

# WINDISP 3D VIEWER USER GUIDE

VERSION 5.05.52

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SOUTHERN GEOSCIENCE  
CONSULTANTS

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# 1 INTRODUCTION

The following document outlines basic functions and tools within the 3D viewer environment, and is intended as an introductory / quickstart guide rather than a complete reference manual.

These user notes are based on version 5.05.52 of 3D Viewer.

## 1.1 Getting Started

To open a model, launch 3D viewer, click on **File>Open Model** and navigate to the directory which contains the 3D model file (\*.bin format).

The main components of the 3D Viewer window are illustrated in Figure 1 below.

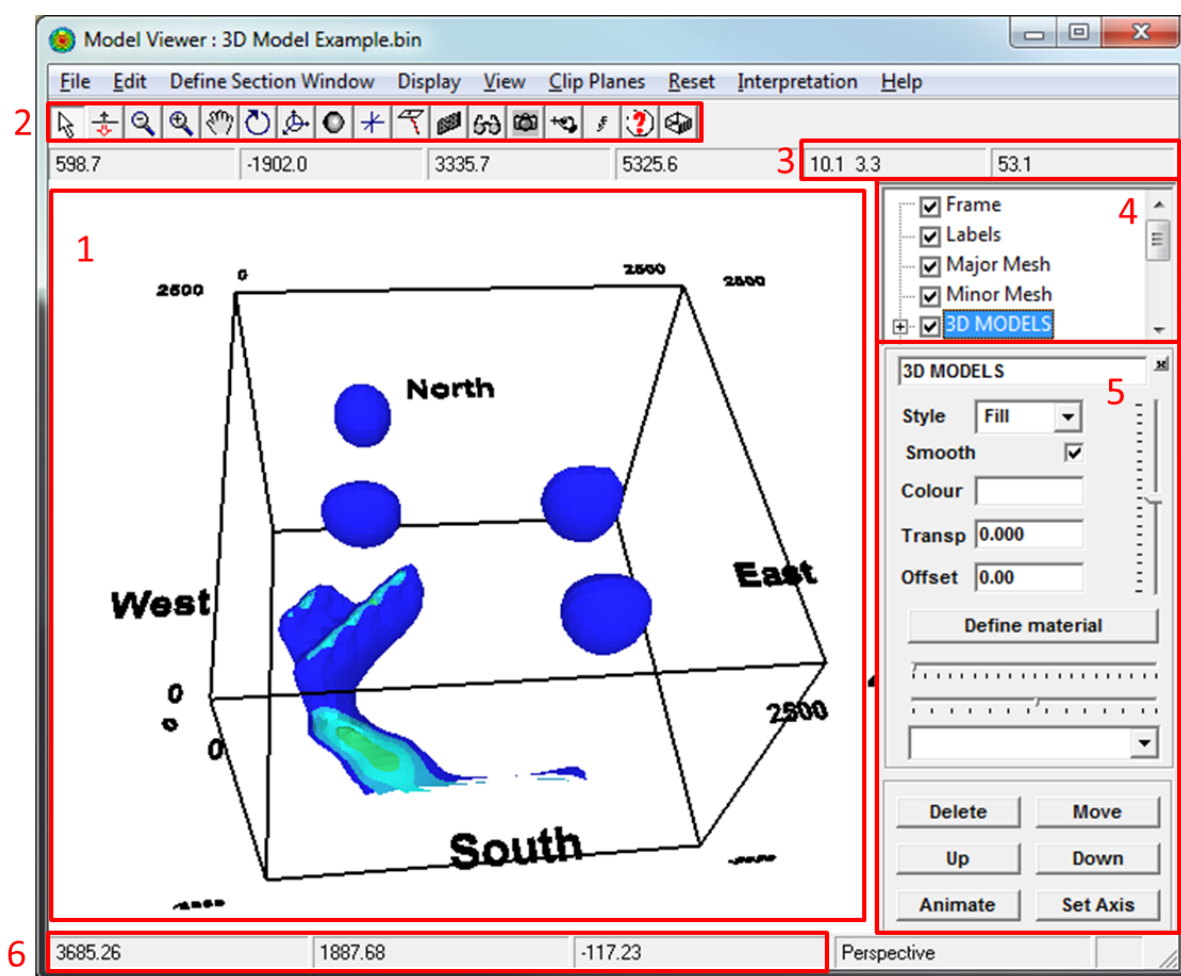


Figure 1. 3D Viewer Window illustrating main components: 1 – 3D display window, 2 – Main toolbar, 3 – Viewing azimuth / inclination, 4 – Object directory tree, 5 – Object editing form, 6 – XYZ cursor location.



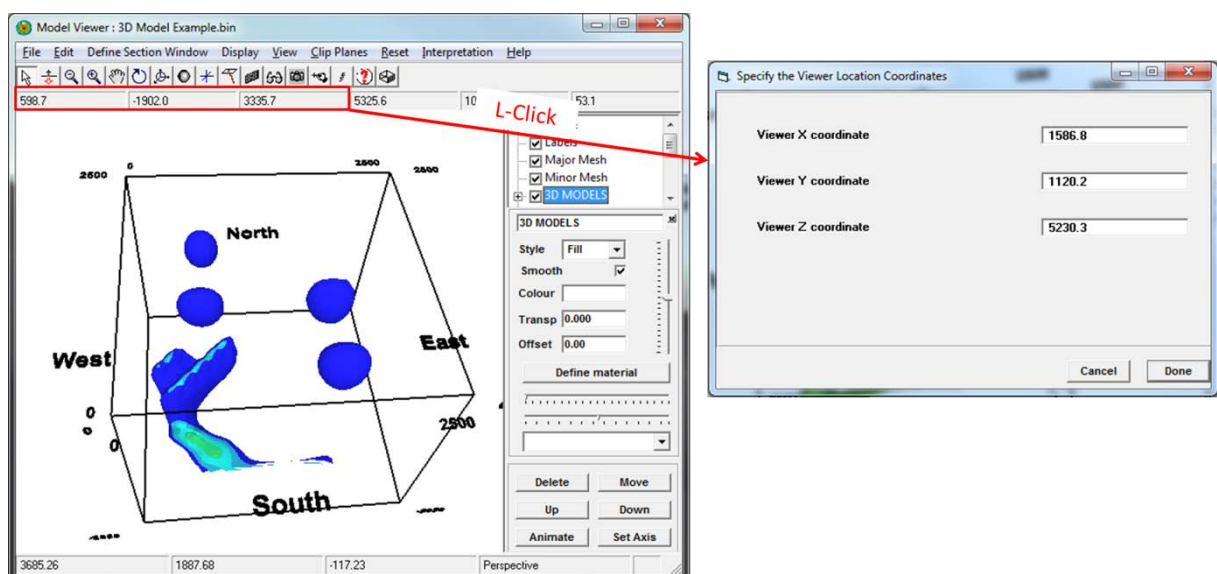
### 3 NAVIGATING IN 3D

Controlling the 3D display and navigating through the workspace is relatively simple, but can be frustrating and does require some practice. Common navigation functions and shortcut keys are listed in the table below:

**Table 1. Basic 3D navigation functions / shortcut keys**

Function	Mouse / Keyboard Command
Rotate Model	Hold L-Click + X-Y Mouse Axis
Rotate Model Incrementally	Arrow Cursor Keys (◀▶▲▼)
Zoom	Hold R-Click + Y Mouse Axis
Pan	Ctrl + L-Click + X-Y Mouse Axis
Reset Front View	/
Reset Top View	\
Spin Model	L-Click + X-Y Mouse Axis
Decrease model spin speed	-
Increase model spin speed	=
Change model spin axis	Arrow Cursor Keys (◀▶▲▼)

The user can also explicitly specify the viewing location and orientation by left-clicking on the first three or last three panels, respectively, at the top of the viewer (Figure 3, Figure 4).



**Figure 3. The viewing location can be specified by left-clicking on any of the first three panels at the top of the viewer (highlighted in red).**

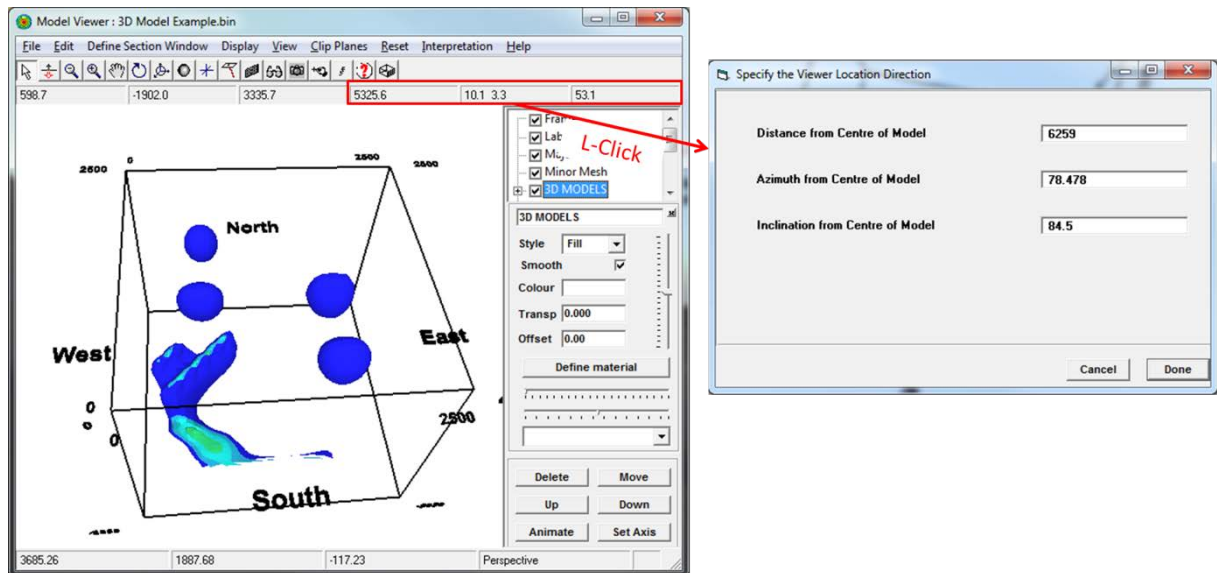


Figure 4. The viewing orientation can be specified by left-clicking on any of the last three panels at the top of the viewer (highlighted in red).


















Many of these navigation functions can also be accessed from the main toolbar (discussed in the next section).

## 4 MAIN TOOLBAR

Many of the tools needed for common operations within 3D viewer are located in a toolbar directly beneath the menu line (Figure 1 above):



A brief description of each tool is listed below:

	Standard display mode
	Zoom in or out using mouse
	Zoom out
	Zoom in
	Pan using mouse
	Start animation
	Determine surface coordinate
	Change illumination direction
	Start / stop 3D crosshair
	Click to add a drillhole to the model
	Click to add a fault to the model
	Start / stop stereo mode – simulate stereoscopic projection if using stereoscopic lenses or anaglyph 3D glasses (e.g. red/blue)
	Take a snapshot of the current screen – copies the current display screen to Windows clipboard
	Collaboration cursor
	Annotate image – take snapshot of current screen and enable basic editing / annotation tools. Can be saved out as BMP
	Identify an item in the display – click on a feature in the display window, the corresponding layer will be highlighted in the directory tree
	Toggle perspective mode – toggle perspective / orthographic projection



## 5 BASIC INTERPRETATION FEATURES

3D Viewer contains a number of simple, but powerful, data interrogation / interpretation tools. Those considered most useful are discussed below. Additional interpretation functions can be accessed from the 'Interpretation' menu.

### 5.1 Determine Surface Coordinate

Click on the  icon in the main toolbar.

This tool can be used to interrogate the x,y,z position of any feature of interest within the display by left-clicking on the feature.

Coordinates of the point on the selected feature are displayed on the first 3 panels at the bottom of the window. A small blue dot is displayed on the feature so the user can see the exact position the tool has snapped to.

*\*Note: Objects that are closer to the viewer are calculated more accurately than those far away.*

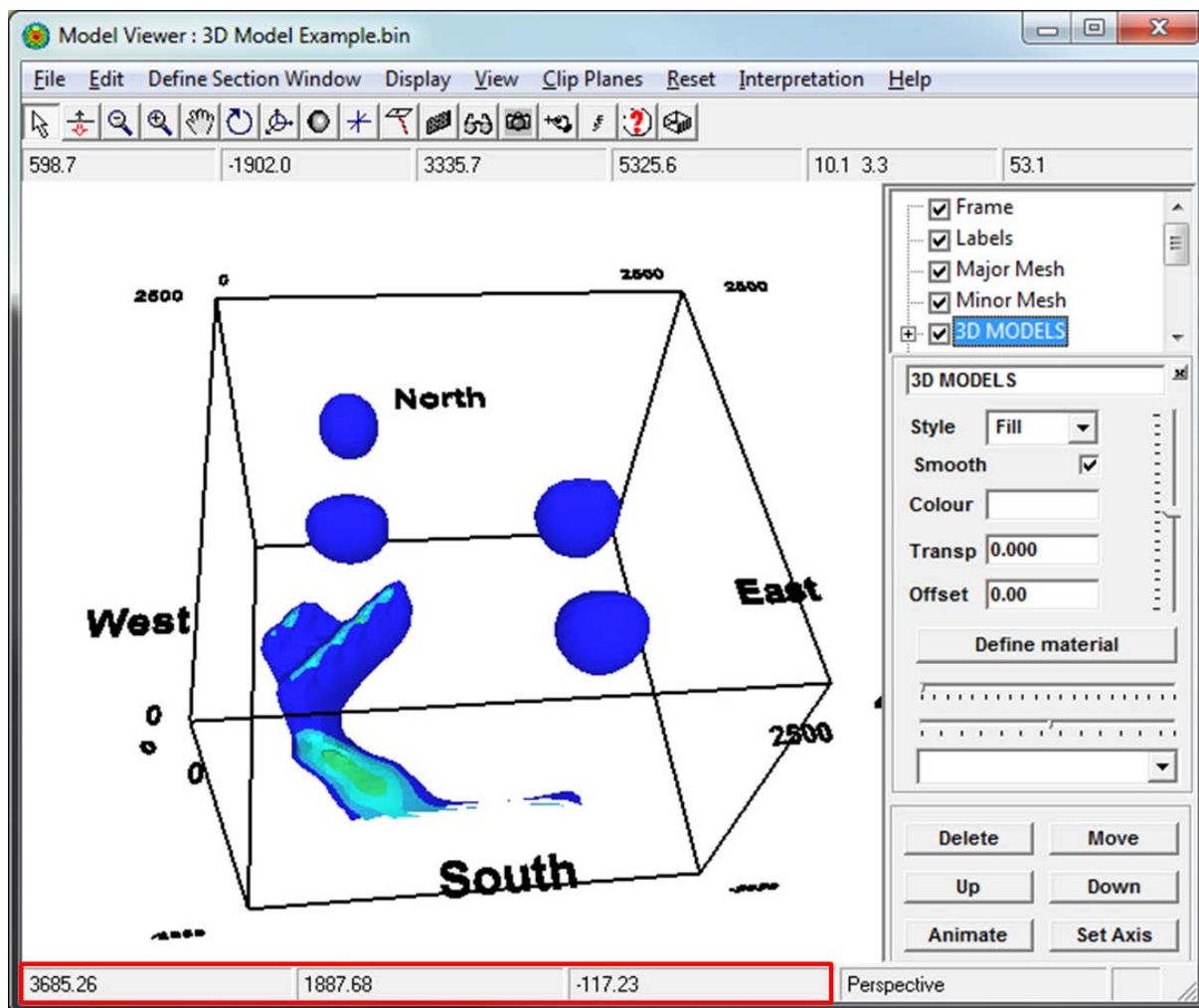


Figure 5. X, Y, and Z coordinates (respectively) of the selected point are shown in the first 3 panels at the bottom of the display (highlighted in red).

## 5.2 Determine the distance, azimuth and inclination angle between two points

Click on the  icon in the main toolbar.

Click and hold the left mouse button, drag the cursor until it is positioned over the end point.

A blue line will be displayed between the origin and end points. The distance, azimuth, and inclination between the two points are displayed in the first 3 panels at the bottom of the window.

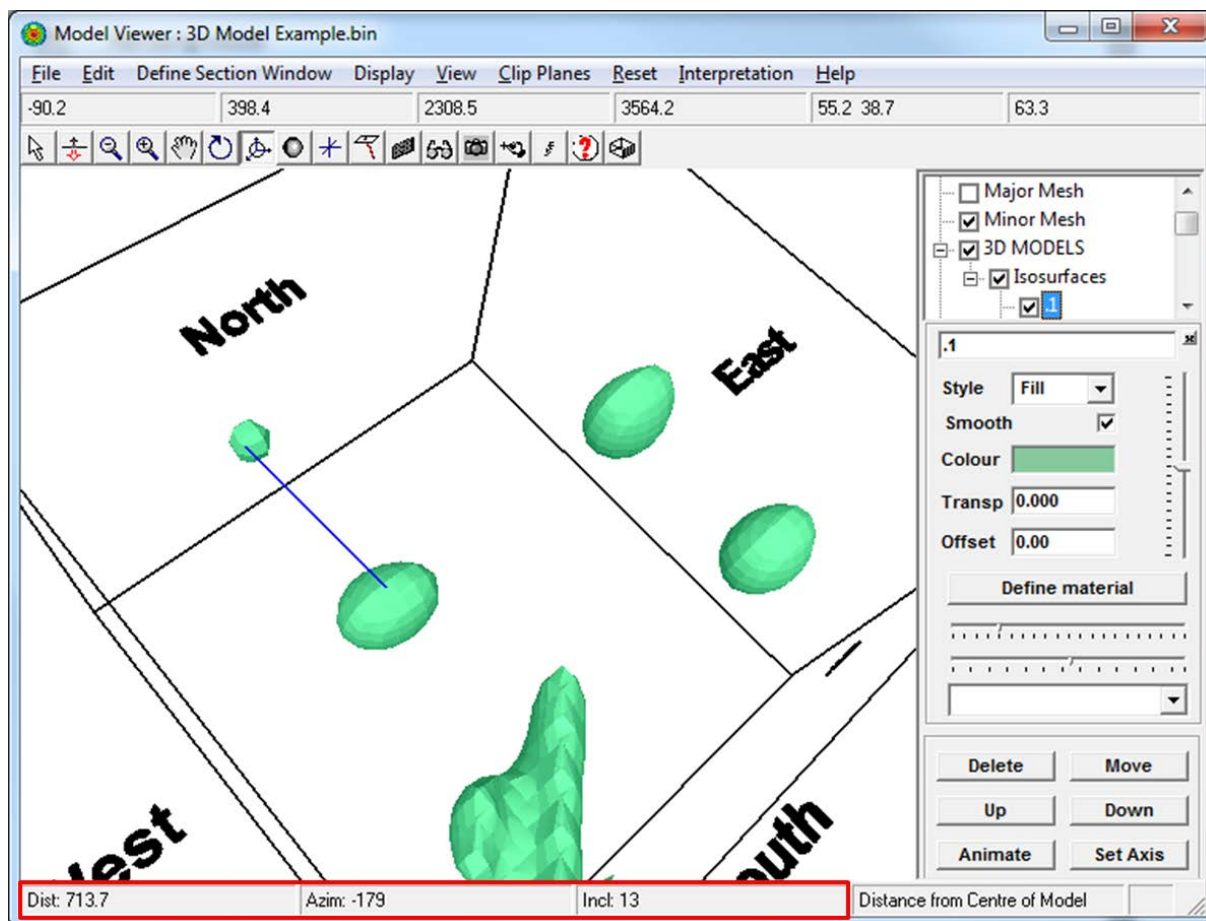



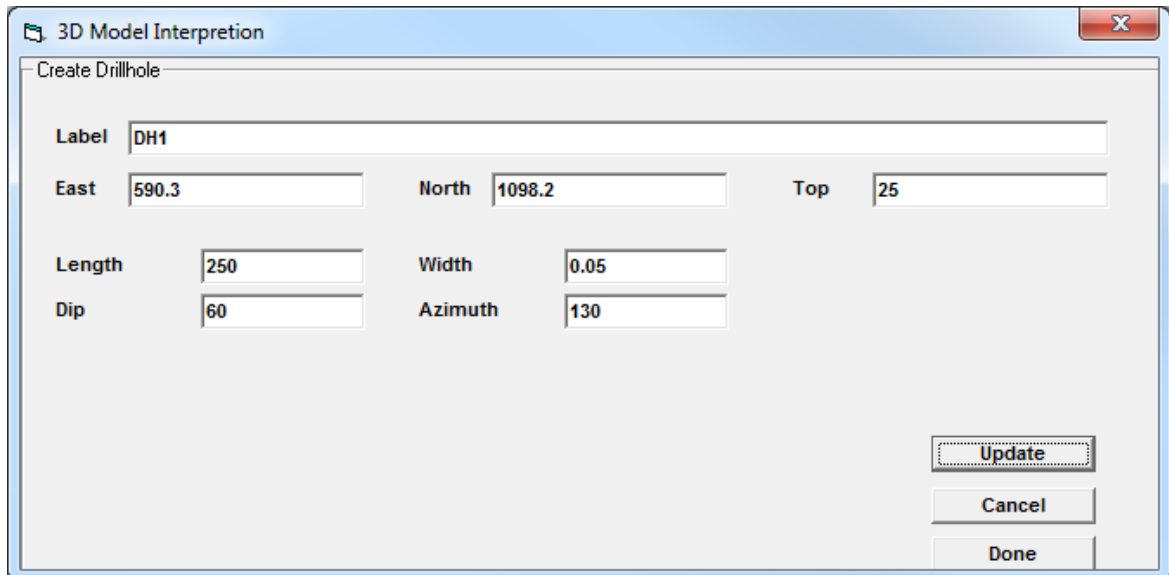
Figure 6. The distance tool uses a blue line to indicate the locations of the origin and end points. Calculated distance, azimuth and inclination (respectively) between the two points is displayed in the first 3 panels at the bottom of the display window (highlighted in red).

### 5.3 Add a drillhole trace to the model

Click on the  icon in the main toolbar.

This will bring up a dialog window in which drillhole location / orientation information can be entered. Once the form is completed, click 'Update' to create a new object in the directory tree. Double-click on the object in the directory tree to modify its properties (see Section 6.8; Figure 7)

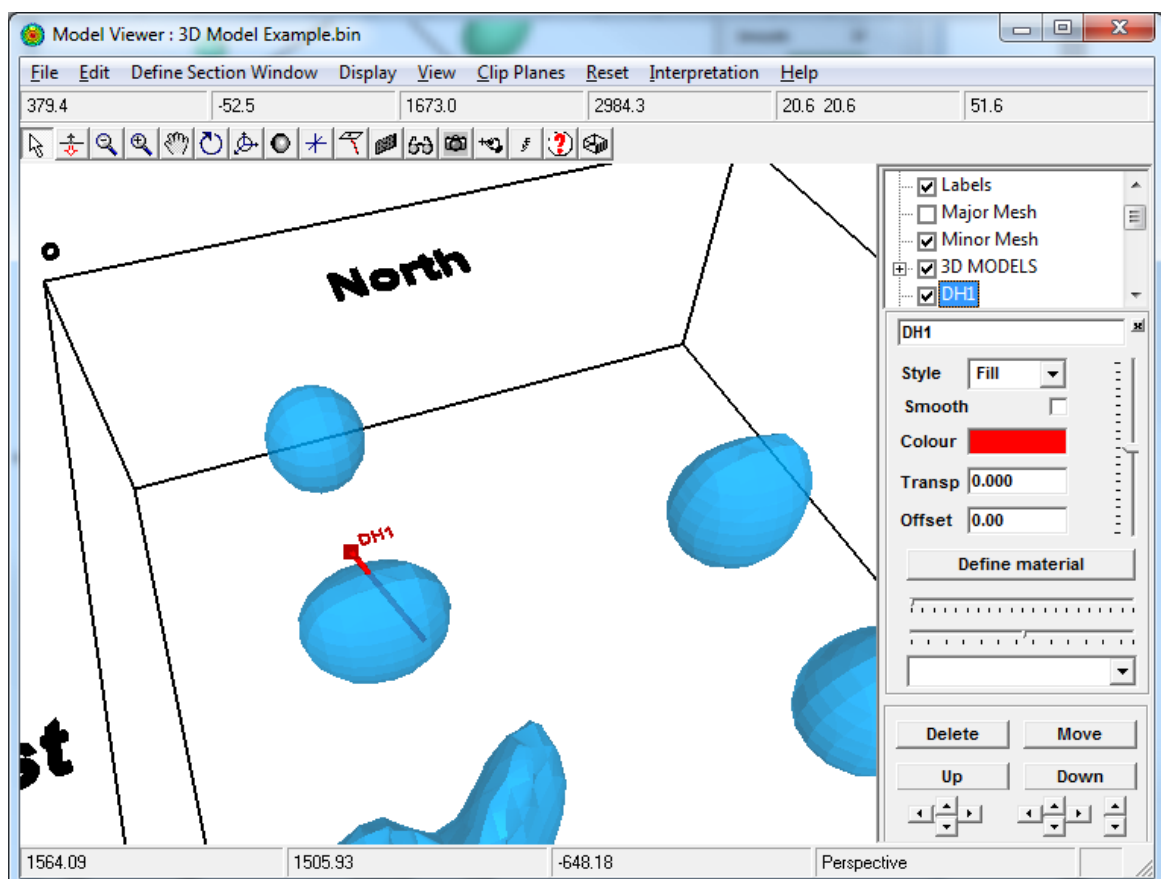
*\*Note: Selecting a point using the 'Determine Surface Coordinate' tool will update the default xyz coordinates in the add drillhole form.*



The '3D Model Interpretation' dialog box, titled 'Create Drillhole', contains the following fields and controls:

Field	Value
Label	DH1
East	590.3
North	1098.2
Top	25
Length	250
Width	0.05
Dip	60
Azimuth	130

Buttons: Update, Cancel, Done

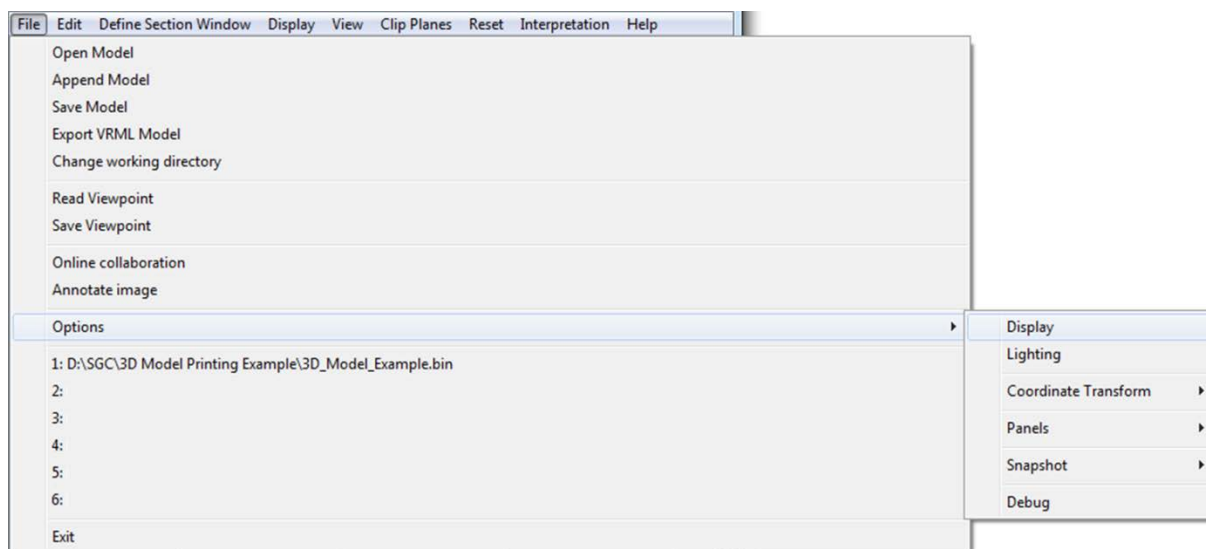


## 6 MENUS

This section provides an overview of each of the menu items listed at the top of the viewer. Specific functions listed within each of these menus are not described in detail.

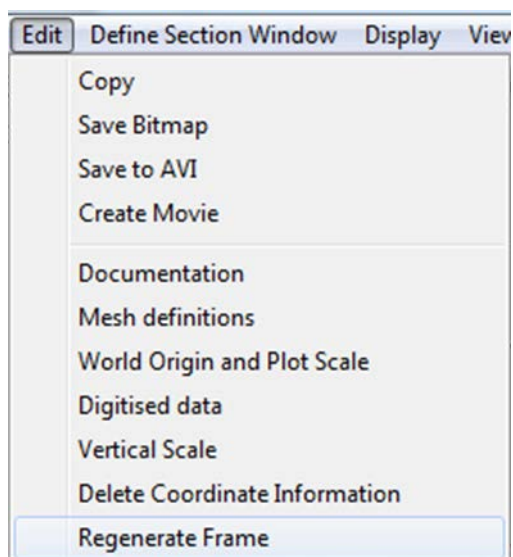
### 6.1 File Menu

The File menu is used for basic functions such as opening / saving models, as well as loading / saving viewpoint files, and contains an Options section which allows the user to modify general 3D viewer preferences such as display and lighting options.



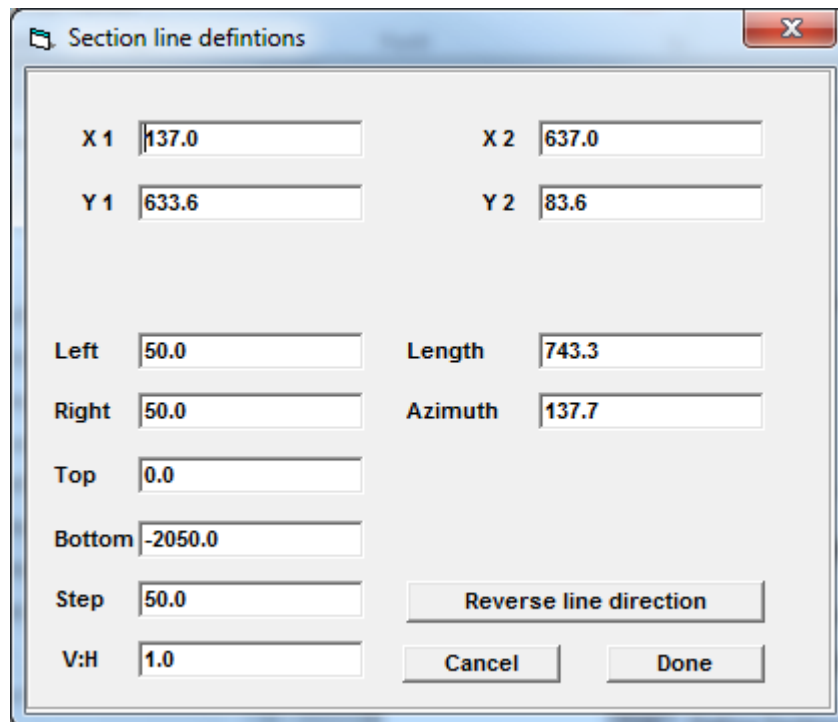
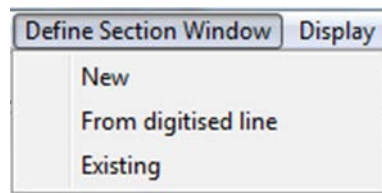
### 6.2 Edit Menu

The Edit menu contains functions for saving screen captures and movies, as well as editing mesh definitions (i.e. 3D grid lines), modifying the vertical scale and frame extents.

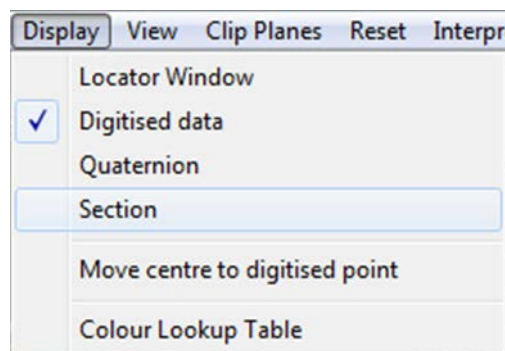


### 6.3 Define Section Window Menu

This menu provides options for displaying a section slice through the 3D model at a user defined location / orientation in a new window.



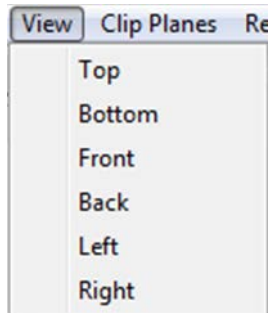
### 6.4 Display Menu



## 6.5 View Menu

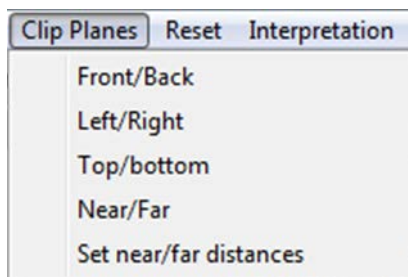
The 'View' menu contains options for setting the display to default orientations.

*\*Note: The current distance from the model is maintained. To reset the observation distance (i.e. to view the entire model), use the options in the 'Reset' menu.*



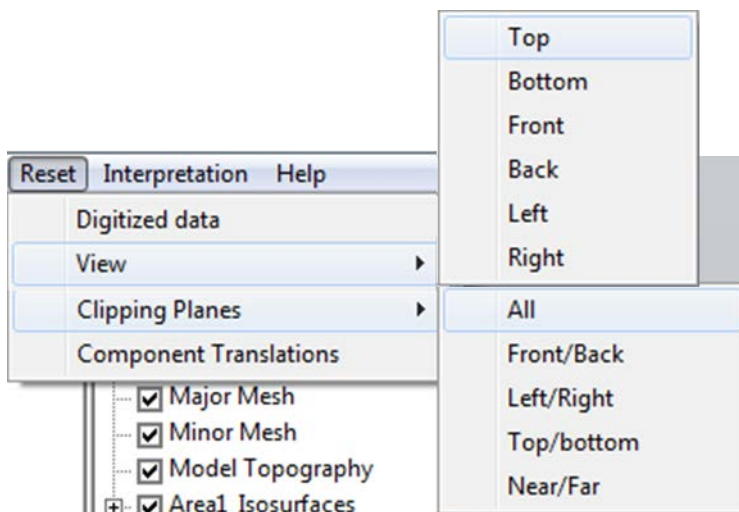
## 6.6 Clip Planes Menu

The 'Clip Planes' menu contains options for clipping the model in various orientations in incremental steps. Note that the Frame, Labels, Major Mesh, and Minor Mesh objects in the directory tree are not affected by these operations.



## 6.7 Reset Menu

The 'Reset' menu contains options for resetting the viewing distance / orientation and clipping planes, etc.



## 6.8 Interpretation Menu

The interpretation menu contains various options for creating, loading, saving / exporting interpretation files. As shown in the dialog boxes below (Figure 7, Figure 8) the 'Create New Feature' tool allows the user to generate various geometric objects with user defined location, orientation, display and label parameters.

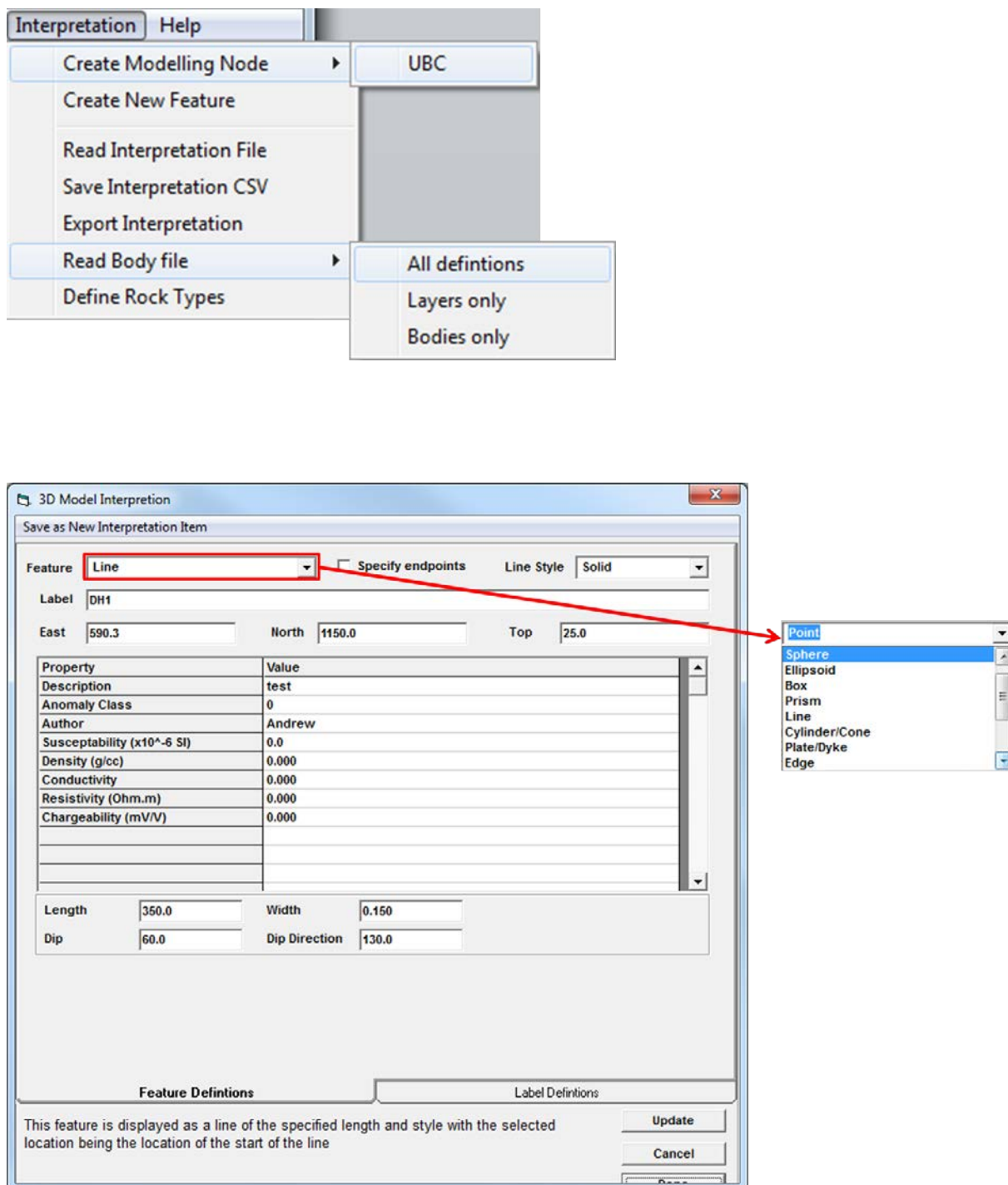


Figure 7. Feature Definitions dialog box



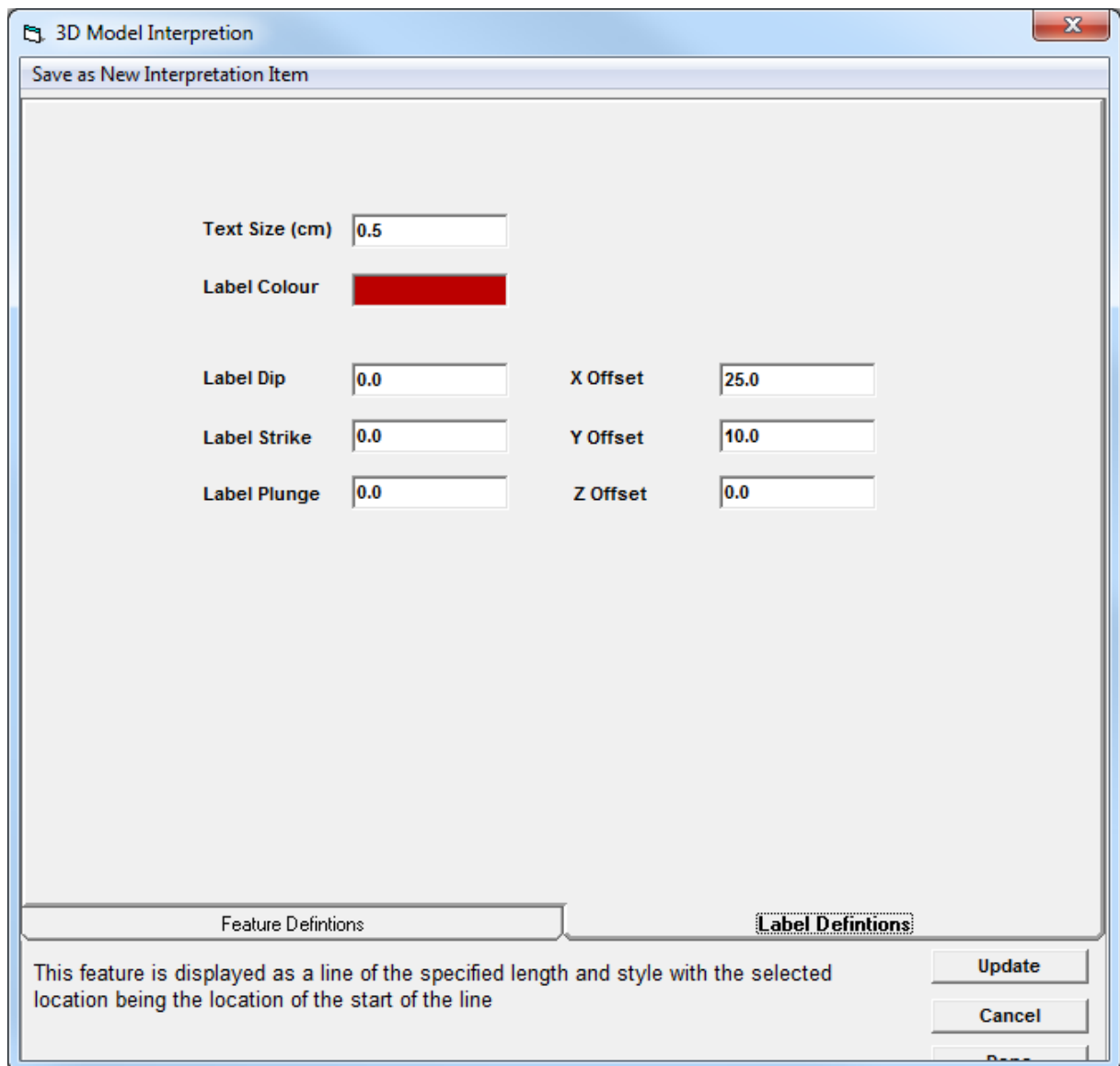


Figure 8. Label Definitions dialog box

## 6.9 Help Menu

The Help menu contains general information regarding the version number and licencing of 3D Viewer, information about the model, and data and statistics relating to OpenGL (API which drives the display).

