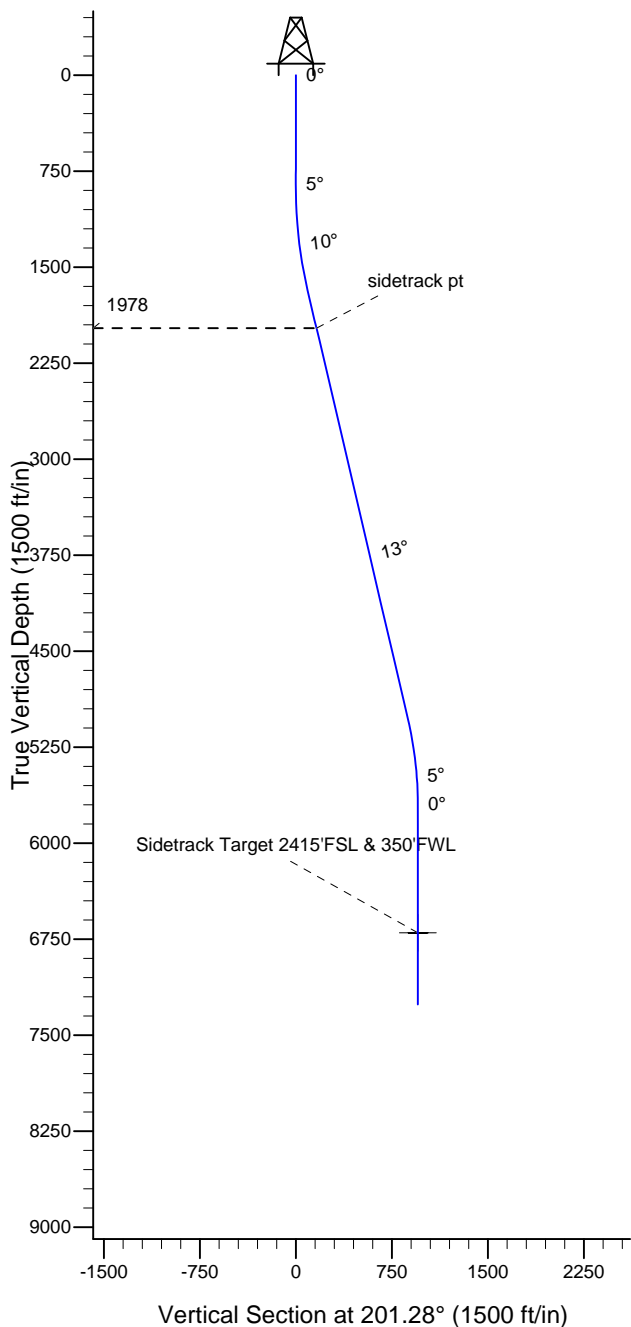


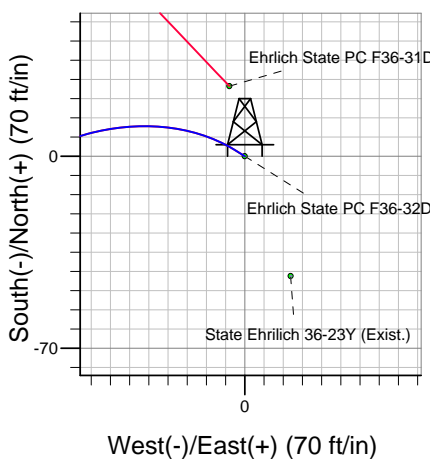
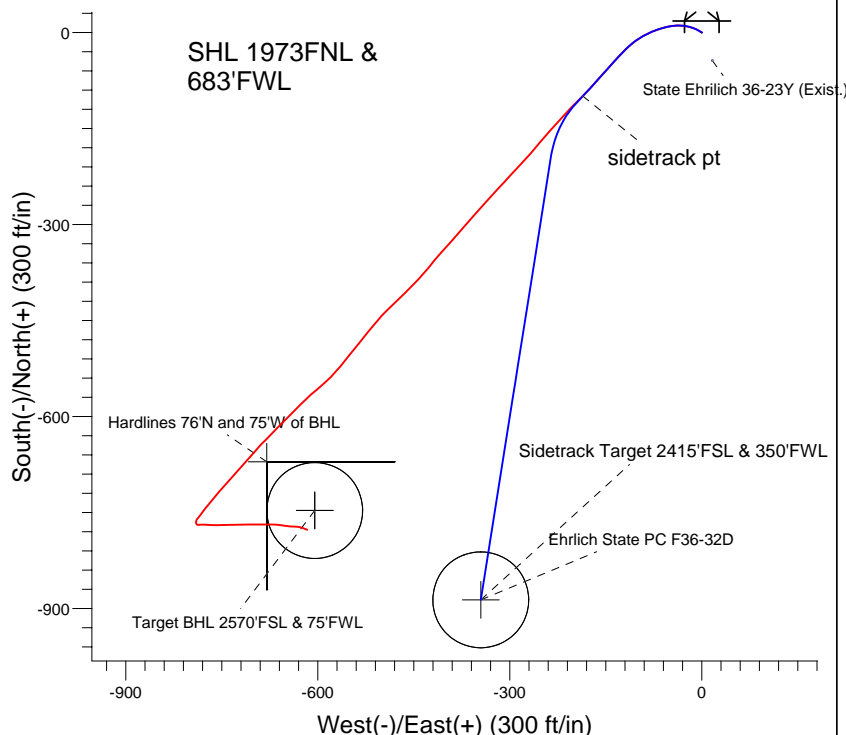
ENSIGN

Directional

Well Name: **Ehrlich State PC F36-32D**
 Surface Location: Ehrlich State PC F36-31D Pad Sec.36-T5N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4703.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1374317.05 3245653.77 40.357550 -104.618510
 Original Well Elev WELL @ 4716.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



Ehrlich State PC F36-32D
 Plan 3 Sidetrack 1 (DEc 13,2010)
 11:38, December 13 2010

Azimuths to True North
 Magnetic North: 8.85°
 Magnetic Field
 Strength: 53181.0snT
 Dip Angle: 67.06°
 Date: 12/7/2010
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Sidetrack Target 2415'FSL & 350'FWL	6700.0	-886.4	-345.3	40.355117	-104.619749	Circle (Radius: 75.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	2000.0	14.99	225.35	1977.9	-99.3	-185.9	0.00	0.00	160.0	
2	2445.2	13.41	189.01	2410.3	-191.0	-235.0	2.00	-117.36	263.2	
3	5144.0	13.41	189.01	5035.5	-809.3	-333.1	0.00	0.00	875.0	
4	5814.6	0.00	0.00	5700.0	-886.4	-345.3	2.00	180.00	951.3	
5	7374.6	0.00	0.00	7260.0	-886.4	-345.3	0.00	0.00	951.3	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.36-T5N-R65W

Ehrlich State PC F36-31D Pad Sec.36-T5N-R65W

Ehrlich State PC F36-32D

Wellbore #1

Plan: Design #1

Standard Planning Report

13 December, 2010

Database:	Landmark	Local Co-ordinate Reference:	Well Ehrlich State PC F36-32D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.36-T5N-R65W	MD Reference:	WELL @ 4716.0ft (Original Well Elev)
Site:	Ehrlich State PC F36-31D Pad Sec.36-T5N-R65W	North Reference:	True
Well:	Ehrlich State PC F36-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	SEC.36-T5N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Ehrlich State PC F36-31D Pad Sec.36-T5N-R65W				
Site Position:		Northing:	1,374,342.50 ft	Latitude:	40.357620	
From:	Lat/Long	Easting:	3,245,647.95 ft	Longitude:	-104.618530	
Position Uncertainty:		0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Ehrlich State PC F36-32D					
Well Position	+N-S	-25.5 ft	Northing:	1,374,317.05 ft	Latitude:	40.357550
	+E-W	5.6 ft	Easting:	3,245,653.77 ft	Longitude:	-104.618510
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,703.0ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/7/2010	8.85	67.06	53,181

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	2,000.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	201.28

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
2,000.0	14.99	225.35	1,977.9	-99.3	-185.9	0.00	0.00	0.00	0.00	
2,445.2	13.41	189.01	2,410.3	-191.0	-235.0	2.00	-0.35	-8.16	-117.36	
5,144.0	13.41	189.01	5,035.5	-809.3	-333.1	0.00	0.00	0.00	0.00	
5,814.6	0.00	0.00	5,700.0	-886.4	-345.3	2.00	-2.00	0.00	180.00	
7,374.6	0.00	0.00	7,260.0	-886.4	-345.3	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Ehrlich State PC F36-32D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.36-T5N-R65W	MD Reference:	WELL @ 4716.0ft (Original Well Elev)
Site:	Ehrlich State PC F36-31D Pad	North Reference:	True
	Sec.36-T5N-R65W		
Well:	Ehrlich State PC F36-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,000.0	14.99	225.35	1,977.9	-99.3	-185.9	160.0	0.00	0.00	0.00
sidetrack pt									
2,050.0	14.56	221.82	2,026.2	-108.5	-194.7	171.8	2.00	-0.87	-7.07
2,100.0	14.18	218.08	2,074.6	-118.0	-202.6	183.5	2.00	-0.75	-7.47
2,150.0	13.87	214.17	2,123.2	-127.8	-209.8	195.3	2.00	-0.63	-7.83
2,200.0	13.61	210.09	2,171.7	-137.9	-216.1	206.9	2.00	-0.50	-8.15
2,250.0	13.43	205.89	2,220.3	-148.2	-221.6	218.5	2.00	-0.37	-8.41
2,300.0	13.32	201.59	2,269.0	-158.8	-226.2	230.1	2.00	-0.22	-8.59
2,350.0	13.28	197.25	2,317.6	-169.6	-230.1	241.5	2.00	-0.08	-8.69
2,400.0	13.32	192.90	2,366.3	-180.7	-233.0	253.0	2.00	0.07	-8.69
2,445.2	13.41	189.01	2,410.3	-191.0	-235.0	263.2	2.00	0.21	-8.61
2,450.0	13.41	189.01	2,415.0	-192.1	-235.2	264.3	0.00	0.00	0.00
2,500.0	13.41	189.01	2,463.6	-203.5	-237.0	275.7	0.00	0.00	0.00
2,550.0	13.41	189.01	2,512.2	-215.0	-238.8	287.0	0.00	0.00	0.00
2,600.0	13.41	189.01	2,560.9	-226.4	-240.6	298.3	0.00	0.00	0.00
2,650.0	13.41	189.01	2,609.5	-237.9	-242.5	309.7	0.00	0.00	0.00
2,700.0	13.41	189.01	2,658.1	-249.3	-244.3	321.0	0.00	0.00	0.00
2,750.0	13.41	189.01	2,706.8	-260.8	-246.1	332.3	0.00	0.00	0.00
2,800.0	13.41	189.01	2,755.4	-272.2	-247.9	343.7	0.00	0.00	0.00
2,850.0	13.41	189.01	2,804.0	-283.7	-249.7	355.0	0.00	0.00	0.00
2,900.0	13.41	189.01	2,852.7	-295.2	-251.5	366.3	0.00	0.00	0.00
2,950.0	13.41	189.01	2,901.3	-306.6	-253.4	377.7	0.00	0.00	0.00
3,000.0	13.41	189.01	2,950.0	-318.1	-255.2	389.0	0.00	0.00	0.00
3,050.0	13.41	189.01	2,998.6	-329.5	-257.0	400.3	0.00	0.00	0.00
3,100.0	13.41	189.01	3,047.2	-341.0	-258.8	411.7	0.00	0.00	0.00
3,150.0	13.41	189.01	3,095.9	-352.4	-260.6	423.0	0.00	0.00	0.00
3,200.0	13.41	189.01	3,144.5	-363.9	-262.4	434.3	0.00	0.00	0.00
3,250.0	13.41	189.01	3,193.1	-375.3	-264.3	445.7	0.00	0.00	0.00
3,300.0	13.41	189.01	3,241.8	-386.8	-266.1	457.0	0.00	0.00	0.00
3,350.0	13.41	189.01	3,290.4	-398.3	-267.9	468.3	0.00	0.00	0.00
3,400.0	13.41	189.01	3,339.0	-409.7	-269.7	479.7	0.00	0.00	0.00
3,450.0	13.41	189.01	3,387.7	-421.2	-271.5	491.0	0.00	0.00	0.00
3,500.0	13.41	189.01	3,436.3	-432.6	-273.3	502.3	0.00	0.00	0.00
3,550.0	13.41	189.01	3,484.9	-444.1	-275.2	513.7	0.00	0.00	0.00
3,600.0	13.41	189.01	3,533.6	-455.5	-277.0	525.0	0.00	0.00	0.00
3,650.0	13.41	189.01	3,582.2	-467.0	-278.8	536.3	0.00	0.00	0.00
3,700.0	13.41	189.01	3,630.9	-478.4	-280.6	547.7	0.00	0.00	0.00
3,750.0	13.41	189.01	3,679.5	-489.9	-282.4	559.0	0.00	0.00	0.00
3,800.0	13.41	189.01	3,728.1	-501.3	-284.2	570.3	0.00	0.00	0.00
3,850.0	13.41	189.01	3,776.8	-512.8	-286.1	581.7	0.00	0.00	0.00
3,900.0	13.41	189.01	3,825.4	-524.3	-287.9	593.0	0.00	0.00	0.00
3,950.0	13.41	189.01	3,874.0	-535.7	-289.7	604.3	0.00	0.00	0.00
4,000.0	13.41	189.01	3,922.7	-547.2	-291.5	615.7	0.00	0.00	0.00
4,050.0	13.41	189.01	3,971.3	-558.6	-293.3	627.0	0.00	0.00	0.00
4,100.0	13.41	189.01	4,019.9	-570.1	-295.1	638.3	0.00	0.00	0.00
4,150.0	13.41	189.01	4,068.6	-581.5	-297.0	649.7	0.00	0.00	0.00
4,200.0	13.41	189.01	4,117.2	-593.0	-298.8	661.0	0.00	0.00	0.00
4,250.0	13.41	189.01	4,165.9	-604.4	-300.6	672.3	0.00	0.00	0.00
4,300.0	13.41	189.01	4,214.5	-615.9	-302.4	683.7	0.00	0.00	0.00
4,350.0	13.41	189.01	4,263.1	-627.3	-304.2	695.0	0.00	0.00	0.00
4,400.0	13.41	189.01	4,311.8	-638.8	-306.0	706.3	0.00	0.00	0.00
4,450.0	13.41	189.01	4,360.4	-650.3	-307.9	717.7	0.00	0.00	0.00
4,500.0	13.41	189.01	4,409.0	-661.7	-309.7	729.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ehrlich State PC F36-32D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.36-T5N-R65W	MD Reference:	WELL @ 4716.0ft (Original Well Elev)
Site:	Ehrlich State PC F36-31D Pad Sec.36-T5N-R65W	North Reference:	True
Well:	Ehrlich State PC F36-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,550.0	13.41	189.01	4,457.7	-673.2	-311.5	740.3	0.00	0.00	0.00
4,600.0	13.41	189.01	4,506.3	-684.6	-313.3	751.7	0.00	0.00	0.00
4,650.0	13.41	189.01	4,554.9	-696.1	-315.1	763.0	0.00	0.00	0.00
4,700.0	13.41	189.01	4,603.6	-707.5	-316.9	774.3	0.00	0.00	0.00
4,750.0	13.41	189.01	4,652.2	-719.0	-318.8	785.7	0.00	0.00	0.00
4,800.0	13.41	189.01	4,700.9	-730.4	-320.6	797.0	0.00	0.00	0.00
4,850.0	13.41	189.01	4,749.5	-741.9	-322.4	808.3	0.00	0.00	0.00
4,900.0	13.41	189.01	4,798.1	-753.4	-324.2	819.7	0.00	0.00	0.00
4,950.0	13.41	189.01	4,846.8	-764.8	-326.0	831.0	0.00	0.00	0.00
5,000.0	13.41	189.01	4,895.4	-776.3	-327.8	842.3	0.00	0.00	0.00
5,050.0	13.41	189.01	4,944.0	-787.7	-329.7	853.7	0.00	0.00	0.00
5,100.0	13.41	189.01	4,992.7	-799.2	-331.5	865.0	0.00	0.00	0.00
5,144.0	13.41	189.01	5,035.5	-809.3	-333.1	875.0	0.00	0.00	0.00
5,150.0	13.29	189.01	5,041.3	-810.6	-333.3	876.3	2.00	-2.00	0.00
5,200.0	12.29	189.01	5,090.1	-821.6	-335.0	887.1	2.00	-2.00	0.00
5,250.0	11.29	189.01	5,139.0	-831.6	-336.6	897.1	2.00	-2.00	0.00
5,300.0	10.29	189.01	5,188.1	-840.9	-338.1	906.3	2.00	-2.00	0.00
5,350.0	9.29	189.01	5,237.4	-849.3	-339.4	914.6	2.00	-2.00	0.00
5,400.0	8.29	189.01	5,286.8	-856.8	-340.6	922.0	2.00	-2.00	0.00
5,450.0	7.29	189.01	5,336.3	-863.5	-341.7	928.7	2.00	-2.00	0.00
5,500.0	6.29	189.01	5,386.0	-869.4	-342.6	934.4	2.00	-2.00	0.00
5,550.0	5.29	189.01	5,435.7	-874.4	-343.4	939.4	2.00	-2.00	0.00
5,600.0	4.29	189.01	5,485.6	-878.5	-344.1	943.5	2.00	-2.00	0.00
5,650.0	3.29	189.01	5,535.5	-881.8	-344.6	946.7	2.00	-2.00	0.00
5,700.0	2.29	189.01	5,585.4	-884.2	-345.0	949.1	2.00	-2.00	0.00
5,750.0	1.29	189.01	5,635.4	-885.7	-345.2	950.6	2.00	-2.00	0.00
5,800.0	0.29	189.01	5,685.4	-886.4	-345.3	951.3	2.00	-2.00	0.00
5,814.6	0.00	0.00	5,700.0	-886.4	-345.3	951.3	2.00	-2.00	0.00
5,850.0	0.00	0.00	5,735.4	-886.4	-345.3	951.3	0.00	0.00	0.00
5,900.0	0.00	0.00	5,785.4	-886.4	-345.3	951.3	0.00	0.00	0.00
5,950.0	0.00	0.00	5,835.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,885.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,050.0	0.00	0.00	5,935.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,100.0	0.00	0.00	5,985.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,150.0	0.00	0.00	6,035.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,085.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,250.0	0.00	0.00	6,135.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,300.0	0.00	0.00	6,185.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,350.0	0.00	0.00	6,235.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,285.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,450.0	0.00	0.00	6,335.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,500.0	0.00	0.00	6,385.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,550.0	0.00	0.00	6,435.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,485.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,650.0	0.00	0.00	6,535.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,700.0	0.00	0.00	6,585.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,750.0	0.00	0.00	6,635.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,685.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,850.0	0.00	0.00	6,735.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,900.0	0.00	0.00	6,785.4	-886.4	-345.3	951.3	0.00	0.00	0.00
6,950.0	0.00	0.00	6,835.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,885.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,050.0	0.00	0.00	6,935.4	-886.4	-345.3	951.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ehrlich State PC F36-32D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.36-T5N-R65W	MD Reference:	WELL @ 4716.0ft (Original Well Elev)
Site:	Ehrlich State PC F36-31D Pad Sec.36-T5N-R65W	North Reference:	True
Well:	Ehrlich State PC F36-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,100.0	0.00	0.00	6,985.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,150.0	0.00	0.00	7,035.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,085.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,250.0	0.00	0.00	7,135.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,300.0	0.00	0.00	7,185.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,350.0	0.00	0.00	7,235.4	-886.4	-345.3	951.3	0.00	0.00	0.00
7,374.6	0.00	0.00	7,260.0	-886.4	-345.3	951.3	0.00	0.00	0.00

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Hardlines 76°N and 75°	0.00	0.00	7,261.0	-670.8	-679.8	1,373,639.55	3,244,980.68	40.355709	-104.620949
- plan misses by 398.0ft at 7374.6ft MD (7260.0 TVD, -886.4 N, -345.3 E)									
- Polygon									
Point 1			7,261.0	0.0	0.0	1,373,639.55	3,244,980.68		
Point 2			7,261.0	0.0	200.0	1,373,641.54	3,245,180.66		
Point 3			7,261.0	0.0	0.0	1,373,639.55	3,244,980.68		
Point 4			7,261.0	-200.0	0.0	1,373,439.57	3,244,982.67		
Target BHL 2570°FSL	0.00	0.00	5,000.0	-746.8	-604.8	1,373,564.29	3,245,056.46	40.355500	-104.620680
- plan misses by 278.3ft at 5105.1ft MD (4997.6 TVD, -800.3 N, -331.7 E)									
- Point									
Target Circle 2570°FS	0.00	0.00	6,776.0	-746.8	-604.8	1,373,564.29	3,245,056.46	40.355500	-104.620680
- plan misses by 294.6ft at 6890.6ft MD (6776.0 TVD, -886.4 N, -345.3 E)									
- Circle (radius 75.0)									
Sidetrack Target 2415	0.00	0.00	6,700.0	-886.4	-345.3	1,373,427.27	3,245,317.30	40.355117	-104.619749
- plan hits target									
- Circle (radius 75.0)									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.0	1,977.9	-99.3	-185.9	sidetrack pt