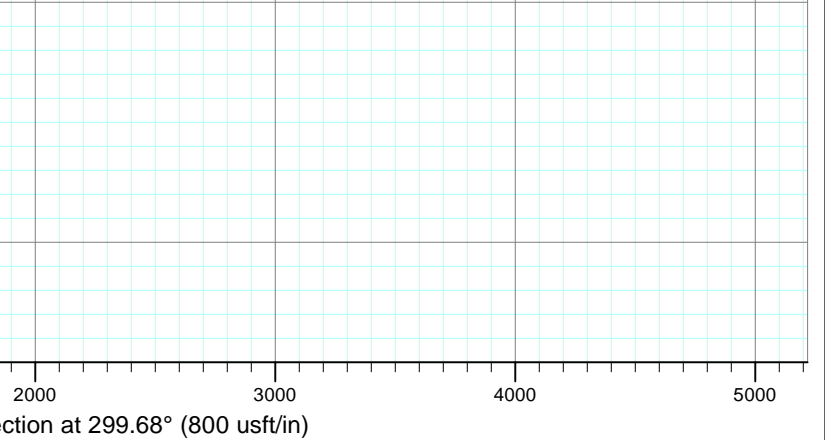
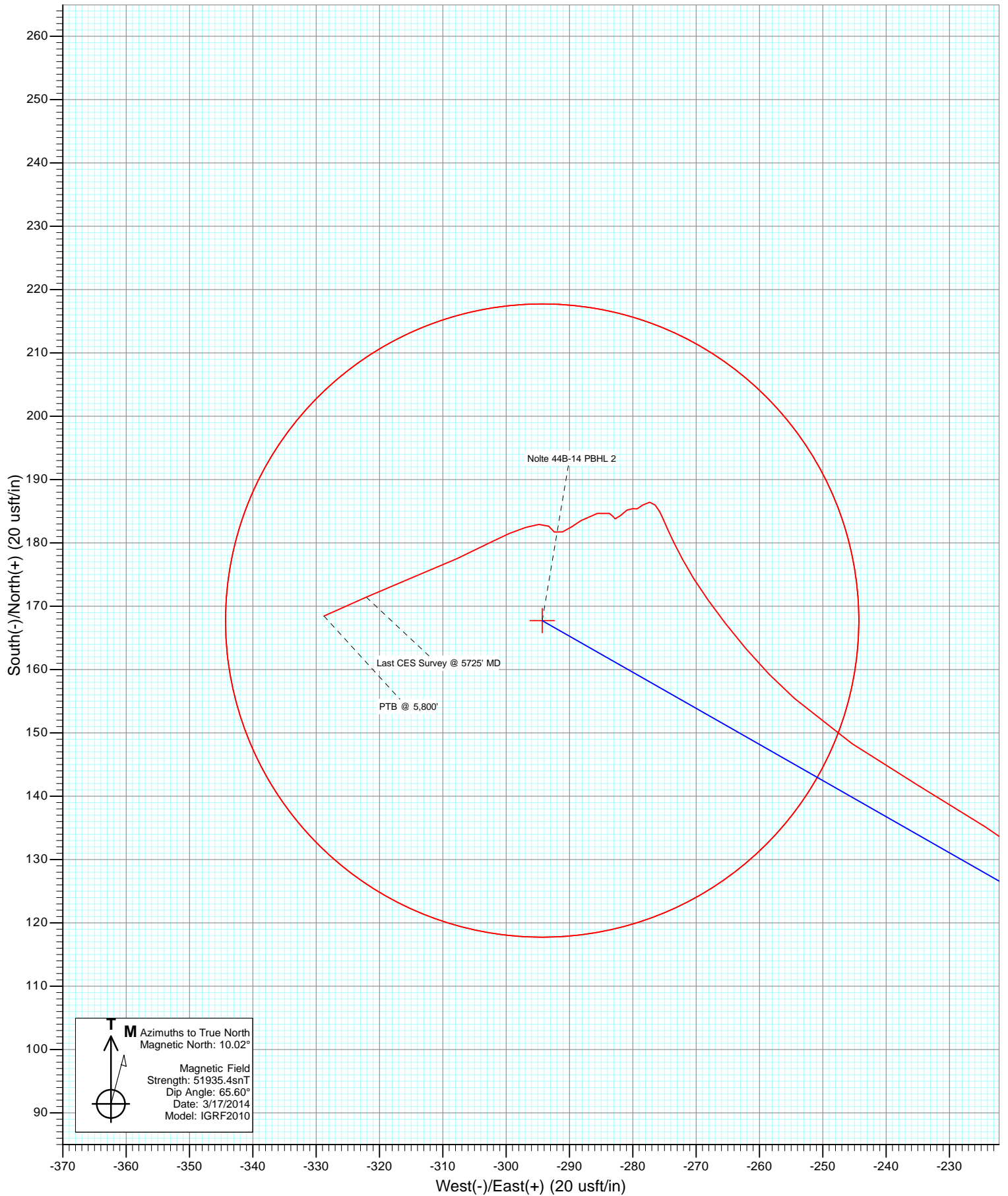


DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Nolte 44B-14 PBHL 2	167.7	-294.3	592789.11	1274261.60	39.432825	-108.069682





Cathedral Energy Services

Survey Report

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 44B-14
Project: Garfield County, CO	TVD Reference: WELL @ 5108.3usft
Site: S14-T7S-R96W	MD Reference: WELL @ 5108.3usft
Well: Nolte 44B-14	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 44B-14						
Well Position	+N/-S	0.0 usft	Northing:	592,613.11 usft	Latitude:	39.432364
	+E/-W	0.0 usft	Easting:	1,274,551.04 usft	Longitude:	-108.068640
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,091.3 usft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/17/2014	10.02	65.60	51,935

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	299.68	

Survey Program Date 3/24/2014					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
145.0	5,800.0	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	1.00	124.00	145.0	-0.7	1.0	-1.3	0.69	0.69	
176.0	0.70	129.10	176.0	-1.0	1.4	-1.7	1.00	-0.97	
206.0	0.60	91.00	206.0	-1.1	1.7	-2.0	1.45	-0.33	
236.0	0.00	13.30	236.0	-1.1	1.9	-2.2	2.00	-2.00	
267.0	0.20	340.10	267.0	-1.0	1.9	-2.1	0.65	0.65	
298.0	0.50	319.20	298.0	-0.9	1.8	-2.0	1.04	0.97	
329.0	1.00	324.90	329.0	-0.6	1.5	-1.6	1.63	1.61	
360.0	1.10	335.60	360.0	-0.1	1.2	-1.1	0.71	0.32	
391.0	1.10	314.20	391.0	0.4	0.9	-0.6	1.32	0.00	
421.0	2.30	306.50	421.0	1.0	0.2	0.3	4.06	4.00	
451.0	3.90	309.10	450.9	2.0	-1.1	1.9	5.35	5.33	
482.0	4.50	306.70	481.8	3.4	-2.9	4.2	2.02	1.94	

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 44B-14
Project:	Garfield County, CO	TVD Reference:	WELL @ 5108.3usft
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5108.3usft
Well:	Nolte 44B-14	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
512.0	5.00	304.20	511.7	4.8	-4.9	6.6	1.80	1.67	
604.0	6.30	293.10	603.3	9.0	-12.9	15.6	1.84	1.41	
696.0	6.80	291.60	694.7	13.0	-22.6	26.0	0.57	0.54	
787.0	7.30	291.60	785.0	17.1	-32.9	37.1	0.55	0.55	
878.0	6.90	291.20	875.3	21.2	-43.4	48.2	0.44	-0.44	
971.0	7.50	300.90	967.6	26.4	-53.8	59.8	1.46	0.65	
995.0	7.40	298.20	991.4	27.9	-56.5	62.9	1.52	-0.42	
1,071.0	7.80	299.40	1,066.7	32.7	-65.3	73.0	0.57	0.53	
1,166.0	7.90	298.80	1,160.8	39.1	-76.7	86.0	0.14	0.11	
1,261.0	7.50	299.70	1,254.9	45.3	-87.8	98.7	0.44	-0.42	
1,356.0	7.20	298.70	1,349.2	51.2	-98.4	110.8	0.34	-0.32	
1,451.0	6.20	305.20	1,443.5	57.0	-107.8	121.9	1.32	-1.05	
1,546.0	5.90	300.90	1,538.0	62.5	-116.2	131.9	0.57	-0.32	
1,641.0	6.20	297.50	1,632.5	67.4	-124.9	141.9	0.49	0.32	
1,737.0	6.20	304.80	1,727.9	72.7	-133.8	152.2	0.82	0.00	
1,831.0	6.20	302.40	1,821.4	78.3	-142.2	162.4	0.28	0.00	
1,926.0	6.00	301.20	1,915.8	83.6	-150.8	172.5	0.25	-0.21	
2,021.0	5.80	298.30	2,010.3	88.5	-159.3	182.2	0.38	-0.21	
2,116.0	5.40	306.30	2,104.9	93.4	-167.1	191.5	0.92	-0.42	
2,211.0	5.50	307.70	2,199.4	98.8	-174.3	200.4	0.18	0.11	
2,306.0	5.50	306.70	2,294.0	104.4	-181.6	209.4	0.10	0.00	
2,401.0	5.20	303.90	2,388.6	109.5	-188.8	218.2	0.42	-0.32	
2,496.0	6.50	307.60	2,483.1	115.2	-196.6	227.9	1.42	1.37	
2,591.0	6.80	306.90	2,577.4	121.8	-205.4	238.8	0.33	0.32	
2,686.0	6.90	305.20	2,671.8	128.5	-214.6	250.0	0.24	0.11	
2,781.0	7.40	303.80	2,766.0	135.2	-224.3	261.8	0.56	0.53	
2,877.0	7.70	299.70	2,861.2	141.8	-235.0	274.4	0.64	0.31	
2,972.0	7.10	304.80	2,955.4	148.3	-245.4	286.6	0.94	-0.63	
3,067.0	6.90	311.70	3,049.7	155.5	-254.5	298.0	0.91	-0.21	
3,162.0	6.50	320.00	3,144.0	163.4	-262.2	308.7	1.10	-0.42	
3,257.0	5.20	324.80	3,238.6	171.0	-268.1	317.6	1.46	-1.37	
3,352.0	4.00	332.00	3,333.2	177.4	-272.1	324.3	1.40	-1.26	
3,447.0	2.60	336.40	3,428.1	182.3	-274.6	328.8	1.50	-1.47	
3,542.0	0.90	333.50	3,523.0	185.0	-275.8	331.2	1.79	-1.79	
3,637.0	0.60	313.30	3,618.0	186.0	-276.5	332.3	0.42	-0.32	
3,732.0	0.60	280.00	3,713.0	186.4	-277.3	333.2	0.36	0.00	
3,827.0	1.00	230.30	3,808.0	186.0	-278.4	334.0	0.80	0.42	
3,921.0	0.30	254.60	3,902.0	185.4	-279.3	334.5	0.78	-0.74	
4,016.0	0.60	280.00	3,997.0	185.4	-280.0	335.1	0.37	0.32	
4,111.0	0.60	231.30	4,092.0	185.2	-280.9	335.8	0.52	0.00	
4,206.0	1.10	229.20	4,187.0	184.3	-282.0	336.2	0.53	0.53	
4,301.0	0.20	318.80	4,282.0	183.8	-282.8	336.7	1.18	-0.95	
4,396.0	0.30	322.90	4,377.0	184.1	-283.1	337.1	0.11	0.11	
4,491.0	0.70	306.60	4,472.0	184.7	-283.7	337.9	0.44	0.42	
4,586.0	1.80	255.90	4,567.0	184.7	-285.6	339.6	1.54	1.16	
4,681.0	1.60	236.10	4,661.9	183.6	-288.1	341.2	0.65	-0.21	
4,776.0	0.60	238.00	4,756.9	182.6	-289.7	342.0	1.05	-1.05	
4,871.0	1.40	242.10	4,851.9	181.7	-291.1	342.9	0.84	0.84	
4,967.0	0.70	334.20	4,947.9	181.7	-292.4	344.0	1.65	-0.73	
5,062.0	0.90	301.60	5,042.9	182.6	-293.3	345.2	0.51	0.21	
5,157.0	1.10	263.50	5,137.8	182.9	-294.8	346.7	0.72	0.21	
5,252.0	1.50	252.20	5,232.8	182.4	-296.9	348.3	0.50	0.42	
5,346.0	1.90	248.20	5,326.8	181.5	-299.5	350.1	0.44	0.43	

Cathedral Energy Services

Survey Report

Company: Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference: Well Nolte 44B-14
Project: Garfield County, CO	TVD Reference: WELL @ 5108.3usft
Site: S14-T7S-R96W	MD Reference: WELL @ 5108.3usft
Well: Nolte 44B-14	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
5,441.0	2.70	241.70	5,421.7	179.8	-303.0	352.3	0.88	0.84	
5,536.0	3.70	245.90	5,516.6	177.5	-307.7	355.3	1.08	1.05	
5,630.0	4.80	248.00	5,610.3	174.8	-314.1	359.5	1.18	1.17	
5,725.0	5.60	246.00	5,704.9	171.4	-322.1	364.7	0.86	0.84	Last CES Survey @ 5725' MD
5,800.0	5.60	246.00	5,779.5	168.5	-328.7	369.0	0.00	0.00	PTB @ 5,800'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Nolte 44B-14 PBHL 2	0.00	0.00	5,805.5	167.7	-294.3	592,789.11	1,274,261.60	39.432825	-108.069682
- actual wellpath misses target center by 43.1usft at 5800.0usft MD (5779.5 TVD, 168.5 N, -328.7 E)									
- Circle (radius 50.0)									
Nolte 44B-14	0.00	0.00	5,805.5	134.1	-284.6	592,755.25	1,274,270.31	39.432733	-108.069648
- actual wellpath misses target center by 61.6usft at 5800.0usft MD (5779.5 TVD, 168.5 N, -328.7 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
5,725.0	5,704.9	171.4	-322.1	Last CES Survey @ 5725' MD	
5,800.0	5,779.5	168.5	-328.7	PTB @ 5,800'	

Checked By: _____ Approved By: _____ Date: _____