

## Demonstration Video

### Surfer 9 - Part 5

### Combining Map Layers and Editing Map Properties

#### PART 5

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1. Welcome to Golden Software's demonstration video for Surfer 9 – Part 5. In this demonstration I'll be covering the topic of combining map layers and editing map properties.
  2. I'll start by creating a shaded relief map. I'll go to **Map | New | Shaded Relief Map**, select the grid file that I want, which in this case is Helens2.grd, and click *Open*. The shaded relief map is created.

I'll go to **View | Fit to Window** so that we can see the map a little better.

A map in Surfer is composed of its map frame and map layers, which you can see in the **Object Manager**. The map frame consists of all the axes and all the map layers, and is called *Map* by default. The map layers are the individual map types that you use to display your data. This map frame has one map layer in it, called *Shaded Relief* for the shaded relief map.

3. Now I want to add some contours to this map. The map is already selected, so I'll simply go to **Map | Add | Contour Layer**. I'll select the grid file, and I'll use the same grid file I used for the shaded relief map, and click *Open*.

Now the contour layer has been added to the map, and you can see in the **Object Manager** that there is a new *Contours* layer in the map frame. This is the easiest way to overlay different map layers together, just simply add more map layers to the existing map frame.

4. If you have already created two separate map frames, you can still overlay the map layers. For example, I will go to **Map | New | Base Map**, select this BLN file and click *Open*. You can see in the **Object Manager** that a new map frame was created with the base map layer. The two map frames are completely separate from each other and not spatially related at all. You can move the map frames apart from each other by clicking and dragging on one of the map frames in any direction.

If you wanted to overlay the base map layer on top of the contour and shaded relief map layers, you can do this in the **Object Manager**. Select the *Base* layer by clicking on it, hold the mouse button down and drag it into the other map frame with the *Contours* and *Shaded Relief* layers. Release the mouse button and the *Base* layer will be added to the other map frame. You can now right click over the empty map frame and go to *Delete* to delete it. Now all three map layers are overlaid in one map frame.

5. To remove a map layer from a map frame, you can simply right click over the layer and go to *Delete*. That will remove that map layer so that it no longer exists in the project. I will go to **Edit | Undo Deletion**.

To separate a map layer from its existing map frame into a new map frame, right click over the map layer and go to *Break Apart Layer*. Now that map layer has its own map frame and is its own separate map. I will delete that map by right clicking on it and going to *Delete*.

6. You can double click on any of the map layers to edit their individual properties. To edit the properties common to all map layers, such as the view, scale, limits and frame properties, double click on the map frame title, called *Map* by default, in the **Object Manager**.
  - a. The **View** page will allow you to adjust the viewing angle and projection of the map. For example, I will change the *Tilt* and *Rotation* values and will change the projection to *Perspective* and click *Apply*. If I move this dialog over, I can see that the map has been adjusted.
  - b. The **Scale** page allows you to set the scale of the map. You can set a relative scale, such as 1" (or centimeter if your page units are centimeters) equals so many map units, or you can set the physical size of the map. I will change the length of the Y axis to 8" and click *Apply*.
  - c. The **Limits** page allows you to specify the portion of the map to display. By default, the data limits are entered and so the entire map is displayed. If you only want to see a portion of the map, you can adjust the map limits here. I will decrease the X and Y maximum values and click *Apply* so we can see the changes.
  - d. The **Frame** page allows you to set the map border line properties and the background fill properties for the map. For example, I will click the *Border* button and change the line style to solid, the color to blue and the width to 0.03 and click *OK*.

I'll click the *Background* button and change the background fill pattern to a pink stippled pattern and click *OK*. I will click *OK* and the background and border line styles are applied. I cannot see them however because map backgrounds lie underneath all other objects on the map, and in this case the shaded relief map obscures the background. I will "turn off" the *Shaded Relief* map layer by unchecking the check box in the **Object Manager** and you can see the background pattern and border line style.

7. To add a map scale, select the map and go to **Map | Add | Scale Bar**. You can change any of the properties you wish for the scale bar and click *OK* and the scale bar is created. If you want to change any of the properties for the scale bar, simply double click on the scale bar to re-enter the properties dialog. I will change the *Number of Cycles* to 5 and the *Cycle Spacing* to 1500 and the *Label Increment* to 1500. Make any other changes you wish and click either *Apply* to see the changes, or *OK* to exit the properties dialog.

This concludes my demonstration of combining map layers and editing map properties.