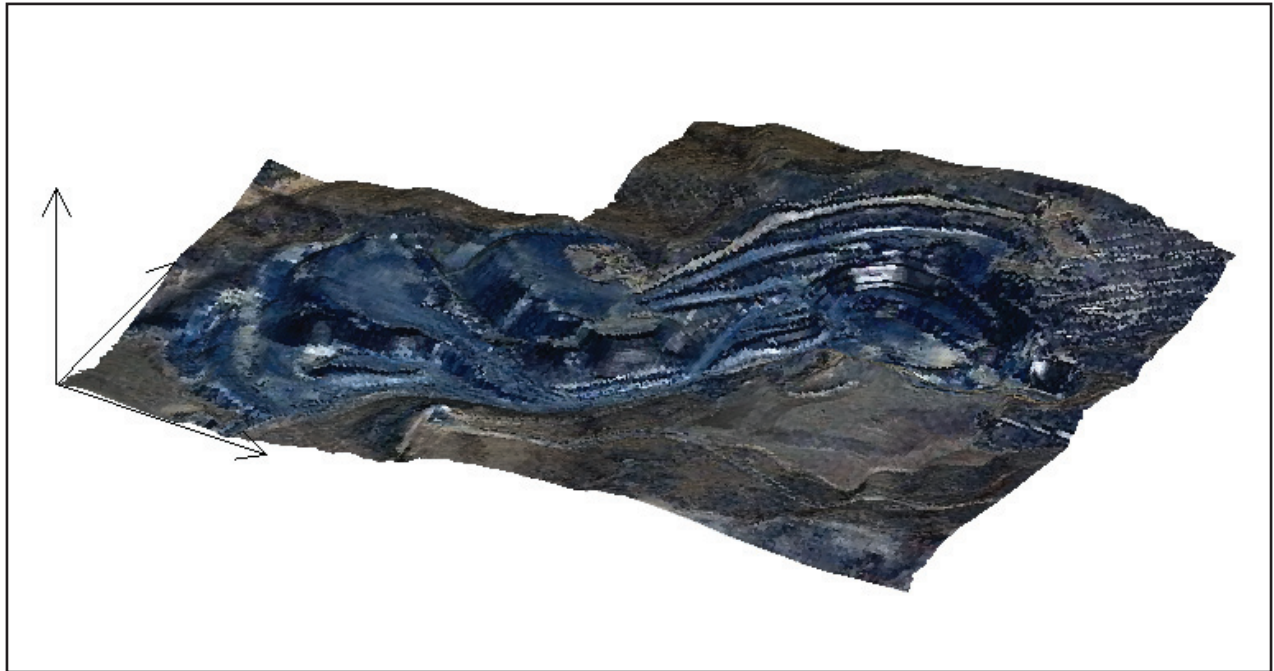


The MS3D Texture Surface Tool and Picture Image Size: Why Very Large Images Cannot Be Displayed

In MineSight® 3-D (MS3D) you can use the **Texture Surface Tool** to apply an image to a surface.



We recommend that you calculate your true image size and save your work before attempting to texture a 'large' surface in MS3D.

In OpenGL, MS3D will attempt to place the texture image in the video card memory and let the video card render the textured surface. However, video cards have a limit to the texture image size. Most modern video cards can handle textures of at most 4096x4096 pixels. Images larger than this will be rendered by the graphics subsystem in software. If this happens, you might notice a difference in performance when adjusting the view; software rendering is much slower.

If you experience problems with a particular image, take a look at the image size. **The image size is not the same as the file size.** Images stored on disk often take advantage of compression schemes to reduce the file size. Unfortunately, when texturing a surface the uncompressed image is needed.

For example, a JPEG image that is 13,140 x 8,700 pixels might be about 20 MB when stored as a file. The uncompressed image size is much larger and is calculated as follows:

Each pixel requires three bytes to store a red, green, and blue color value. Thus the amount of memory required for the image is: 13,140 pixels * 8,700 pixels * 3 bytes = 342,954,000 bytes, or about 343 MB

The required memory allocation is done by the graphics subsystem and is not controlled by MS3D. In general, a 32-bit Windows program can only use up to 2 GB of RAM, so 343 MB is about 17% of the total memory available to run the program. Additionally, the 343 MB needs to be allocated as single contiguous block. Even if there is 343 MB of total memory available, there might not be a single block of this size.

If this happens, MS3D could refuse to texture the surface or might suddenly disappear without warning.