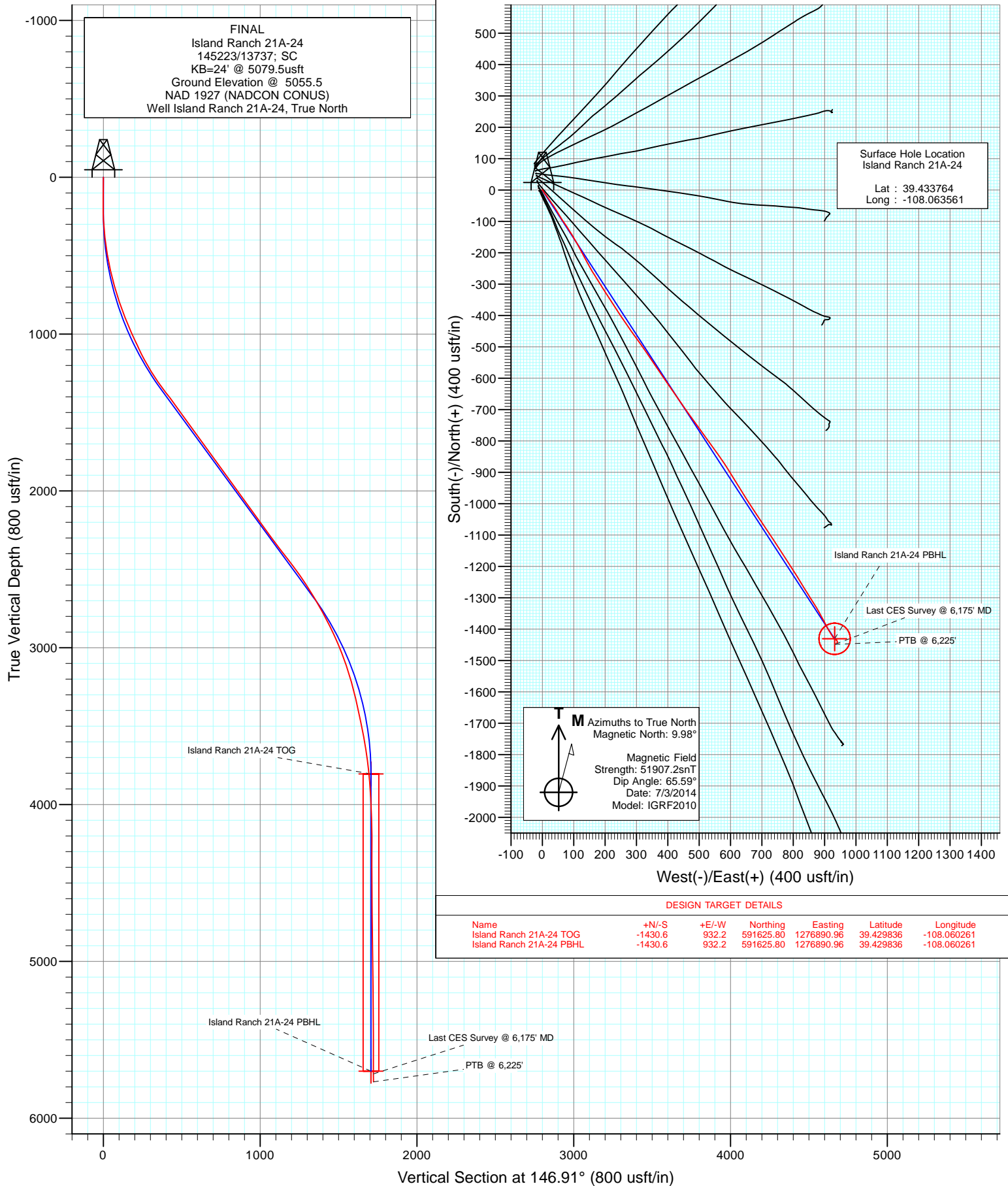


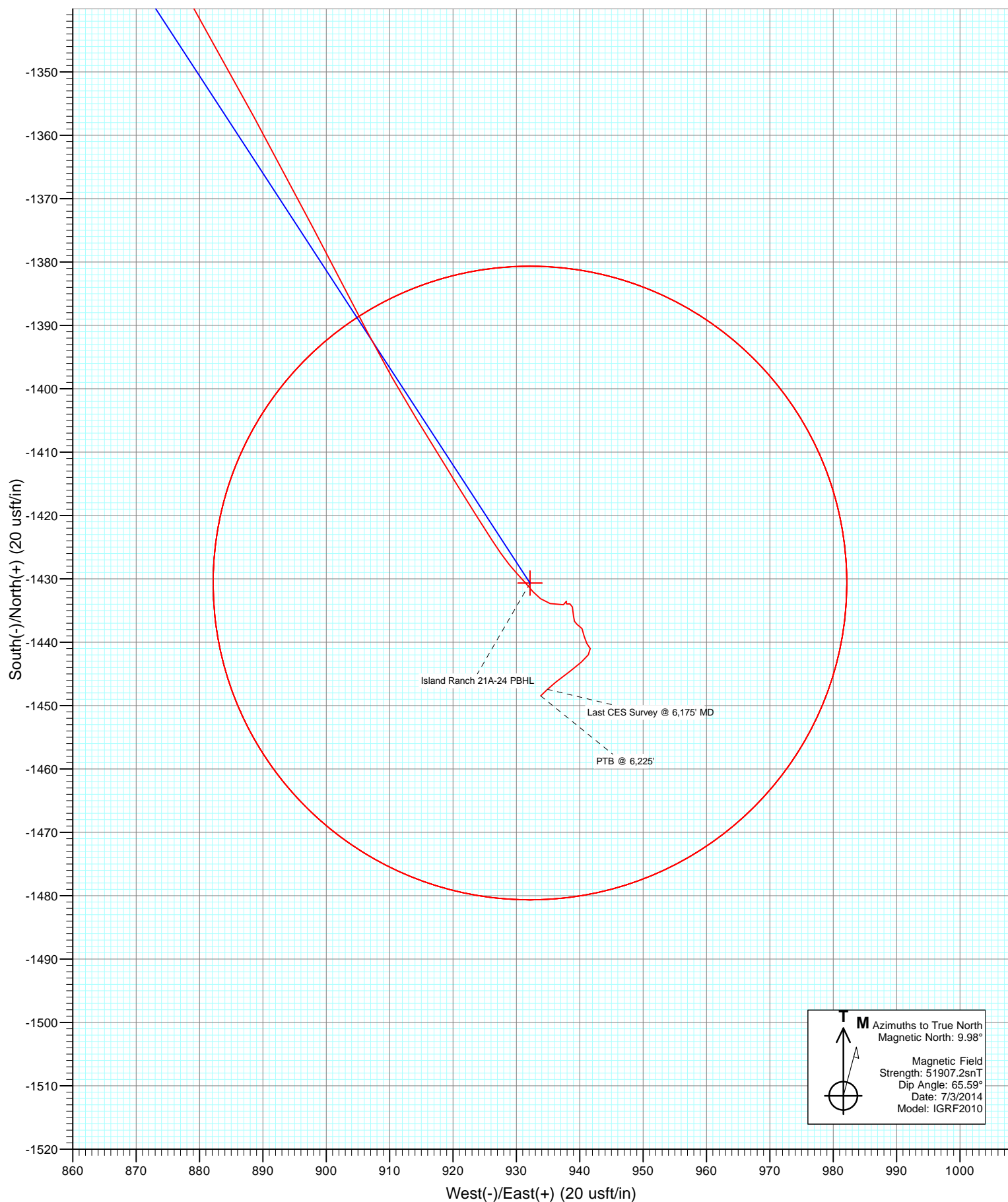


Project: Garfield County, CO
 Site: S13-T7S-R96W (Island Ranch)
 Well: Island Ranch 21A-24
 Wellbore: DD
 Design: FINAL





Project: Garfield County, CO
Site: S13-T7S-R96W (Island Ranch)
Well: Island Ranch 21A-24
Wellbore: DD
Design: FINAL



Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Island Ranch 21A-24
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 5079.5usft
Site:	S13-T7S-R96W (Island Ranch)	MD Reference:	KB=24' @ 5079.5usft
Well:	Island Ranch 21A-24	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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:	1,019,013.23 usft	Latitude:	40.624725
From:	Lat/Long	Easting:	2,338,017.18 usft	Longitude:	-104.282679
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.77 °

Well	Island Ranch 21A-24					
Well Position	+N/-S	0.0 usft	Northing:	593,082.17 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:	5,055.5 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/3/2014	9.98	65.59	51,907

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	146.91	

Survey Program	Date	7/7/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
141.0	6,225.0	Survey #1 (DD)	ISCWSA MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
141.0	0.60	309.30	141.0	0.5	-0.6	-0.7	0.43	0.43		
203.0	1.10	103.10	203.0	0.5	-0.2	-0.6	2.68	0.81		
265.0	2.90	139.20	265.0	-0.8	1.4	1.4	3.41	2.90		
325.0	4.30	151.70	324.8	-3.9	3.4	5.1	2.66	2.33		
417.0	7.10	144.00	416.4	-11.6	8.4	14.3	3.15	3.04		
508.0	10.20	145.00	506.3	-22.7	16.3	27.9	3.41	3.41		
603.0	12.80	144.20	599.4	-38.1	27.3	46.9	2.74	2.74		
691.0	15.30	146.80	684.8	-55.8	39.4	68.2	2.93	2.84		
783.0	18.40	150.20	772.8	-78.5	53.2	94.9	3.53	3.37		
875.0	20.50	145.00	859.6	-104.3	69.7	125.5	2.96	2.28		
979.0	23.40	148.30	956.0	-136.8	91.0	164.3	3.03	2.79		
1,074.0	24.50	151.10	1,042.8	-170.1	110.4	202.8	1.66	1.16		

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Island Ranch 21A-24
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 5079.5usft
Site:	S13-T7S-R96W (Island Ranch)	MD Reference:	KB=24' @ 5079.5usft
Well:	Island Ranch 21A-24	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,169.0	27.00	151.90	1,128.4	-206.4	130.1	244.0	2.66	2.63	
1,264.0	29.90	150.60	1,211.9	-246.0	151.9	289.1	3.12	3.05	
1,359.0	34.60	147.00	1,292.2	-289.3	178.2	339.7	5.34	4.95	
1,455.0	37.50	147.90	1,369.9	-336.9	208.6	396.2	3.07	3.02	
1,550.0	35.80	146.90	1,446.1	-384.7	239.2	452.9	1.90	-1.79	
1,645.0	36.30	145.00	1,522.9	-431.0	270.5	508.8	1.29	0.53	
1,740.0	35.80	143.60	1,599.7	-476.4	303.1	564.6	1.01	-0.53	
1,835.0	36.00	146.00	1,676.7	-522.0	335.2	620.3	1.50	0.21	
1,930.0	35.90	146.00	1,753.6	-568.2	366.4	676.1	0.11	-0.11	
2,025.0	36.10	145.30	1,830.4	-614.3	397.9	731.9	0.48	0.21	
2,120.0	36.10	145.20	1,907.2	-660.3	429.8	787.8	0.06	0.00	
2,215.0	36.30	144.80	1,983.8	-706.2	462.0	843.9	0.33	0.21	
2,310.0	36.20	143.70	2,060.4	-751.8	494.8	900.0	0.69	-0.11	
2,405.0	36.00	144.60	2,137.2	-797.2	527.6	955.9	0.60	-0.21	
2,500.0	35.00	144.00	2,214.5	-842.0	559.7	1,011.0	1.11	-1.05	
2,595.0	36.60	147.80	2,291.6	-888.0	590.9	1,066.6	2.88	1.68	
2,690.0	37.50	148.40	2,367.4	-936.6	621.1	1,123.8	1.02	0.95	
2,785.0	37.70	147.30	2,442.7	-985.7	651.9	1,181.7	0.74	0.21	
2,880.0	36.20	147.10	2,518.6	-1,033.7	682.9	1,238.9	1.58	-1.58	
2,975.0	32.90	146.20	2,596.8	-1,078.7	712.5	1,292.7	3.51	-3.47	
3,071.0	30.80	145.90	2,678.4	-1,120.7	740.8	1,343.4	2.19	-2.19	
3,166.0	29.00	148.10	2,760.7	-1,160.4	766.6	1,390.7	2.22	-1.89	
3,260.0	27.20	146.40	2,843.7	-1,197.6	790.5	1,435.0	2.10	-1.91	
3,356.0	24.30	148.60	2,930.1	-1,232.8	812.9	1,476.7	3.18	-3.02	
3,451.0	21.60	148.80	3,017.6	-1,264.4	832.2	1,513.7	2.84	-2.84	
3,546.0	19.30	146.90	3,106.6	-1,292.5	849.8	1,546.9	2.52	-2.42	
3,641.0	16.40	147.90	3,197.0	-1,317.1	865.5	1,576.0	3.07	-3.05	
3,736.0	13.80	150.70	3,288.7	-1,338.3	878.2	1,600.7	2.84	-2.74	
3,831.0	12.40	151.40	3,381.3	-1,357.2	888.6	1,622.2	1.48	-1.47	
3,926.0	11.90	152.50	3,474.1	-1,374.8	898.0	1,642.1	0.58	-0.53	
4,021.0	10.20	152.40	3,567.4	-1,390.9	906.5	1,660.2	1.79	-1.79	
4,117.0	8.80	148.40	3,662.0	-1,404.7	914.2	1,676.0	1.61	-1.46	
4,212.0	6.60	148.30	3,756.2	-1,415.6	920.9	1,688.8	2.32	-2.32	
4,307.0	5.10	147.10	3,850.7	-1,423.8	926.1	1,698.4	1.58	-1.58	
4,402.0	2.90	136.90	3,945.4	-1,429.1	930.0	1,705.0	2.42	-2.32	
4,497.0	1.90	140.90	4,040.4	-1,432.0	932.7	1,709.0	1.07	-1.05	
4,592.0	2.20	110.50	4,135.3	-1,433.9	935.4	1,712.0	1.17	0.32	
4,687.0	0.70	39.20	4,230.3	-1,434.1	937.4	1,713.3	2.19	-1.58	
4,782.0	0.20	46.10	4,325.3	-1,433.5	937.9	1,713.1	0.53	-0.53	
4,877.0	0.40	208.40	4,420.3	-1,433.7	937.9	1,713.2	0.62	0.21	
4,972.0	0.30	83.20	4,515.3	-1,434.0	938.0	1,713.5	0.66	-0.11	
5,067.0	0.30	89.80	4,610.3	-1,433.9	938.5	1,713.7	0.04	0.00	
5,162.0	0.60	164.50	4,705.3	-1,434.4	938.8	1,714.3	0.63	0.32	
5,257.0	1.20	177.10	4,800.3	-1,435.9	939.0	1,715.7	0.66	0.63	
5,351.0	0.70	119.90	4,894.2	-1,437.1	939.6	1,717.0	1.07	-0.53	
5,446.0	0.60	143.40	4,989.2	-1,437.8	940.4	1,718.0	0.30	-0.11	
5,542.0	1.00	177.20	5,085.2	-1,439.1	940.7	1,719.3	0.63	0.42	
5,636.0	0.60	128.70	5,179.2	-1,440.2	941.1	1,720.4	0.80	-0.43	
5,731.0	0.60	163.70	5,274.2	-1,441.0	941.7	1,721.4	0.38	0.00	
5,826.0	0.80	221.00	5,369.2	-1,442.0	941.4	1,722.0	0.73	0.21	
5,922.0	1.10	225.80	5,465.2	-1,443.1	940.3	1,722.4	0.32	0.31	
6,016.0	1.70	233.90	5,559.2	-1,444.6	938.5	1,722.7	0.67	0.64	
6,111.0	1.60	232.30	5,654.1	-1,446.2	936.3	1,722.8	0.12	-0.11	

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Island Ranch 21A-24
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 5079.5usft
Site:	S13-T7S-R96W (Island Ranch)	MD Reference:	KB=24' @ 5079.5usft
Well:	Island Ranch 21A-24	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
6,175.0	1.70	225.90	5,718.1	-1,447.4	934.9	1,723.1	0.33	0.16	Last CES Survey @ 6,175' MD
6,225.0	1.70	225.90	5,768.1	-1,448.4	933.9	1,723.4	0.00	0.00	PTB @ 6,225'

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 - actual wellpath misses target center by 13.5usft at 4262.5usft MD (3806.4 TVD, -1420.2 N, 923.8 E) - Circle (radius 50.0)	0.00	0.00	3,805.0	-1,430.6	932.2	591,625.80	1,276,890.96	39.429836	-108.060261
Island Ranch 21A-24 PE - actual wellpath misses target center by 16.7usft at 6156.6usft MD (5699.8 TVD, -1447.0 N, 935.3 E) - Circle (radius 50.0)	0.00	0.00	5,700.0	-1,430.6	932.2	591,625.80	1,276,890.96	39.429836	-108.060261

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
6,175.0	5,718.1	-1,447.4	934.9	Last CES Survey @ 6,175' MD
6,225.0	5,768.1	-1,448.4	933.9	PTB @ 6,225'

Checked By: _____ Approved By: _____ Date: _____