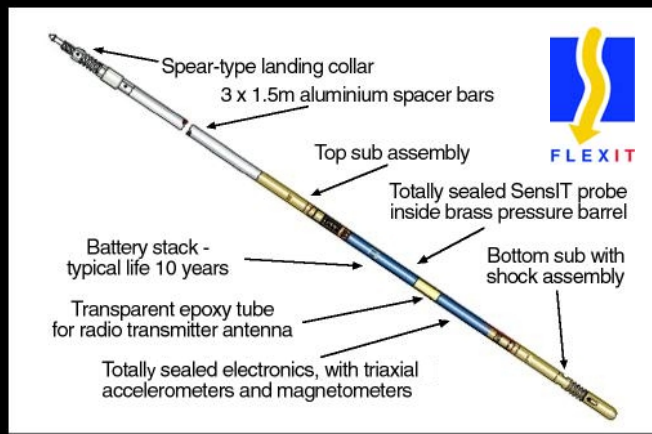


Interface with Borehole Angular Deviation Devices

- Winprof interfaces with the following borehole angular deviation devices:
- BORETRAK
- PULSAR (UK)
- FLEXIT (Sweden)
- DEVIBENCH



Boretrak™ Interface

- Winprof downloads data directly from the Boretrak CDU unit. The raw CDU and probe data are immediately available for editing:

The screenshot displays two overlapping windows of the Boretrak Raw Data software. The top window shows the 'CDU Data' tab with input fields for Rod Length (1.00), Azimuth (180.00), and Rod Left (0.00), and a table of CDU Time for five rods. The bottom window shows the 'Probe Data' tab with a table of 15 readings, each with Pitch, Roll, and Probe Time values. The right side of the bottom window contains navigation buttons and a status indicator.

CDU Data

Readings for Hole #1

Rod Length: 1.00
Azimuth: 180.00
Rod Left: 0.00

Rod #	CDU Time
1	181603
2	181607
3	181616
4	181623
5	181628

Probe Data

Reading #	Pitch	Roll	Probe Time
1	99.980	-30.950	180524
2	99.980	-30.950	180527
3	99.980	-30.940	180530
4	99.980	-30.950	180533
5	99.980	-30.950	180536
6	99.980	-30.940	180539
7	99.980	-30.950	180542
8	99.980	-30.950	180545
9	99.980	-30.950	180548
10	99.980	-30.940	180551
11	99.980	-30.940	180554
12	99.980	-30.950	180557
13	99.980	-30.950	180600
14	99.980	-30.950	180603
15	99.980	-30.940	180606

of Readings: 1947

Navigation buttons: Previous Hole, Next Hole, First Hole, Last Hole, Delete Row, OK, Cancel, Help

Boretrak™ Interface (cont)

- Raw data is interpreted to provide information for each measured borehole:

The screenshot displays the 'Boretrak Measurement Results' software window. The title bar reads 'Boretrak Measurement Results'. Below the title bar are four tabs: 'Borehole Data', 'Top View', 'Vertical Section', and 'Critical Section'. The main content area is titled 'Results for Boretrak Hole #2' and includes a 'Reference Azimuth 270°' label. It is divided into three sections: 'Borehole Collar', 'Desired', and 'Measured Deviation'. The 'Borehole Collar' section has input fields for Northing (0.00), Easting (0.00), and Elevation (0.00). The 'Desired' section has input fields for Hole Angle (0.00), Hole Depth (0.00), and Azimuth (180.00). The 'Measured Deviation' section has input fields for X (1.64), Y (-5.07), True Vertical Depth (11.84), Hole Depth (13.00), and Final Azimuth (162.13). Below these sections is a table with 10 columns: Rod #, TDepth, Offset, Rod Depth, X, Y, Pitch, Roll, Dip, and Azimuth. The table contains 5 rows of data. To the right of the table is a vertical toolbar with buttons for 'Previous', 'Next', 'First', 'Last', 'Print', 'Report', 'Recalculate', and 'Redraw'. The 'Redraw' button is currently active, indicated by a pencil icon.

Boretrak Measurement Results

Borehole Data | Top View | Vertical Section | Critical Section

Results for Boretrak Hole #2

Reference Azimuth 270°

Borehole Collar

Northing: 0.00
Easting: 0.00
Elevation: 0.00

Desired

Hole Angle: 0.00
Hole Depth: 0.00
Azimuth: 180.00

Measured Deviation

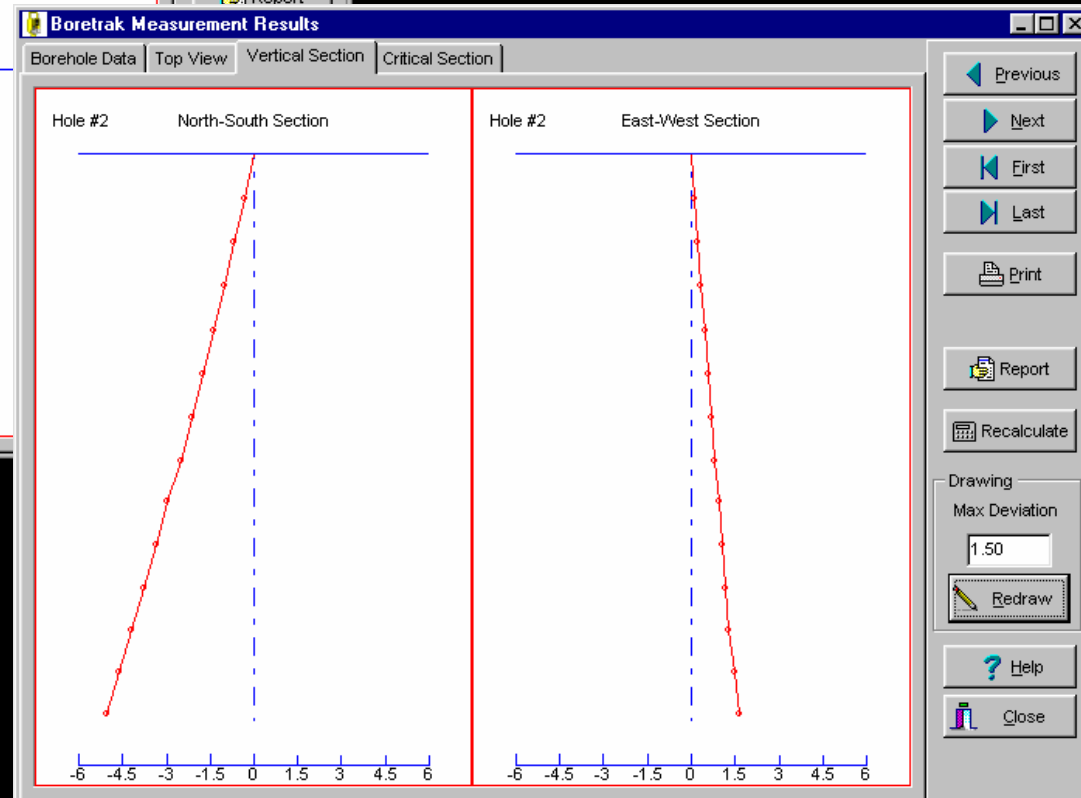
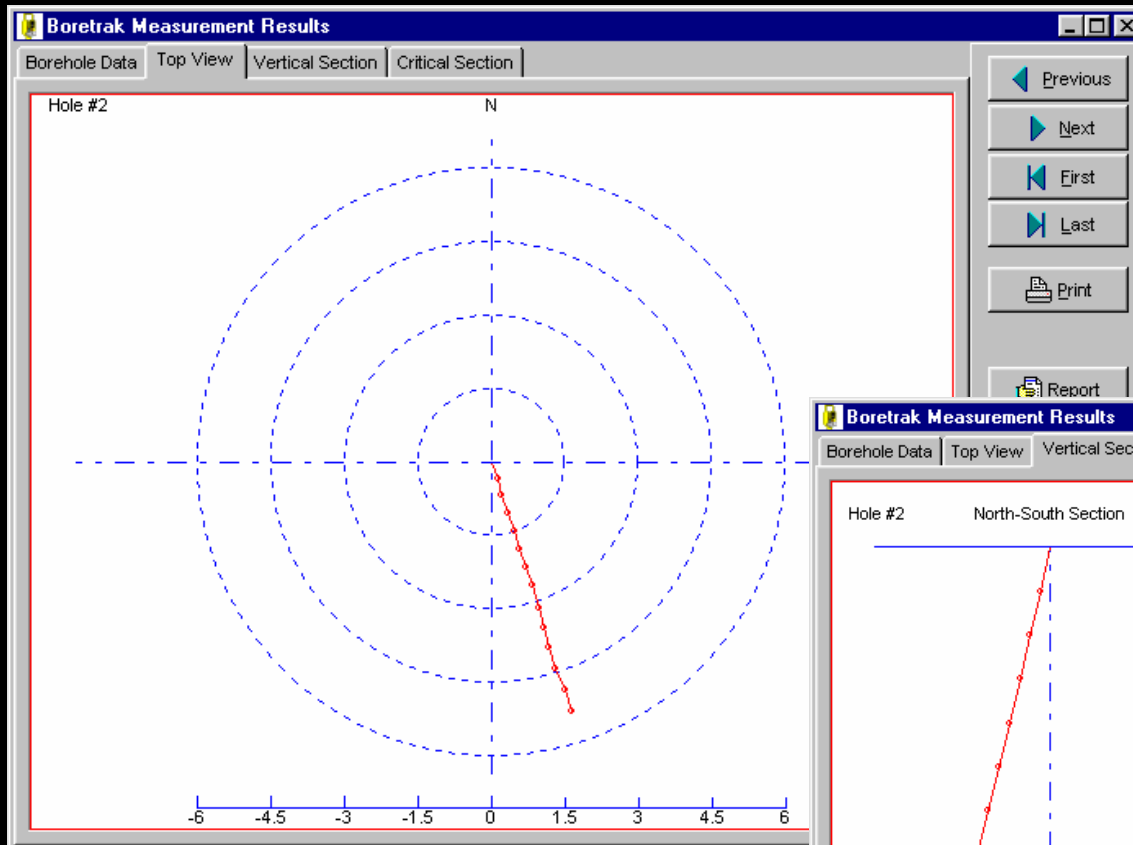
X: 1.64 Y: -5.07
True Vertical Depth: 11.84
Hole Depth: 13.00
Final Azimuth: 162.13

Rod #	TDepth	Offset	Rod Depth	X	Y	Pitch	Roll	Dip	Azimuth
1	0.937	0.326	1.000	0.123	-0.326	-19.040	7.460	19.216	159.383
2	1.870	0.676	2.000	0.209	-0.676	-20.460	5.280	19.800	166.144
3	2.799	1.031	3.000	0.318	-1.031	-20.780	6.690	20.361	162.933
4	3.722	1.391	4.000	0.455	-1.391	-21.110	8.470	21.081	159.117
		1.754	5.000	0.583	-1.754	-21.290	7.880	21.052	160.617
				0.712	-2.123	-21.680	7.980	21.370	160.750

Previous | Next | First | Last | Print | Report | Recalculate | Redraw

Drawing: Max Deviation: 1.00

Boretrak™ Interface (cont)



Flexit Interface

FLEXIT Interface

Borehole Data | Top View | Vertical Section | Critical Section

Results for FLEXIT Profile # 200

Profile #200		Desired		Measured Deviation	
Northing	0.000	Drill Angle:	0	X:	0.014
Easting	0.000	Hole Depth:	0	Y:	-2.719
Elevation	0.000	Azimuth:	180	Actual Deviation:	2.72
				True Vertical Depth:	15.77
				Hole Depth:	16.00
				Final Azimuth:	169.8

	X (m)	Y (m)	True Depth (m)	Depth (m)	Inclination (°)	Azimuth (°)
▶	-0.03	-0.17	0.99	1.0000	-80.1000	190.0000
	-0.08	-0.71	3.94	4.0000	-79.6000	185.1000
	-0.12	-1.19	6.90	7.0000	-80.8000	185.4000
	-0.11	-1.73	9.85	10.0000	-79.6000	178.5000
	-0.07	-2.25	12.80	13.0000	-79.9000	175.8000
	0.01	-2.72	15.77	16.0000	-80.9000	169.8000
*						

All Dimensions in m

Previous

Next

First

Last

Print


Report

Recalculate

Drawing

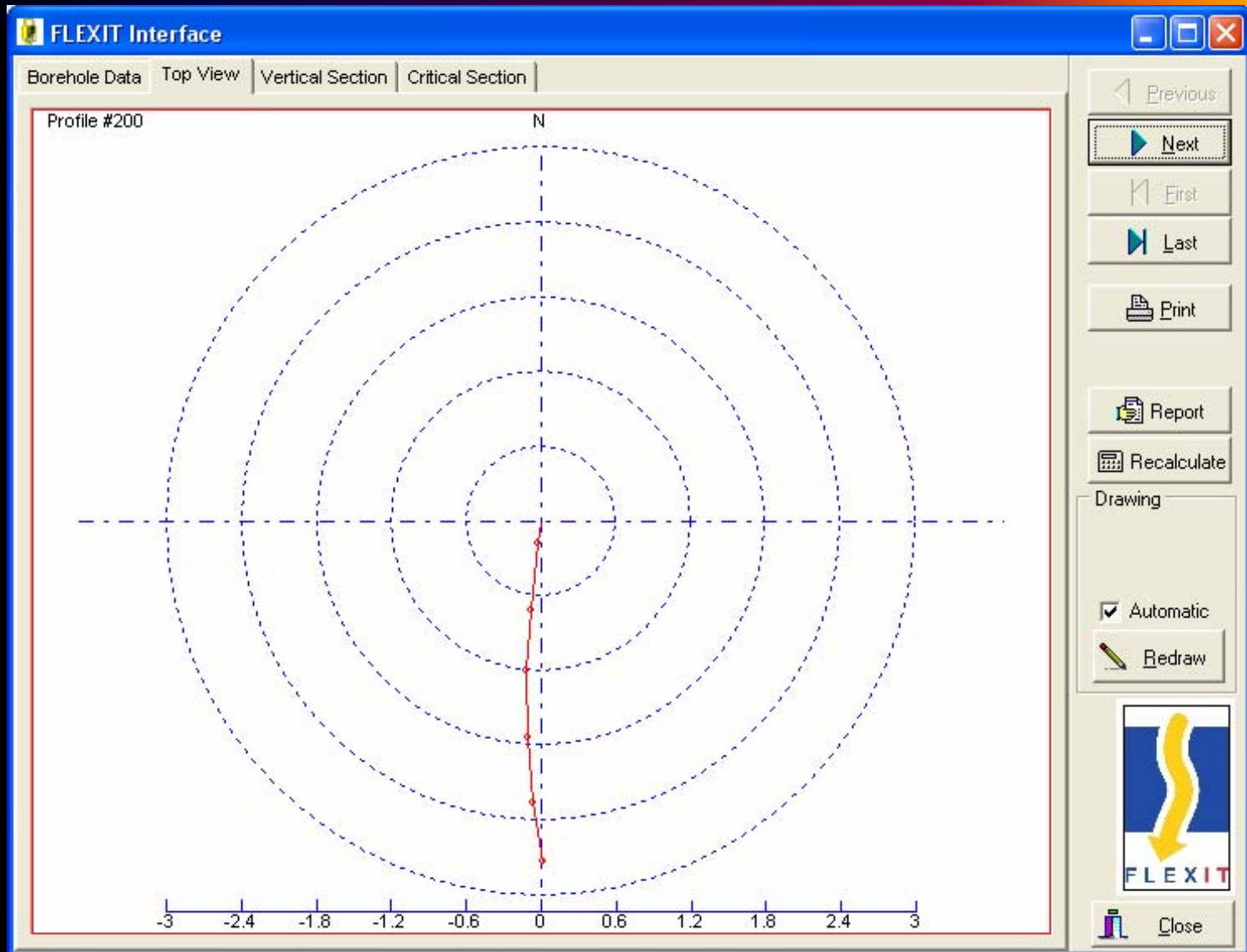
Automatic

Redraw



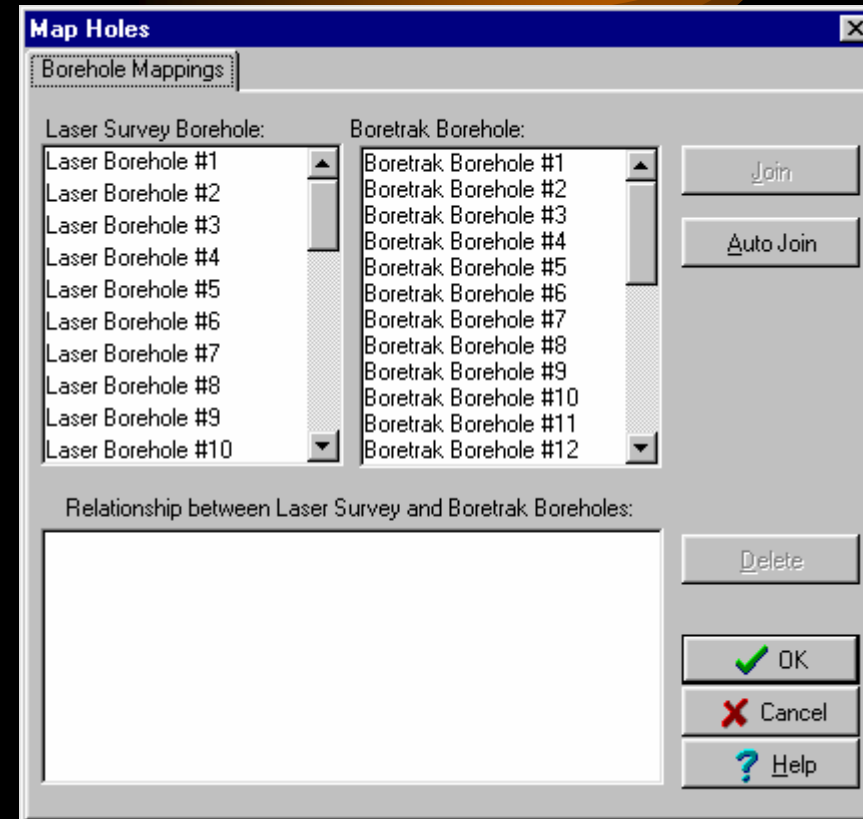
Close

Flexit Interface (cont)

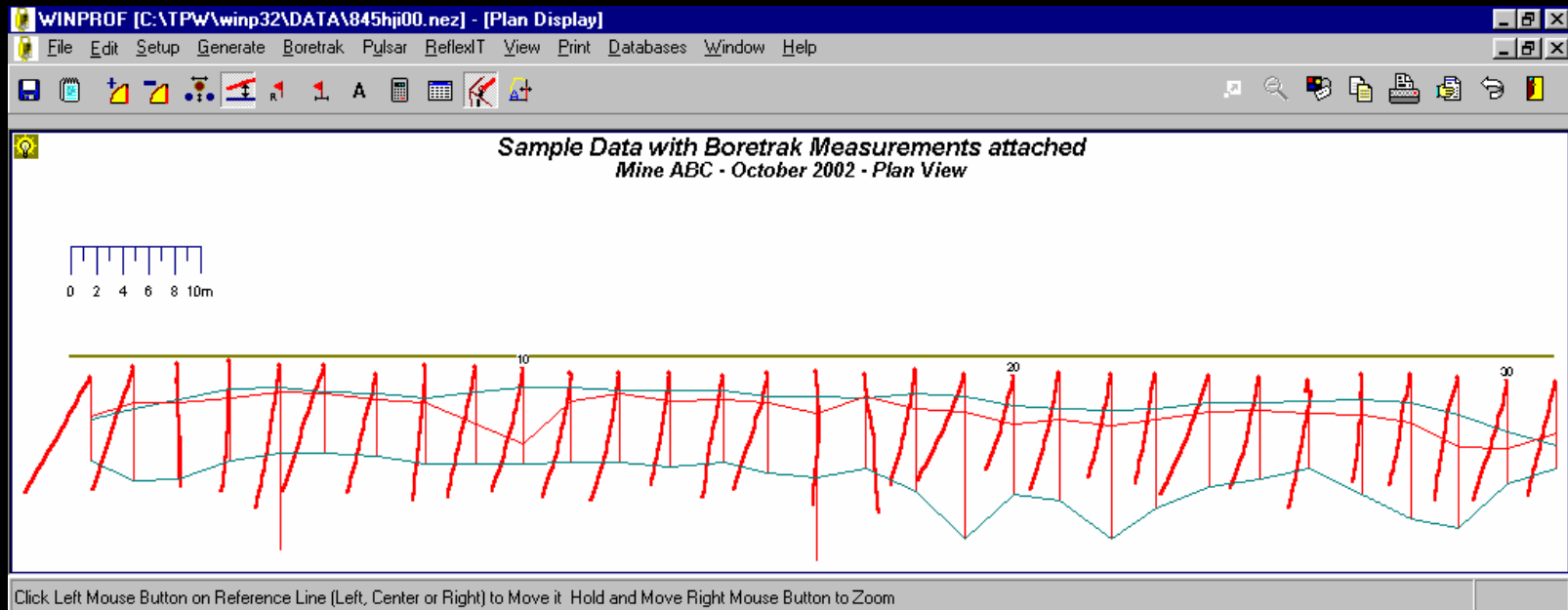
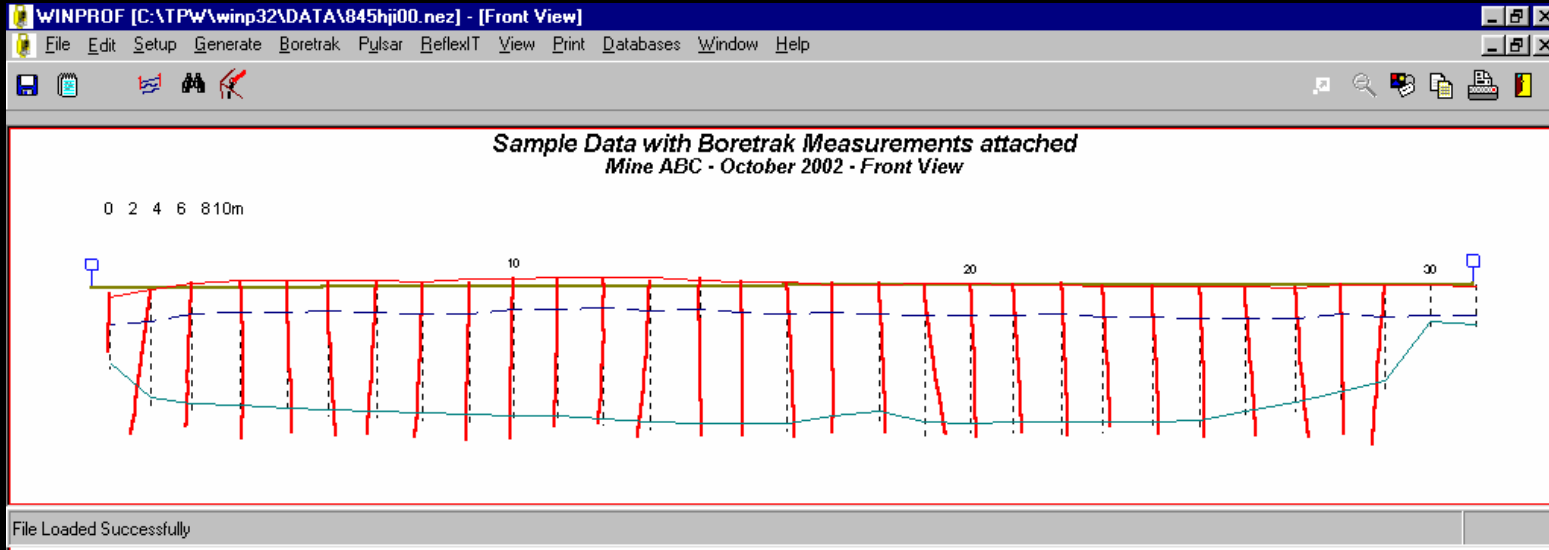


Angular Deviation Measurements Interface

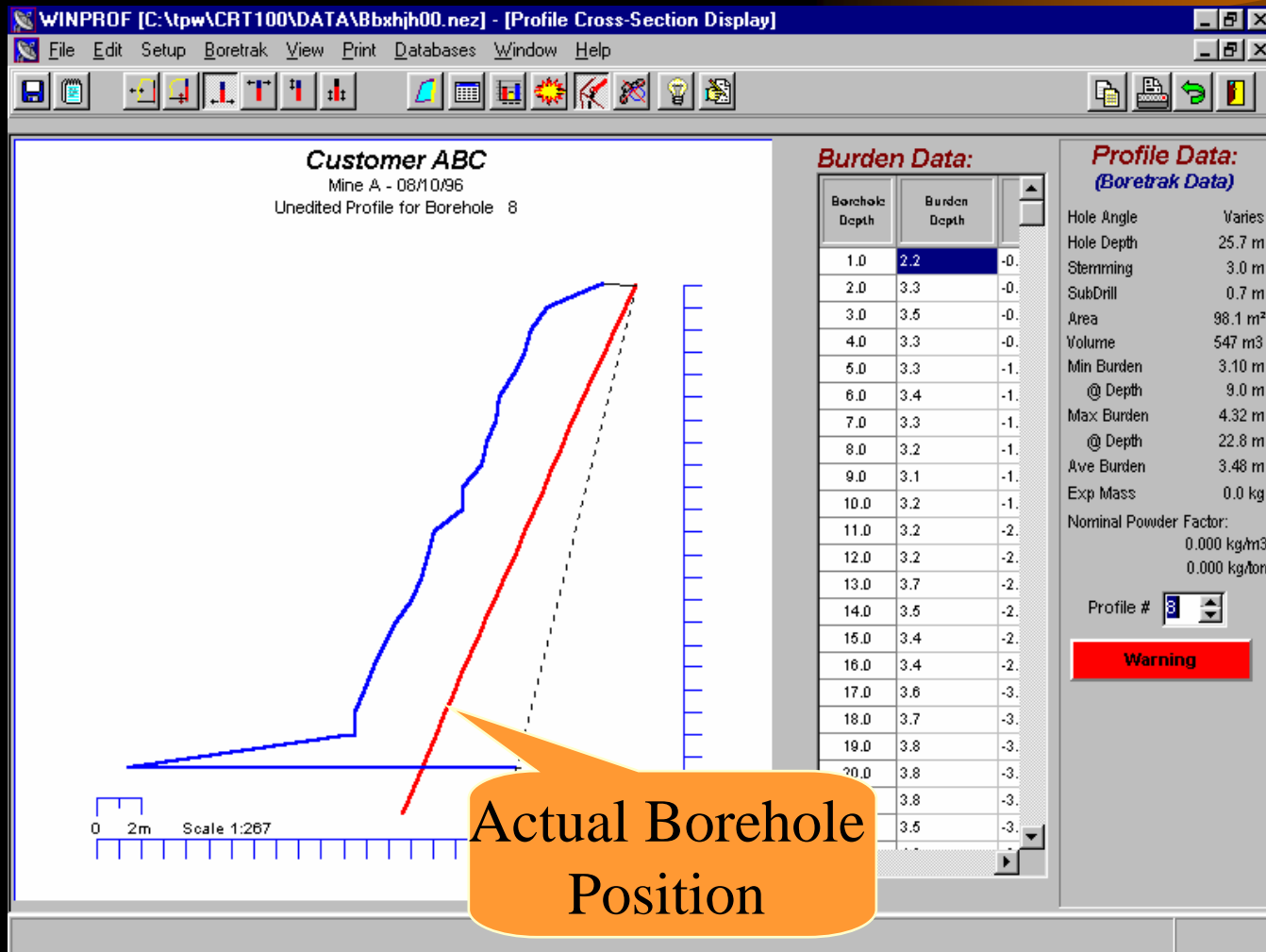
- Borehole angular deviation measurements can be linked to the survey data, automatically, or one at a time.
- Once the two measurements are linked, all burden calculations will be based on the actual measurements as shown in the following screens.



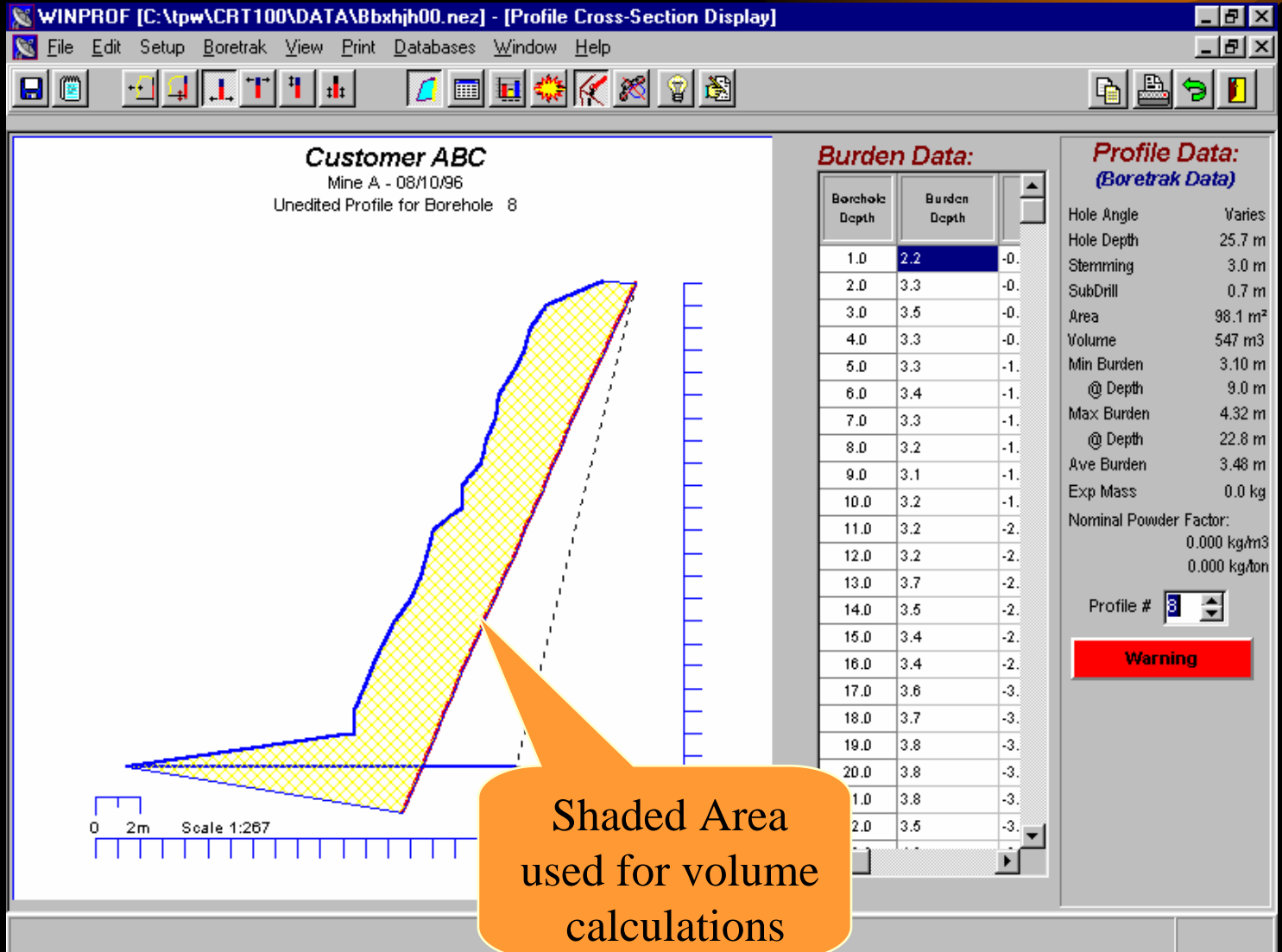
3D Survey with Borehole Angular Measurements attached



Borehole Deviation



Calculations based on Actual (true) Hole Position



Boretrak/Pulsar/Flexit Reports (Angular Deviation Measurements Report)

Boretrak Summary Report

Customer: Westspreng GMBH
 Survey Location: Germary
 Face Name: F01
 Station ID: P01
 Operator: Luis Valentim,
 Survey Date: 08/10/96

Hole #	Hole Coordinates			Measured Deviation		True Vertical Depth	Actual Hole Depth	Design Hole Depth	Actual Final Azimuth	Desired Final Azimuth
	Northing	Easting	Elevation	x	y					
1	85.18	-1.12	11.15	5.020	8.882	22.156	24.400	5.686	29.5	180.0
2	85.18	-1.12	11.15	3.129	9.440	22.272	24.400	5.686	18.3	180.0
3	85.18	-1.12	11.15	-0.260	9.461	20.929	23.000	5.686	358.4	180.0
4	85.18	-1.12	11.15	0.735	10.100	23.931	26.000	5.686	4.2	180.0
5	85.18	-1.12	11.15	1.814	10.977	23.477	26.000	5.686	9.4	180.0
6	85.18	-1.12	11.15	3.241	9.653	22.807	25.000	5.686	18.6	180.0
7	85.18	-1.12	11.15	2.275	9.085	22.087	24.000	5.686	14.1	180.0
8	85.18	-1.12	11.15	0.943	10.342	23.495	25.700			
9	85.18	-1.12	11.15	2.201	9.983	21.923	24.200			
10	85.18	-1.12	11.15	2.406	9.570	23.494	25.500			
11	85.18	-1.12	11.15	2.187	9.614	23.363	25.400			
12	85.18	-1.12	11.15	2.263	9.826	22.311	24.500			
13	85.18	-1.12	11.15	1.417	8.578	20.202	22.000			
14	85.18	-1.12	11.15	1.665	9.255	20.948	23.000			
15	85.18	-1.12	11.15	2.604	8.941	21.015	23.000			
16	85.18	-1.12	11.15	0.323	10.348	22.063	24.400			

Boretrak Report

Results for Boretrak Hole # 1 (Laser Borehole # 1)

Customer: Westspreng GMBH
 Survey Location: Germary
 Face Name: F01
 Station ID: P01
 Operator: Luis Valentim,
 Survey Date: 08/10/96

Measured Deviation: X (m): 5.02
 Y (m): 8.88
 Actual True Vertical Depth = 22.16
 Hole Depth 24.40
 Desired Hole Depth: 5.69
 Final Azimuth 29.48
 Borehole #1 Collar
 Northing 85.18
 Easting -1.12
 Elevation 11.15

Rod #	TDepth	Offset	Rod Depth	X	Y	Pitch	Roll	Dip	Azimuth
1	0.910	-0.351	1.000	0.222	0.351	-12.820	21.110	22.558	32.3
2	1.818	-0.711	2.000	0.436	0.711	-12.360	21.610	22.715	30.8
3	2.709	-1.118	3.000	0.634	1.118	-11.410	24.550	24.360	25.9
4	3.606	-1.510	4.000	0.842	1.510	-11.990	23.630	23.928	27.9
5	4.504	-1.895	5.000	1.052	1.895	-12.150	23.200	23.696	28.7
6	5.401	-2.280	6.000	1.272	2.280	-12.690	23.200	23.878	29.8
7	6.299	-2.669	7.000	1.476	2.669	-11.780	23.450	23.741	27.7
8	7.199	-3.055	8.000	1.678	3.055	-11.690	23.200	23.545	27.7