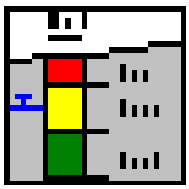
Programme for the presentation of bore profiles, well casings, dynamic penetration tests, cone penetration tests, data histograms and tables

GGU-STRATIG



Last edited: January 2000

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1 Preface

The GGU-STRATIG programme allows the presentation of bore profiles and dynamic penetration tests according to German Standard DIN 4023. Additionally, data histograms, tables, well casings (in the classical, as well as in a simplified, very space saving, manner) and cone penetration tests can be presented and edited. Data input is in accordance with WINDOWS conventions and can therefore be learned almost without the use of a user-manual. Graphic output supports the True-type fonts supplied with WINDOWS, so that an excellent layout is guaranteed. Colour output and Bitmap graphics are supported. For refinement of graphics, DXF files may also be imported (please read the Mini-CAD manual).
The following system minimum is needed to use the programme:

- MS-DOS compatible computer (Pentium I or higher processor),
- WINDOWS 95, WINDOWS98 and WINDOWS NT (32 bit version)

The core of the programme system has been in use for approx. 12 years. It has been successfully used in a large number of projects by renowned consultancies and institutes, and has been thoroughly tested. No errors have been discovered. Nevertheless, a liability for completeness and correctness of the programme system and the user-manual, and for damage resulting from any incompleteness, cannot be given.

2 Programme concept

The overall view of the graphical presentation consists mainly of two parts:

- Part 1 contains input for the bore profiles, well casings, data histograms, tables and dynamic penetration tests (so-called profile data).
- Part 2 contains input for a page header, e.g. your company logo (so-called header data).

You can save profile and header data separately in different files. You can also save the header data together with the profile data in the same file.
The image created has four cutting edges and is 29.7 cm high and 42 cm wide (A3) when the programme starts. Image height and width can be edited as wished. The header data are displayed at the right image edge. Between the cutting edges, a frame is displayed with a default distance to the left edge (filing edge) of 2.5 cm and to the other edges of 0.8 cm. Alterations are possible within wide limits. Within this frame the bore profiles, dynamic penetration tests, data histograms etc. will be drawn. Per page, you can display 30 bore profiles and wells, 30 dynamic penetration tests, 30 data histograms and 10 CPT's. Bore profiles, dynamic penetration tests and data histograms can be positioned in any x and y direction. Additionally to the position in x direction, you must enter an absolute height (e.g. m AD) for every presentation type. Together with the input for height position (e.g. in m AD) of the lower image edge, as well as a height and length scale, the bore profiles will be presented with the correct height and length orientation.

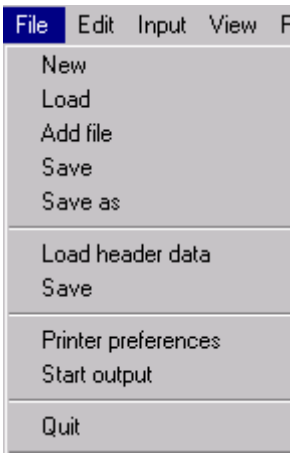
After starting the programme you will see a start-up screen consisting of an empty A3 page. At the top window edge, seven **menus** are present:

- File
- Edit
- Input
- View
- Preferences
- Horizon polygons
- ?

After clicking on a menu, the so-called menu items roll down, from which you can then reach all programme functions.
The programme works on the principle of "What you see is what you get". This means that the screen presentation represents, on the whole, that which you will see on your printer. With a consequent realisation of this principle, the screen would have to be refreshed after every alteration you make. For reasons of efficiency, and as this can take several seconds for complex screen contents, the GGU- STRATIG screen is not refreshed after every alteration. If you would like to refresh the screen contents, you may press either the [F2] key, or the [Esc] key. The [Esc] key will also give an overview.

3 File menu

This menu has a total of ten selectable menu items and four descriptive entries.



3.1 Menu item "File / New"

With the first menu item, "New", you can delete all current input for bore profiles, dynamic penetration tests, data histograms etc., together with the header data. You will have an empty page, and can then enter a new profile.

3.2 Menu item "File / Load"

Using the menu item "Load", you can load a previous file with information on bore profiles, dynamic penetration tests, data histograms etc. into the system, which can then be edited. This file must have been created (e.g. in a previous "sitting") using the GGU-STRATIG programme or the GGU- STRATIG programme (presentation of bore logs). On the supplied disk a file by the name of EXAMPLE.BOP can be found, which contains an example data set. The "Load" menu item will usually be selected for editing previously saved profiles etc.
After selecting this menu a file requester box will open. Here you can select the appropriate file name by mouse-click, or by typing the name. Then click in the "OK" field. The contents of the file will then be read and displayed. After selecting "Cancel" the file requester will disappear without having loaded a file.

3.3 Menu item "File / Add"

With this menu item you can add a previously saved GGU- STRATIG file to the file which is currently opened and displayed on the screen. The data from the added file will be added to the data currently in the system. It is therefore possible to mix several previous data sets using this menu item. This is interesting if, e.g., you have already created a bore profile and would like to add it to the current drawing. After selecting this menu item the file requester box will open. Here you can select the appropriate file name by mouse-click, or by typing the name. Then click in the "OK" field. The contents of the file will then be read and displayed. After selecting "Cancel" the file requester box will disappear without having added a file.
When adding profile data, the preferences for the general view (height of lower page edge, scales in x and y direction, page format) are taken from the added file.

3.4 Menu item "Save file"

You can save data entered or edited during programme use into a file, in order to have them available at a later date, or to archive them. If you select "Save", the file will be saved without further questioning with the name of the currently opened file.

3.5 Menu item "Save file as"

You can save data entered during programme use to an existing file, or as a new file, i.e. under a different file name. For reasons of clarity, it makes sense to use ".BOP" as file suffix, as this is the suffix used in the file requester box for the menu item "Load". If you do not enter a suffix when saving, ".BOP" will be used automatically.

3.6 Menu item "File / Load header data"

This menu item allows loading of a header which contains, e.g., your company logo. All header data (text, lines, bitmaps) are aligned with the right page edge. When the page width is altered, the header data wander automatically by the given amount to the left or right. This greatly simplifies management of header data. This menu item can also be reached via the menu item "CAD for header data" (see further below). The default file suffix is ".KPF". Otherwise, the information for the menu item *"Load" Profile data* is valid.

3.7 Menu item "File / Save header data"

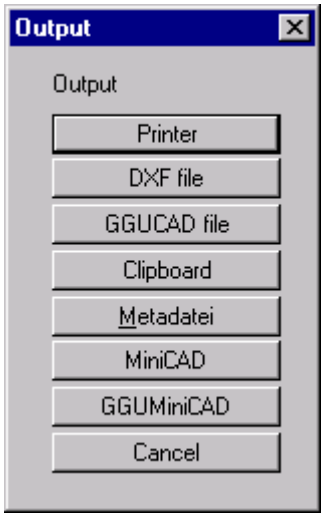
If you have edited the header data, you can save these alterations using this menu item, in order to have them available again for different files, e.g. in different GGU programmes. This menu item can also be reached via the menu item "CAD for header data" (see further below).

3.8 Menu item "File / Printer preferences"

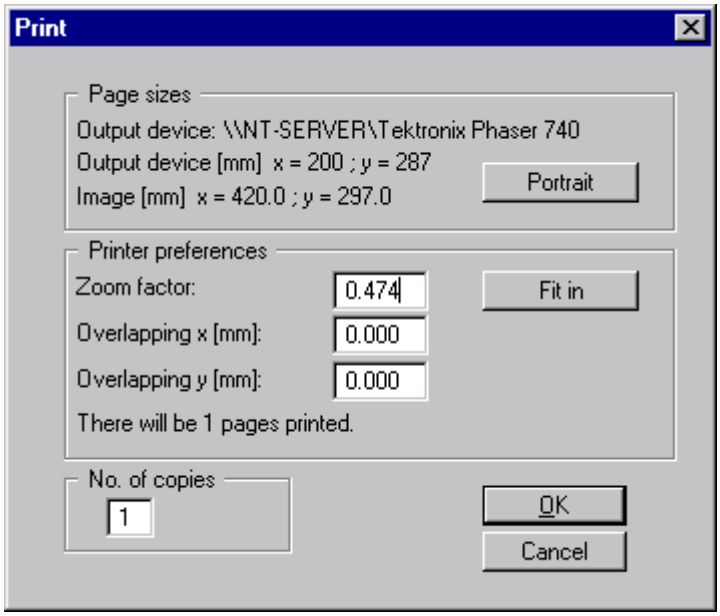
You can edit printer preferences (e.g. swap between portrait and landscape) or change the printer in accordance with WINDOWS conventions.

3.9 Menu item "File / Start output"

The following dialogue box appears:



"Printer"
allows graphic output of the current screen contents to the WINDOWS standard printer or to a different printer, selected in the menu option "Printer preferences". For direct output, the following dialogue box appears:



In the upper part of the dialogue box, the maximum dimensions which the printer can accept are given. Below this, the dimensions of the image to be printed are given. If the image is larger than the output format of the printer, the image will be printed to several pages (in the above example, 1). In order to be better able to re-connect the image later, the possibility of entering an overlap for each page, in x and y direction, is given. Alternatively, you also have the possibility of selecting a smaller zoom factor, ensuring output to one page. The **“Fit in“** button will automatically calculate this zoom factor. Further, you may enter the number of copies to be printed.

"DXF file / GGUCAD file"

allows output of the current screen contents to a file, in order to further process the image in a different programme (e.g. AutoCAD, GGUCAD). AutoCAD output is in the so-called DXF format, which is standardised. With reference to the DXF format, please see the note in the menu “View“, menu item “WINDOWS font”. Bitmap graphics and colour fill will not be exported to AutoCAD.

“Clipboard“

The current screen contents are copied to the WINDOWS clipboard. From there, they can be imported into other WINDOWS programmes for further editing, e.g. into a word processor. Use of the Metafile format guarantees the best possible quality when transferring graphics.

"WMF file"

The current screen contents can be saved in the Windows Metafile format.

"MiniCAD"

The current screen contents are saved in MiniCAD format and can then be loaded and further processed in all GGU programmes using the MiniCAD system.

"GGUMiniCAD"

Allows output of the current screen contents to a file, in order to be edited in the GGUMiniCAD programme.

"Cancel"

The menu item **"Start"** is cancelled.

3.10 Menu item "File / Quit"

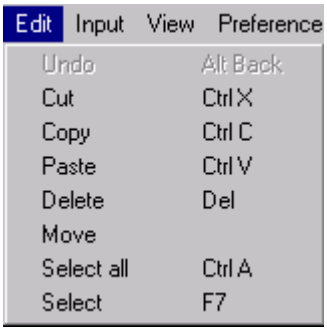
After a safety request, you can quit the programme.

3.11 Menu "File / 1, 2, 3, 4"

At the bottom of the drop-down window, you see the last four edited files. You can load these by clicking with the left mouse button, saving you the use of „File / Load".

4 Edit menu

After clicking on this menu item the following box appears:



In order to use the following menu item you must either "Select" an object, or "Select all".

4.1 Menu item "Edit / Undo"

Here you can undo all actions carried out with the following points, such as cutting and deleting.

4.2 Menu item "Edit / Cut"

After "Selecting" or "Marking all" you can cut out individual objects, or all objects, and thus remove them.

4.3 Menu item "Edit / Copy"

The selected objects are copied to the clipboard and can then be pasted into, e.g., another GGU-STRATIG file.

4.4 Menu item "Edit / Paste"

A previously marked object, which was "Cut" or "Copied" to the clipboard can be pasted to a different GGU-STRATIG file.

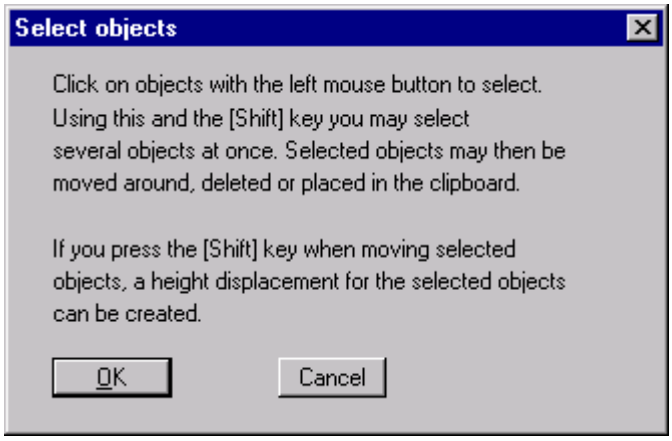
4.5 Menu item "Edit / Delete"

A previously marked object can be deleted.

4.6 Menu item "Edit / Mark all"

You can mark all objects in the file.

4.7 Menu item "Edit / Select"

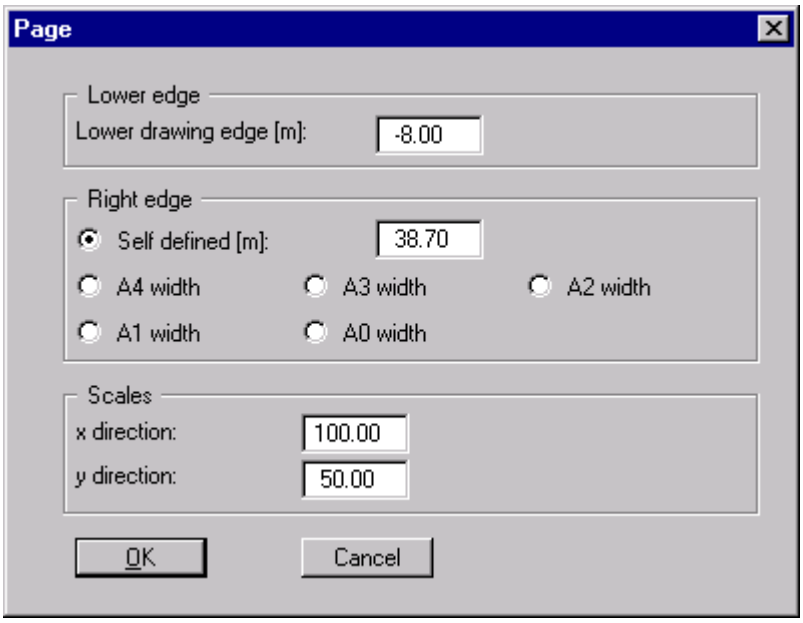


5 Input menu

Using the "Input" menu, you can edit or enter data for bore profiles, dynamic penetration tests, data histograms and all other possible graphical presentations.

5.1 Menu item "Input / Overall view"

In the main, with the menu item "Overall view", you can edit the page size and the height orientation of the bore profiles, dynamic penetration tests etc. After clicking on this menu item you will see the following dialogue window:



You can now edit the four given numbers. With the "Right margin" entry you can edit the length of the page. If you have selected the number 100 for "Scale in x direction" (scale 1: 100), this means that an input of, e.g., 60.0 in "Right margin" will give you a drawing within the frame which is 60 cm long. It usually makes sense

when using the programme, to use a scale factor of 100 for the x direction, as all "meter input" for the x direction will then correspond to centimetres on the page. In order to achieve an A3 presentation, with the programme default left filing edge of 2.5 cm and right edge distance of 0.8 cm, you must select a value of 38.7.

38.7 + 2.5 + 0.8 = 42.0 cm = A 3

For A4 presentation the value of 17.7 should be used. These values are valid for an x direction scale factor of 100.

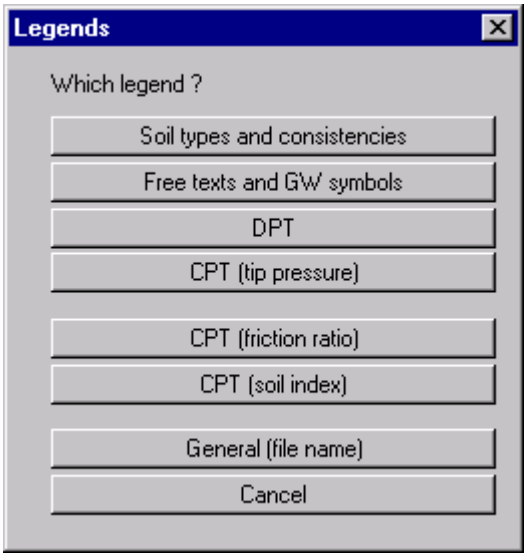
With the "Lower drawing edge", you define the height orientation of the bore profiles, dynamic penetration tests etc., in the drawing. If, e.g., you have entered a 5 m deep bore profile with a height of 39.85 [m AD] and a y scale of 1 : 50, then this value must be approx. 31.5 [m AD] in order to have the bore profile presented height centred for an A4 drawing. If you enter a too high or too low value for the lower drawing edge (here e.g. 5.5 m AD), the bore profile will wander up or down, out of the presentation area of the drawing, and will no longer be visible on the screen! In this case, alter the height position of the lower drawing edge correspondingly, until your profile reappears in the drawing.

- With the scale in y direction (= vertical direction) you can influence, amongst others, the length of the bore profiles, dynamic penetration tests and data histograms in the image to be drawn.

With reference to the decisive input values for "Lower drawing edge" and "Scale y direction", please also see the menu items "Input / Bore profile" and "Input / DPT." By clicking in the "OK" box, input or alterations will be accepted, and by clicking in the "Cancel" box they will be rejected, and the dialogue box removed from the screen.

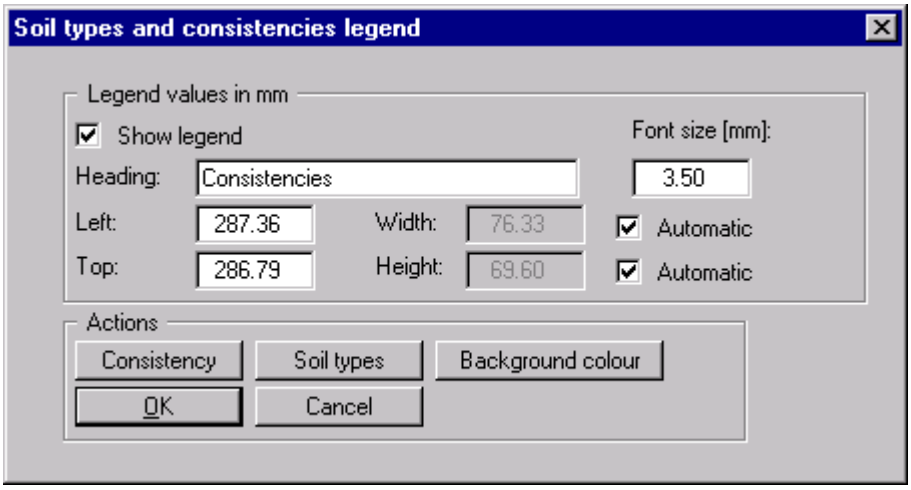
5.2 Menu item "Input / Legends"

Using this menu item you can select from various legends for the presentations you have entered.

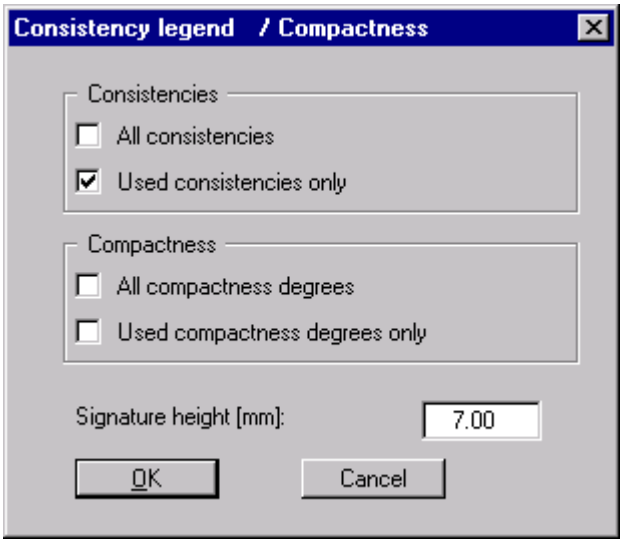


After selecting a legend you can define the desired layout (size, position etc.) in the dialogue box which appears. Particulars for values with an effect on the legend presentation are given in further dialogue boxes.

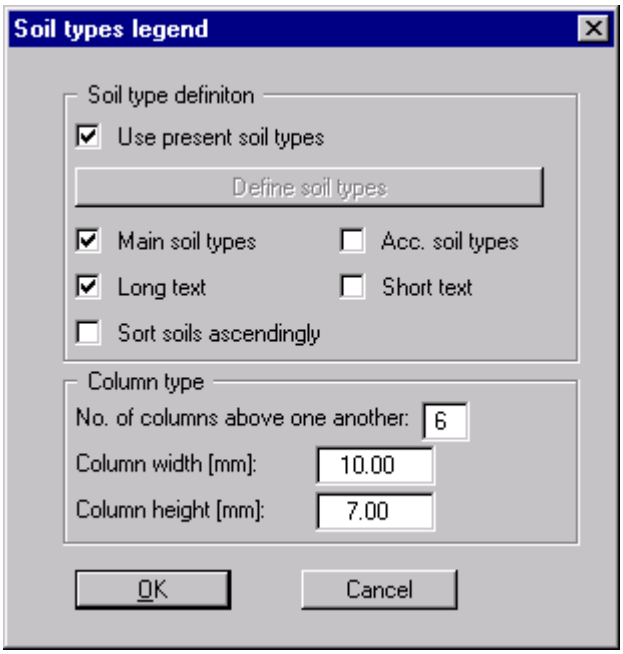
5.2.1 Soil types and consistencies legend



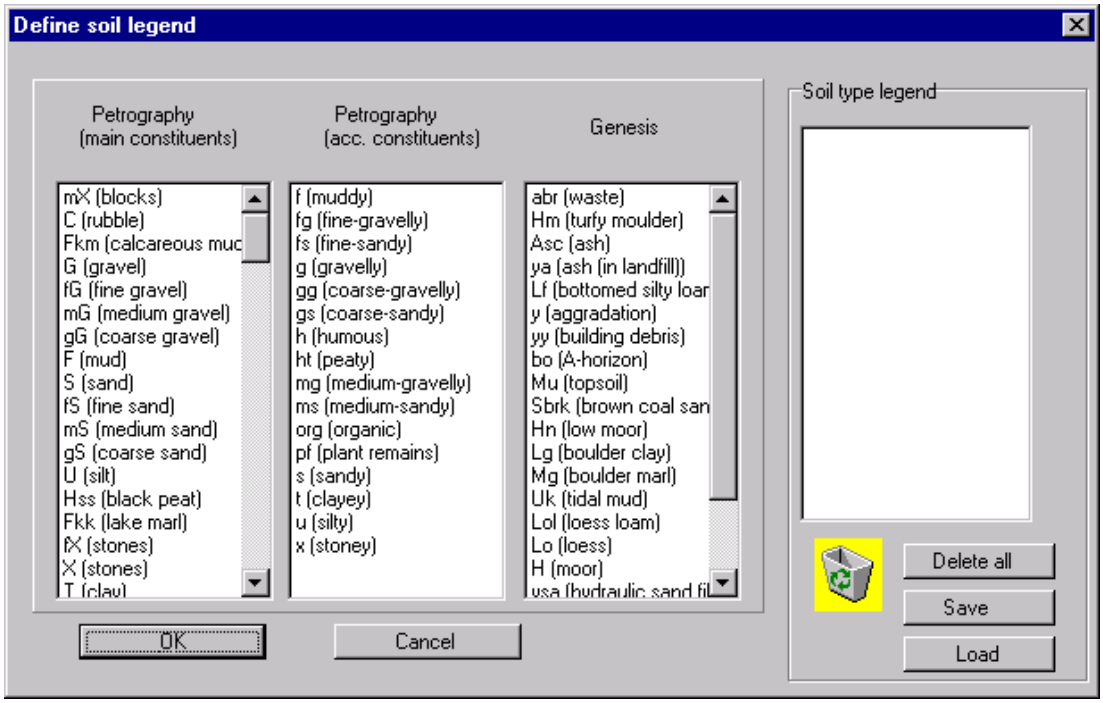
With this dialogue box you can achieve presentation of a legend for consistencies and/or soil types. The “Show legend“ switch determines whether or not a legend is displayed in the drawing. Which descriptions appear in the legend (consistencies and/or soil types), can be determined in the dialogue boxes which appear when you click on the “Consistencies” “Soil types” buttons.
The legend position values to be entered into the dialogue box [in mm] have as their origin the top left corner of the drawing. It is simpler to use the menu item „Input / Move objects“ to position the legends on the page, than adjusting these numerical values. You can define the legend size, or have it determined automatically by the programme. Definition of a “background colour“ for the legend is also possible
Using the “Consistencies“ action switch you call up the following box:



With the two switches, you can determine which consistencies are to be described in the legend. If neither of the two switches are activated, no consistencies will be shown in the legend. Moreover, in this box you can determine with what size the signatures are to be displayed.
If you click on the **"Soil types"** switch, the following box appears:

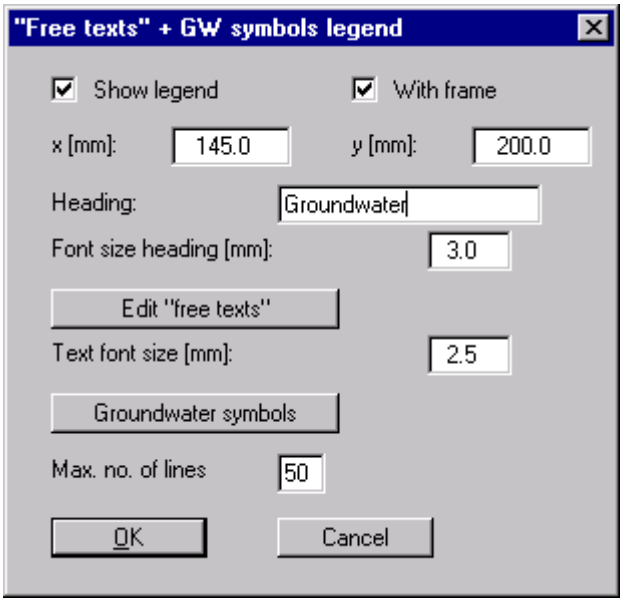


You can define the soil types to appear in the legend, or have them defined automatically by the programme. For automatic definition, the “Use present soil types“ switch is activated, and all currently displayed soil types will be described. If you would like to use the same legend for several profiles, even when not all soil types are present in each individual profile you can, after switching off „Use present soil types“, click on the „Define soil types” button. You will then see a dialogue box, in which you can define your own soil types list, which will then appear in the legend.

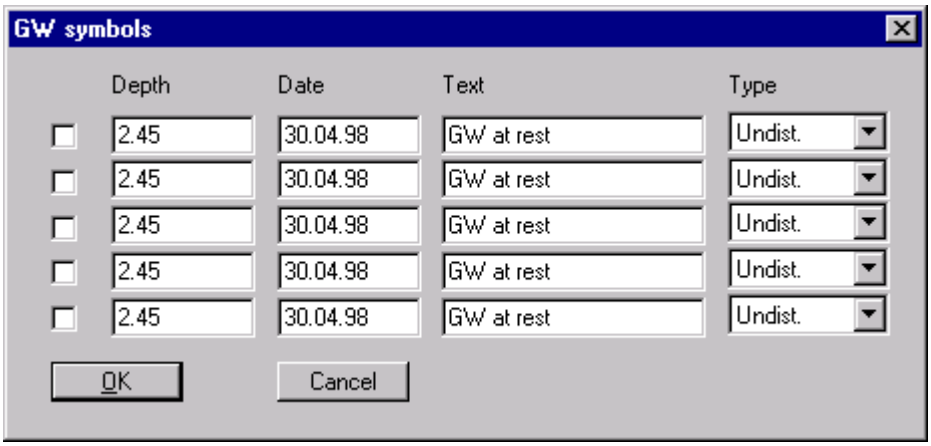


Each combination can be saved in a file with the “.BOA“ suffix and then be loaded into any other profile.
With the “Main soil types” and “Acc. Soil types” switches, you can determine which soil types are to be displayed in the legend. If neither of the two switches are marked, no soil types will be shown in the legend. The “Long text” and “Short text” switches determine with which text the legend entries are to be labelled (see dialogue box “Bore profile / Horizons”). Further input fields determine the arrangement and size of the legend entries.

5.2.2 Free texts and GW symbols legend

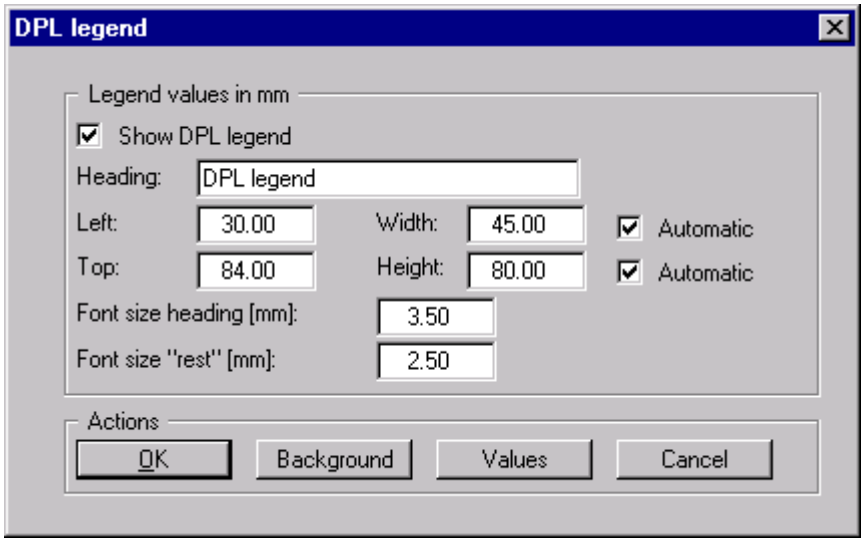


By selecting and activating this legend you can have user-defined texts displayed. To do this, click on “Edit “free texts”” and enter the text in the editor window. You can save this to a TXT file or load a previous text file. Upon closing the window, the text entered will be used. You can adjust the text sizes for legend headings and texts in the appropriate input fields.
If you would like to have the groundwater symbols explained, click on the “Groundwater symbols” button. You will then see the following dialogue box:

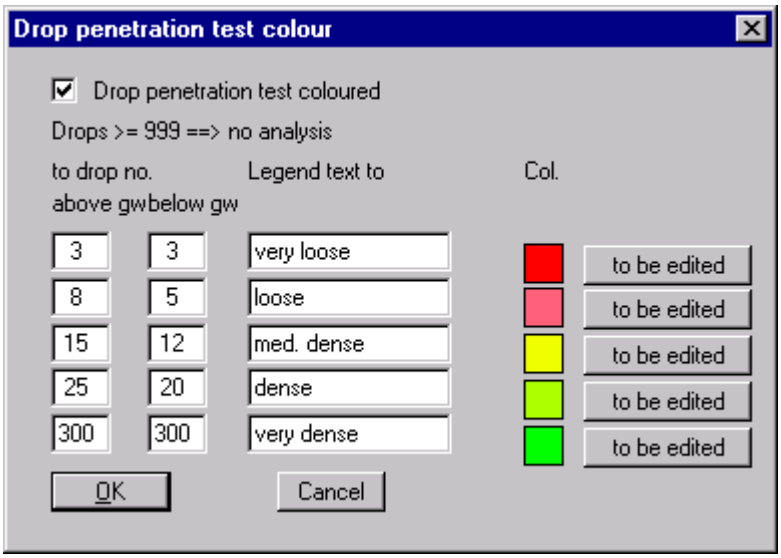


You can activate one or more rows. The various GW symbols can be selected at the end of each row. Now you need merely adjust the labelling for the selected GW symbol.

5.2.3 Dynamic penetration test legend



With this dialogue box you can achieve presentation of a legend for dynamic penetration tests. The „Show DPL legend“ switch determines whether or not a legend is displayed in the drawing. The legend position values to be entered into the dialogue box [in mm] have as their origin the top left corner of the drawing. It is simpler to use the menu item „Input / Move objects“ to position the legends on the page, than adjusting these numerical values.
You can define the legend size, or have it determined automatically by the programme. Definition of a „Background colour“ for the legend is also possible. Using the „Values“ button you call up the following dialogue box:



If the “Drop penetration test coloured“ switch is activated, the test diagrams will be displayed coloured. Each colour, which can be edited with the “edit“ button, is taken from the blow count in the diagram. The colour boundaries are determined by the values for “to drop no.”. Boundary values can be given for drop numbers above or below groundwater level (see “Input / Drop penetration test”). The text after this will

be entered into the legend with the colour. Imaginable would be a text such as “non-load bearing”, “slightly load bearing”, etc.

5.2.4 Cone penetration test (tip pressure) legend

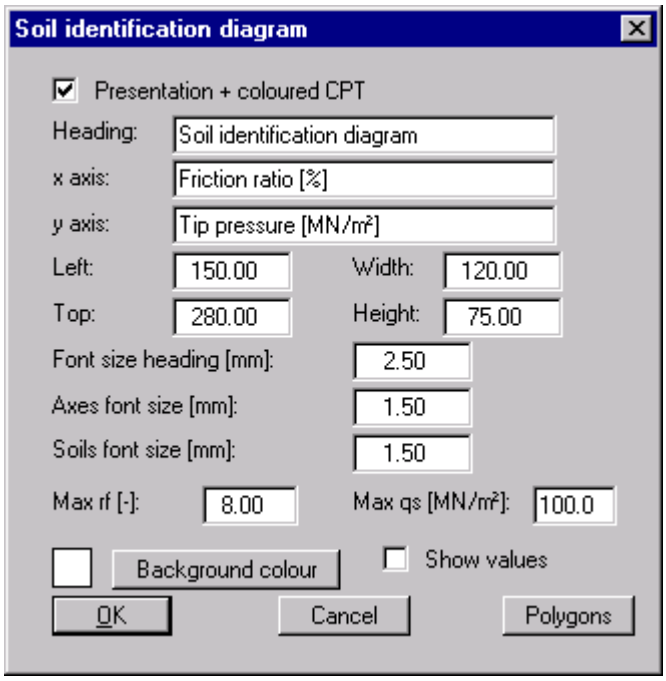
You can define a legend for tip pressure, in complete analogy to the dynamic penetration test legend. Instead of the blow count however, you here define ranges for tip pressure.

5.2.5 Cone penetration test (friction ratio) legend

You can define a legend for the friction ratio, in complete analogy to the dynamic penetration test legend. Instead of the blow count however, you here define ranges for the friction ratio. As the friction ratio can be correlated to the soil type, a kind of soil profile can be created with the appropriate choice of friction ratio areas.

5.2.6 Cone penetration test (soil index) legend

The following dialogue box appears:



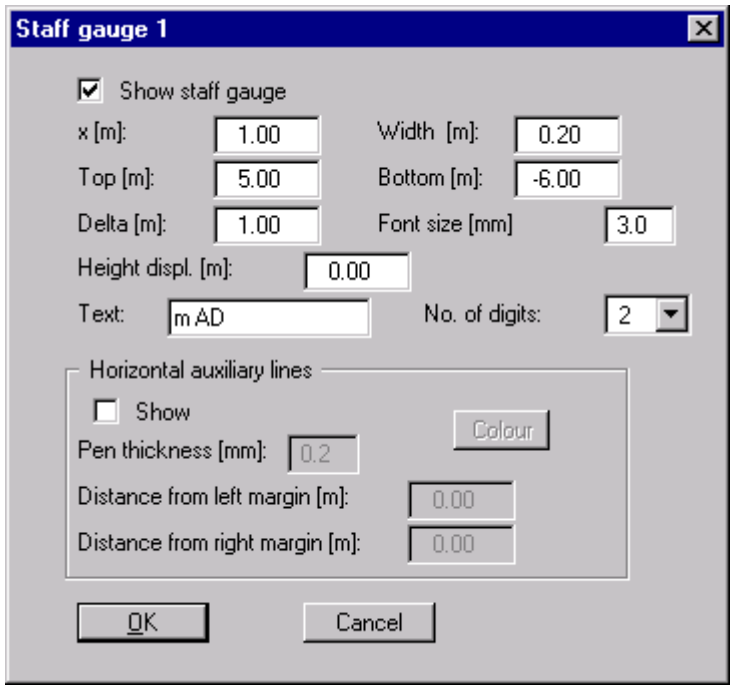
With the help of this dialogue box you can have a so-called soil identification diagram displayed. Using the tip pressure and the friction ratio for a certain soil type, which was previously defined using the „Polygons“ button, this soil type can be given a background colour in the CPT (friction ratio) diagram. In this way, a soil type can be determined solely from a CPT.

5.2.7 General legend (file name)

Using this menu item the file name can be saved in the form.

5.3 Menu "Input / Staff gauge"

To gain a better overview of the profiles you have a maximum of two staff gauges displayed by the programme. You can work with one staff gauge each at the left and/or right of the profiles page or, for two profiles with „height displacement", you can also have the staff gauges used with a height displacement.
If you select the **„Gauge 1"**, or the **„Gauge 2"** buttons, the following dialogue box, e.g. will appear:



The staff gauge will only be displayed if the "Show staff gauge" switch is selected. The values to be entered in the dialogue box are to be given in m, in the scale which you have previously determined (see Section 7.1, "Input / Overall view") In the dialogue box you can edit the shape, the position, the size and the labelling of the staff gauge. The position of the staff gauge can also edited using the menu items „Input / Move object" (see 7.13) and "Input / Move all objects" (see 7.14).
Using the „Height displacement" button, the gauges can be placed above one another. The height displacement for the staff gauges and for the soundings must be equal.
For better visualization, horizontal auxiliary lines can be displayed using the "Show" button. The colour, pen width and distance of the lines to the edge can be selected as desired.

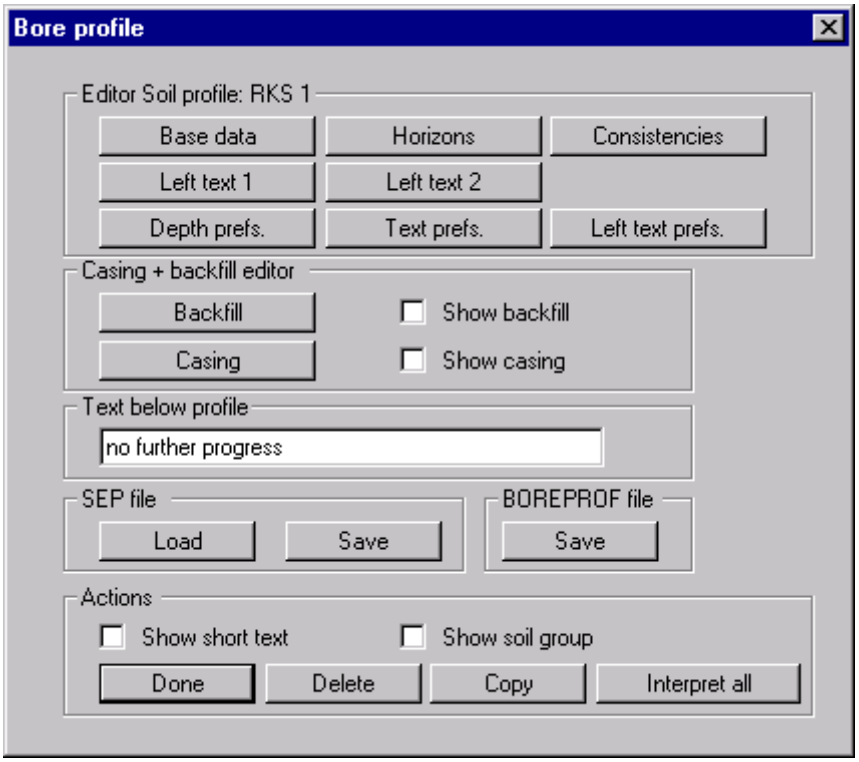
5.4 Menu "Input / Bore profile"

The „Bore profile" menu item allows input of new bore profiles, or editing of existing profiles. Additionally, gauge casings (backfill and/or casings) can be presented in a simplified manner. This simplified manner has the great advantage over the classical manner (see menu item „Input / Wells") that, with almost identical information content, it is much more space saving, as bore profile, casings and backfill are all presented together.
After clicking on this menu you will see, e.g., the following dialogue box:

In this case two profiles are already present, with the designations RKS 1, and RKS 2.
The following actions are possible:

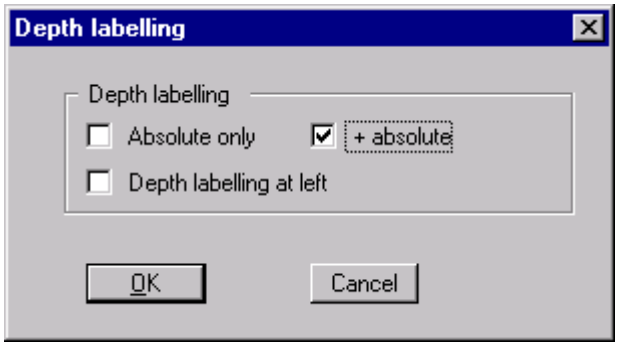
- By clicking on the **„To menu"** button you can return to the menu bar.
- By clicking in the **„For all"** box, you can define specific settings for all bore profiles.
- By clicking in the **„New"** box, you can open a new bore profile. You can now enter a new bore profile.
- By clicking in a box **with a profile name**, you can edit the corresponding bore profile.

If you would like display wells and bore profiles (see Section 7.5), you can switch to the well edit mode by clicking in the **"Bore profile"** box.
After clicking in the „**New**" box, or a box with a current bore profile, the following dialogue box will be opened.



The following actions are possible:

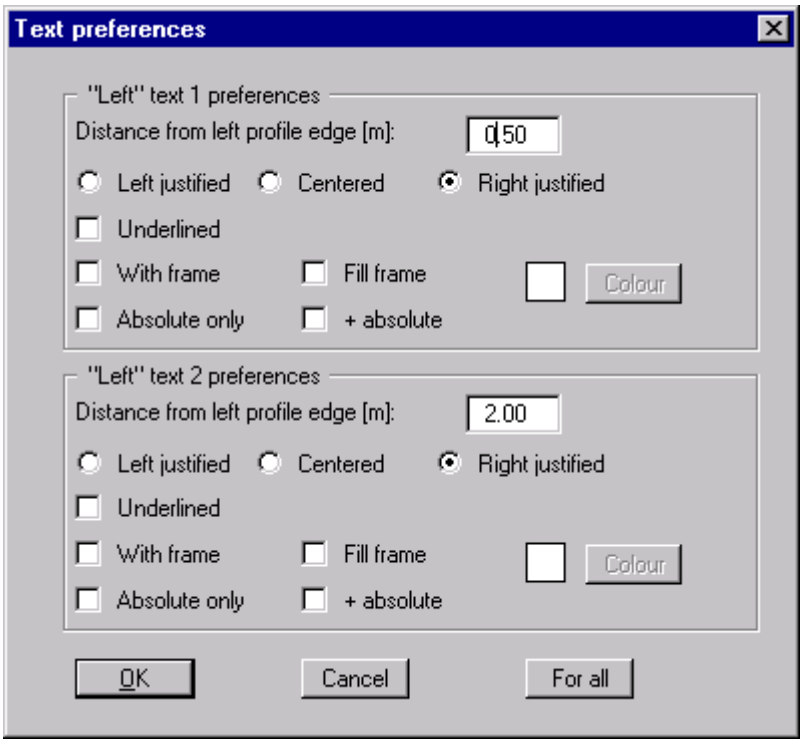
- **"Base data"**
  You can enter or edit the base data for the corresponding bore profile (see description below).
- **"Horizons"**
  You can edit or enter the horizon structure for the corresponding bore profile (see description below).
- **"Consistencies"**
  You can enter or edit the consistency symbols according to DIN 4023 data for the corresponding bore profile (see description below).
- **"Left text 1"** and/or **"Left text 2"**
  After clicking in the boxes you can define labelling in one or two 2columns" at the left of the bore profile (e.g. for water content, LOI, special samples, cored samples etc. (see description below).
- **"Depth prefs."**
  You can specify preferences for the presentation of "horizon depths".



By selecting the “Absolute only“ switch, the absolute height will be used (e.g. m AD) instead of the depth from the upper edge of the bore profile. With “+ absolute” height, the absolute height will be given, additionally to the depth from the upper edge of the bore profile.
By selecting the „Depth labelling at left” switch, the depth labelling will be entered at the left of the bore profile.

- **“Text prefs.”**
  After clicking in the box you can edit preferences for the presentation of the “Horizon texts” (see description below).

- **“Left text prefs.“**
  After clicking in the box you can edit preferences for the “Left texts 1“ and “Left texts 2“, e.g. centred, left justified, underlined etc., and how far the “Left texts” are to be displayed from the profile edge.



Similarly to the “Depth prefs.“, you select the type of depth labelling (“Absolute only” , “+ absolute”. height

- **“Backfill”**
  You can enter or edit the horizon structure of a current backfill for the corresponding bore profile (see description below). A backfill entered here will only be displayed if the „Show backfill“ switch is selected.

- **“Casing”**
  You can enter or edit the horizon structure of a current casing for the corresponding bore profile (see description below). A casing entered here will only be displayed if the „Show casing“ switch is selected.

- **“Text below profile”**
  In this field you can enter a text, which will be displayed below the profile. In order to create a line break, you must enter a „#” (e.g. no further progress#concrete).

- **“Load“ SEP file**
  After clicking in the box you can load a SEP file. SEP stands for „SchichtenErfassungsProgramm“. This programme was developed by the NLfB (Geological Survey of Lower Saxony) in Hannover for data acquisition from field reconnaissance. An abbreviation set for this programme can also be selected in the GGU- STRATIG programme, in order to enter horizons using abbreviations. After loading a SEP file, the abbreviations will be automatically interpreted and converted to the corresponding long texts. Following this the bore profile can be displayed.

- **“Save“ SEP file**
  After clicking in the box you can create a SEP file. However, horizon input must then have been carried out using the SEP abbreviations (see below).

- **“Save BOREPROF file”**
  After clicking in the box you can save the soil profile.

- **“Show short text”**
  By selecting this switch the labelling of the bore profile will be carried out using short text (see further below). Otherwise long text will be used (see further below).

- **“Show soil group”**
  By selecting this switch the bore profile will be labelled with the appropriate soil group (rounded box at the right of the long or short text). A box will only be created when an entry has been made in the „Soil group“ data field of the corresponding horizon.

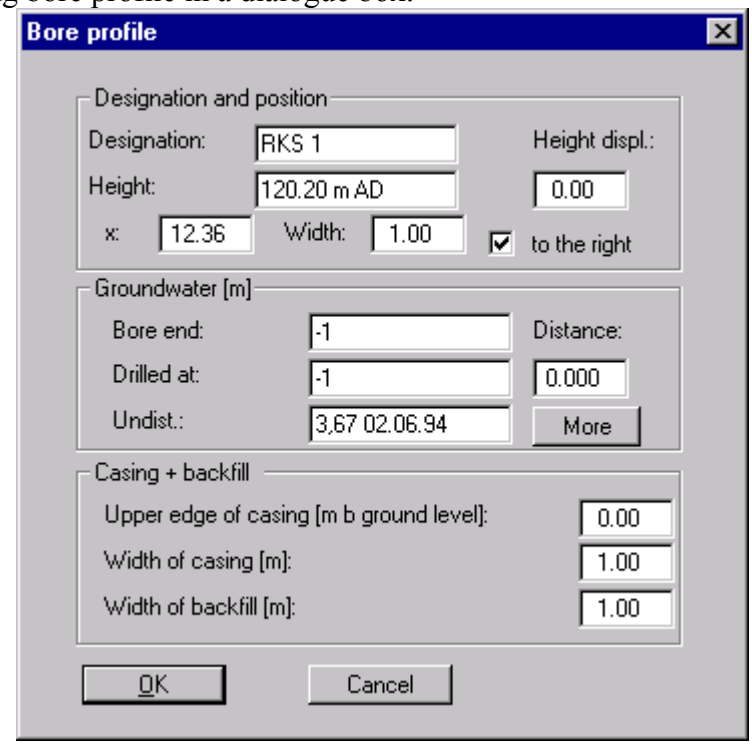
- **“Done”**
  You will arrive back at the previous dialogue box.

- **“Delete”**
  After a security request the currently displayed test will be deleted.

- **"Copy"**
  By clicking in the box, you can duplicate the current bore profile. You will then find yourself in the „Base data" (see below) dialogue box of the duplicated log.
- **"Interpret all"**
  By clicking in the box, all abbreviations entered for the bore profile will be interpreted again. This is necessary e.g. if you have subsequently edited the preferences for presentation of short text (see menu item "Preferences / Abbreviations (SEP)").

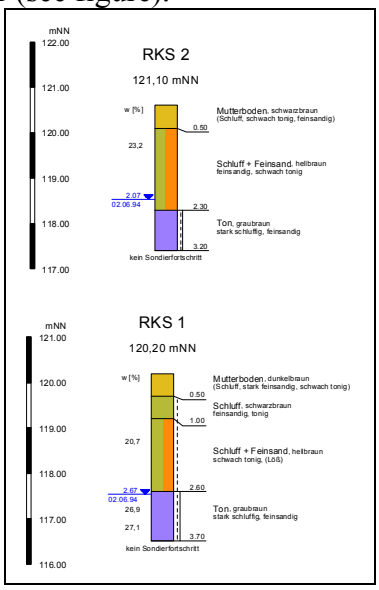
5.4.1 Bore profile / Base data dialogue box

After clicking in the "Base data" box, you can enter or edit the base data for the corresponding bore profile in a dialogue box.



In the first line you enter the bore profile designation. This designation is entered by default in the drawing directly above the corresponding bore profile. (Note: You can edit the arrangement of designations and the heights of the bore profile on the page using the menu item „Preferences / General", see Section 9.1).
In the second line you enter the height position of the bore profile (= upper edge of borehole). A number must always be entered first, as this value serves as the y coordinate for graphical presentation. If you use negative numbers, no space is allowed between the minus sign and the number. After the number a text may be entered, with one space distance to the number. This text will be displayed on the page below the bore profile, together with the height information of the profile. A text example would be „m AD" or just "m" if not taken from a fixed reference point.

You may also do without text input. If you would like to achieve height labelling such as, e.g., “AD + 34.30 m”, please also read Section 9.1.
In order to have the bore profile visible in the drawing, the lower page edge must be correctly set in the dialogue box „Input / Overall view” (see above)!
With a height for the bore profile of 53.87 m AD (see dialogue box above) and a scale factor in y direction of 50 (= 1:50) a lower page edge of e.g. 45 m makes sense, in order to achieve a vertically centred position for the bore profile.
Input for the position of the bore profile in x direction is from the left page edge. If, as in this example, you have selected a scale in x direction of 100, entering the number „5.0” will mean that the bore profile will be displayed 5 cm from the left page edge.
You can then give the width for the bore profile. For a scale in x direction of 100 (=1:100), entering the number „1.0” will mean that the bore profile will be displayed 1 cm wide.
At the top right of the dialogue box you will find the „At right“ switch. By selecting this switch, the profile text will be entered at the right of the profile. Otherwise the text will be displayed at the left.
Using the „Height displacement“ button, two soundings with the same height can be displayed above one another (see figure).

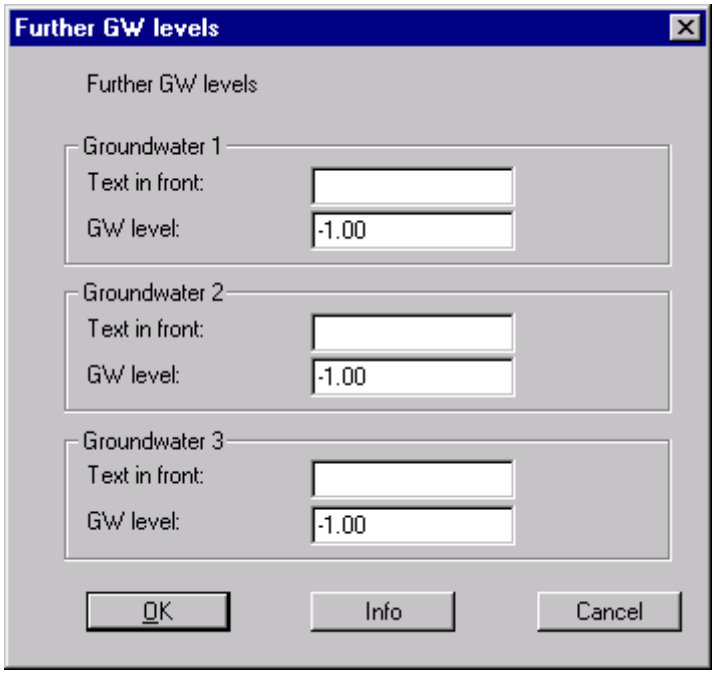


Input for the groundwater level is taken from the upper edge of the borehole. After the depth a text may be entered (e.g. date), with one space distance to the number, which will be entered into the drawing. If no groundwater level is to be entered, enter a negative number (e.g. –1). An entry can also be made automatically using the SEP abbreviations, if you enter the following abbreviations in the supplements:

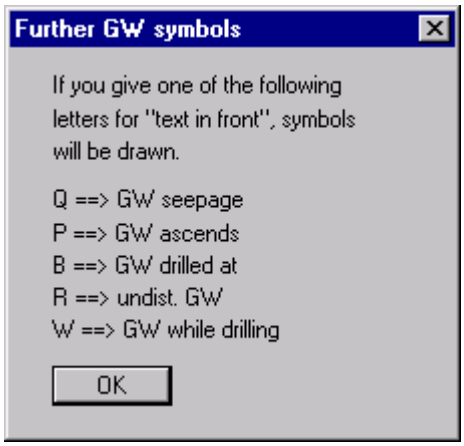
- gw GW at end of bore
- gwr GW at rest

With “Separation“ in the „Groundwater“ area, you can control the separation of the groundwater labelling from the bore profile.

With the “More“ button in the “Groundwater” area, you can define three further groundwater levels.



In the main, the description given above is valid for input. However, the „Text in front” replaces the groundwater symbol. Entry of a groundwater symbol can also be achieved here if you enter one of the letters described in the following dialogue box (“Info” button).



An groundwater entry can also be made automatically using the SEP abbreviations, if you enter the following abbreviations:

- gwa groundwater 1
- gwf groundwater 2
- gwg groundwater 3

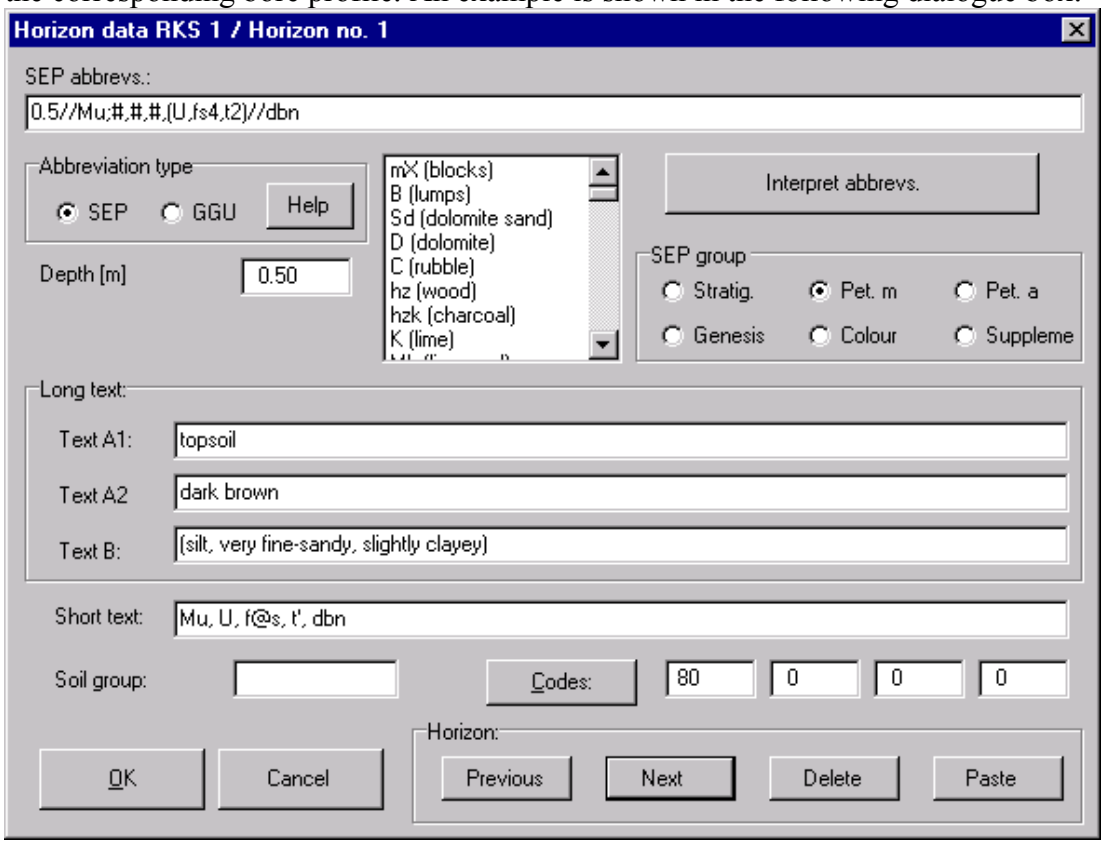
If present, the following input is also given:

- the height position of any casings (taken from upper edge of borehole; negative values mean that the casing is in the form of a stick-up well),
- the width of the casing and backfill (see also „Bore profile width“ above).

After clicking in the ”Done” box, input or alterations will be accepted and the dialogue box removed from the screen.
After clicking in the ”Cancel” box, input or alterations will not be accepted and the dialogue window removed from the screen.

5.4.2 “Bore profile / Horizons” dialogue box

After clicking in the „Horizons” box, you can enter or edit the horizon structure for the corresponding bore profile. An example is shown in the following dialogue box:



Horizon input is possible:

- “by hand” or
- by interpreting one or more abbreviations

möglich. For input **“by hand“** you must first enter the depth of the horizon, i.e. the horizon base with reference to the upper edge of the bore (ground level). You can then type the desired horizon description into the “Long text” area using the keyboard. The text in the first line (text A1) of the long text area will later be displayed next to the profile in 3 mm letters. The text in the second line (text A2) will be displayed after the previous text in the profile in 2.5 mm letters. The text in the third line (text B) will be displayed below this in 2.5 mm letters. If the horizon is

too small for labelling in two lines, the labelling will be automatically “split”.
Editing of the default font sizes is possible using the menu item “Preferences / Font sizes” (see Section 9.3).
If you would like to label your drawing with short text only (see below), you can do without long text input.
You must then enter a short text, will appear later in the drawing on one line only. If you would like to label your drawing with long text only, you can do without short text input.
Further to this, you can enter a soil group according to DIN 18196 (e.g. as DIN abbreviation) for each horizon. The soil groups entered will be shown above one another at the right of the profile texts.
At the bottom right you will see four boxes with code numbers. These code numbers control the fill of the horizon presentation with soil type symbols according to DIN 4023. Entering a “20” e.g. means “Silt”. You can enter two main soil types (code boxes 1 and 2: larger number of soil type symbols) and two accessory soil types (code boxes 3 and 4). If, e.g., accessory soil types are present, enter a “0” into the corresponding box. The distribution of the symbols is carried out with a random generator, for optical reasons. All soil types given in the DIN 4023 are available.
Besides input „by hand“, a faster input via **„interpret abbreviations“** is also possible. To do this you must enter the desired abbreviations into the top line, the ”abbreviation line“, and then press the **“interpret“** button. The long texts which are allocated to the abbreviations will then be automatically entered into the corresponding lines. Two abbreviation systems are envisaged: The GGU abbreviations, as a relatively simple system, developed from practical use for horizon registration, and the SEP abbreviations from the “Schichten-Erfassungs-Programm” of the Geological Survey of Lower Saxony (NLfB). For input using „interpret abbreviations“ you can switch between the two abbreviation systems by clicking on **“GGU“** or **“SEP”** in the Abbreviation type field.
For input using **”GGU abbrevs.“** you must first enter the depth of the horizon in the “Depth” input field, i.e., the horizon base with reference to the upper edge of the bore (ground level). Then follows input of the abbreviations for soil type and colour, which will be interpreted in accordance with the supplied “KURZ.TXT” file. This file contains abbreviations for all necessary parameters (long text, short text, code numbers, colour), so that a very simple and fast horizon input is possible.
The ”KURZ.TXT“ file supplied with this programme version contains the commonest abbreviations used within the GGU GmbH. However, you can edit this file as desired, in order to fit it to your own special needs, by selecting the menu item “Preferences / Abbreviations (GGU)” (see Section 9.9). In the dialogue box you can edit the abbreviations, the corresponding code numbers and the corresponding long and short texts to suit your wishes.
Due to the greater flexibility, the SEP abbreviations are recommended.
Explanation of the GGU abbreviations
For horizon input using **”GGU abbreviations”**, the following agreements are valid:

- A *maximum of 6 abbreviations* will be interpreted, to be separated by comma or space.
- A ”#“ will not be interpreted.

- The first abbreviation will be interpreted as main soil type and used in the text. The second abbreviation, if it begins with a capital letter, will also be interpreted as a main soil type. If two main soil types are present, they will be automatically connected with a "+".
- The following two or three abbreviations will be interpreted as accessory soil types. The following two or three abbreviations will be interpreted as accessory soil types.
- The fifth and sixth abbreviations for further soil characteristics (e.g. colour) will be interpreted according to the default preferences and entered into the form.

For input, you must first enter the abbreviations and then click on the **"interpret"** action switch, or press the key combination [Alt] + I. The programme then interprets the abbreviations and creates the corresponding long text, short text and code numbers.
Examples:

- The abbreviations "U, T, fs-, ms+, ge" give:
  Silt + clay
  yellow
  slightly fine-sandy, very medium-sandy
- The abbreviations "S, #, u, #, hbr" give:
  Sand
  light brown
  silty
- The abbreviations "S, u+, t, fg-, gr" give:
  Sand
  grey
  very silty, clayey, slightly fine-gravelly

After interpretation you can edit and extend the long and short texts according to your wishes.

Explanation of the SEP abbreviations

Input via "SEP abbreviations" is similar to input of "GGU abbreviations". Here you must enter, one after the other, the horizon depth, stratigraphy, petrography (generally main and accessory soil types), genesis, soil colour and further data. SEP stands for „SchichtenErfassungsProgramme". This programme was developed by the NLfB (Geological Survey of Lower Saxony) in Hannover for data acquisition from field reconnaissance. An abbreviation set for this programme can also be selected in the GGU- STRATIG programme, in order to enter horizons using abbreviations. If you have the GGU-BORELOG programme (bore logs), as well as GGU- STRATIG, you can achieve the highest possible compatibility between the data sets of both programmes by exclusively using the SEP abbreviations. For a detailed study of the SEP abbreviations please see the SEP manual, available from the NLfB. The abbreviation set from the SEP programme has now become standard in several state geological surveys within the Federal Republic of Germany. After bore or sounding input, the GGU- STRATIG programme allows saving in an SEP

compatible format, if you have used the SEP abbreviations. You can thus achieve a high degree of compatibility to other applications. Loading of files created with the SEP programme is also supported.
An abbreviation line consists of seven input areas:

- Depth
- Stratigraphy (age)
- Petrography (main soil types + accessory soil types + characteristics if necessary)
- Genesis (origin)
- Colours
- Supplements
- Samples

These input areas are each separated by a "/ ". In the petrography field, the main and accessory soil types are separated by a " ; ".

Depth / Stratigraphy / Petrography (main) ; Petrography (accessory) / Genesis / Colours / Supplements / Samples

Anywhere in the petrography field, abbreviations for properties can be entered. Qualities such as "slightly" or "very" are taken into account by a "2" or a "4" directly after the abbreviation ("1" = "very slightly"; "5" = "very strongly")
The abbreviations defined by the NLfB for the "Engineering geology" subset are contained in the SEPKURZ.TXT file, delivered with the programme. Using the **"Preferences / Abbreviations (SEP)"** (see Section 9.10) menu item, you can view, print and, if necessary, edit the current SEP abbreviations, together with the long and short texts, and the code numbers. You may also save edited SEP abbreviations under a different file name.
If several abbreviations are required within one field (e.g. "Petrography"), they are to be separated with a comma. For horizon input, a maximum of four code numbers can be used. When interpreting a SEP abbreviation line, the four data fields (code boxes) will be filled out from left to right. If only one main soil type is present and the code number for an accessory soil type is not to be entered into the second code data field (otherwise too many soil signatures will be drawn), then enter a "#" in the abbreviation line, as a place holder.

- Example:
  The following horizon is to be entered:
  Horizon base = 2.35 m
  Medium sand, slightly fine-sandy, very silty, brown, soil group SU,
  Stratigraphy, Genesis and samples not present
  The abbreviation line is:
  2.35//mS;#fs2,u4//bn/SaU
  After pressing the „interpret" button all input will be converted to long text.

When saving a bore as a SEP file (see below) the „#“ will not be carried across, so that data compatibility to the SEP programme is kept.
If an input is not required in an area (e.g. stratigraphy), simply leave the “stratigraphy” area empty (see example above).
For colour input, two colours can also be combined. For example:

- gero ==> yellow-red ge = yellow; ro = red
- dbn ==> dark brown d = dark; bn = brown

If an “=“ is entered after the colour abbreviation, the long text will be supplemented with “ish“. For example:

- ge= ==> yellowish
- ro= ==> reddish

If an abbreviation from a different field is to be used in any of the fields, the field designation

- „S:“ for stratigraphy
- „P:“ for petrography
- „G:“ for genesis
- „F:“ for colours
- „Z:“ for supplements

must be entered. For example:

- 2,35//mS; fs2, u4, F:bn/SaU
  The colour brown (bn) will thus be interpreted into the “petrography“ field.

Free text can be entered into any area. The free text must be entered in apostrophe’s. For example:

- 2,35//’Construction rubble”, mS; fs2, u4/bn/SaU
  The free text “Construction rubble” will thus be entered into the “petrography“ field, in front of “Medium sand”.

If you would like to have the long text in brackets, simply enter these at the desired position in the abbreviation line.
For example:

- 2,35//’Contruction rubble”, (mS); fs2, u4/bn/SaU
  “Medium sand”, in long text, will then be placed in brackets.

Once the abbreviations have been entered, select the **“Interpret”** button. The abbreviations will then be converted to long text. The programme distributes the three long texts internally as follows.

- Stratigraphy, petrography (main constituents) and genesis after long text line 1 = Text A1 (maximum 54 characters)
- Petrography (accessory constituents) after long text line 3 = Text B (maximum 110 characters; input window rolls horizontally for more than 54 characters !)
- Colour after long text line 2 = Text A2 (maximum 54 characters)

The allocations can be adjusted in „Preferences / Abbreviations (SEP)“, dialogue box „Long texts“.
The SEP programme allows an abbreviation line length of 255 characters. The GGU-STRATIG programme also allows this line length. If the number of abbreviation characters goes above a value of 60, the input window will scroll horizontally to the left. With the „Pos 1“ key you can return to the beginning of the line. With the „End“ key you can move to the end of the line.
The SEP programme is much more consequential than the DIN 4023. The genetic expressions “topsoil, boulder clay, fill, etc.”, e.g., are thrown into one pot with purely petrographic expressions (e.g. sand, gravel, etc.) in DIN 4023. If you would like to enter these genetic expressions in the first position in the long text line, using the GGU- STRATIG programme (e.g. to 1.2 m “Fill, sand, silty”), you must enter the following abbreviation line:

- 1.2//G:y,S,u

Where „G:“ stands for the genetic abbreviation subset, the „y” is the SEP abbreviation for fill from this subset. In principle, it also imaginable to enter the „y” abbreviation, together with the long text “fill” into the petrography subset (see also Section 9.10). This procedure may be pragmatic, as you can do without input of the „G:“, you will, however, lose compatibility to the SEP programme. The functionality of the GGU- STRATIG programme will not be restricted in any way. You can also create a completely different set of abbreviations with completely different long texts (e.g. in a different language).
Using the SEP abbreviation line you can also create an entry for the respective soil layer in the “Soil group” data field. All abbreviations in the “Supplements” SEP data field with “h” as the column designation will be interpreted as a soil group (also see the “Edit / SEP abbreviations” menu item, dialogue box button “Supplements”).
Input of **samples** and their designations follows at the end of the abbreviation line. After the final supplement input enter a „ / „ and begin with the depth from which the sample was taken. It is important that you enter a decimal point here, *not* a comma. You can then enter the field designation in brackets. SEP abbreviations are also available for sample types, which can be looked up or supplemented in „Preferences / Abbreviations (SEP)“, dialogue box button „Samples”. If a further sample has been taken from the same horizon, separate the entries with a semicolon and enter the depth, number and type in the same sequence.

- For example the entry:
  /1.2(Gl 1),(bp1);1.4(Gl 2),(so)
  very poor quality bore sample at a depth of 1.2 m in glass 1 and special sample at a depth of 1.4 m in glass 2.

With the SEP abbreviation line you can also create an entry for consistencies. For this, the abbreviations

- wf5 = wet
- flu = liquid
- kos1 = semi-liquid
- kos2 = plastic

- kos3 =semi-solid
- kos4 =solid
- kos5 =hard
- klg = jointed

and combinations e.g.

- kos2 - kos3 = plastic to semi-solid
- kos3 - kos4 = semi-solid to solid

are available, which are contained in the SEP data field „Supplements“. These abbreviations should not be edited.
The „Bore profile / Horizons“ dialogue box (see figure above) also contains six buttons, which have the following functions:

- **“Previous“**
  You will return to the previous horizon.
- **“Next“**
  You will move to the next horizon
- **“Delete“**
  The horizon displayed in the dialogue window will be deleted.
- **“Paste“**
  An additional horizon will be inserted in front of the horizon displayed in the dialogue window.
- **“Cancel“**
  Horizon input will be stopped. Alterations to the displayed horizon will be rejected.
- **“OK“**
  Horizon input is complete. Alterations to the displayed horizon will be accepted.

For groundwater the following abbreviations are available:

- gw = groundwater level at end of boring
- gws groundwater ascended
- gwr = groundwater at rest

The abbreviations must be entered in supplements. Depth and additional test (as free text) may be given, e.g.:

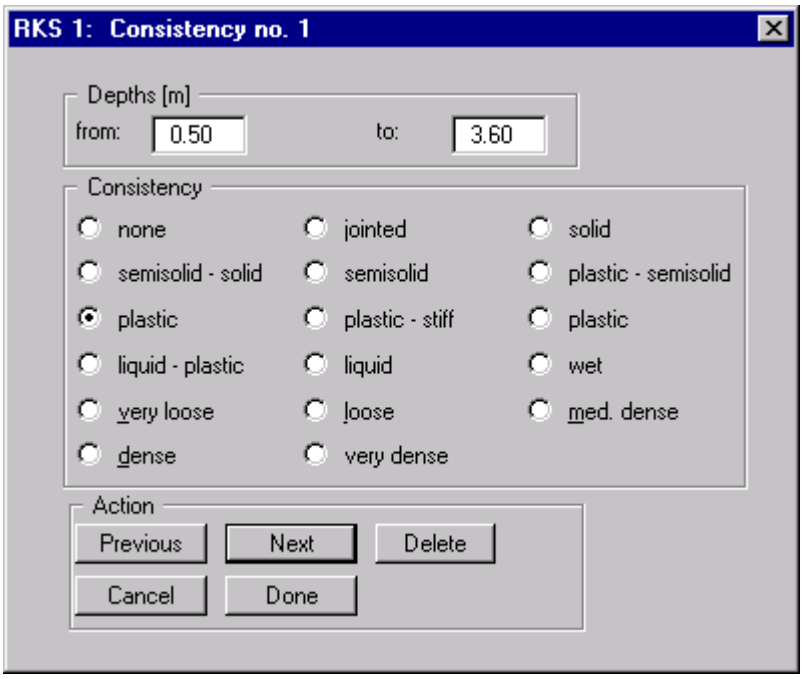
- .../gwr(1.23,‘12.05.1999‘)

means: At rest groundwater level at 1.23 m on the 12.05.1999

5.4.3 “Bore profile / Consistencies” dialogue box

After clicking in the „Consistencies” box, you can enter or edit the consistencies according to DIN 4023 for the corresponding bore profile, if you have not already had them interpreted via “Supplements”.

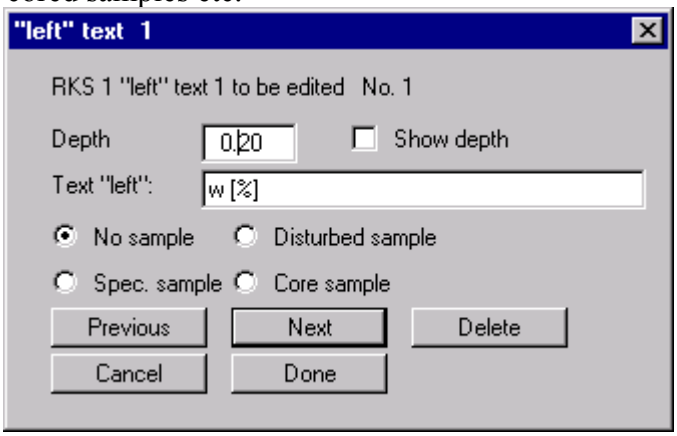
The consistencies can be entered in any order (not necessarily from top to bottom).



In the first two lines you enter the upper and lower limit for each consistency. You can then select the desired consistency by clicking in the corresponding box. An overlapping of consistencies is possible, although this wouldn't make much sense. The buttons at the bottom of the dialogue box have the same functions as those for horizon input (see above).

5.4.4 "Bore profile / Left texts 1" and "Bore profile / Left texts 2" dialogue boxes

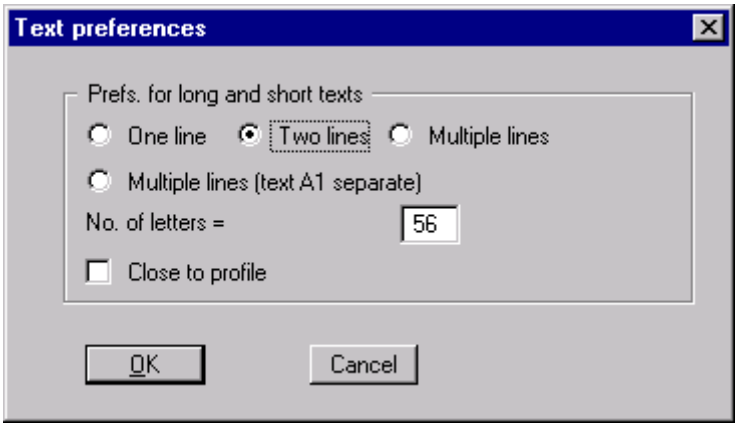
After clicking in the "Left text 1" and/or „Left text 2" boxes you can define labelling in one or two „columns" at the left of the bore profile (e.g. for water content, LOI, special samples, cored samples etc.



The "left texts" can be entered in any order.
In the first line you enter the height position of the text, taken from the upper edge of the bore profile. If the „Show depth" switch is activated, the depth will automatically

be entered at the end of the left text. You can then enter the appropriate text (e.g. w = 23.2%). If you select one of the „Disturbed sample, “Special sample” or “Core sample” switches, the correct symbol according to DIN 4023 will be displayed in front of the text.
The buttons at the bottom of the dialogue box have the same functions as those for horizon input (see above).

5.4.5 Dialogue box “Bore profile / Text prefs.”



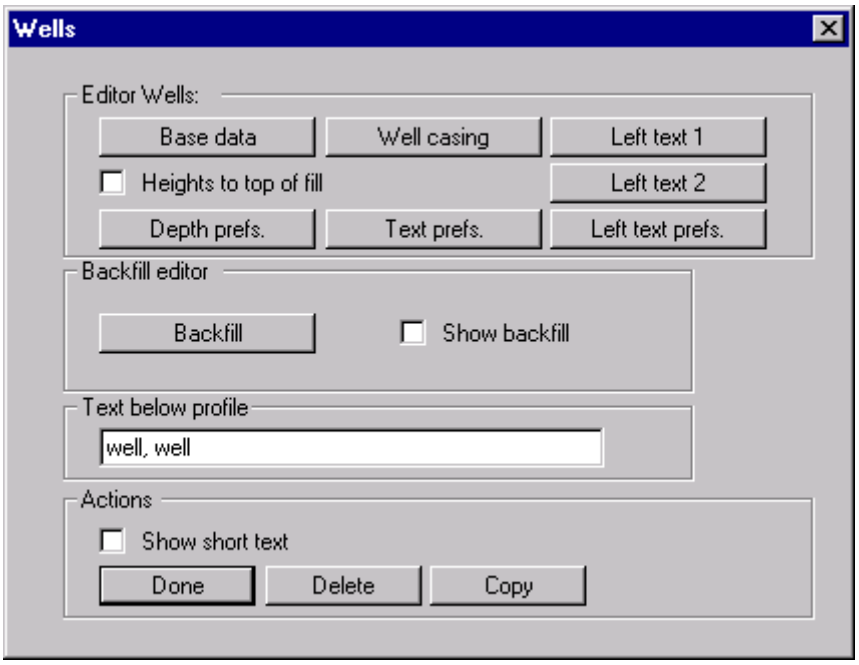
In this dialogue box you determine in which form the long texts are to be displayed:

- **“One line“**
  All horizon descriptions will be given in one line.
- **“Two lines“**
  Text A1 and Text A2 for each horizon will be given in the first line. Text B of the horizon will be given in the second line.
- **“Multiple lines“**
  Text A1, Text A2 and Text B will be given in several lines. A line break will be carried out if, after 25 characters, a space or a comma is found in the composite text. The font size is uniform.
- **“Multiple lines (Text A1 separate)“**
  Analogous to multiple lines (see above), but with Text A1 in the first line. The rest will be broken. The width of the text output can be controlled, if you have selected “Multiple lines”, by entering the number of characters per line.

Further to this, the distance of the text output from the bore profile can be given. If you activate the „Close to profile“ switch, the horizon description will begin 5 mm from the bore profile. Otherwise the text will begin approx. 3 mm from the depth labelling of the horizon.

5.5 Menu "Input / Wells"

The menu item „Wells" allows input and presentation of sounding well casings (with casing and backfill) in the classical manner. The casing is displayed centrally, surrounded by the backfill.



Data input is completely analogous to that of the menu item "Bore profile" (see above). The well casing is entered after clicking on **"Casing"** and the backfill is entered after clicking on **"Backfill"**.
In the main, you must only observe,

- that for casings, a width must also be entered, which will optically displayed,
- that the height of the backfill must be given in **absolute** coordinates (i.e. in m AD, e.g.) and
- that no consistencies may be entered.
- Additionally, with the **"Heights to top of backfill"** switch, you can determine whether or not the depth labelling is to be with reference to the top of the backfill. This is only meaningful if the top of the casing is at a different height level as that of the backfill.

For well casings, the following pre-defined "hatchings" are available with the given code numbers:

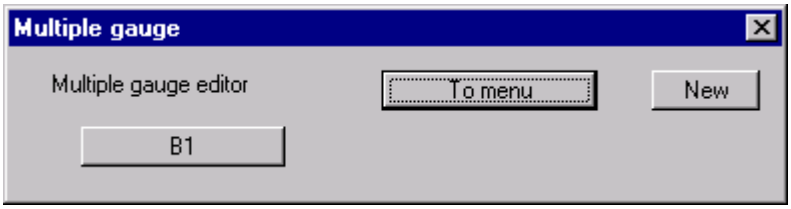
- 500 Filter pipe
- 510 Vertical lines
- 520 Horizontal lines
- 530 Cross hatching

- 540 Cap
- 550 Sump
- 560 Exterior line

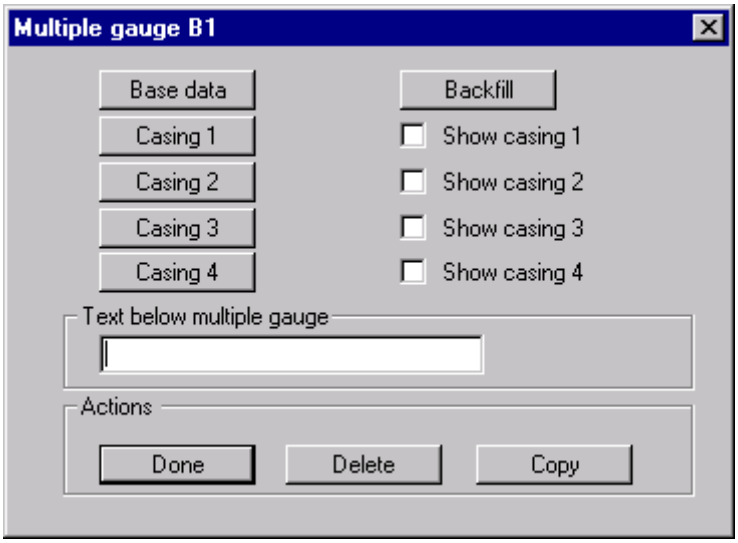
If you would like to use special casing details in the profile, use the menu item „Preferences / Bitmaps". With this option it is possible to tie in drawings which you have created with a graphics programme (e.g. Paintbrush).
If you would like display wells and bore profiles in a soil profile, you can switch to the bore profile edit mode by clicking in the **"Wells"** box (see Section 7.4).

5.6 Menu "Input / Multiple gauge"

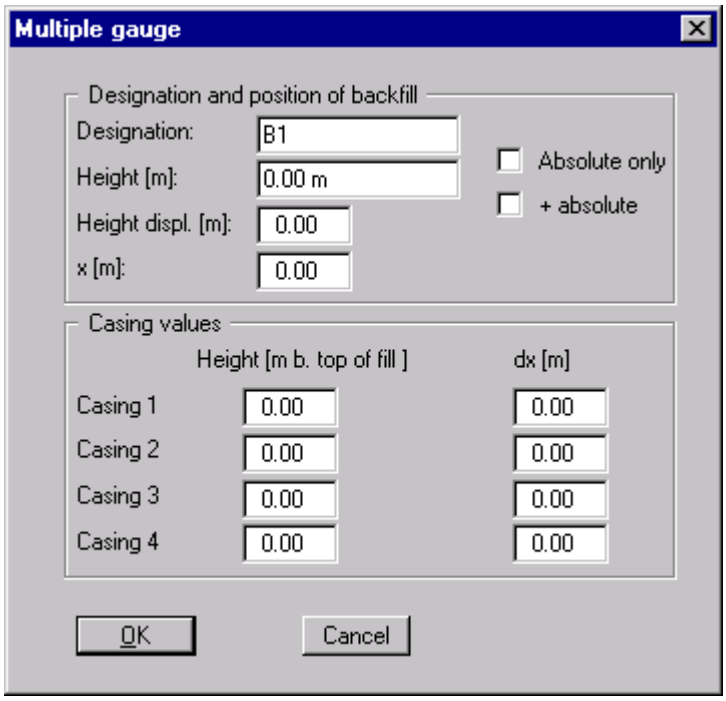
The „Multiple gauge" menu item allows input and/or editing of multiple gauges. The menu item can also be used, in principle, for the presentation of individual gauges (well casings). After clicking on this menu item you will arrive at a dialogue box which will allow definition of a new multiple gauge, or selection of a current one.



After clicking on **B1** you will see the following dialogue box:



In **„Base data“** you enter the name and the position of the gauge:



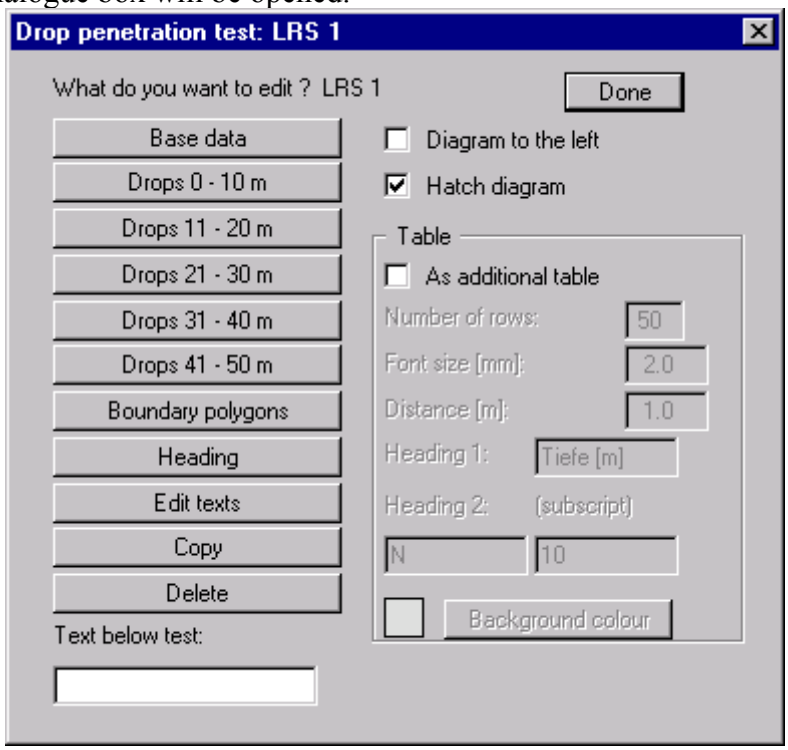
The height of the casing is given with reference to the height of the backfill. With **dx,** the position of each casing, with reference to the centre of the borehole, is given.
The backfill horizons and the individual casings are entered in **“Backfill“** and **“Casing 1“**, **“Casing 2“** etc. Input corresponds to horizon input for bore profiles (see Section 7.4). After the “Casing 1”, “Casing 2” etc. buttons, you can decide which of the four casings should be displayed.
For well casings, the following pre-defined ‘hatchings’ are available with the given code numbers:

- 500 Filter pipe
- 510 Vertical lines
- 520 Horizontal lines
- 530 Cross hatching
- 540 Cap
- 550 Sump
- 560 Exterior line

If you would like to use special casing details in the profile, use the menu item „Preferences / Bitmaps”. With this option it is possible to tie in drawings which you have created with a graphics programme (e.g. Paintbrush).

5.7 Menu "Input / Drop penetration test"

The „Drop penetration test" menu item allows input of new drop penetration tests, or editing of existing drop penetration tests. After clicking on this menu item you will arrive at a dialogue box which will allow definition of a new drop penetration test, or selection of a current one.
After clicking in the "**New**" box, or a box with a current penetration test, the following dialogue box will be opened.

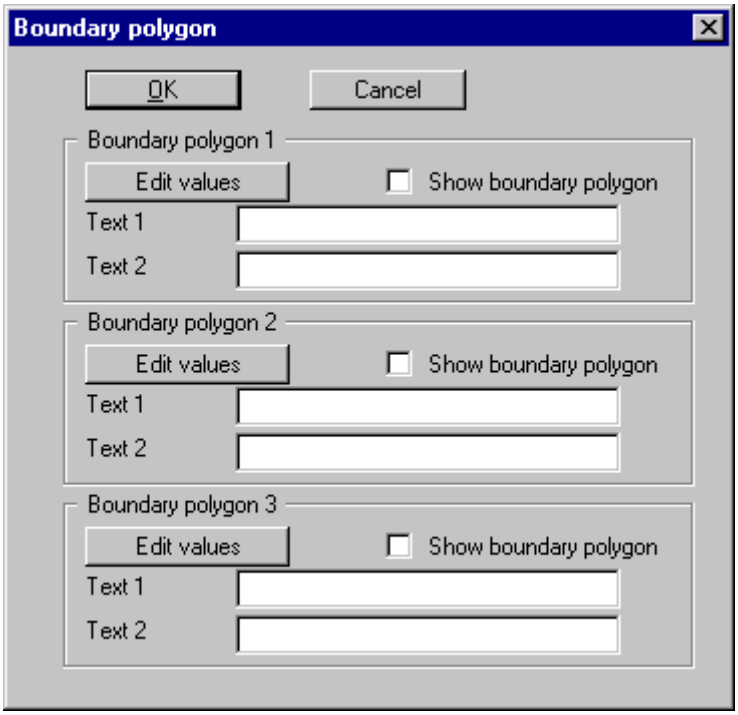


The following actions are possible:

- **"Done"**
  You will arrive back at the previous dialogue box.
- **"Base data"**
  You can enter or edit the base data for the corresponding bore profile (see description below).
- **"Drops 0 - 10 m"**
  After clicking in the box you can enter the blow count for 0 to 10 m. Input of a negative number (e.g. "-1") or no number at all designates the end of the penetration test.

  With the „Delete drops" box you can, e.g. for a duplicated test, delete all drop counts.
  For penetration tests with depths of more than 10 m, further action switches are available. Input is completely analogous.
- **"Boundary polygons"**
  After clicking in the box you can have a polygon displayed within the

penetration test diagram. This can be useful e.g., if boundary curves are to be displayed for dense, medium-dense, etc. compaction.



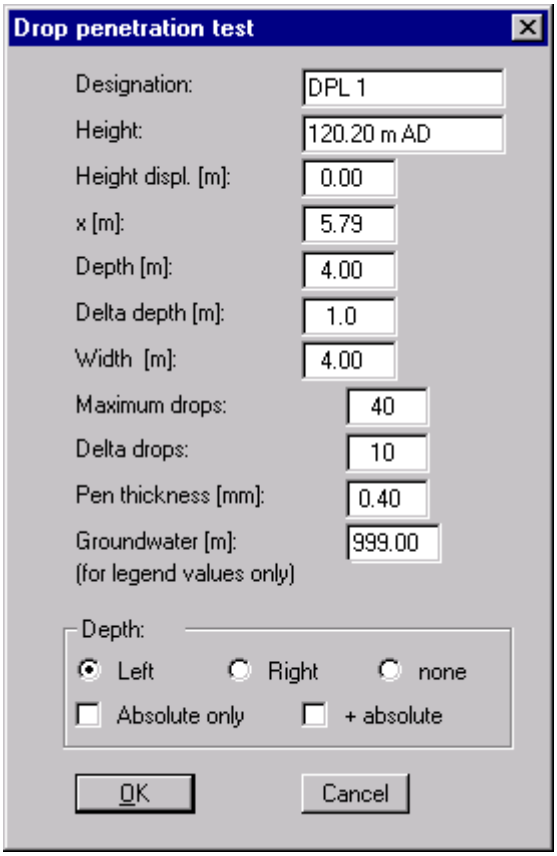
Up to 3 boundary polygons can be defined. The texts „1“ and „2“ are entered in the diagram below the selected limit range. The actual polygon is entered after selecting the “Edit values” button. You will see a dialogue box, in which you can enter the corner points of a polygon.

- **“Heading“**
  You can edit the text above the diagram.
- **“Edit texts“**
  You can enter a text after every meter, which will be displayed to the right of the diagram.
- **“Copy”**
  By clicking in the box, you can duplicate the current penetration test. You will then find yourself in the „Base data“ dialogue box of the duplicated test.
- **“Delete”**
  After a security request the currently displayed test will be deleted.
- **“Diagram to the left”**
  With this switch you can have the diagram mirrored.
- **“Hatch diagram“**
  With this switch you can switch a horizontal hatching of the displayed penetration diagram on or off..

- **"As additional table"**
  With this switch you can have the penetration data displayed additionally as a table (see description below).
- **"Text below test"**
  In this field you can enter a text to be displayed below the penetration test. In order to create a line break, you must enter a "#" (e.g. no further progress#concrete).

5.7.1 Drop penetration test / Base data dialogue box

After clicking in the "Base data" box, you can enter or edit the base data for the corresponding penetration test.

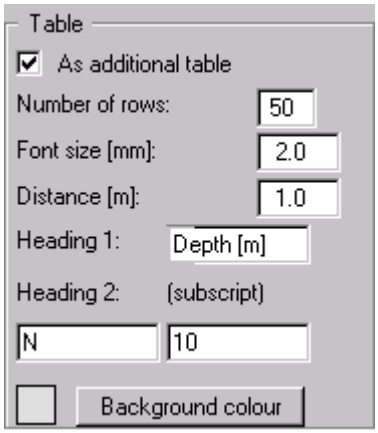


In the first line of the dialogue box you enter the penetration test designation. This name is later entered in the drawing above the corresponding penetration test. In the second line you enter the height position of the penetration test (= upper edge of test). A number must always be entered first, as this value serves as the y coordinate for graphical presentation. If you use negative numbers, no space is allowed between the minus sign and the number. After the number a text may be entered, with one space distance to the number. This text will be displayed on the page below the penetration test name, together with the height information of the profile.

In order to have the penetration test visible in the drawing, the lower and the right page edge, and the scales in x and y direction must be correctly set in the menu item „Input / Overall view" (see above)!
With a height for the penetration test of 120.20 m AD and a scale factor in y direction of 50 (= 1:50) a lower page edge of e.g. 113.0 m makes sense, in order to achieve a vertically centred position for a 5 m deep penetration test.
Using the „Height displacement" button, two diagrams with the same height can be placed above one another.
Then comes the input for the position of the penetration test in x direction, from the left page edge. If you have selected a scale in x direction of 100, entering the number „14.0" will mean that the penetration test will be displayed 14 cm from the left page edge.
The position of the penetration test(s) can also edited using the menu items „Input / Move object" and „Input / Move all objects" (see 7.13 and 7.14).
You can then give the depth to be displayed for the test diagram. This value need not correspond to the greatest blow count depth. The „Delta depth" value defines the depth labelling separation.
Next comes input for the width of the penetration test diagram. If you enter, e.g., a "4.0" here, with a scale in x direction of 100 given in the menu item "Overall view", then the penetration test diagram will be shown in the drawing with a width of 4 cm.
You must then enter the maximum number of drops to be displayed in the diagram. The „Delta drops" value defines the drop labelling separation.
Further to this, you can define the pen width for the "drop curve".
If the penetration test is „in" groundwater, the colour evaluation of the drop numbers can be carried out for "above" or "below" groundwater level (see "Input / Legends / Drop penetration test", Section 7.2.3). For this, you must enter the measured groundwater level here. If you enter „999", groundwater levels will not be considered.
In the lower part of the dialogue box, the depth labelling can be controlled.

5.7.2 Dialogue box „As additional table"

If the „As additional table" switch is activated, you can set preferences for a table presentation.



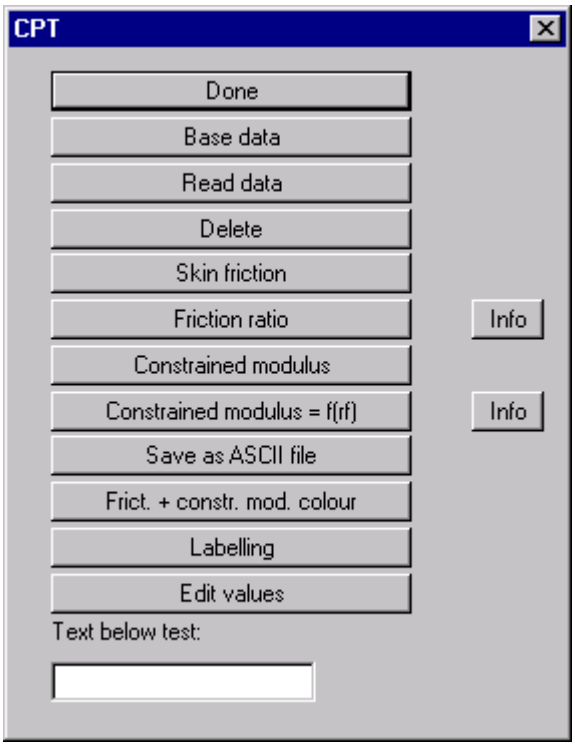
TIP: In order to achieve a presentation in which one table row corresponds to approx. 10 cm penetration depth (equal final depth of diagram and table), with a y scale in the overall view of 1: 50, you must set the font size to 1.3 mm.

The number of lines should be adjusted to the sounding depth, i.e. 10 lines per 1 m depth. The distance is given in m in the current x scale, measured from the right diagram edge. You can edit the column headings and give a background colour for the table.

5.8 Menu item "Input / Cone penetration test"

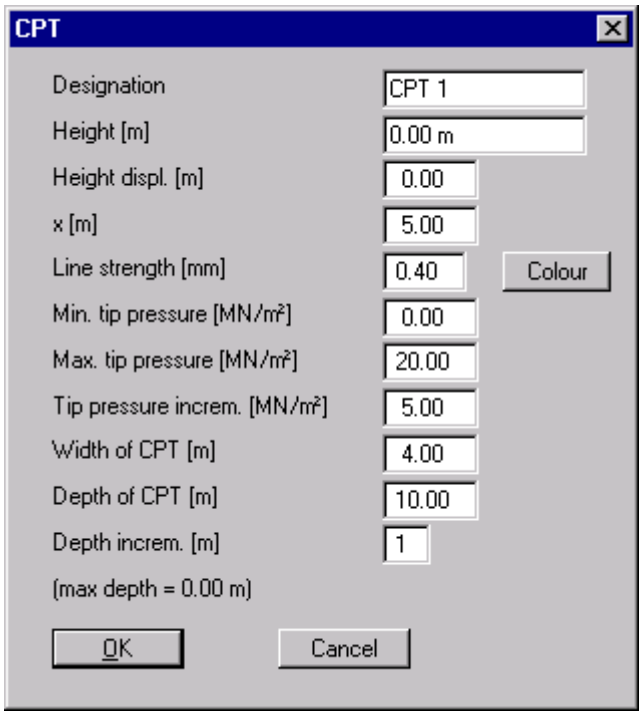
The „Cone penetration test" menu item allows input of new cone penetration tests, or editing of existing cone penetration tests. After clicking on this menu item you will arrive at a dialogue box which will allow definition of a new cone penetration test, or selection of a current one (see also menu item Cone penetration test).

After clicking in the „New" box, or a box with a current CPT, the following dialogue box will be opened.



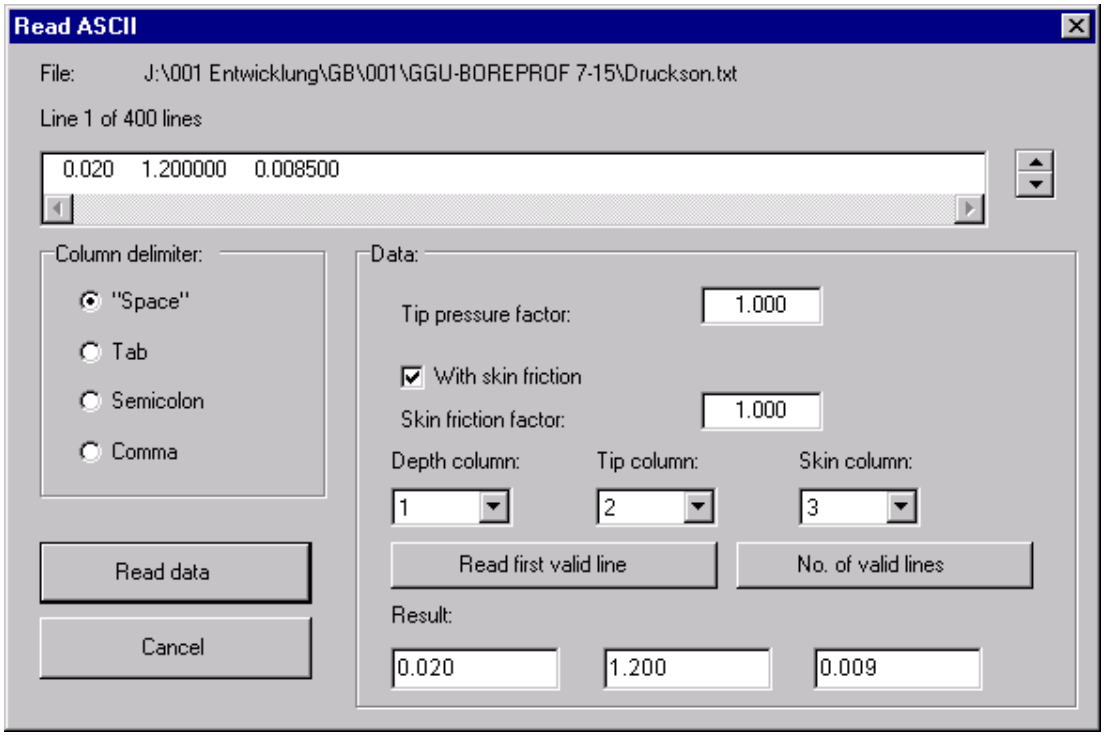
In the dialogue box there are fourteen buttons. The following actions are possible:

- **“Done”**
  You will arrive back at the previous dialogue box.
- **“Base data”**
  You can enter or edit the base data for the corresponding CPT.



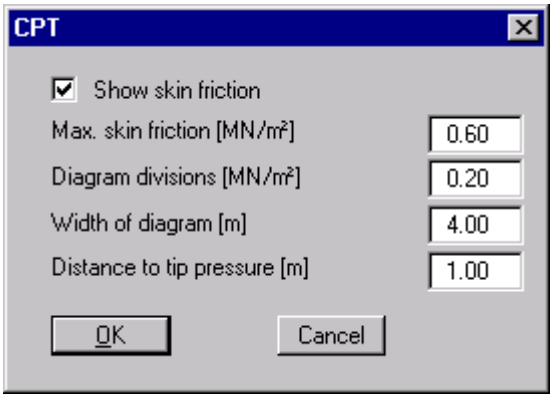
With “Height“ and „x“ you enter the position of the cone penetration test (CPT). Here, you can also enter a “height displacement” (see “Input / Bore profile”, “Base data” dialogue box). „Line strength“ designated the width with which the curve is drawn. With the „Colour“ button you can alter the pen colour. „Min. tip pressure”, „Max. tip pressure” and „Tip pressure increment” control the tip pressure axes. „Width“ and „Depth” of the CPT control the depth and width of the tip pressure diagram on the page. The vertical subdivision of the diagram is determined with „Depth increment“. For information purposes, the maximum depth of the CPT is shown in brackets.

- **„Read data“**
  You can read in the results of a CPT from an ASCII file. The data in this file, which you will generally receive from the „tip pressure company“, must contain one value per line (depth, tip pressure and, optionally, skin friction). After selecting a file with measured values the following dialogue box appears:



The current line of the ASCII file is shown at the top of the window. Using the arrows at the right you can move through the file. If the file also contains skin friction values, activate the „With skin friction“ switch. When all input is correct, the result for this line will appear in the box below the columns. Otherwise „error“ will appear. You may then have to alter the column delimiter. If the file contains invalid as well as valid lines, these will be simply skipped when reading.
The programme expects the values in MN/m². If the measured values are not in the correct dimension, you can enter a correction factor under „Tip pressure factor” and/or “Skin friction factor”. Finally, select the “Read data” button. You will then see information on the number of lines read. You can then edit the CPT further, or evaluate it.

- **“Delete”**
  After a security request the currently displayed CPT will be deleted.
- **“Skin friction”**
  You will see the following dialogue box:



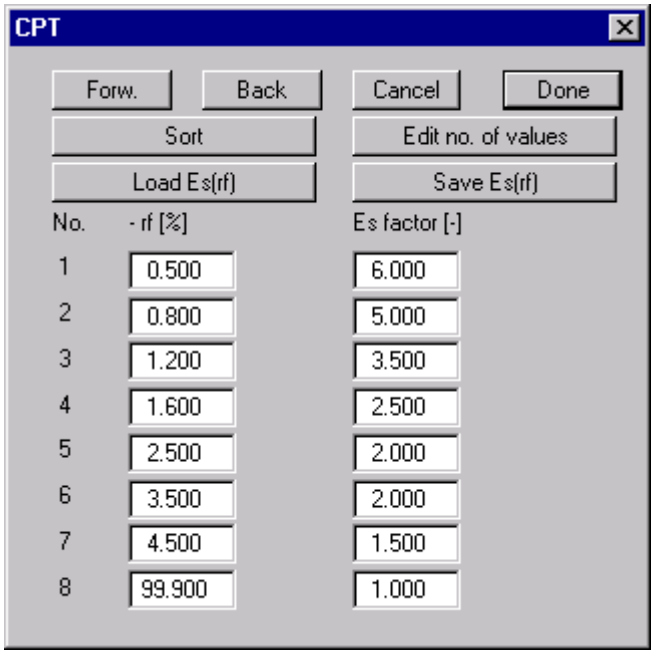
If the „Skin friction“ switch is deactivated, the skin friction diagram will not be displayed. You can set preferences for the skin friction diagram values. With „Distance to tip pressure“ you can control the distance of the skin friction diagram to the tip pressure diagram.

- **“Friction ratio”**
  The friction ratio can be calculated from the tip pressure and skin friction and displayed in a diagram. Otherwise see „Skin friction“. A list of friction ratio values for certain soil types can be viewed by clicking on the neighbouring **“Info“** button.

- **“Constrained modulus”**
  The constrained modulus can be approximately derived from the tip pressure and skin friction and displayed in a diagram. Also see the following point.

- **“Constrained modulus = f(rf)**”
  Dependent upon the friction ratio rf, the tip pressure must be multiplied by a factor, in order to arrive at the constrained modulus.

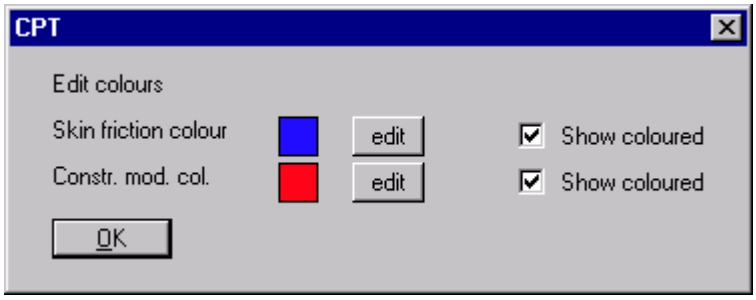
  In the following dialogue box you enter the friction ratio rf up to which each factor is to be valid. The dialogue box allows display of up to 8 value pairs. If more value are present you can move through the table with “Forw.“ and “Back”. If you would like to edit the number of value pairs, select the „Edit no. of values” button. If you would like to add a value pair, increase the number of value pairs and enter the values at the end of the table. Then select the “Sort” button. The table will be sorted according to increasing rf values. The sort function will always be called up after leaving the dialogue box.



If you would like to save the table, select the „Save Es(rf)" button. If you then keep the default file name, „BOPO.RFE", the values in the table will be automatically active at the next programme start. If you would like to load values from a previously saved file, select the „Load Es(rf)" switch. A list of constrained moduli for certain soil types can be viewed by clicking on the neighbouring **„Info"** button.

- **"Save as ASCII file"**
  You can save the values (depth, tip pressure and optionally skin friction) as an ASCII file.

- **"Frict. + constr. mod. colour**"
  The area between the value curve and the vertical axis can be coloured. You can give your preferences in this dialogue box.



With reference to the colour presentation of tip pressure and friction ratio, please see the menu item "Legends".

- **"Labelling"**
  The individual diagrams (tip pressure, skin friction, friction ratio and

constrained modulus) are labelled at the top. In this box you can edit the default labelling.

- **"Edit values"**
  You can edit loaded values or enter values completely by hand. Use of the dialogue box corresponds almost exactly to that of the „Constrained modulus = f(rf)" dialogue box described above. A „Sort" switch is not present, the values will nevertheless be sorted automatically for increasing depth upon leaving the dialogue box. In principle, the „Edit values" programme function can also be "abused" for other purposes. It is imaginable, e.g., to enter a water content profile, which can also be colour-coded (see "Legends" menu item).

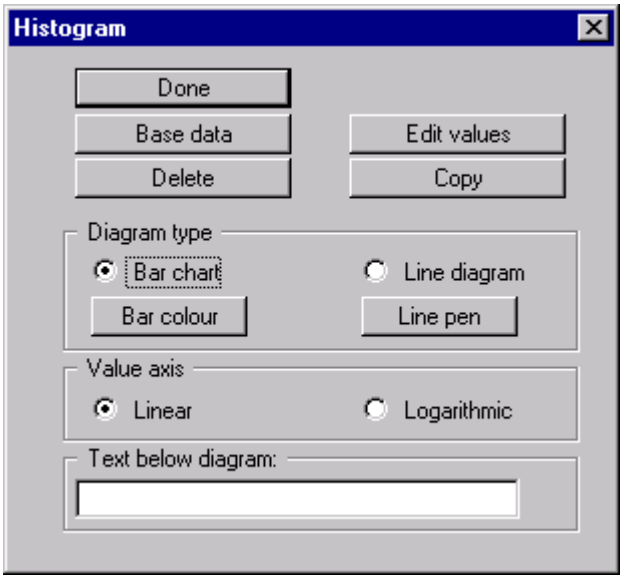
  It is also possible to create a bar chart with variable bar width etc. The only limit is your imagination.

- **"Text below test"**
  In this field you can enter a text to be displayed below the CPT. In order to create a line break, you must enter a „#" (e.g. no further progress#concrete).

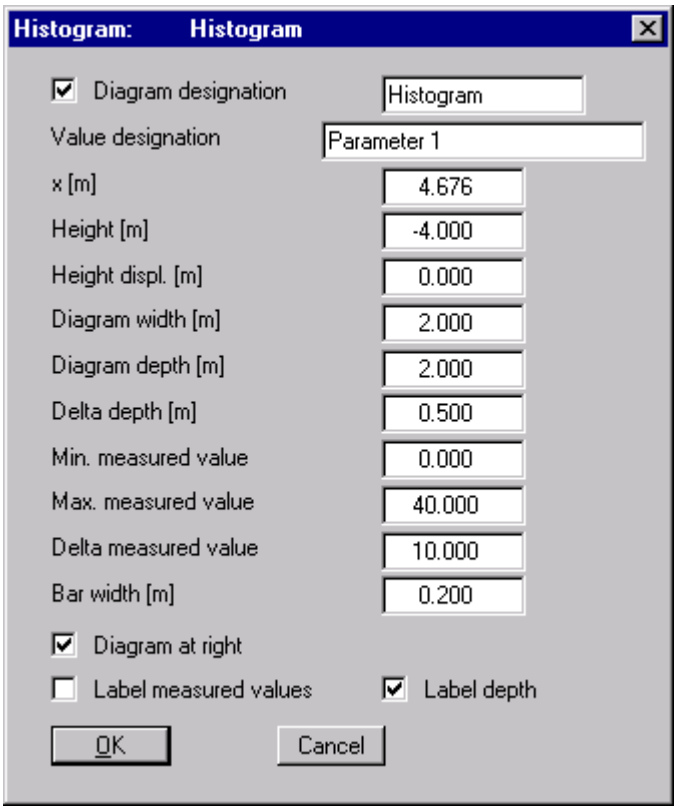
5.9 Menu item "Input / Histogram"

Using this menu item you can add histograms (e.g. water content profiles, concentration distributions, etc.) to your drawing. The values will be displayed as depth orientated bars, or connected as lines. The values axes can be subdivided linearly or logarithmically. You can align the bars (lines) at the left or the right and, if desired, suppress depth labelling. For value input a data pair with depth and corresponding value is necessary. The number of values can be edited via an action switch (the default value is 0). Otherwise data input corresponds largely with that of CPT's, so an explanation can be kept short here.

5.9.1 Histogram dialogue box



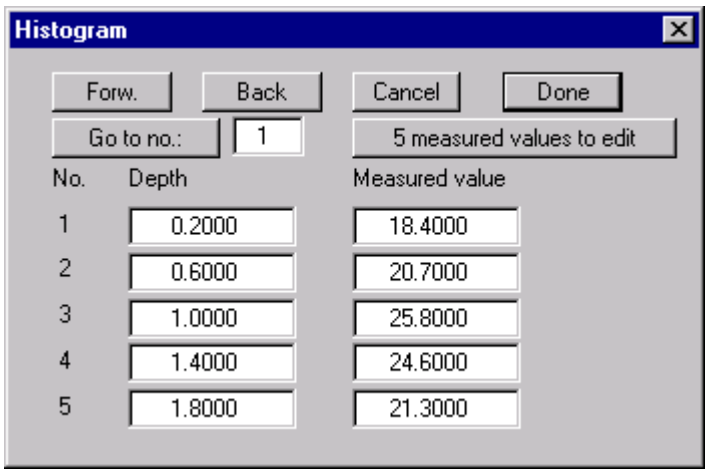
The buttons and switches of this central input box will now be explained.
"**Base data**"



In this dialogue box you enter the base data for the histogram. If the „Diagram designation" switch is deactivated, a designation will not be displayed. With „x" and „Height displacement" the diagram is positioned in the graphics. The depth labelling

subdivisions are controlled with „Delta depth“. The axes presentation is controlled with „Minimum measured value“, „Maximum measured value“ and „Delta measured value“ . If the „Diagram at right“ switch is deactivated, the values will be entered into the diagram increasing to the left. If the “Label measured values“ switch is activated, the values will be additionally labelled with the value quantity. With the “Label depth“ switch, the depth can be switched off.

“Edit values”



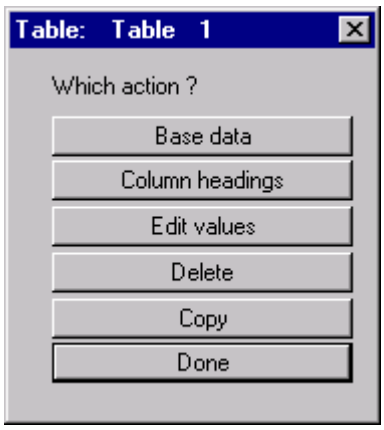
- **”x measured values to edit“**
  In the example shown 3 value pairs are already given. By pressing the „3 measured values to edit” button you will arrive at a dialogue box, in which the number of value pairs can be edited. If no values are yet present, you will see a „0“ in the box. By increasing this number, further value pairs will be added, by reducing it, current pairs can be deleted.
- **”Forw.“ and “Back“**
  A maximum of 8 value pairs will be shown. If more value pairs are present you can move through the list with the „Forw.“ and “Back” buttons.
- **”Go to no.“**
  By entering a value number and clicking on “Go to no.“ you will move directly to the corresponding value pair.
- **”Cancel“**
  By clicking in this box you will return to the previous dialogue box. The values entered will not be accepted.
- **”Done”**
  You will arrive back at the previous dialogue box. All values entered will be accepted.

- **”Delete”**
  The histogram can be deleted.
- **”Copy”**
  The current histogram will be duplicated. You will then move directly to the „Base data“ dialogue box of the duplicated log.

- **”Bar chart” and ”Line diagram”**
  With this switch you determine the type of diagram.
- **”Bar colour”**
  You can edit the bar colour.
- **”Line pen”**
  You can edit the pen width and the pen colour.
- **”Linear”** and **”Logarithmic”**
  You can edit the axes divisions.

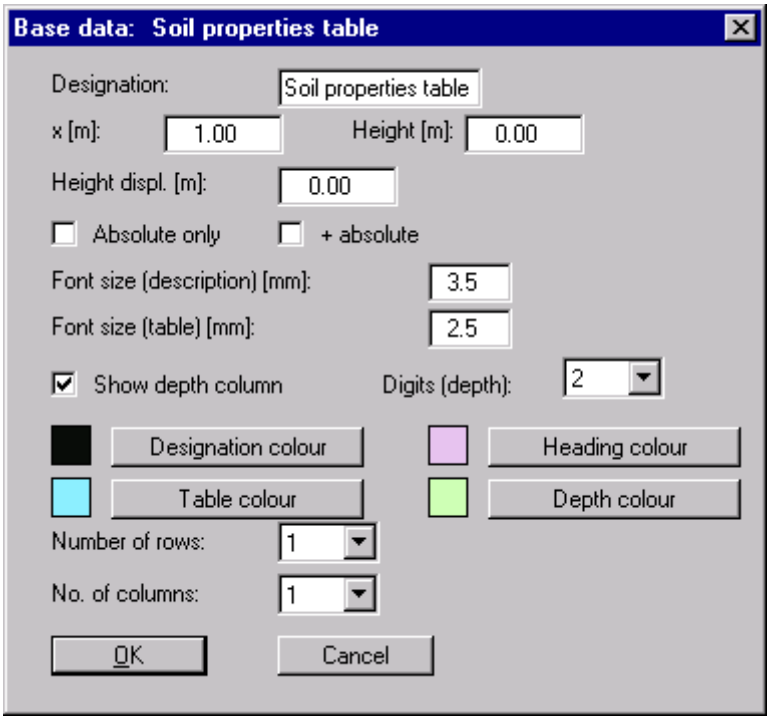
5.10 Menu item “Input / Table”

With this menu item you can display tables (e.g. with soil properties) depth orientated next to the bore profile. You will see the following dialogue box:



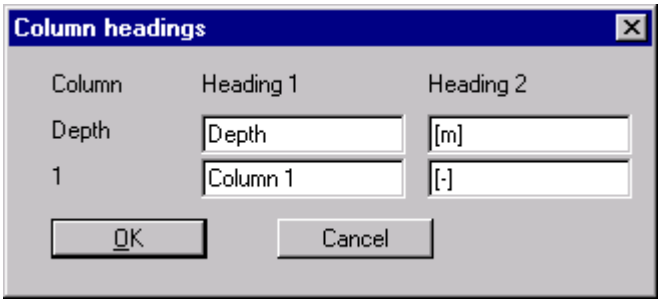
In the dialogue box there are six buttons. The following actions are possible:

- **“Base data“**
  When you click on the “Base data“ field, you will see the following dialogue box:



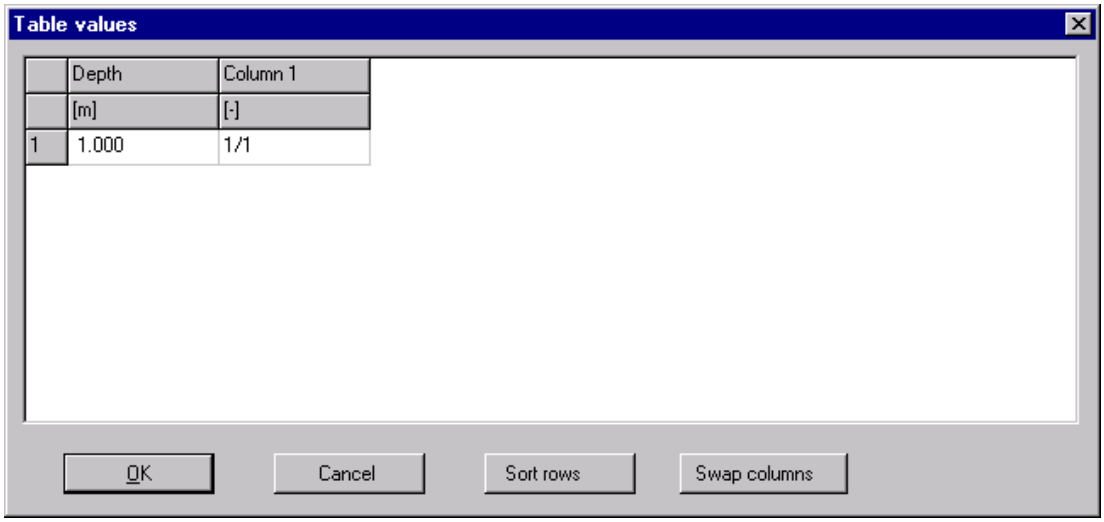
You can give the table a “designation“. With “x“ and “Height displacement” the table is positioned on the page. The height should correspond to that of the bore profile. For depth presentation, you can choose between “Absolute only” and “+ absolute”. Höhe“ gewählt werden. You can determine whether or not the depth column is to be displayed and if so, with how many digits after the point.
You can have the backgrounds coloured for various columns and heading rows. The number of rows and columns can be varied. For horizon orientated displays, the number of rows must correspond to the number of horizons in the bore profile. The number of columns corresponds to the number of parameters you wish to show, not including the depth column.

- **“Column headings“**
  According to the number of columns entered in base data, you will see the following dialogue box e.g.:



Heading 1 will be shown in the 1st row, heading 2 in the 2nd.

- **“Edit values“**
  In the following dialogue box input or editing of values to be shown in the table is carried out. For horizon orientated table display, the horizon depths of the bore profile in question must be given.



  If new rows are entered they can then “sorted“ by depth. By clicking on “Swap columns“, you can change the column positions.

- **“Delete”**
  After a security request the table will be deleted.

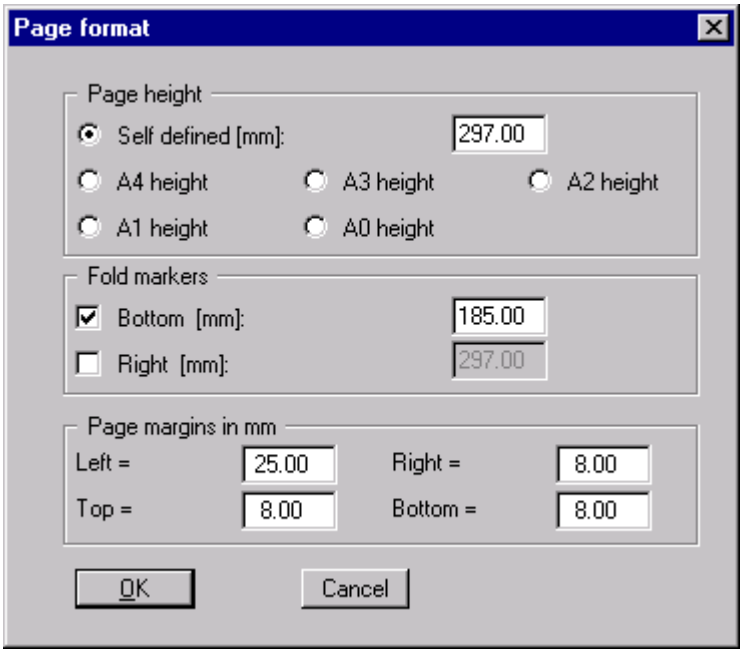
- **“Copy“**
  You can duplicate the table. After clicking on this button you will move directly to the “Base data” dialogue box of the newly created table and can then edit the designation and other information.

- **“Done“**
  After clicking on this button you will move back to the menu bar.

5.11 Menu item “Input / Statistics”

Using this menu item you can have statistics on the current boreholes and penetration tests created. Further to this, it is possible to assign depth dependent prices per bored meter. With the individual prices, the programme can determine the final cost.

5.12 Menu item "Input / Page format"



- You can edit the page height, e.g. in order to achieve a page height greater than the default 297 mm.
- If you would like fold markers in the graphics, activate the "Fold markers/Bottom" and/or "Fold markers/Right" switches.
- You can edit the distance of the plot edges to the page edge(s).

The width of the page can be given in „Input / Overall view" (see 7.1).

5.13 Menu item "Input / Move object"

With this menu item you can alter the position of an individual object. Objects with a fixed height (bore profiles, wells, drop penetration tests, histograms, staff gauge) can be moved in the x direction only. The legends, on the other hand, can be moved as desired. In order to move, click on „OK" in the dialogue box and „pull" the object to its new position with the left mouse button pressed. If you would like to move an individual object, e.g. a bore profile, in the y direction, you must simultaneously press the Shit key. The height displacement for this object will be automatically corrected in the base data. In order to move a further object, you must select the menu item „Input / Move object" once again. Instead of selecting this menu item, you can also press the „F11" key.
To move individual header texts or MiniCAD texts, use the corresponding menu item „View / Mini-CAD" and/or „View / CAD for header data". For details please see the supplied "Mini-CAD" manual.

5.14 Menu item "Input / Move all objects"

With this menu item you can displace all displayed objects (except for drawing header and legends) by the same amount. To do this, click on „OK" in the dialogue box and move the objects horizontally and vertically to the desired position with the left mouse button pressed. If you simultaneously press the Shift key, the objects will only be moved horizontally. If you wish for vertical displacement only, then press the [Ctrl] key when moving.

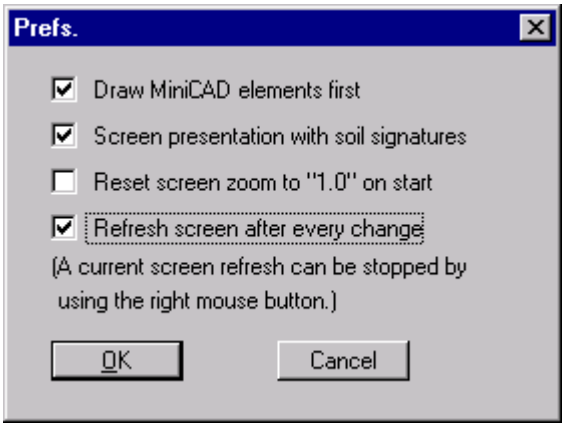
5.15 Menu "Input / Mirror"

Using this menu item you can have the horizontal arrangement of the displayed objects mirrored, i.e. for profile presentation the direction of view is turned around, so to speak (before 1, 2 ,3, after: 3, 2, 1). The default axis is the page centre.
In the dialogue box you can select which objects are to be mirrored around which axis. If the „Mirror texts too" switch for bore profiles and wells, and „Mirror depths too" switch for penetration test diagrams are off, mirroring will only be with reference to the distance from the left page edge. The arrangement of texts and depths will not be influenced.

6 View menu

6.1 Menu item "View / Preferences"

You will see the following dialogue box:



Mini-Cad elements will be drawn over objects created by GGU- STRATIG (bore profiles, DPT's etc.). In this way you can cover individual texts for example. If the bore profiles are to be placed in the foreground, you can select „Draw MiniCAD elements first".
As default, the GGU- STRATIG programme does without screen output of the soil signatures and line strengths, in order to increase processing speed. If you would like to have the soil signatures and/or line strengths presented on the screen, you can set the appropriate preference using this menu item. Output of the drawing to a printer or a file is not influenced by this. Such output will always be with soil signatures and line strengths.

Normally the screen presentation will not be refreshed after every alteration you make. If you would like this, click on the “Refresh screen after every change” switch.

6.2 Menu item “View / Alignment”

With this menu item you can align objects (bore profiles, wells, DPT’s, etc.) within the page.
You can use a vertical alignment between the top and bottom edge and/or horizontal alignment of the objects between the furthest left and furthest right objects.

6.3 Menu item “View / Refresh”

With this menu item you can refresh the screen presentation. At the same time, the size of the screen presentation can be given by selecting a zoom factor. If, e.g., after using the zoom function (see below), only part of the image is visible, you can achieve a complete view using this menu item. It is much simpler, however, to get a complete overview using the [Esc] key. Pressing the [Esc] key will give a complete overview using the zoom factor in this dialogue box. With the [F2] key you can refresh the screen without altering the coordinates or the zoom factor.

6.4 Menu item “View / Zoom”

You will see information on the zoom function. By pressing the [Ctrl] key you can, with the left mouse button pressed, „pull“ open a window, which will then be displayed enlarged. An overall view can be had once again by pressing the [Esc] key, or by using the menu item “View / Refresh” (see above).

6.5 Menu item “View / Mini-CAD and CAD for header data”

With these two menu items you can add free text to your graphics or equip them with additional lines, rectangles and bitmaps. Further to this, DXF files can be loaded. For details please see the supplied “Mini-CAD” manual. The same dialogue box appears for both menu items, the functions of which are further explained in the „Mini-CAD” manual. There are the following differences between “Mini-CAD and CAD for header data”

- Drawing elements created with Mini-CAD are with reference to the coordinate system of the bore profiles, DPT’s or histograms (e.g. AD heights), and will be displayed accordingly. This menu item should therefore always be selected when you wish to enter additional information in the area of the bore profiles, DPT’s or histograms (e.g. position of foundation base or current foundations). All information in these Mini-CAD data will be saved with the profile data (.BOP suffix).

- Drawing elements created with “CAD for header data” are with reference to the page format (in [mm]). They therefore always remain at the same position on the page, regardless of the coordinates of the bore profile. You should always use this menu item when entering general information (e.g. company logo, report number, attachment number, stamp). When you save these so-called header data (see Mini-CAD manual), they can be reloaded

into a completely different system (with different system coordinates). The thus saved header data will once again be at the same position on the page. This much simplifies creation and management of general page information.

6.6 Menu item "View / Icon and status bar"

After programme start-up an icon bar appears in the top left of the programme window. By clicking on these icons (Smarticons) you can directly reach most of the programme functions.
If you would rather work with a vertical bar, you can carry out the necessary alterations (e.g. pop-up window with one column) using this menu. You can also switch off the Smarticons. The preferences will be saved, amongst others, in the "BOPO.ALG" file (see menu item "Save preferences"), and will be active at the next programme start.
The meaning of the Smarticons will appear in a text window, if you hold the left mouse button pressed over the icon. Some icon functions cannot be called up via normal menus and menus.

 "Zoom (-) / Zoom (+)"

With the zoom function you can zoom in or out of parts of the image, by clicking the left mouse button.

 "Copy area"

If you would like to copy only parts of the graphics, in order to paste, e.g. to a report text, click on this icon. You will see information on this function and can then mark an area, which will be copied to the clipboard or can be saved in a file.

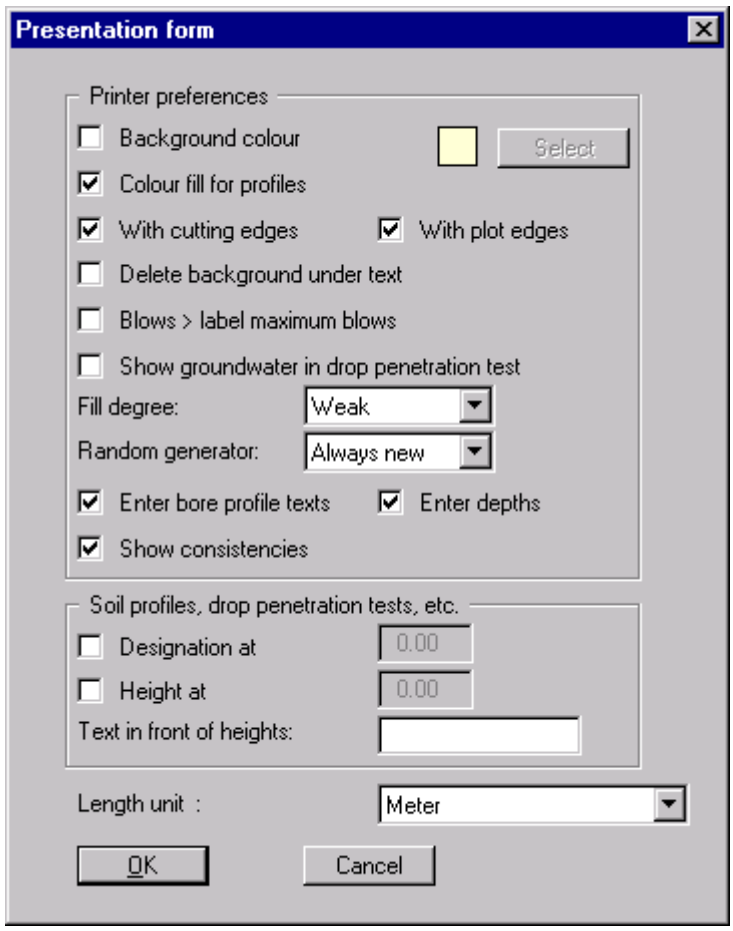
 "Legend on / off"

Using this icon you can switch the soil types and consistencies legend on and off. Legend editing is not possible.

7 Preferences menu

7.1 Menu item "Preferences / General"

The following dialogue box appears:

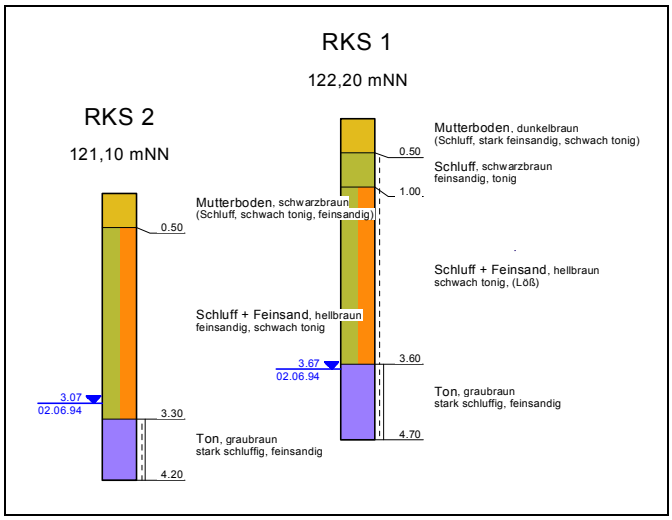


In the upper part of the dialogue box you can specify output preferences:

- **"Background colour"**
  You can optically enhance the drawing with a background colour. You can switch the background colour display on and off, and select a colour.

- **"Colour fill for profiles"**
  The bore profiles and well casings can be coloured according to DIN. Only the main soil types will be considered. With two main soil types, the profile will be vertically divided . Colour fill will be carried out if at least one of the first two code numbers is valid, and the corresponding long text (text A1; see menu item „Input / Bore profile", dialogue box „Horizons") begins with a capital letter. You can determine the colours for each main soil type with the menu item „Preferences / Soil colours". With this menu item, you can decide whether or not to use a colour fill.

- **”With cutting edges“**
  If you deactivate this switch, the outer page borders will not be printed. For information purposes only, a lilac coloured rectangle will be displayed on the screen, which designates the area to be printed. This allows, e.g. together with a page format fitted to the printer, printing of a single soil profile or similar to an A4 printer, without it being necessary to use an output zoom factor < 1.0. You can thus save yourself a subsequent enlargement on a copying machine.
- **”With plot edges“**
  In the programme defaults, the form is displayed with a frame (plotting edge). You can switch off this frame with the „with plotting edges” switch.
- **”Delete background behind text“**
  If the text and the presentation overlap, due to lack of space, the background can be deleted (see example.):



- **“Blows > label maximum blows“**
  If some of the blow counts for a drop penetration test are above your selected maximum, the numbers can be displayed on the left or right of the penetration test diagram.
- **”Show groundwater in drop penetration test“**
  If you have given a groundwater level in the drop penetration test base data, you can have it displayed in the test diagram by selecting this switch.
- **”Fill degree“**
  Here you can select from a very weak to a very strong filling of the bore profiles with soil signatures.

In the lower part of the dialogue box you can set preferences for the labelling of objects:

- **“Designation at“**
  By selecting this switch the names of bore profiles, wells etc., will not appear directly above each object, but will all be displayed at the same height in the drawing. This height is to be given in absolute coordinates, e.g. in m AD.
- **”Height at“**
  The positioning of height entries of objects is analogous to that of the designations (see above).
- **”Text in front of heights“**
  If you enter e.g. „AD” in this box, the height labelling above the profiles, soundings etc. will be in the form of „AD + 12.34“.

By clicking on **“OK”** the preferences will be accepted, with **“Cancel”** they will be rejected.

7.2 Menu item “Preferences / Font”

With this menu item you can switch to a different WINDOWS True-type font. The available True-type fonts are displayed in the dialogue box which then appears.

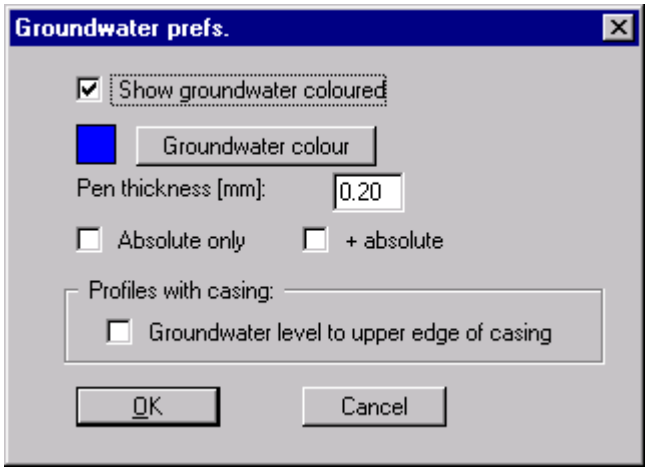
7.3 Menu item “Preferences / Font sizes”

With this menu item you can edit the font sizes for the drawing texts. Input is subject to some restrictions, which are checked by the programme. If you make entries which are not permitted, they will be automatically corrected, after an appropriate warning message.

7.4 Menu item “Preferences / Pens”

You can edit the pen colours and widths with which the elements and element frames are drawn.

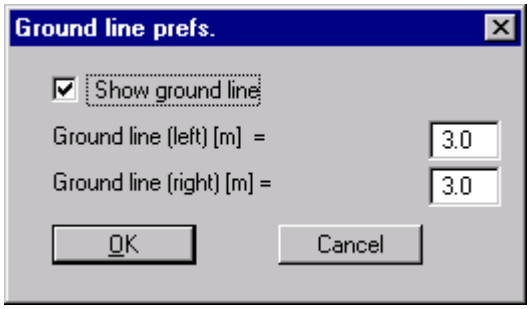
7.5 Menu item “Preferences / Groundwater”



When using a colour output device, you can edit the colour of the groundwater labelling and the line strength.
Further to this you can determine, similarly to depth labelling of bore profiles, whether or not the groundwater is to be labelled additionally with the absolute height or with the absolute height only.
If you have entered a casing as well as a bore profile, you can have the ground water level given relative to the casing by clicking on the "Groundwater level to upper edge of casing" button. The groundwater level input in „Input / Bore profile / Base data" must, however, still be given relative to ground level.

7.6 Menu item "Preferences / Ground line"

To the right and left of the bore profiles and wells, a horizontal ground line can be displayed, mainly for optical enhancement of the drawing. In this menu item, you can determine whether or not a ground line should be displayed, and with which width the line should be displayed.



7.7 Menu item "Preferences / Save "

Upon clicking on this menu item a file requester box will be called up. You can now save the current preferences from the menu „Preferences" in a file, which should have the suffix „.ALG". If you select "BOPO.ALG" as file name, and save the file on the same level as the GGU- STRATIG programme, the preferences will be automatically loaded at the next programme start.

7.8 Menu item "Preferences / Load "

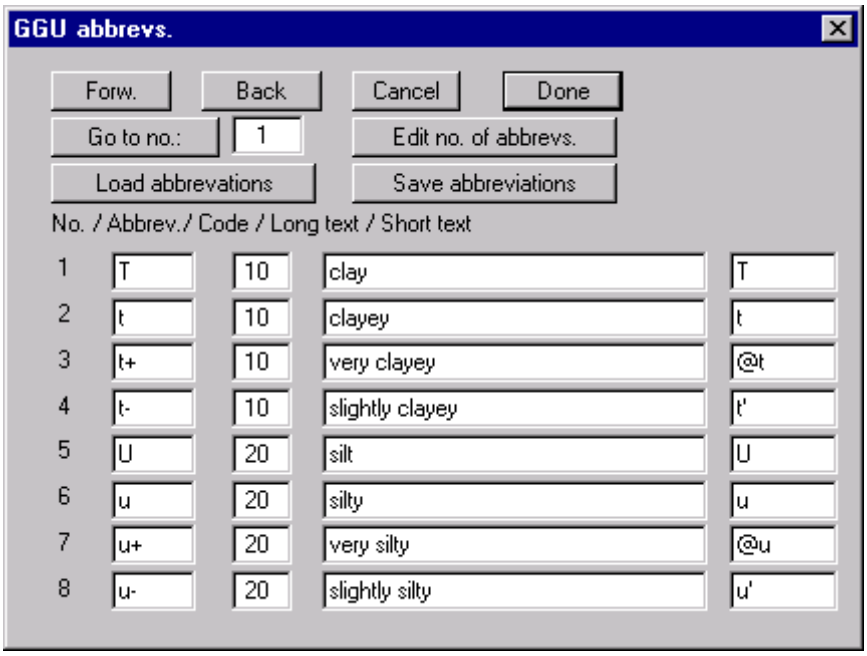
Upon clicking on this menu item a file requester box will be called up. You can now load preference data which was previously saved with the menu item „Preferences / Save" (see above).

7.9 Menu item "Preferences / Abbreviations (GGU) "

The menu item „Input / Bore profile" (dialogue box „Horizons") contains an explanation of the GGU abbreviations function. Using this menu item you can edit the abbreviations, the corresponding code numbers and the corresponding long and short texts. The number of abbreviations can be increased or reduced („Edit no. of abbrevs." button). When editing data the following input in the dialogue box is necessary:

- Abbreviation
- Corresponding code number (see menu item „Info / Code numbers")

- Corresponding long text
- Corresponding short text



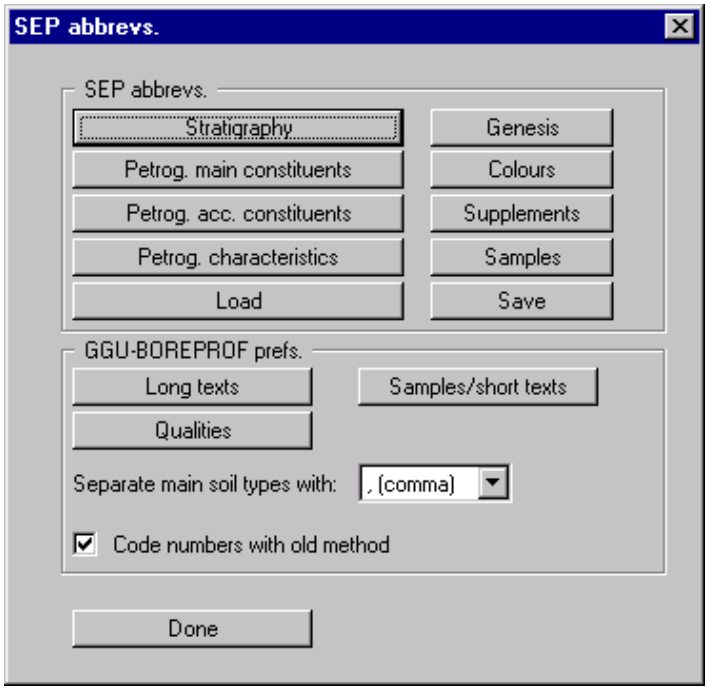
The dialogue box also allows saving of an abbreviation file (default suffix „.TXT“). If you select “KURZ.TXT” as file name, and save the file on the same level as the GGU- STRATIG programme, the saved abbreviations will be automatically loaded at the next programme start.
The dialogue box also allows loading of an different abbreviation files.

7.10 Menu item “Preferences / Abbreviations (SEP) “

The menu item „Input / Bore profile“ (dialogue box „Horizons“) contains an explanation of the SEP abbreviations function.
The menu item „Preferences / Abbreviations (SEP)“ allows editing and printing of the individual SEP abbreviation sets (stratigraphy, petrography, etc.). Besides abbreviations, the long and short texts can be edited. Further to this, in the abbreviation sets “petrography” and “genesis”, the corresponding code number is shown, which controls soil hatching in accordance with DIN 4023. The code numbers are automatically entered into the appropriate data fields upon interpretation of abbreviations (see horizon input; Section 7.4.2). For horizon input, a maximum of four code numbers can be used. When interpreting a SEP abbreviation line, the four data fields (code boxes) will be filled out from left to right. If only one main soil type is present and the code number for an accessory soil type is not to be entered into the second code data field (otherwise too many soil signatures will be drawn), then enter a “#” in the abbreviation line, as a place holder.
For example:

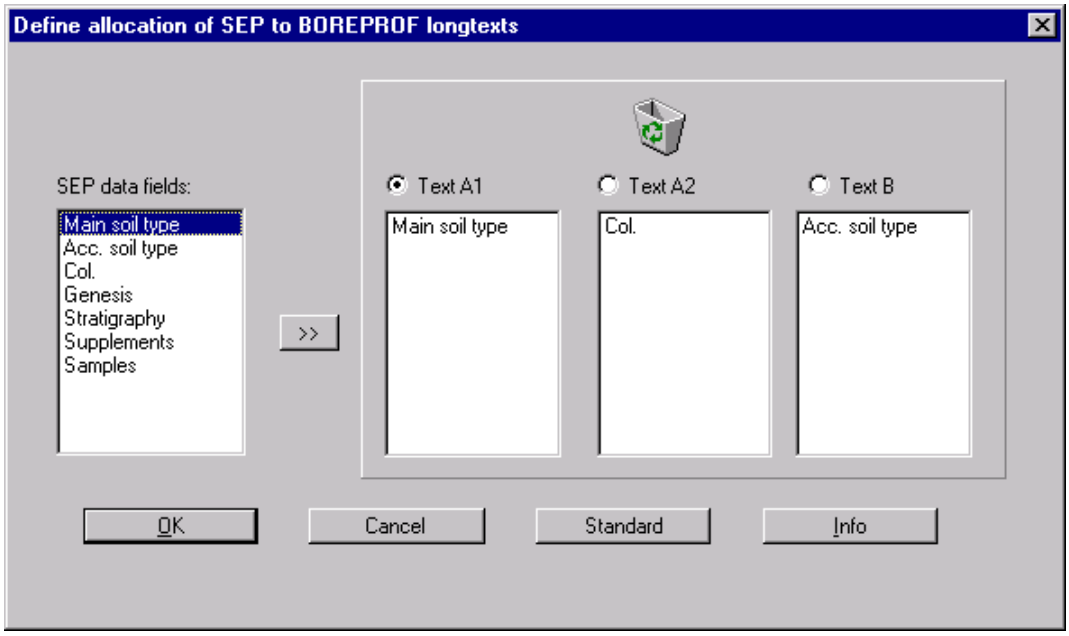
- 1.20//mS;#,fs//gero

When saving a bore as a SEP file (see Section 7.4) the „#“ will not be carried across, so that data compatibility to the SEP programme is kept.
You will see the following dialogue box:

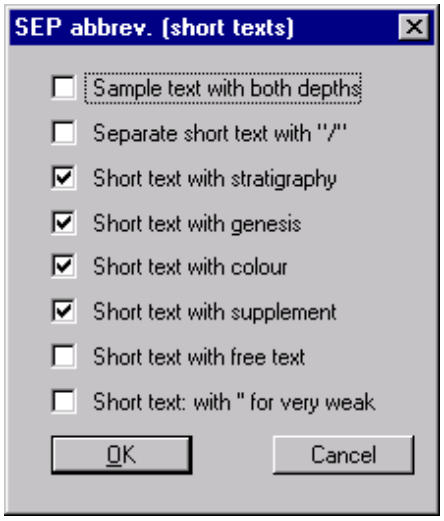


The abbreviations are divided into sub-sets in accordance with the SchichtenErfassungsProgramm. After selecting the „Stratigraphy“ button you will see a dialogue box in which you can carry out the desired alterations.
If compatibility to the SEP programme is to be kept, for data exchange purposes, the SEP abbreviations should on no account be edited. If compatibility is not completely necessary, the abbreviations can be adjusted to your needs.
The SEP abbreviation file may be saved (default suffix „.TXT“). If you select “SEPKURZ.TXT” as file name, and save the file on the same level as the GGU-STRATIG programme, the saved SEP abbreviations will be automatically loaded at the next programme start.
The dialogue box also allows loading of different SEP abbreviation files.
For presentation in the GGU-BOREPROF programme, you can set preferences in the lower part of the dialogue box:

- **“Long texts“**
  You can edit the default allocation of long text to interpreted abbreviations to suit your wishes.



- **"Samples + Short texts"**
  You can influence the presentation of sample texts and the short text line.



  If you edit the short text preferences, you must re-interpret the abbreviation lines in „Input / Bore profile", dialogue box „Horizons". To do this, you may also use the „Interpret all" button in „Input / Bore profile" (see Section 7.4).

- **"Qualities"**
  You can alter the text presentation e.g., from "slightly" to "somewhat".

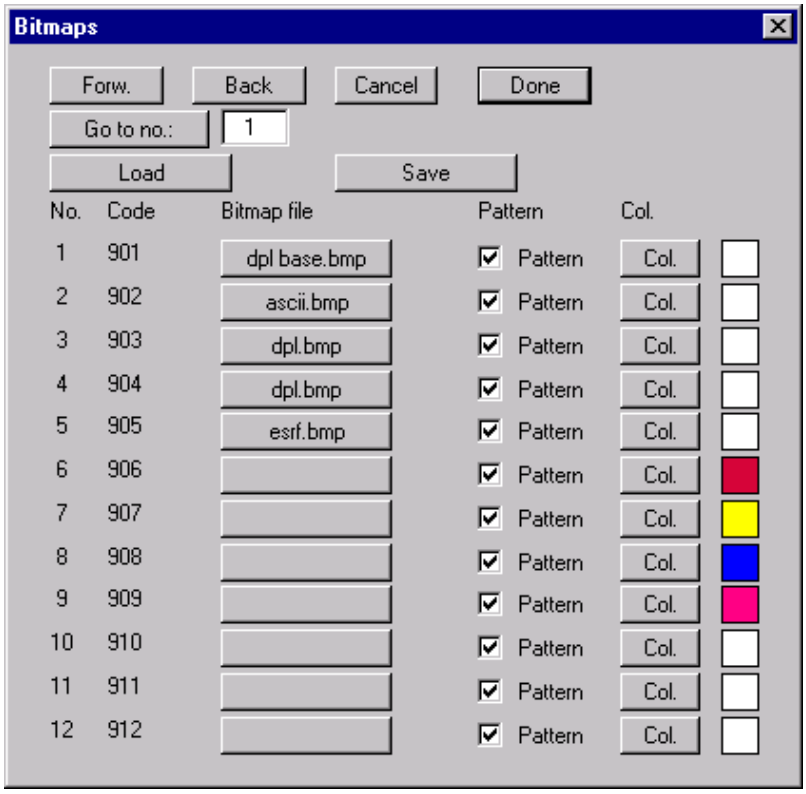
7.11 Menu item "Preferences / Soil colours "

The bore profiles and the well casings can be coloured in accordance with DIN. Colours may be defined for every main soil type, and can be edited at will.

The dialogue box allows saving of a “soil colour” file (default suffix „.COL“). If you select “BOPO.COL” as file name, and save the file on the same level as the GGU-STRATIG programme, the saved colours will be automatically loaded at the next programme start.
The dialogue box also allows loading of a different file with colour information.

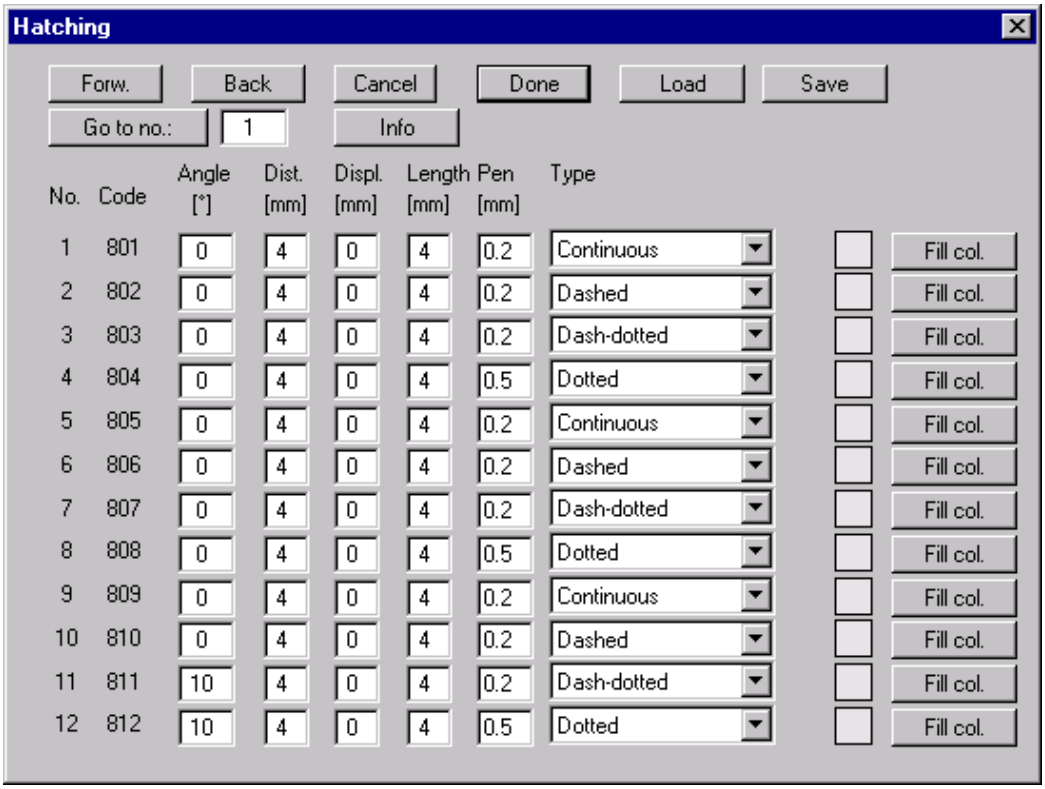
7.12 Menu item “Preferences / Bitmaps”

In rare cases it may be desirable to use soil hatching other than those prescribed by DIN. In this case it is possible to create a bore profile fill using Bitmaps. These Bitmaps (in WINDOWS .BMP format) can be created using, e.g., the „Paintbrush” programme, which is installed with every WINDOWS installation. This file format can also be created with other WINDOWS graphics programmes (e.g. CorelDraw). Further to this, you have the possibility of creating Bitmap templates with the help of a scanner.
Filling of a profile with a Bitmap graphic is done by entering the appropriate code number during horizon input (see below). The abbreviations and code numbers contained in the files „KURZ.TXT” and „SEPKURZ.TXT” can be edited or supplemented in order to allocate the Bitmaps to abbreviations and thus to long and short texts.
For filling of bore profiles with user-defined Bitmaps the code numbers 901 to 999 are available. Correspondingly, the dialogue box contains a continuous, non-editable, numbering from 901 upwards.



After clicking on the action switch after each code number a file requester box opens with which you can allocate a code number to a Bitmap file. The Bitmap file must be in the “BITMAPS” folder, which is on the programme level (e.g. “C:\GGU-SOFT\ STRATIG \BITMAPS”).
Bitmap graphics have a defined width and height when created, e.g. with „Paintbrush”. The programme increases or reduces this width to the width of the bore profile, when you select the „Pattern” switch. The resulting height for the bore profile presentation is then determined automatically. In this manner a vertically displaced hatching is repeated until the horizon is completely filled. If the „Pattern” switch is not selected, the Bitmap will be stretched or compressed to the full height (of the horizon).
User-defined Bitmaps will only be displayed on the screen, exactly the same as for standard soil type hatching, if the „Screen presentation with soil signatures“ switch is selected in „View / Preferences”. They will, however, be entered when printing the bore profile, independently of the setting of this switch.
In principle, Bitmaps can also be used in colour. Problems may occur if you try to send such a Bitmap to an output device which is not capable of colour output. Quite often, ugly grey scales will be the result. In order to achieve higher flexibility there is a „Col.“ Button behind each Bitmap file, with which you can allocate a colour to the Bitmaps. This colour will only be entered when the „Colour fill for profiles“ switch is activated, in the menu item „Preferences / General”. Each selected colour will be shown in the dialogue box.
You can save the Bitmaps in a file with suffix “.BIT”.

7.13 Menu item “Preferences / Hatching”



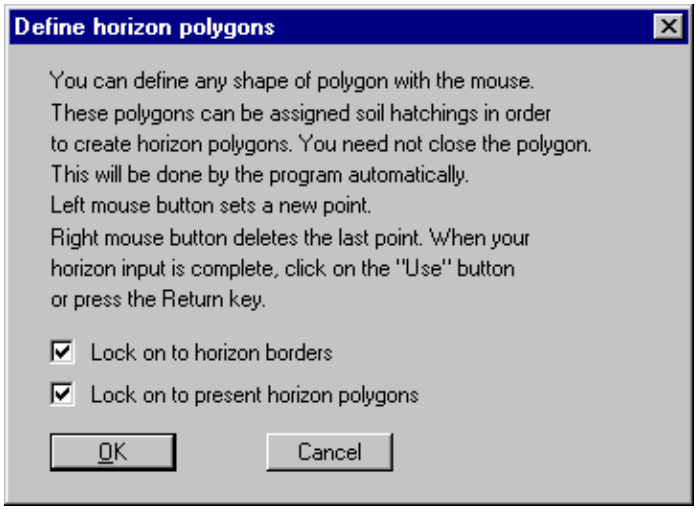
For filling of areas with hatching the code numbers 801 to 850 are available.
Using „Forw./Back/Go to no." you can move through the dialogue box.
Upon selecting the „Info" switch you will see information on filling out of the hatching dialogue box. In order to create, e.g., a concrete hatching you must enter the code numbers 801 and 802 in the soil profile.
Screen presentation is achieved by selecting the „Screen presentation with soil signatures" switch in the menu item „View / Preferences".
You can save the hatching in a file with suffix ".SRF".

8 Horizon polygons menu

With horizon polygons you can define any part of the drawing to be filled with colour and signatures. This greatly simplifies the creation of, e.g., geological sections.

8.1 Menu item "Horizon polygons / Define polygon"

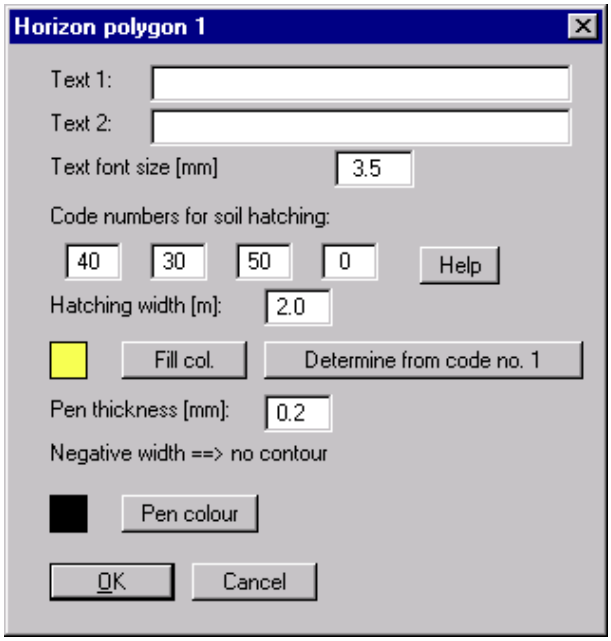
The following information appears:



With the “Lock on to horizon borders” and „Lock on to present horizon polygons” buttons it is possible to exactly position the points.

8.2 Menu item “Horizon polygons / Edit”

An editor for each horizon polygon can be called up with the mouse by clicking in the appropriate polygon with the left mouse button. The following box appears:



With the „Text 1“ and „Text 2“ fields, two lines of text can be entered. The „Fill colour“ can be freely defined or determined from the first code number.
You can specify the ”Pen thickness“ and the “Pen colour“ of the surrounding line by selecting the appropriate buttons.
If more than one polygon is present the „Arrange polygons“ field appears. By clicking on the buttons the presentation can be selected:

- “Backwards” polygon will be moved one level back

- „To the back“ polygon will be moved right to the back
- „Forwards“ polygon will be moved one level forwards
- „To the front“ polygon will be moved right to the front

8.3 Menu item “Horizon polygons / Delete”

You can delete any horizon polygon with the mouse by clicking in the appropriate polygon with the left mouse button. [Backspace] restores the last „delete”.

8.4 Menu item “Horizon polygons / Delete all”

With this menu item all horizon polygons can be deleted.

8.5 Menu item “Horizon polygons / Move polygon point”

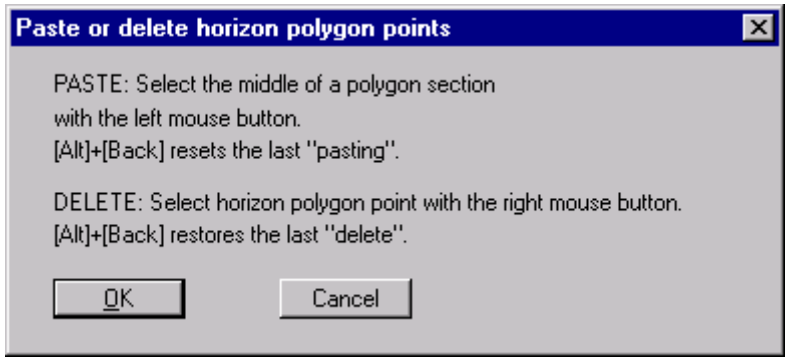
A polygon point can be moved with the left mouse button pressed.

8.6 Menu item “Horizon polygons / Edit”

The coordinates of a point can be edited by clicking on a point.

8.7 Menu item „Horizon polygons / Paste / Delete”

You may add individual polygon points or delete current points. The dialogue box explains the possibilities.



9 ? menu

This menu has several options from which you can access the help system for various themes, as well as options containing programme info, copyright, etc.

10 Tips and tricks

10.1 Keyboard

You can reach the most important menu items of the menu “Input” by using the function keys. The function keys are shown in the corresponding menu items.
The individual allocations are as follows:

- [Esc] refreshes the screen contents and sets the screen back to A3 format. This is useful, e.g., if you have used the zoom function to display parts of the screen and would like to quickly return to a complete overview.
- [F2] refreshes the screen without altering the current magnification.
- [F5] calls up the menu item “Input / Staff gauge”
- [F6] calls up the menu item “Input / Bore profile”
- [F7] calls up the menu item “Input / Wells”
- [F8] calls up the menu item “Input / Drop penetration test”
- [F9] calls up the menu item “Input / Histogram”
- [F11] calls up the menu item “Input / Move object”
- [F12] calls up the menu item “Input / Move all objects”

10.2 Mouse

By double-clicking with the left mouse button in certain screen areas you can reach almost all of the programme input dialogue boxes.

- By double-clicking over a bore profile, a well, a DPT or a histogram, you will open the “Base data” dialogue box for each diagram/test.
- By double-clicking below, or with pressed [Shift] key, a bore profile, a well, a DPT or a histogram, you will open the “Base data” dialogue box for each diagram/test.
- By double-clicking in a bore profile, a backfill or a casing, the “Horizons” dialogue box for that horizon will be opened.
- By double-clicking in a DPT, the “Drop numbers” dialogue box will be opened.
- By double-clicking in a histogram, the “Measured values” dialogue box will be opened.
- By double-clicking in a legend, the “Legend” dialogue box will be opened.
- By double-clicking on a drawing element (text, line or Bitmap) created with „Mini-CAD” or „CAD for header data”, the input box will be opened.
- By double-clicking in other area of the sheet, the “Overall view” dialogue box will be opened.
- By double-clicking in other areas of the sheet, with the [Shift] key pressed, the “Page format” dialogue box will be opened.
- Slow screen output can be cancelled with a click of the right mouse button..
- By clicking and pulling with the mouse, with the [Ctrl] key pressed, you activate the zoom function, i.e. the selected section will fill the screen.

- If, in a short text, you would like to have a letter overlined, then you must enter a “@” in front of the letter.

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