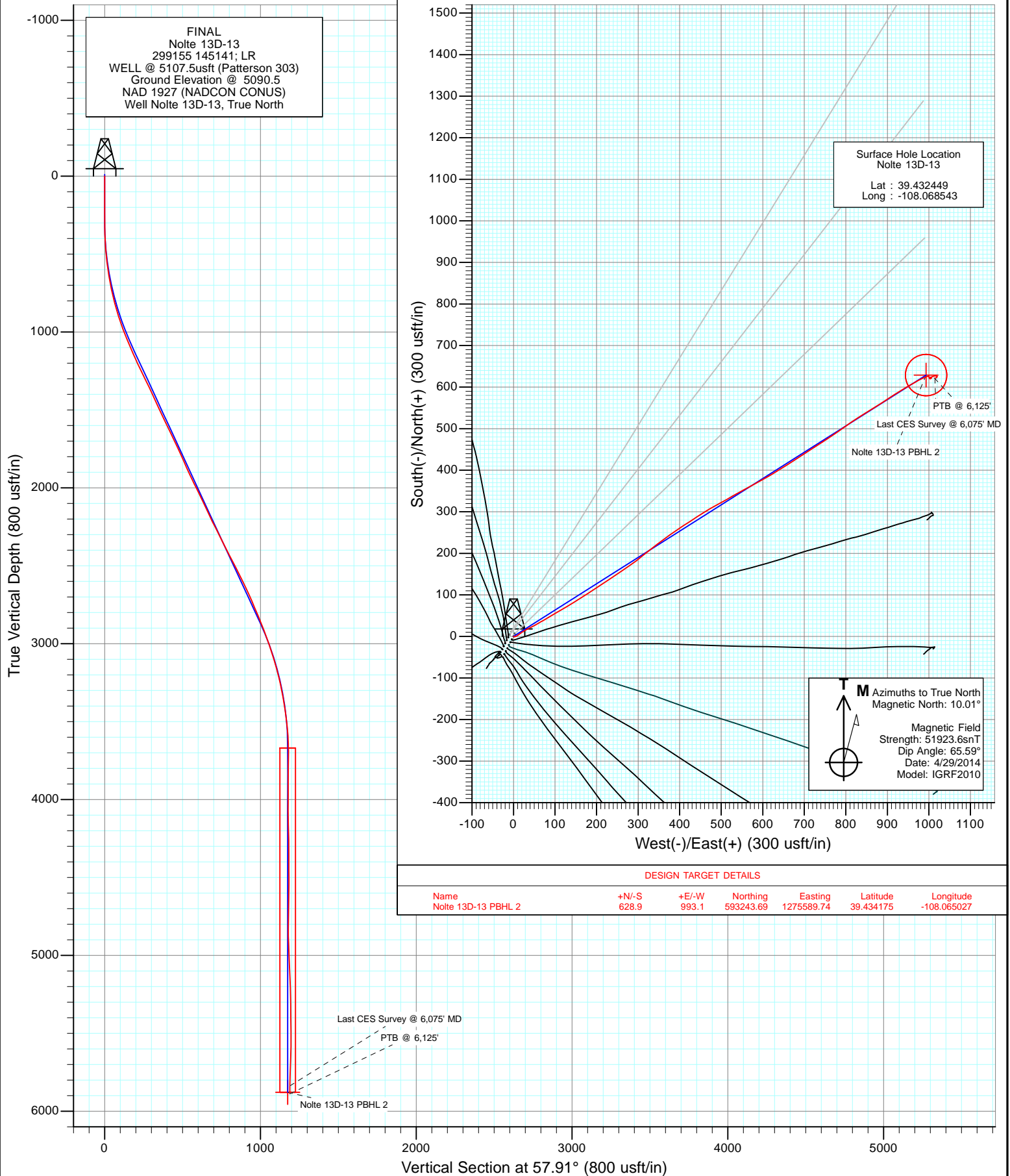
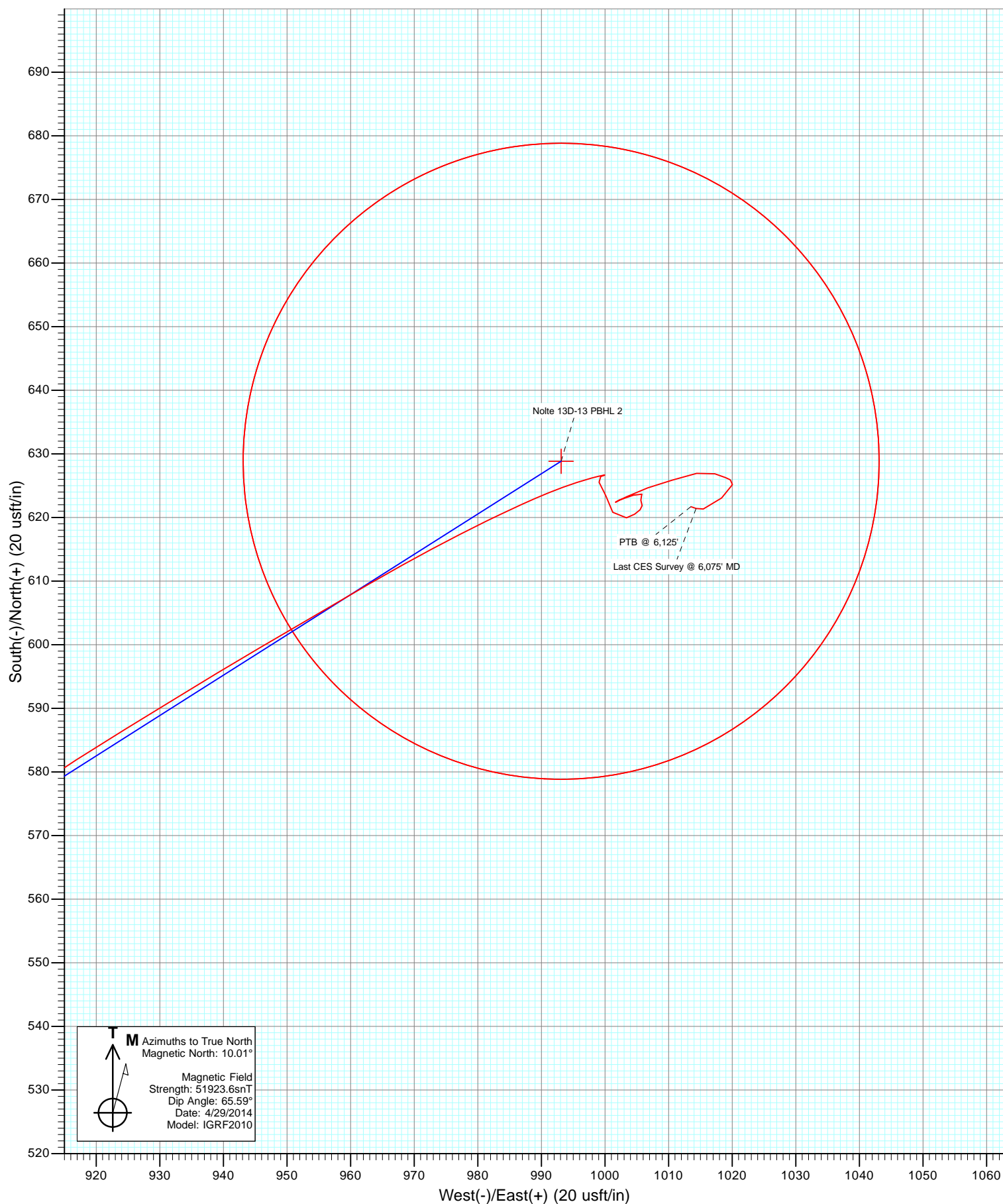




Project: Garfield County, CO
Site: S14-T7S-R96W
Well: Nolte 13D-13
Wellbore: DD
Design: FINAL





Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 13D-13
Project:	Garfield County, CO	TVD Reference:	WELL @ 5107.5usft (Patterson 303)
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5107.5usft (Patterson 303)
Well:	Nolte 13D-13	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		S14-T7S-R96W			
Site Position:		Northing:	592,602.09 usft	Latitude:	39.432320
From:	Lat/Long	Easting:	1,274,369.93 usft	Longitude:	-108.069280
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.62 °

Well	Nolte 13D-13					
Well Position	+N/-S	0.0 usft	Northing:	592,643.16 usft	Latitude:	39.432449
	+E/-W	0.0 usft	Easting:	1,274,579.24 usft	Longitude:	-108.068543
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,090.5 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/29/2014	10.01	65.59	51,924

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	57.91	

Survey Program	Date	4/30/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
145.0	6,125.0	Survey #1 (DD)	MWD	Geolink MWD	

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		
145.0	0.30	128.70	145.0	-0.2	0.3	0.1	0.21	0.21		
237.0	0.40	134.40	237.0	-0.6	0.7	0.3	0.11	0.11		
329.0	1.20	83.50	329.0	-0.7	1.9	1.2	1.08	0.87		
421.0	2.80	75.40	420.9	-0.1	5.0	4.2	1.76	1.74		
512.0	5.70	52.60	511.7	3.3	10.8	10.9	3.63	3.19		
604.0	8.50	56.30	603.0	9.8	20.1	22.2	3.08	3.04		
696.0	11.10	62.60	693.6	17.7	33.6	37.8	3.05	2.83		
787.0	13.40	61.60	782.5	26.7	50.6	57.1	2.54	2.53		
878.0	16.40	59.80	870.5	38.2	71.0	80.5	3.34	3.30		
969.0	20.00	59.60	956.9	52.5	95.6	108.9	3.96	3.96		
1,075.0	22.70	59.40	1,055.6	72.1	128.8	147.4	2.55	2.55		
1,170.0	23.60	56.90	1,143.0	91.8	160.5	184.8	1.40	0.95		

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 13D-13
Project:	Garfield County, CO	TVD Reference:	WELL @ 5107.5usft (Patterson 303)
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5107.5usft (Patterson 303)
Well:	Nolte 13D-13	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
1,265.0	25.80	57.60	1,229.3	113.3	193.9	224.5	2.34	2.32	
1,360.0	26.60	55.80	1,314.5	136.3	228.9	266.4	1.19	0.84	
1,455.0	24.70	56.50	1,400.1	159.2	263.1	307.5	2.03	-2.00	
1,550.0	24.80	52.70	1,486.4	182.3	295.5	347.2	1.68	0.11	
1,645.0	25.80	51.10	1,572.3	207.3	327.4	387.5	1.28	1.05	
1,740.0	25.70	53.40	1,657.9	232.6	360.1	428.6	1.06	-0.11	
1,835.0	25.20	56.70	1,743.7	256.0	393.5	469.4	1.58	-0.53	
1,930.0	23.60	56.20	1,830.2	277.7	426.2	508.6	1.70	-1.68	
2,025.0	25.00	58.00	1,916.8	298.9	459.0	547.7	1.67	1.47	
2,120.0	26.60	62.30	2,002.3	319.4	494.9	589.0	2.59	1.68	
2,215.0	25.80	59.40	2,087.5	339.8	531.5	630.8	1.59	-0.84	
2,310.0	25.00	62.20	2,173.4	359.7	567.1	671.5	1.52	-0.84	
2,405.0	26.80	60.80	2,258.8	379.5	603.5	712.9	2.00	1.89	
2,500.0	26.70	57.90	2,343.7	401.3	640.3	755.7	1.38	-0.11	
2,595.0	27.60	56.90	2,428.2	424.7	676.8	799.0	1.06	0.95	
2,690.0	26.90	57.70	2,512.6	448.2	713.4	842.5	0.83	-0.74	
2,785.0	26.20	56.50	2,597.6	471.2	749.1	885.0	0.93	-0.74	
2,880.0	24.50	54.80	2,683.5	494.2	782.7	925.6	1.95	-1.79	
2,975.0	23.00	55.50	2,770.4	516.0	814.1	963.8	1.61	-1.58	
3,070.0	22.40	58.20	2,858.1	536.1	844.7	1,000.5	1.27	-0.63	
3,165.0	20.10	58.30	2,946.6	554.2	874.0	1,034.9	2.42	-2.42	
3,261.0	18.50	56.20	3,037.2	571.3	900.7	1,066.6	1.82	-1.67	
3,356.0	16.30	58.30	3,127.9	586.7	924.6	1,095.0	2.41	-2.32	
3,451.0	13.70	59.40	3,219.6	599.5	945.6	1,119.6	2.75	-2.74	
3,546.0	10.80	60.10	3,312.4	609.6	963.0	1,139.8	3.06	-3.05	
3,641.0	8.80	63.00	3,406.0	617.4	977.2	1,155.9	2.17	-2.11	
3,736.0	6.60	66.40	3,500.2	622.9	988.7	1,168.5	2.36	-2.32	
3,830.0	3.90	74.40	3,593.8	625.9	996.7	1,176.9	2.97	-2.87	
3,925.0	0.20	110.60	3,688.7	626.7	1,000.0	1,180.1	3.94	-3.89	
4,020.0	1.00	257.50	3,783.7	626.4	999.3	1,179.5	1.23	0.84	
4,115.0	1.10	142.50	3,878.7	625.5	999.1	1,178.8	1.87	0.11	
4,210.0	1.70	160.60	3,973.7	623.5	1,000.1	1,178.5	0.78	0.63	
4,305.0	1.80	153.70	4,068.6	620.8	1,001.2	1,178.1	0.25	0.11	
4,400.0	1.90	72.00	4,163.6	620.0	1,003.4	1,179.5	2.55	0.11	
4,495.0	1.20	39.60	4,258.5	621.2	1,005.5	1,181.9	1.15	-0.74	
4,590.0	0.40	253.50	4,353.5	621.9	1,005.8	1,182.5	1.63	-0.84	
4,685.0	1.10	7.60	4,448.5	622.7	1,005.6	1,182.8	1.38	0.74	
4,780.0	0.10	34.50	4,543.5	623.7	1,005.8	1,183.5	1.07	-1.05	
4,875.0	1.70	260.30	4,638.5	623.5	1,004.5	1,182.2	1.86	1.68	
4,970.0	1.10	238.50	4,733.5	622.8	1,002.3	1,180.0	0.83	-0.63	
5,065.0	0.20	60.40	4,828.5	622.4	1,001.7	1,179.3	1.37	-0.95	
5,161.0	2.10	63.60	4,924.5	623.3	1,003.4	1,181.2	1.98	1.98	
5,255.0	2.30	70.00	5,018.4	624.7	1,006.7	1,184.8	0.34	0.21	
5,350.0	2.60	74.90	5,113.3	625.9	1,010.6	1,188.7	0.38	0.32	
5,445.0	2.20	74.50	5,208.2	626.9	1,014.4	1,192.5	0.42	-0.42	
5,540.0	1.50	115.90	5,303.2	626.9	1,017.3	1,194.9	1.54	-0.74	
5,634.0	0.70	96.40	5,397.2	626.3	1,019.0	1,196.0	0.93	-0.85	
5,729.0	0.40	150.10	5,492.2	625.9	1,019.7	1,196.4	0.59	-0.32	
5,824.0	0.60	159.10	5,587.2	625.2	1,020.1	1,196.3	0.23	0.21	
5,919.0	3.00	229.40	5,682.1	623.1	1,018.3	1,193.8	3.00	2.53	
6,014.0	1.20	262.30	5,777.0	621.3	1,015.5	1,190.4	2.21	-1.89	
6,075.0	1.00	288.40	5,838.0	621.4	1,014.3	1,189.5	0.87	-0.33	Last CES Survey @ 6,075' MD
6,125.0	1.00	288.40	5,888.0	621.7	1,013.5	1,188.9	0.00	0.00	PTB @ 6,125'

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 13D-13
Project:	Garfield County, CO	TVD Reference:	WELL @ 5107.5usft (Patterson 303)
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5107.5usft (Patterson 303)
Well:	Nolte 13D-13	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

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
Nolte 13D-13 PBHL - actual wellpath misses target center by 13.3usft at 6116.9usft MD (5879.9 TVD, 621.7 N, 1013.6 E) - Circle (radius 50.0)	0.00	0.00	5,879.7	628.5	1,002.3	593,243.08	1,275,598.90	39.434174	-108.064995
Nolte 13D-13 PBHL 2 - actual wellpath misses target center by 21.8usft at 6117.0usft MD (5880.1 TVD, 621.7 N, 1013.6 E) - Circle (radius 50.0)	0.00	0.00	5,879.7	628.9	993.1	593,243.69	1,275,589.74	39.434175	-108.065027

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
6,075.0	5,838.0	621.4	1,014.3	Last CES Survey @ 6,075' MD	
6,125.0	5,888.0	621.7	1,013.5	PTB @ 6,125'	

Checked By: _____ Approved By: _____ Date: _____