

Export .DGN files from gINT

In this module you will learn the fundamentals to exporting DGN files from gINT for use in MicroStation

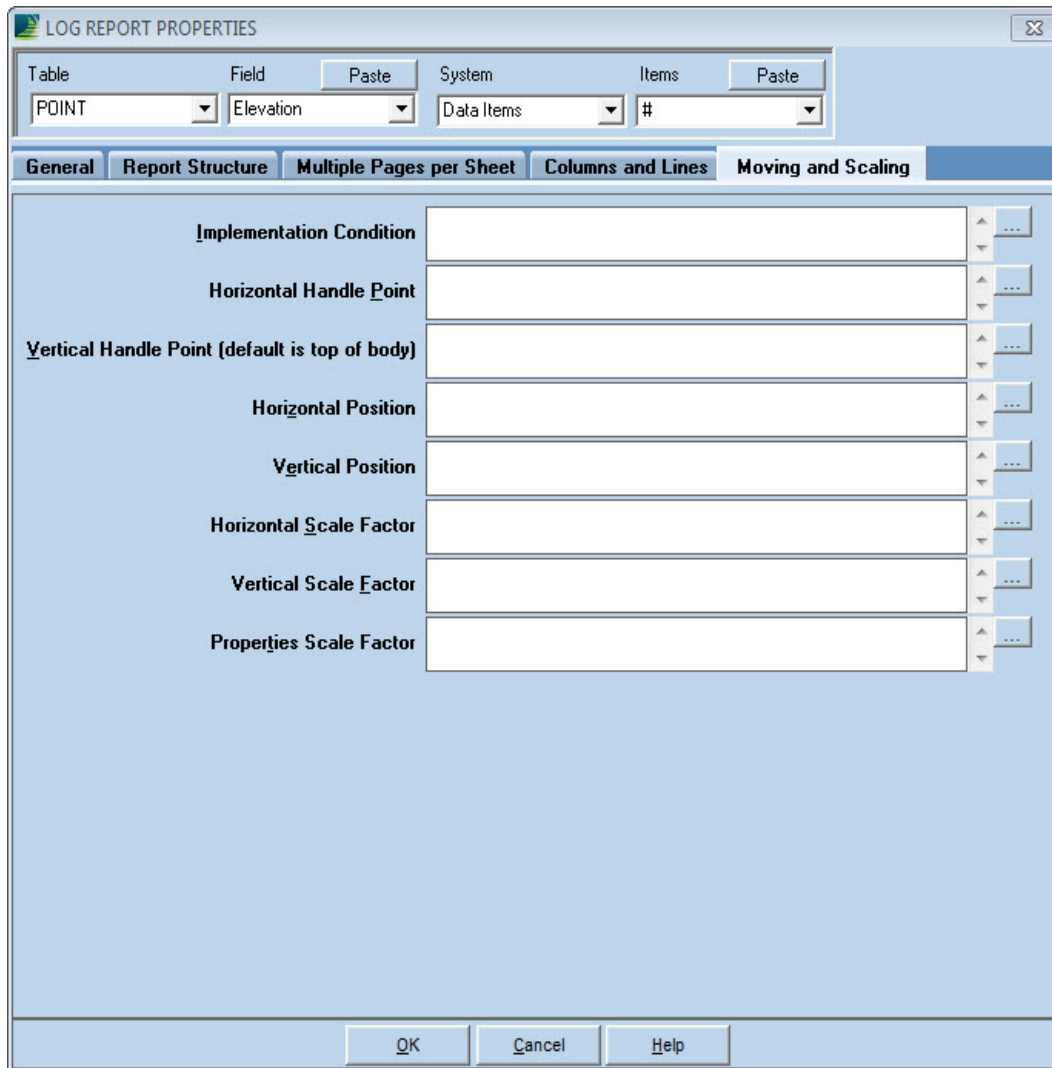
Lesson Objectives

After completing this module, you will be able to:

- Set gINT parameters to enable export of logs in DGN format
- Export gINT fence drawings in DGN format

Exporting a Log

Moving and Scaling Tab



The **Moving and Scaling** tab allows you to move and scale the entities of the final report.

The most common need to do this is with export to DXF and DGN. Remember that gINT works internally in a page coordinate space (inches or millimeters on a physical piece of paper). Generally in a CAD program you are dealing with a site coordinate space. Instead of performing all the necessary translation and scaling

of the entities in CAD you could use these properties to perform the coordinate and property value modifications.

Implementation Condition



This property is used to specify a criteria that will return a True or False results.

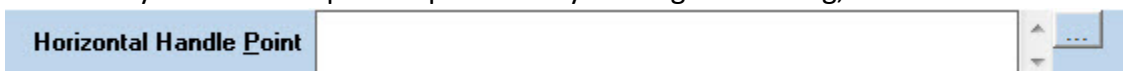
If blank, any moving or scaling of the report will occur on all output.

If you want the scaling to occur only when exporting to DGN, you would use the condition <<DGNEExport>>

This System Data (<<DGNEExport>>) Item can be pasted from the Items Data Tool list when the System list is set to "Data Items". The Systems Data Item returns True if the output is DGN, and False otherwise.

Horizontal Handle Point

If you have set up the report for any moving and scaling, the **horizontal handle**



point allows you to specify the horizontal handle point of the report.

You can enter a single value or an expression.

You will typically select an entity on the report, such as the horizontal center of the Graphic Column entity.

When the condition specified in the **implementation condition** is met, the handle point is moved to the coordinates specified by the **horizontal position** and **vertical position** values and coordinates are scaled from this point. The default position is the left edge of the log, regardless of its position on the paper space. The figure **Default Handle Points** indicates the default horizontal handle point.

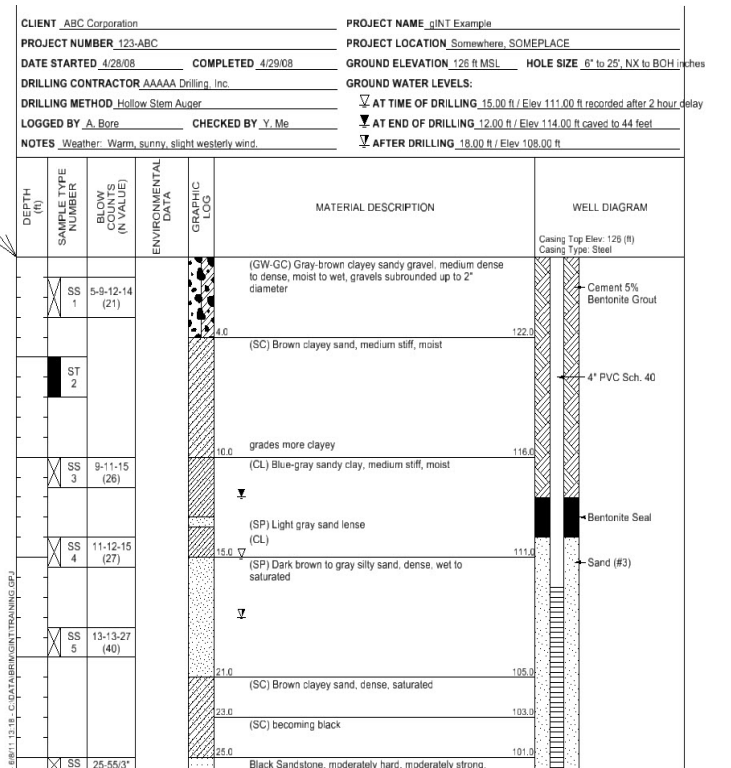
Vertical Handle Point

If you have set up the report for any moving and scaling, the **vertical handle point** allows you to specify the vertical handle point of the report.

Vertical Handle Point (default is top of body)

If blank, the original coordinates are not moved. The default location is the top of the body (the boring log - below the header and column headers. The figure **Default Handle Points** indicates the default vertical handle point.

HANDLE POINT



Default Handle Points: The default horizontal and vertical handle points on a borehole log in MicroStation when exported from gINT in DGN format

Horizontal Position

A screenshot of a software interface showing a text input field labeled "Horizontal Position". The field is empty and has a small icon with three dots and arrows on the right side.

If you have set up the report for any moving or scaling, the **Horizontal Handle Point** is moved to the coordinates specified in the **Horizontal Position** property.

If blank, the coordinates are not moved.

Vertical Position

A screenshot of a software interface showing a text input field labeled "Vertical Position". The field is empty and has a small icon with three dots and arrows on the right side.

If you have set up the report for any moving or scaling, the **Vertical Handle Point** is moved to the coordinates specified in the **Vertical Position** property.

If blank, the coordinates are not moved.

Horizontal Scale Factor

A screenshot of a software interface showing a text input field labeled "Horizontal Scale Factor". The field is empty and has a small icon with three dots and arrows on the right side.

If you have set up the report for any moving or scaling this property allows you to specify the **Horizontal Scale Factor** of the report.

The default is 1, that no scaling will occur.

If a value for this property is specified, then the scaling is zeroed on the **Handle Point**.

For example


The **Horizontal Handle Point** is at 3.5 and the **Horizontal Scale Factors** is 2.

There is an entity with an X coordinate of 4.5

The new X coordinate of the entity would be:

$$3.5+2*(4.5-3.5) = 5.5$$

Vertical Scale Factor

A screenshot of a software interface showing a property field. The field is labeled "Vertical Scale Factor" in a blue header bar. The field itself is empty and has a small icon with three dots and arrows on the right side.

If you have set up the report for any moving or scaling this property allows you to specify the **Vertical Scale Factor** of the report.

The default is 1, that no scaling will occur.

If a value for this property is specified, then the scaling is zeroed on the **Handle Point**.

Properties Scale Factor

A screenshot of a software interface showing a property field. The field is labeled "Properties Scale Factor" in a blue header bar. The field itself is empty and has a small icon with three dots and arrows on the right side.

This property scales appropriate entity properties when you export a graphics file at output.

The default for this property is 1, that no scaling occurs.

Using Moving and Scaling Log Report Properties for DGN Export

You have a simple log form that you need to place on final design drawings for a road project.

A. In CAD, the vertical axis is elevation so you want the top of each borehole to be at a Y value corresponding to the surface elevation (<<Point.Elevation>>) and the depth scale will be 1:1. That is, a foot (or meter) depth needs to be one vertical unit in the final CAD drawing.

B. The horizontal axis is based on the borehole station along the road alignment. Let's say the station is stored in the field <<Point. Station>> and it

is input in decimal format, that is, 12345.6, and not 123+45.6 (in feet) or 12+345.6 (in meters).

C. The ratio of the horizontal axis to the vertical is 10:1. That is, the distance taken horizontally for 10 station is its equals the distance covered vertically for one elevation unit. Let's say we store this ration in the field <<ProjectDGN Aspect Ratio>>. That way you can alter the exaggeration on a project basis. In this example you would store "10", 10 will be made the default value so if the field is blank, 10 will be used.

D. The graphic column will be 0.3* the aspect ratio. Some text heights will be 0.15* the aspect ratio, and others will be 0.1* the aspect ratio.

The setup is as follows:

Log page properties

Report Structure Tab

Depth Units Page 1:

```
<<Calc(<<LogBodyHtPg1>>*<<FirstData(<<Project.DGN Aspect Ratio>>,10)>>)>>
```

Continuous Printing

Check this property. This will continue the log vertically no matter how deep so you only get one page regardless of hole depth.

Moving and Scaling Tab

Implementation Condition

```
<<DGNEExport>>
```

That is, only implement the moving and scaling if exporting to DGN.

Horizontal Handle Point

Specify the X Value corresponding to the center of the graphic column.

Vertical Handle Point

Leave blank. The program will use the top of the log body.

Horizontal Position

<<Calc(<<Point.Station>>/<<FirstData(<<Project.DGN Aspect Ratio>>,10)>>

Vertical Position

<<Point.Elevation>>

Horizontal Scale Factor

<<FirstData(<<Project.DGNAspect Ratio>>,10)>>

Vertical Scale Factor

<<FirstData(<<Project.DGNAspect Ratio>>,10)>>

Properties Scale Factor

<<FirstData(<<Project.DGNAspect Ratio>>,10)>>

The **Properties Scale Factor** will scale the text and graphic properties (such as your graphic column, sample column and water symbol as well as report header and footer information and material description) of the log report appropriately.

- ① With this setup you can run test prints and export to DGN files that result in the proper configuration in CAD.

Exporting a Fence Diagram

Expand Frame to fit scale(s)

This item is a checkbox.

Marking this property tells the program to increase the frame width and/or height if scales are specified in the fence output screen (information below) that require frame expansion.

Sample Usage

Assume your fence data frame is 9 inches wide and your distance axis spans a length of 1,000 feet.

At output time, if you specify a distance axis scale of 50 feet per inch, that would require a data frame of 20 inches (1,000 feet divided by 50 feet per inch equals 20 inches).

With this property marked, the Data Frame will expand to that width (from the example above - 20 inches) only upon preview, or export to DXF GDW or DGN.

If you print to paper or PDF, the Data Frame will remain at 9 inches and all boreholes that are on the distance axis beyond 450 feet will be left off the plot.

In the same scenario, if you specify a distance axis of 200 feet per inch, only 5 inches would be required for the data frame with (1000 feet divided by 200 feet per inch equals 5 inches). In this case, the frame width will remain at 9 inches and it will not expand on preview, or export to DXF, GDW or DGN.

The behavior also applied to the vertical axis scale.

Scaling at Output (Fence)

FENCE OPTIONS				
Baseline	<input type="text"/>	<input type="text"/>	<input type="text"/>	Use Aligme
	Minimum	Maximum	Scale	Divisions
Vertical Axis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Distance Axis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	Reverse Distance Axis (2D views only)			Z Axis <input type="text"/>

When preparing to export a fence diagram, there are fence options as shown above on the Output >Fence tab.

The Vertical Axis and Distance Axis Scale values are of interest to us for the DGN export.

If the maximum and minimum values are left blank, the program expands the scales as much as possible to show the full extent of the data specified. As noted above, when exporting to DGN, DXF, GDW or previewing, the frames are expanded so that page size is not a factor in what can be plotted on a fence.

To scale your fence at output to feet, you can specify the Scale (in coordinate units/page units, for example, feet per inch or meters per millimeter). Remember, gINT works in paper space so it is converting items based on paper space. gINT will scale the fence by multiplying the body width and height by the scale factor.

For example, if you put a scale of 1 in the vertical and distance axes, gINT will multiply everything during output such that 1 inch of paper space in gINT equals 1 foot in MicroStation. So if your data frame is 9 inches wide by 5.5 inches tall it will translate to 9 feet by 5.5 feet in MicroStation.

If you enter no scale, gINT will default to a scale such that the gINT document is in the same size (in paper space) when the DGN file is opened in MicroStation.

If your fence in gINT is 9 inches wide by 5.5 inches wide, and enter a scale of 1/12 for the vertical and distance axes, then your fence will be scaled up such that 1 foot on your gINT fence equals one foot of real space in Microstation.

- ① When altering scales, only the distance is affected. Any lettering or graphics are not scaled during the export.

Summary and Review

Summary

You are now able to:

- Set gINT parameters to enable export of logs in DGN format
- Export gINT fence drawings in DGN format

