

### 1 - Open Pro

- Use the shortcut on your desktop or launch the program from Geotec\Bin folder.

### 2 – Enter your license identification (LID) provided by Sobek

- For a **trial** license, the LID starts with **T**.
- For an **individual** license, the LID starts with **W**.
- For a **removable** license, the LID starts with **R**.
- For a **network** license, the LID starts with **N**.

### 3 – License and software information

- From the menu bar, use **Help > License**.  
The window shows information about the license used.
- From the menu bar, use **Help > About**.  
The window shows information about the Geotec version installed.

💡 Pro can be used in English or in French. Change the language via the **Style** menu.

Pro is used to produce profile views of borehole data. With Pro, you can create cross-sections to view geotechnical, environmental or geomechanics properties of boreholes projected on an outline. The production of profile views includes the following steps, without necessarily following the order below.

### Enter borehole data and location

Profile views are produced with borehole data available in the corporate database. See the **Tutorial on Log** for basic information about the definitions, graphic interface, characteristics of entry forms and data entry.

To create a profile view, the location of boreholes must be defined, in terms of coordinates or chainage along an axis.

### Create an axis (outline)

The axis is the outline onto which the borings are projected. It has a minimum of two points. It does not have to go through the borings. Pro calculates the projection and indicates the offset perpendicular to the axis.

### See all data in PROFILE

Once an axis (outline) is created, simply retrieve it via a query for the cross-section to the displayed. Round the limits of the X and Y axes of the PROFILE graph to make sure to see all available data.

### Edit the options

Several display options of geotechnical properties are available to adjust the look of the presentation. These options are saved in the style file, which is a customizable graphic output, independent from projects.

### Define the X and Y scales

The scales of the profile view can be optimized by Pro, or fixed by the user. The scale is typically expressed as the ratio of the measurement on the profile view over the real measurement in the field, for example 1:1000.

### Edit the graphic presentation




The look of the presentation is saved in the style file, which can be reused for any project. The page format can be selected, as well as the columns to display for each boring, including their width, formatting and X-axis, if needed.


### Print and export to DXF

The graphic report can be printed on paper or PDF, or exported to DXF.

### Define the coordinate system





Geotec supports the UTM and MTM coordinate systems. It is important to define the coordinate system used to correctly locate the borings along the georeferenced outline.

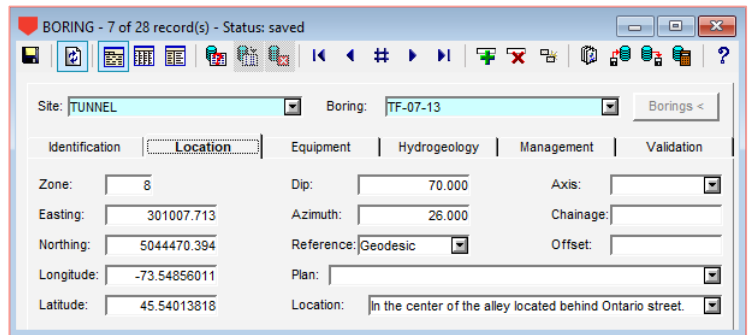
- Open the Site entry form via button  of the horizontal toolbar.
- Retrieve the site via a query with buttons  → site no. →  or [F7] → site no. → [F8]
- In the Location tab, make sure that the **coordinate system, NAD and zone** are defined.

Then, Geotec can calculate the longitudes and latitudes of the borings based on their X and Y coordinates, or vice-versa. The location of the site can also be calculated as the average of its borings locations via button .

### 1a - Enter the X, Y and Z coordinates of the borings

Pro uses the X, Y and Z coordinates of the borings to locate them on the profile view.




- Open the Boring entry form via button  of the horizontal toolbar.
- Retrieve the site's borings via a query with buttons  → site no. →  or [F7] → site no. → [F8]
- Enter the natural ground elevation (Z) as well as the Easting and Northing.
- If the coordinate system is defined (see previous bullet point), the longitude and latitude will be automatically calculated. You can also launch the calculation with button .



Identification	Location	Equipment	Hydrogeology	Management	Validation
Zone:	8	Dip:	70.000	Axis:	
Easting:	301007.713	Azimuth:	26.000	Chainage:	
Northing:	5044470.394	Reference:	Geodesic	Offset:	
Longitude:	-73.54856011	Plan:			
Latitude:	45.54013818	Location:	In the center of the alley located behind Ontario street.		

### 1b - Enter the chainage, offset and associated axis (outline)

If coordinates are not taken, Pro can create the profile view along the axis, with the borings chainage and offset from the axis.

- Open the Boring entry form via button  of the horizontal toolbar.
- Retrieve the site's borings via a query with buttons  → site no. →  or [F7] → site no. → [F8]
- Define the associated axis number, the chainage of the boring and its offset to the axis.

### 2 - Enter the dip and azimuth


For inclined borings, indicate the dip and azimuth. The values are taken into account in the projection.

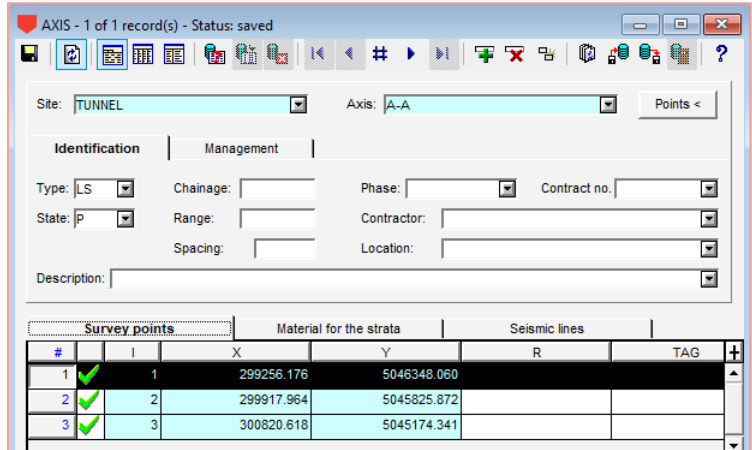
## Definition of axis (outline)

The axis is the outline onto which the borings are projected. It has a minimum of two points. It does not have to go through the borings. Pro calculates the projection and indicates the offset perpendicular to the axis.

The axis can be created by entering its implementation points or by importing its points from an Excel file of CSV extension. It can also be created interactively in Google Maps or in the plan view.


### 1- Define in the entry form or import points

- Open the Axis entry form via button  of the horizontal toolbar.
- In New mode, select the site of the axis. The list shows all sites defined in the SITE table.
- Enter the axis number. It can have up to 20 characters with numbers, letters and symbols - \_ ( ).  
Note: The site-axis combination must be unique.
- Enter other relevant data such as its type, state, location, etc.
- In the Survey points tab, enter the point index and the X and Y coordinates.
  - The coordinates are entered according to the coordinate system, NAD and zone defined in the site.
  - The index determines if the borings are left or right of the axis, from the point of view of an observer on the smallest index looking to the other end. Their position is shown by an arrow up or down, respectively, in the profile view.
  - For implementation points, you can add a radius of curvature for the outline.






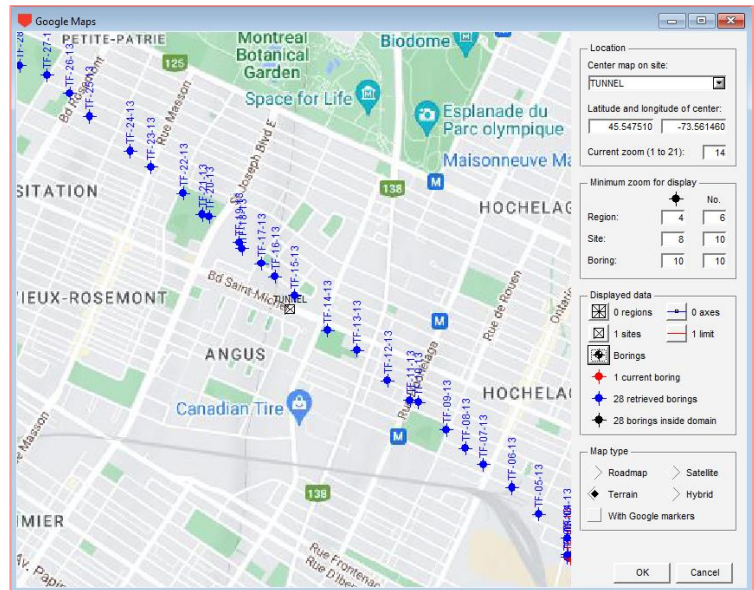
#	I	X	Y	R	TAG
1	✓	1	299256.176	5046348.060	
2	✓	2	299917.964	5045825.872	
3	✓	3	300820.618	5045174.341	

You can import survey points of an axis via the Import

External Data (CSV) button  of the toolbar. The CSV file must contain, for each point, at least its SITE\_NO, AXIS\_NO, I, X and Y. There is not maximum number of points per axis.


### 2- Create interactively in Google Maps

- Open the Google Maps entry form via button  of the horizontal toolbar.
- Move the map, or use the drop-down list to Center the map on a specific site.  
Note: To be in the list, the site must have a longitude and latitude, which can be calculated in Geotec via button  of the site entry form.
- Right-click and choose **Create an Axis**. The cursor changes to .
- Left-click each point of the axis.
- When the last point is defined, right-click and select **Terminate**.
- The axis entry form opens and shows the coordinates of each point clicked.  
Note: The axis points are converted to geodesic coordinates based on the coordinate system defined for the site of the axis.
- Enter the axis number and any other relevant information.



### 3- Create interactively in the plan view

If a plan view is displayed in Pro and an axis is already retrieved, you can create a new axis via the plan view.

- Right-click in the plan view and choose **Create an Axis**. The cursor changes to .
- Left-click each point of the axis.
- When the last point is defined, right-click and select **Terminate**.

- The axis entry form opens and shows the coordinates of each point clicked.  
Note: The axis points are shown in the coordinate system defined for the site of the axis.
- Enter the axis number and any other relevant information.

#### 4- Modify interactively an axis

In Google Maps and in the plan view, you can modify an existing axis (outline) whose value in the State field is 'P' (planned).

To add a point:

- Right-click on the axis and choose **Add an Axis Point**.
- Left-click at the location of the new point; it will be added between the two points closest to the cursor.
- Add another point or right-click and choose **Terminate**.

To move a point:



- Place the cursor on the axis point.
- Left-click, hold and move the point to the desired location.

To delete a point:

- Right-click on the axis point and choose **Delete this Axis Point**.

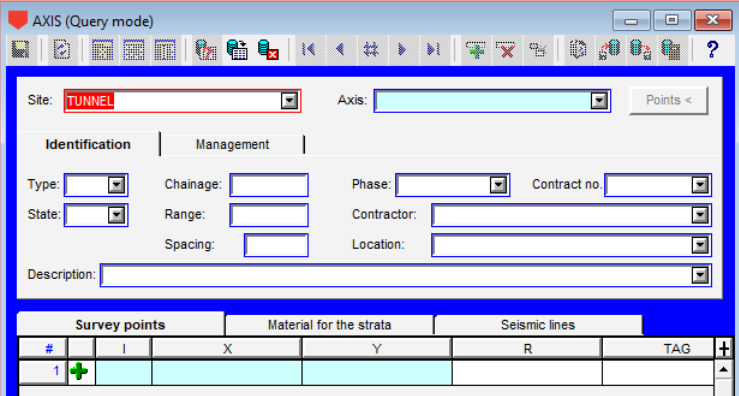
#### Query to retrieve the axis

Once an axis (outline) is created, simply retrieve it via a query for the cross-section to be displayed.

- Click  from the toolbar or **[F7]** to open the Axis entry form directly in Query mode.
- Enter the criteria to filter the records, for example the site number and/or axis number.
- Execute the query by clicking  in the toolbar, or **[F8]**, or **Query > Execute**.

The query retrieves all records corresponding to the specified criteria. If more than one axis is retrieved, the 1<sup>st</sup> is shown in PROFILE\_1, the 2<sup>nd</sup> in PROFILE\_2 (if it exists), etc.

If no record corresponds, the entry form returns in New mode (to insert).




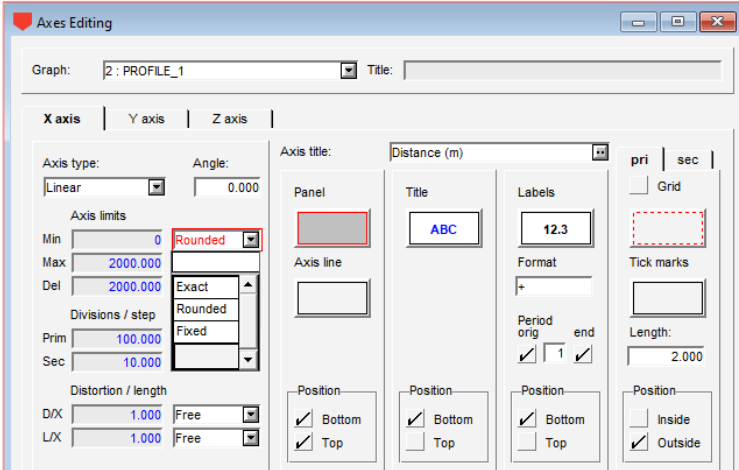
#### Round the limits of the axes

Pro displays the borings around the axis retrieved, depending on the retrieval distance (see Options In Pro), between the minimum and maximum X and Y limits of the profile.

Round the limits of the X and Y axes of the PROFILE graph to make sure to see all available data.


To make sure to see all available data, it is suggested to round the limits of the X and Y axes of the PROFILE graph. Pro will then optimize the display based on the borings data and space available on the page.

- Use  in the vertical toolbar, or **Style > Axes**.
- Select graph **PROFILE\_1** in the drop-down list, if not already selected.
- Go to **X axis** tab.
- For the Min and Max axis limits, choose **Rounded**.
- Do the same for the **Y axis**.



## OPTIONS IN PRO

Several display options of geotechnical properties are available to adjust the look of the presentation. These options are saved in the style file, which is a customizable graphic output, independent from projects.

Click  in the horizontal toolbar of Pro, or **Style > Options**.

### Selection of axes and borings

This section is used to customize the borings to retrieve.

- Choose to display the profile of **one axis only (the first retrieved)** or of **several (all those retrieved)**. To show several axes, you must also have several graphs PROFILE\_1, PROFILE\_2, etc. in the style.
- Choose to display the borings from the **current site** (same site as the axis), or **of all nearby sites**, in which case the borings close to the axis will be displayed, no matter their site.
- By checking **retrieve only borings close to the current axis**, Pro retrieves only the borings located in a rectangular boundary around the axis, based on the distance specified in the next field. This avoids using too much memory.  
To retrieve a cross-section whose borings are located by a chainage and an offset (see section 1b on page 2): select Current site and do not check the option Retrieve only borings close to current axis.
- Specify the **maximum detection distance** between the boring and the axis, beyond which the borings are not represented on the profile view. This distance (offset) is calculated perpendicular to the axis and on both sides.
- Specify the **minimum offset** between the boring and the axis, beyond which the offset will be shown in the graphic report next to the boring identifier. If the boring is located at a lesser distance than the minimum offset, its offset will not be displayed.
- If necessary, specify a spacing between the borings, in millimeters, to displayed them equidistant from each other.

### Identifier of borings

This section is used to customize the display of the boring numbers and their offset to the axis on the profile views.

- Choose to display the **identifier of borings** as text (number only), with a significant marker (symbol) or in a square or round box and specify its dimensions.
- Choose to display the identifier **at a distance relative to the top of each boring** or of the graph.
- Modify the formatting of the boring identifier and of the offset via the big **Attributes** buttons.

### Presentation of axis points and seismic lines

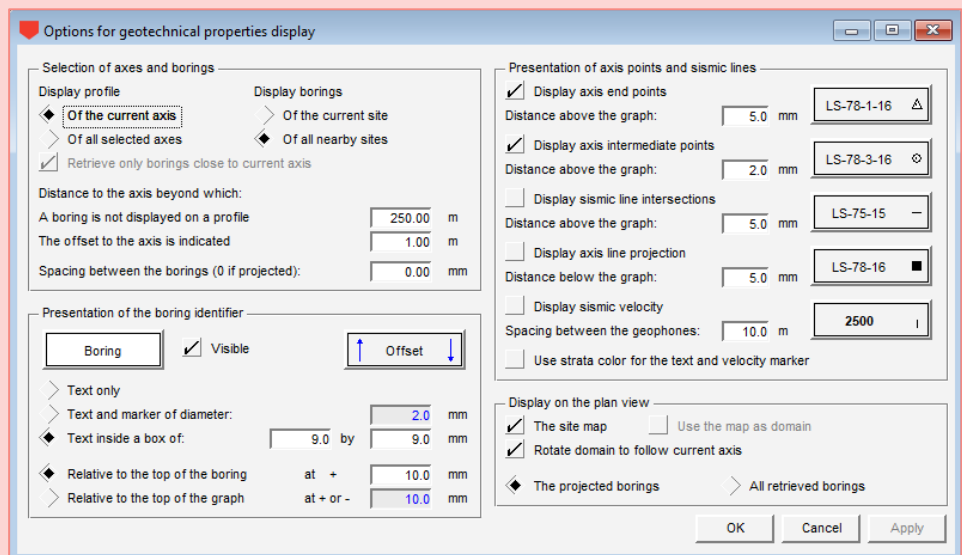
This section is used to customize the display of the axis points on the cross-sections.

- Check the desired items to display them.
- Indicate the distance between the symbol and the top of the graph. A negative distance puts the symbol inside the graph.
- Modify the formatting of the items via the big **Attributes** buttons.
- If seismic test data is present for the axis (see the axis definition), the measured velocities can be displayed under the seismic profile, and the profile is interrupted if the spacing between 2 geophones is greater than the spacing specified in the options.

### Display on plan view

This section is used to customize the display in the plan view, if visible on the graphic report.

- Display the **site map** specified in field FILE\_NAME of the SITE table. This file is cartographic (.dxf, .sit, .ctr – see the **Site module**). If a map is displayed, you can use its domain for the plan view.
- Check to **rotate the domain to follow the current axis** for Pro to adjust the orientation of the plan view so that the axis follows the profile view. Otherwise, the plan view is oriented with North up.
- Choose to display in the plan view **only the borings projected** on the profile view, or **all borings retrieved** (therefore including those unchecked by the user or too far from the axis to be projected).



The screenshot shows the 'Options for geotechnical properties display' dialog box. It is organized into four main sections:

- Selection of axes and borings:** Includes 'Display profile' (radio buttons for 'Of the current axis' and 'Of all selected axes'), 'Display borings' (radio buttons for 'Of the current site' and 'Of all nearby sites'), and a checked option 'Retrieve only borings close to current axis'. Below are input fields for 'Distance to the axis beyond which: A boring is not displayed on a profile' (250.00 m), 'The offset to the axis is indicated' (1.00 m), and 'Spacing between the borings (0 if projected):' (0.00 mm).
- Presentation of the boring identifier:** Features a 'Boring' box, a checked 'Visible' checkbox, and an 'Offset' field with up/down arrows. Below are options for 'Text only', 'Text and marker of diameter:' (2.0 mm), 'Text inside a box of:' (9.0 by 9.0 mm), and 'Relative to the top of the boring' (at + 10.0 mm) and 'Relative to the top of the graph' (at + or - 10.0 mm).
- Presentation of axis points and seismic lines:** Contains several checked options: 'Display axis end points' (5.0 mm, LS-78-1-16), 'Display axis intermediate points' (2.0 mm, LS-78-3-16), 'Display seismic line intersections' (5.0 mm, LS-75-15), 'Display axis line projection' (5.0 mm, LS-78-16), and 'Display seismic velocity' (2500). There is also an unchecked option 'Use strata color for the text and velocity marker'.
- Display on the plan view:** Includes checked options for 'The site map' (with 'Use the map as domain' unchecked) and 'Rotate domain to follow current axis'. A radio button for 'The projected borings' is selected, with 'All retrieved borings' as an alternative.


Buttons for 'OK', 'Cancel', and 'Apply' are located at the bottom right.

The scales of the profile view can be optimized by Pro, or fixed by the user. The scale is expressed as the ratio of the measurement on the profile view over the real measurement in the field, for example 1:1000.

To fix a scale, use the ratio of the width in mm of the PROFILE graph to the length of the real outline.

### Display the scale calculated by Pro


Pro calculates the current scale, which can be display on the graphic output.

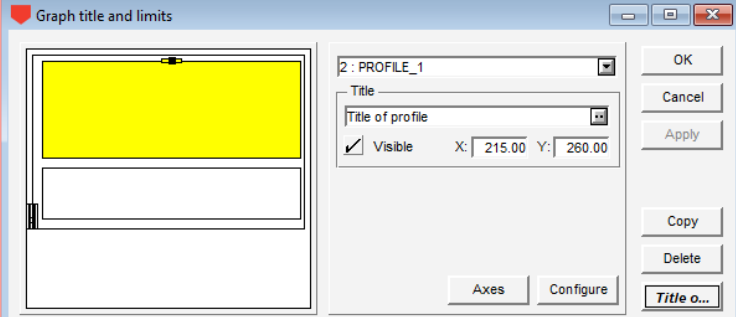
- Go to Object mode with 
- Add a text or a text zone via the horizontal toolbar.
- As text, enter keyword \$\$scale\_hor\_1 for the horizontal scale of profile 1, \$\$scale\_ver\_1 for the vertical scale of profile 1, etc. The keywords are expressed as measurement on field / measurement on plan. Simply add 1/ or 1: in front.

### Fix the measurement on plan in X

The dimensions (in mm) of the PROFILE graph are fixed in the style file. The positions in mm are calculated from the bottom left of the page.

The maximum space available is indicated in the Page row of the table, and depends on the page dimensions (Letter, Legal, Ledger, A0, etc.)


- Click  in the horizontal toolbar, or **Style > Graphs**.
- For PROFILE\_1 graph, adjust the left position and width of the graph. It is the **width** that is used for the X scale.
- Do the same for the bottom position and the **height**.

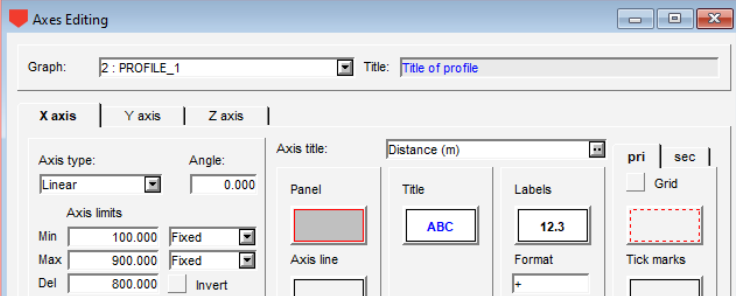


#	#P	Name	Left	Width	Right	Bottom	Height	Top	Visible	Active
1	0	0 Page	0.00	420.00	420.00	0.00	270.00	270.00	Yes	Yes
2	1	0 PLAN_VIEW	15.00	400.00	415.00	15.00	80.00	95.00	Yes	Yes
3	2	0 PROFILE_1	15.00	400.00	415.00	110.00	150.00	260.00	Yes	Yes
4	3	-2 RUN	-10.00	6.00	-4.00	0.00	40.50	40.50	Yes	Yes
5	4	-2 STRATIGRAPHY	-4.00	8.00	4.00	0.00	40.50	40.50	Yes	Yes

### Fix the measurement on field in X


To have a specific scale, fix the measurement of the axis (outline), in other words the difference between the maximum and minimum limits of the axis.

- Click  in the horizontal toolbar, or **Style > Axes**.
- Select graph PROFILE\_1 in the drop-down list, if not already selected.
- Go to **X axis** tab.
- For the Min and Max axis limits, choose **Fixed** and indicate the values. Delta (difference) is calculated by Pro.



### Fix the distortion in Y

To fix the scale in Y, it is recommended to impose a distortion.

- Click  in the horizontal toolbar, or **Style > Axes**.
- Select graph PROFILE\_1 in the drop-down list, if not already selected.
- Go to **Y axis** tab.
- For the Min and Max axis limits, choose **Rounded**.
- For **Distortion D/X**, choose **Fixed** and enter the value (ex: 5).

### Calculation of above example


The scale in X is calculated as the measurement on plan (width of PROFILE\_1 graph) over the length of the outline (delta in X), or:  
 $400 \text{ mm} / 800 \text{ m} = 1 \text{ mm} / 2 \text{ m} = 1 / 2000$

The scale in Y is calculated as the scale in X multiplied by the distortion, or:  
 $1 / 2000 \times 5 = 1 / 400$

The look of the presentation is saved in the style file, which can be reused for any project. The page format can be selected, as well as the columns to display for each boring, including their width, formatting and X-axis, if needed.


### Page format

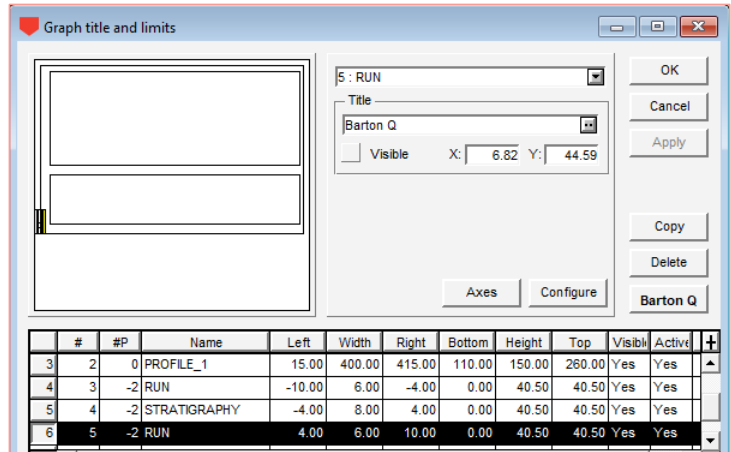
The page dimensions can be modified. It is recommended to save a style file per page format, for the dimensions of the graphs to be already adjusted.

- Click  in the horizontal toolbar, or **Style > Page**.
- At the top right, select a standard format in the drop-down list (letter, legal, tabloid, A0, A1, etc.) or enter the desired dimensions.
- When printing, it will be important to configure the printer with the same standard format.


### Columns of properties

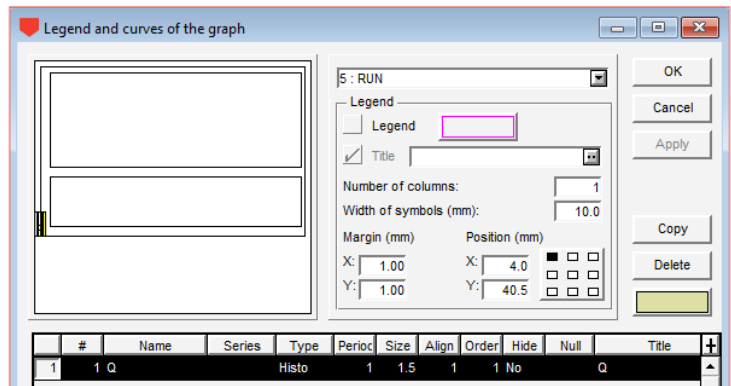
Any property of borings as a function of depth can be displayed in a column.

- Click  in the horizontal toolbar, or **Style > Graphs**.
- Modify or copy an existing row and enter a negative number in #P.
- In the **Name** cell, choose the table from which you want to display data (from the DB).
- Indicate the left and right or width in millimeters relative to the center of the boring (« 0 »). A negative value means left of center.




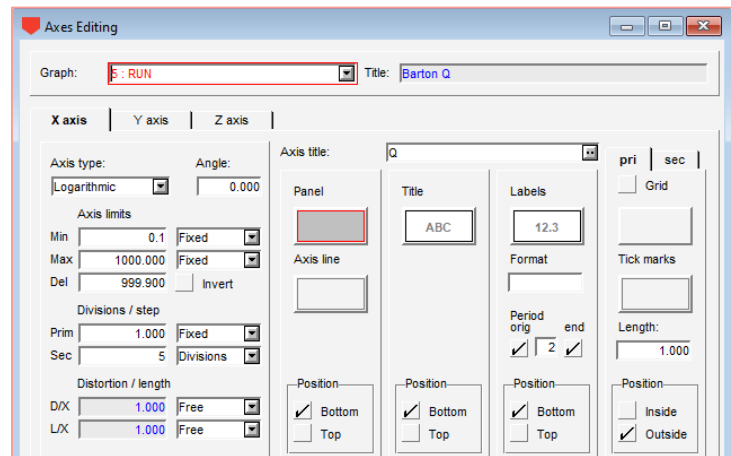
### Formatting of columns

- Click **Configure** in the graphs window, or  in the horizontal toolbar, or **Style > Legend and curves**.
- Select the column to edit in the drop-down list, if not already selected.
- Modify or copy an existing row.
- In the **Name** cell, choose the field from which you want to display data (from the DB).
- Modify the type of display (Text, Point, Histogram, etc.). The Default type is managed by Geotec.
- Modify the formatting via the **Attributes** button under Delete.



### Formatting of columns axes

- Click **Axes** in the graphs window, or  in the horizontal toolbar, or **Style > Axes**.
- Select the column to edit in the drop-down list, if not already selected.
- Go to **X axis** tab and modify the desired elements.
  - Axis type
  - Minimum and maximum limits
  - Primary and secondary divisions
  - Axis line, title, labels, grids and tick marks



The graphic report can be printed on paper or PDF, or exported to DXF.

### Printing on paper or PDF

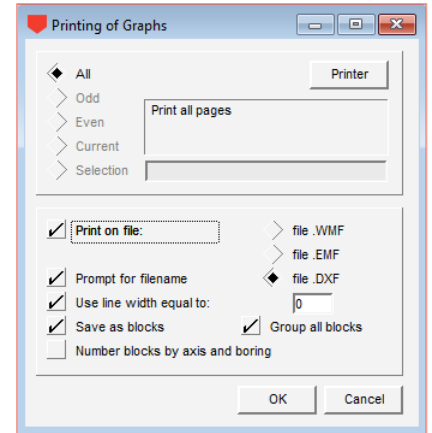
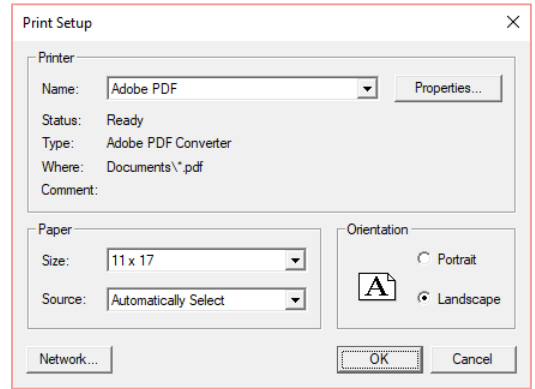
In both cases, you must configure the printer.

- Do the query to retrieve the profile view(s).
- Go to File > Printer Setup.
- Choose the paper or PDF printer installed on your workstation. We recommend Adobe PDF.
- Select the correct paper size and click OK.
- Go to File > Print.
- Uncheck **Print on file** (the bottom section will be disabled).
- Click OK.
- If printing on PDF printer, the file name suggested is **SiteNo\_AxisNo.pdf**.

### Exporting to DXF

The graphic report can be exported to DXF format for AutoCAD.

- Do the query to retrieve the profile view(s).
- Go to File > Print.
- Check Print on file and file .DXF.
- Indicate a line width of 0 for AutoCAD.
- Check **Save as blocks** for each boring to be a unique bloc in AutoCAD.
- Check **Group all blocks** for all blocks (borings) to be grouped as one in AutoCAD.
- Click OK.
- The file name suggested is **SiteNo\_AxisNo.dxf**.





## SUMMARY

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## CONTACT US

At Sobek, we are committed to providing a technical support that exceeds your expectations.  
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