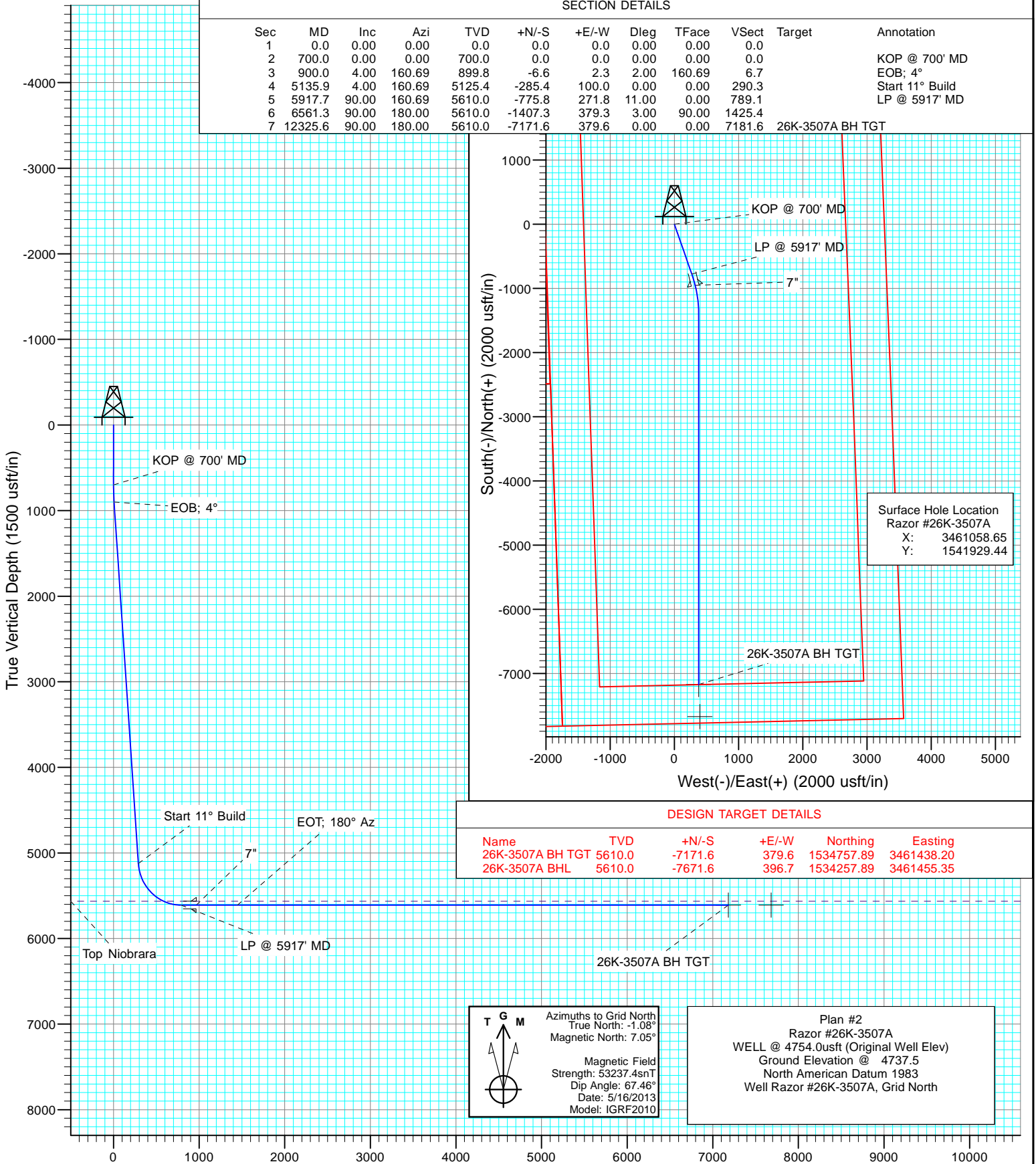


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0		KOP @ 700' MD
3	900.0	4.00	160.69	899.8	-6.6	2.3	2.00	160.69	6.7		EOB; 4°
4	5135.9	4.00	160.69	5125.4	-285.4	100.0	0.00	0.00	290.3		Start 11° Build
5	5917.7	90.00	160.69	5610.0	-775.8	271.8	11.00	0.00	789.1		LP @ 5917' MD
6	6561.3	90.00	180.00	5610.0	-1407.3	379.3	3.00	90.00	1425.4		
7	12325.6	90.00	180.00	5610.0	-7171.6	379.6	0.00	0.00	7181.6	26K-3507A BH TGT	



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
26K-3507A BH TGT	5610.0	-7171.6	379.6	1534757.89	3461438.20
26K-3507A BHL	5610.0	-7671.6	396.7	1534257.89	3461455.35

T G M

Azimuths to Grid North
 True North: -1.08°
 Magnetic North: 7.05°

Magnetic Field
 Strength: 53237.4snT
 Dip Angle: 67.46°
 Date: 5/16/2013
 Model: IGRF2010

Plan #2
 Razor #26K-3507A
 WELL @ 4754.0usft (Original Well Elev)
 Ground Elevation @ 4737.5
 North American Datum 1983
 Well Razor #26K-3507A, Grid North

Vertical Section at 176.97° (1500 usft/in)

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Razor #26K-3507A
Company: Whiting Petroleum Corporation	TVD Reference: WELL @ 4754.0usft (Original Well Elev)
Project: Weld County, CO	MD Reference: WELL @ 4754.0usft (Original Well Elev)
Site: S26-T10N-R58W	North Reference: Grid
Well: Razor #26K-3507A	Survey Calculation Method: Minimum Curvature
Wellbore: HZ	
Design: Plan #2	

Project Weld County, CO		
Map System: US State Plane 1983	System Datum: Mean Sea Level	
Geo Datum: North American Datum 1983		
Map Zone: Colorado Northern Zone		

Site S26-T10N-R58W					
Site Position:	Northing:	1,541,774.28 usft	Latitude:	40° 48' 31.46 N	
From: Lat/Long	Easting:	3,459,642.55 usft	Longitude:	103° 50' 22.31 W	
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16"		Grid Convergence:	1.07 °	

Well Razor #26K-3507A					
Well Position	+N/-S	0.0 usft	Northing:	1,541,929.44 usft	Latitude: 40° 48' 32.73 N
	+E/-W	0.0 usft	Easting:	3,461,058.65 usft	Longitude: 103° 50' 3.86 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level: 4,737.5 usft

Wellbore HZ					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	8.13	67.46	53,237

Design Plan #2				
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	176.97

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	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	4.00	160.69	899.8	-6.6	2.3	2.00	2.00	0.00	160.69	
5,135.9	4.00	160.69	5,125.4	-285.4	100.0	0.00	0.00	0.00	0.00	
5,917.7	90.00	160.69	5,610.0	-775.8	271.8	11.00	11.00	0.00	0.00	
6,561.3	90.00	180.00	5,610.0	-1,407.3	379.3	3.00	0.00	3.00	90.00	
12,325.6	90.00	180.00	5,610.0	-7,171.6	379.6	0.00	0.00	0.00	0.00	26K-3507A BH TGT

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Razor #26K-3507A
Company: Whiting Petroleum Corporation	TVD Reference: WELL @ 4754.0usft (Original Well Elev)
Project: Weld County, CO	MD Reference: WELL @ 4754.0usft (Original Well Elev)
Site: S26-T10N-R58W	North Reference: Grid
Well: Razor #26K-3507A	Survey Calculation Method: Minimum Curvature
Wellbore: HZ	
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	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	KOP @ 700' MD
900.0	4.00	160.69	899.8	-6.6	2.3	6.7	2.00	2.00	EOB; 4°
5,135.9	4.00	160.69	5,125.4	-285.4	100.0	290.3	0.00	0.00	Start 11° Build
5,697.3	65.75	160.69	5,564.0	-573.9	201.1	583.8	11.00	11.00	Top Niobrara
5,917.7	90.00	160.69	5,610.0	-775.8	271.8	789.1	11.00	11.00	LP @ 5917' MD
6,100.0	90.00	166.16	5,610.0	-950.5	323.8	966.2	3.00	0.00	7"
6,561.3	90.00	180.00	5,610.0	-1,407.3	379.3	1,425.4	3.00	0.00	
6,584.3	90.00	180.00	5,610.0	-1,430.3	379.3	1,448.3	0.00	0.00	EOT; 180° Az
12,325.6	90.00	180.00	5,610.0	-7,171.6	379.6	7,181.6	0.00	0.00	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
26K-3507A BH TGT - hit/miss target - Shape - Point	0.00	0.00	5,610.0	-7,171.6	379.6	1,534,757.89	3,461,438.20	40° 47' 21.81 N	103° 50' 0.68 W
26K-3507A BHL - plan misses target center by 500.3usft at 12325.6usft MD (5610.0 TVD, -7171.6 N, 379.6 E) - Point	0.00	0.00	5,610.0	-7,671.6	396.7	1,534,257.89	3,461,455.35	40° 47' 16.87 N	103° 50' 0.58 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,100.0	5,610.0	7"	0	0	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,697.3	5,564.0	Top Niobrara		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
700.0	700.0	0.0	0.0	KOP @ 700' MD	
900.0	899.8	-6.6	2.4	EOB; 4°	
5,135.9	5,125.4	-284.2	103.4	Start 11° Build	
5,917.7	5,610.0	-772.5	281.2	LP @ 5917' MD	
6,584.3	5,610.0	-1,425.6	396.3	EOT; 180° Az	
12,830.2	5,610.0	-7,671.5	396.7	PBHL @ 12830' MD	