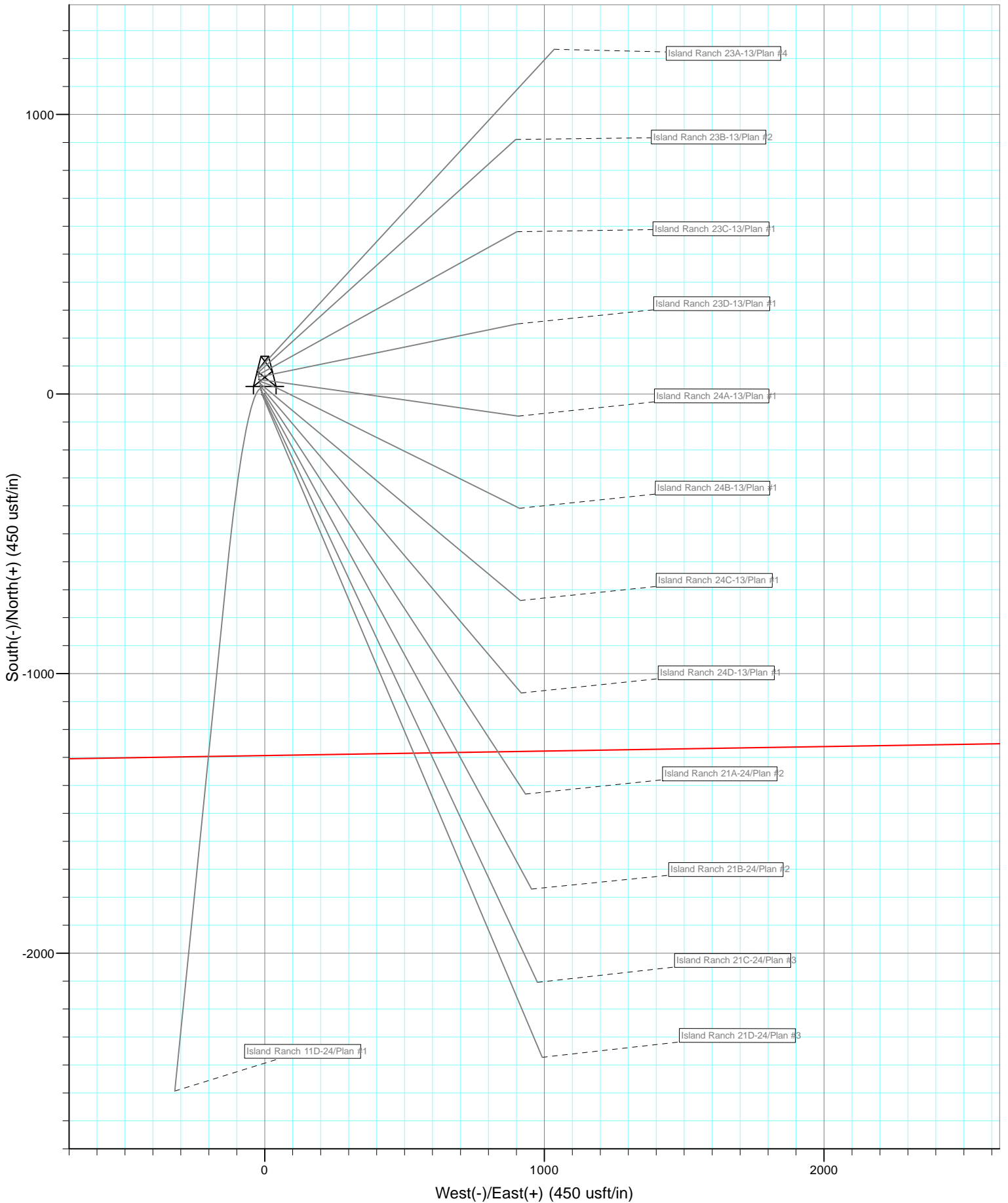
FORMATION TOP DETAILS		
TVDPth	MDPath	Formation
2692.0	3091.6	Ohio Creek
3170.0	3632.5	Williams Fork
3805.0	4279.8	TOG
5120.0	5594.8	Cameo
5550.0	6024.8	Rollins

Plan #2
 Island Ranch 21A-24
 KB=20' @ 5100.0usft (Patterson #303)
 Ground Elevation @ 5080.0
 NAD 1927 (NADCON CONUS)
 Well Island Ranch 21A-24, True North

CASING DETAILS		
TVD	MD	Name
978.9	1000.0	9 5/8"
	6212.2	4 1/2"

M Azimuths to True North
 Magnetic North: 10.02°
 Magnetic Field
 Strength: 51936.8snT
 Dip Angle: 65.60°
 Date: 3/17/2014
 Model: IGRF2010





Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Island Ranch 21A-24
Company: Caerus Oil & Gas (NAD 27)	TVD Reference: KB=20' @ 5100.0usft (Patterson #303)
Project: Garfield County, CO	MD Reference: KB=20' @ 5100.0usft (Patterson #303)
Site: S13-T7S-R96W (Island Ranch)	North Reference: True
Well: Island Ranch 21A-24	Survey Calculation Method: Minimum Curvature
Wellbore: DD	
Design: Plan #2	

Project Garfield County, CO		
Map System: US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)		
Map Zone: Colorado Central 502		

Site S13-T7S-R96W (Island Ranch)			
Site Position:	Northing:	593,103.71 usft	Latitude: 39.433822
From: Lat/Long	Easting:	1,275,986.01 usft	Longitude: -108.063611
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16"		Grid Convergence: -1.62 °

Well Island Ranch 21A-24					
Well Position	+N/-S	0.0 usft	Northing:	593,082.19 usft	Latitude: 39.433764
	+E/-W	0.0 usft	Easting:	1,275,999.53 usft	Longitude: -108.063561
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level: 5,080.0 usft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	3/17/2014	(°) 10.02	(°) 65.60	(nT) 51,937

Design Plan #2				
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	146.91

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		
225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.00	0.00		
1,432.7	36.23	146.91	1,353.8	-309.4	201.6	3.00	3.00	0.00	146.91		
3,072.1	36.23	146.91	2,676.2	-1,121.2	730.6	0.00	0.00	0.00	0.00		
4,279.8	0.00	0.00	3,805.0	-1,430.7	932.2	3.00	-3.00	0.00	180.00	Island Ranch 21A-24	
6,174.8	0.00	0.00	5,700.0	-1,430.7	932.2	0.00	0.00	0.00	0.00	Island Ranch 21A-24	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Island Ranch 21A-24
Company:	Caerus Oil & Gas (NAD 27)	TVD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Project:	Garfield County, CO	MD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Site:	S13-T7S-R96W (Island Ranch)	North Reference:	True
Well:	Island Ranch 21A-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
225.0	0.00	0.00	225.0	0.0	0.0	0.0	0.00	0.00	KOP @ 225'
300.0	2.25	146.91	300.0	-1.2	0.8	1.5	3.00	3.00	
400.0	5.25	146.91	399.8	-6.7	4.4	8.0	3.00	3.00	
500.0	8.25	146.91	499.1	-16.6	10.8	19.8	3.00	3.00	
600.0	11.25	146.91	597.6	-30.7	20.0	36.7	3.00	3.00	
700.0	14.25	146.91	695.1	-49.2	32.1	58.8	3.00	3.00	
800.0	17.25	146.91	791.4	-72.0	46.9	85.9	3.00	3.00	
900.0	20.25	146.91	886.0	-98.9	64.4	118.0	3.00	3.00	
1,000.0	23.25	146.91	978.9	-129.9	84.7	155.1	3.00	3.00	9 5/8"
1,100.0	26.25	146.91	1,069.7	-165.0	107.5	197.0	3.00	3.00	
1,200.0	29.25	146.91	1,158.2	-204.0	132.9	243.5	3.00	3.00	
1,300.0	32.25	146.91	1,244.1	-246.9	160.8	294.6	3.00	3.00	
1,400.0	35.25	146.91	1,327.3	-293.4	191.2	350.2	3.00	3.00	
1,432.7	36.23	146.91	1,353.8	-309.4	201.6	369.3	3.00	3.00	EOB @ 36.23° INC
1,500.0	36.23	146.91	1,408.1	-342.7	223.3	409.1	0.00	0.00	
1,600.0	36.23	146.91	1,488.8	-392.3	255.6	468.2	0.00	0.00	
1,700.0	36.23	146.91	1,569.4	-441.8	287.8	527.3	0.00	0.00	
1,800.0	36.23	146.91	1,650.1	-491.3	320.1	586.4	0.00	0.00	
1,900.0	36.23	146.91	1,730.7	-540.8	352.4	645.5	0.00	0.00	
2,000.0	36.23	146.91	1,811.4	-590.3	384.6	704.6	0.00	0.00	
2,100.0	36.23	146.91	1,892.1	-639.9	416.9	763.7	0.00	0.00	
2,200.0	36.23	146.91	1,972.7	-689.4	449.2	822.8	0.00	0.00	
2,300.0	36.23	146.91	2,053.4	-738.9	481.4	881.9	0.00	0.00	
2,400.0	36.23	146.91	2,134.1	-788.4	513.7	941.0	0.00	0.00	
2,500.0	36.23	146.91	2,214.7	-837.9	546.0	1,000.1	0.00	0.00	
2,600.0	36.23	146.91	2,295.4	-887.5	578.2	1,059.2	0.00	0.00	
2,700.0	36.23	146.91	2,376.1	-937.0	610.5	1,118.3	0.00	0.00	
2,800.0	36.23	146.91	2,456.7	-986.5	642.8	1,177.4	0.00	0.00	
2,900.0	36.23	146.91	2,537.4	-1,036.0	675.0	1,236.5	0.00	0.00	
3,000.0	36.23	146.91	2,618.0	-1,085.5	707.3	1,295.6	0.00	0.00	
3,072.1	36.23	146.91	2,676.2	-1,121.3	730.6	1,338.3	0.00	0.00	Start 3° Drop
3,091.6	35.65	146.91	2,692.0	-1,130.8	736.8	1,349.7	3.01	-3.01	Ohio Creek
3,100.0	35.39	146.91	2,698.8	-1,134.9	739.5	1,354.6	3.00	-3.00	
3,200.0	32.39	146.91	2,781.8	-1,181.6	769.9	1,410.3	3.00	-3.00	
3,300.0	29.39	146.91	2,867.6	-1,224.7	797.9	1,461.7	3.00	-3.00	
3,400.0	26.39	146.91	2,956.0	-1,263.9	823.5	1,508.5	3.00	-3.00	
3,500.0	23.39	146.91	3,046.7	-1,299.1	846.5	1,550.5	3.00	-3.00	
3,600.0	20.39	146.91	3,139.5	-1,330.4	866.8	1,587.8	3.00	-3.00	
3,632.5	19.42	146.91	3,170.0	-1,339.6	872.8	1,598.9	3.00	-3.00	Williams Fork
3,700.0	17.39	146.91	3,234.1	-1,357.5	884.5	1,620.2	3.00	-3.00	
3,800.0	14.39	146.91	3,330.2	-1,380.4	899.4	1,647.6	3.00	-3.00	
3,900.0	11.39	146.91	3,427.7	-1,399.1	911.6	1,669.9	3.00	-3.00	
4,000.0	8.39	146.91	3,526.2	-1,413.5	921.0	1,687.1	3.00	-3.00	
4,100.0	5.39	146.91	3,625.5	-1,423.6	927.5	1,699.1	3.00	-3.00	
4,200.0	2.39	146.91	3,725.2	-1,429.3	931.3	1,705.9	3.00	-3.00	
4,279.8	0.00	0.00	3,805.0	-1,430.7	932.2	1,707.5	3.00	-3.00	EOD @ 0° INC - TOG
4,300.0	0.00	0.00	3,825.2	-1,430.7	932.2	1,707.5	0.00	0.00	
4,400.0	0.00	0.00	3,925.2	-1,430.7	932.2	1,707.5	0.00	0.00	
4,500.0	0.00	0.00	4,025.2	-1,430.7	932.2	1,707.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Island Ranch 21A-24
Company:	Caerus Oil & Gas (NAD 27)	TVD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Project:	Garfield County, CO	MD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Site:	S13-T7S-R96W (Island Ranch)	North Reference:	True
Well:	Island Ranch 21A-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,600.0	0.00	0.00	4,125.2	-1,430.7	932.2	1,707.5	0.00	0.00	
4,700.0	0.00	0.00	4,225.2	-1,430.7	932.2	1,707.5	0.00	0.00	
4,800.0	0.00	0.00	4,325.2	-1,430.7	932.2	1,707.5	0.00	0.00	
4,900.0	0.00	0.00	4,425.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,000.0	0.00	0.00	4,525.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,100.0	0.00	0.00	4,625.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,200.0	0.00	0.00	4,725.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,300.0	0.00	0.00	4,825.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,400.0	0.00	0.00	4,925.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,500.0	0.00	0.00	5,025.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,594.8	0.00	0.00	5,120.0	-1,430.7	932.2	1,707.5	0.00	0.00	Cameo
5,600.0	0.00	0.00	5,125.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,700.0	0.00	0.00	5,225.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,800.0	0.00	0.00	5,325.2	-1,430.7	932.2	1,707.5	0.00	0.00	
5,900.0	0.00	0.00	5,425.2	-1,430.7	932.2	1,707.5	0.00	0.00	
6,000.0	0.00	0.00	5,525.2	-1,430.7	932.2	1,707.5	0.00	0.00	
6,024.8	0.00	0.00	5,550.0	-1,430.7	932.2	1,707.5	0.00	0.00	Rollins
6,100.0	0.00	0.00	5,625.2	-1,430.7	932.2	1,707.5	0.00	0.00	
6,174.8	0.00	0.00	5,700.0	-1,430.7	932.2	1,707.5	0.00	0.00	TD @ 6,174.8' MD

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
Island Ranch 21A-24 TC - plan hits target center - Circle (radius 50.0)	0.00	0.00	3,805.0	-1,430.7	932.2	591,625.80	1,276,890.96	39.429836	-108.060261
Island Ranch 21A-24 PE - plan hits target center - Circle (radius 50.0)	0.00	0.00	5,700.0	-1,430.7	932.2	591,625.80	1,276,890.96	39.429836	-108.060261

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,000.0	978.9	9 5/8"	0	0
6,212.2		4 1/2"	0	0

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Island Ranch 21A-24
Company:	Caerus Oil & Gas (NAD 27)	TVD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Project:	Garfield County, CO	MD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Site:	S13-T7S-R96W (Island Ranch)	North Reference:	True
Well:	Island Ranch 21A-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,091.6	2,692.0	Ohio Creek		0.00	
3,632.5	3,170.0	Williams Fork		0.00	
4,279.8	3,805.0	TOG		0.00	
5,594.8	5,120.0	Cameo		0.00	
6,024.8	5,550.0	Rollins		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
225.0	225.0	0.0	0.0	KOP @ 225'	
1,432.7	1,353.8	-309.4	201.6	EOB @ 36.23° INC	
3,072.1	2,676.2	-1,121.3	730.6	Start 3° Drop	
4,279.8	3,805.0	-1,430.7	932.2	EOD @ 0° INC	
6,174.8	5,700.0	-1,430.7	932.2	TD @ 6,174.8' MD	