



RIFT TD TUTORIAL

MODEL SETUP

IMPORT ASCII DATA

INTRODUCTION

In this tutorial you will:

- Coordinates from an ASCII file.
- Triangulate the coordinates to form a Surface.
- Edit the surface elements.
- Set surface visual properties.

A copy of the **Rift TD** Users Manual may be useful when working through this tutorial. It is installed during **Rift TD** installation, but can also be downloaded from our [download page](#).

TUTORIAL COMPONENTS

This tutorial comprises:

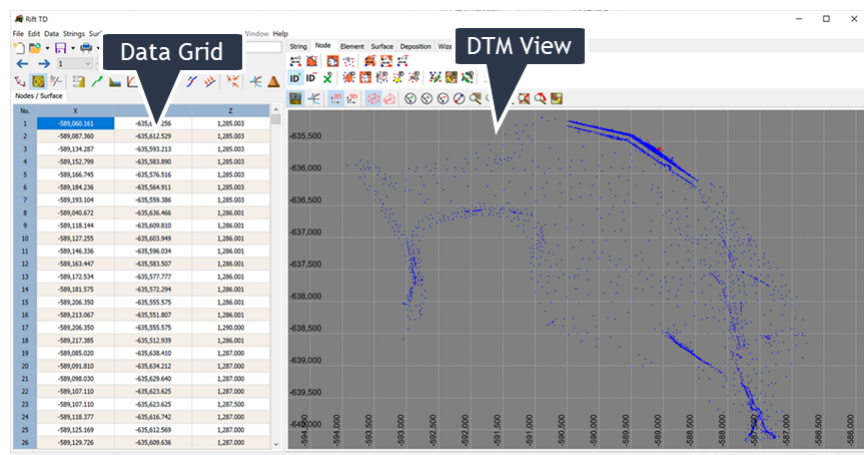
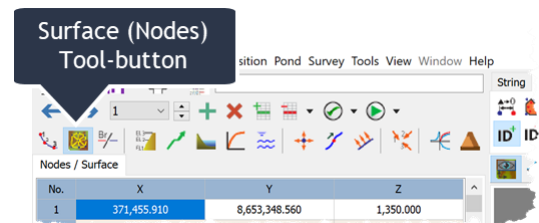
- This instruction set.
- An ASCII Survey Data File (Survey Data.txt).
- The Final Model (Surface Model.rft).

MODEL SET-UP

IMPORT DATA

Import coordinates from the ASCII data file as Nodes:

- **Activate Nodes:**
 - Click the **Nodes (Surfaces) Tool-button**, or
 - Click **Edit > Nodes**.
- Click **File > Import > ASCII**.
- Select the data file, **Survey Data.txt**.
- Click **Open**.



TRIANGULATE NODES

Triangulate the nodes to generate a surface:

- Either:
 - **Click** the **Triangulate Tool-button** , or
 - **Click** **Surface > Elements > Triangulate**.

Rift TD checks for coincident nodes during triangulation, and prompts for an action if any are found:

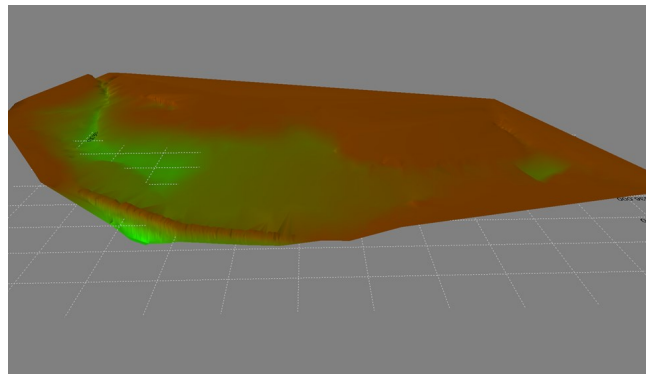
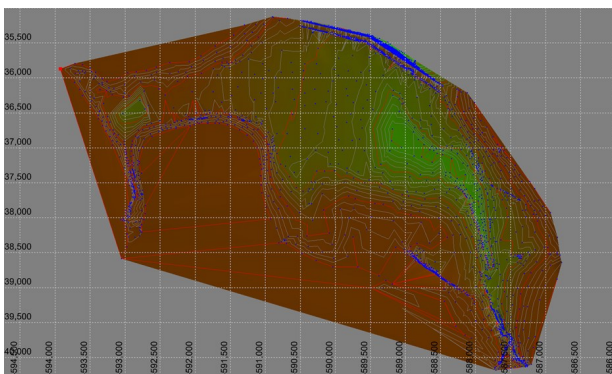
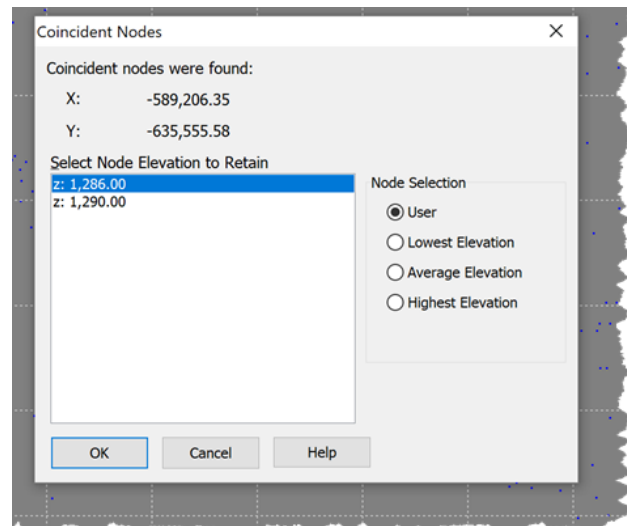
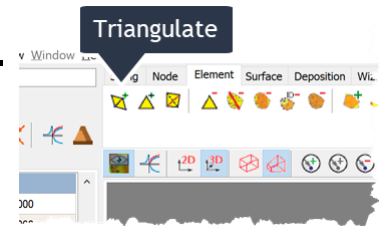
- **Select** the elevation that you want to retain on the **Coincident Node Dialog**.

Coincident nodes are **nodes** with the same x and y coordinates.

- **Click** **Ok**.

You can select an action for any additional coincident nodes:

- **User**: You will be prompted for the elevation to retain.
- **Lowest Elevation**: The lowest node elevation will be used.
- **Average Elevation**: The average node elevation will be used.



EDIT ELEMENTS

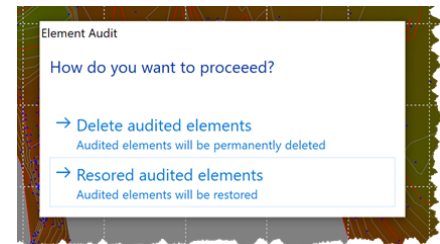
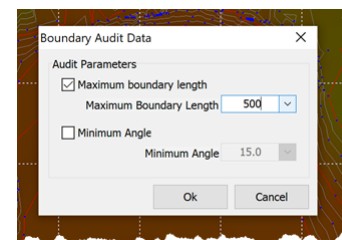
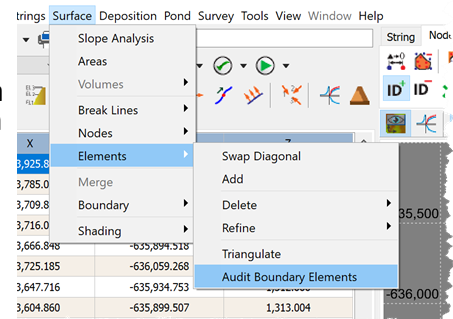
You can edit **Elements** following a triangulation:

- Audit boundary Elements.
- Swap Element Diagonals.
- Delete Elements.
- Add Elements.

AUDIT BOUNDARY ELEMENTS

During triangulation narrow elements may form around the surface perimeter. You can audit elements to delete these elements:

- Click **Surface > Elements > Audit Boundary Elements**.
- Specify the boundary audit parameters.
 - **Maximum boundary length:** The maximum length of a boundary element side: For this model set a maximum boundary length of 500 m.
 - **Minimum angle:** The minimum angle in a boundary element: For this model uncheck this option.
- Click **OK**.
- Confirm if you would like to:
 - Delete; or
 - Restore the audited elements.



SWAP ELEMENT DIAGONALS

You can **edit Elements** by swapping their diagonal.

You may need to do this to ensure that the model accurately reflects the surface following:

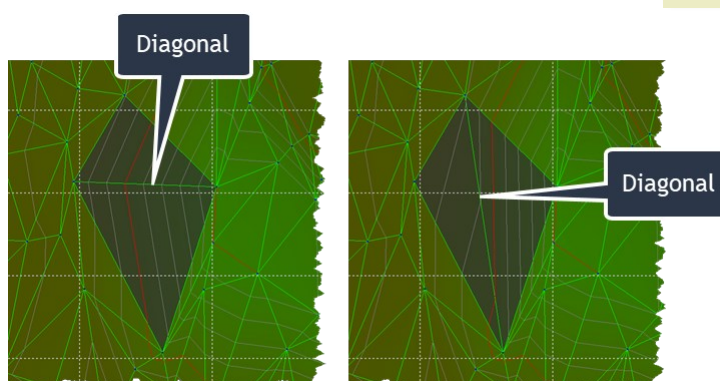
- Triangulation; or a
- Surface merge.

To **Swap Element Diagonals**:

- **Activate** the **DTM View**.
- Either:
 - Click **Surface > Elements > Swap Diagonal**; or
 - Click the **Swap Element Diagonal Tool-button** on the Element Toolbar.
- Click on the **DTM View** close to the diagonal that you want to swap.

It is useful to view **Element** borders when swapping element diagonals:

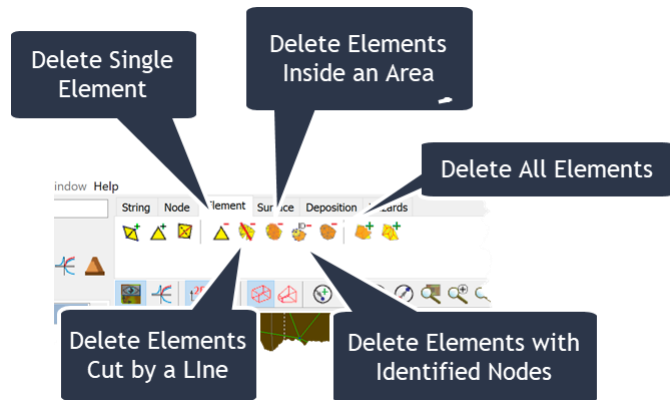
- **Right click** on the **DTM View**.
- **Select View Options**.
- **Activate Element** properties.
- **Check Render Border**.
- Click **Ok**.



DELETE ELEMENTS

You can delete:

- A Single Element.
- Elements Cut by a Line.
- Elements Inside an Area.
- Elements Connected to Identified Nodes.
- All Elements.

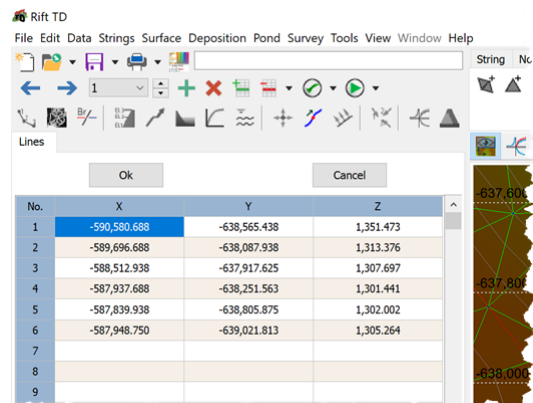


You can access these operations either:

- Via the **main menu**: **Surface > Elements > Delete**; or the
- **Element Toolbar**.

You need to **define** a **line** or **area** if you **Delete Elements Cut by a Line** or **Delete Elements inside an Area**:

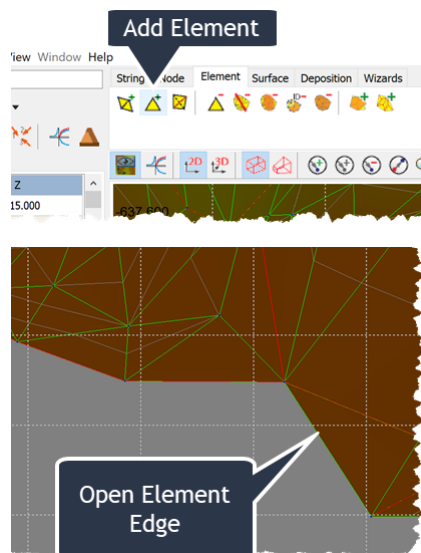
- The **Define Line/Area data type** is **activated** when you select these operations.
- **Click** on the **DTM View** to define the **Line** or **Area**; or **enter** the coordinates of the **Data Grid**.
- **Click Ok**, or **Ctrl Enter**, to confirm the line or area.



ADD ELEMENTS

You can add single elements on the **DTM View**:

- Either:
 - **Click Surface > Elements > Add**; or
 - **Click** the **Add Element Tool-button** on the **Element Toolbar**.
- On the **DTM View**, either:
 - **Select** three **Open Nodes**; or
 - **Select** an open Element side and an Open Node:
 - **Click** inside an **Element**, close an **Open Element Edge** that will be used as a side for the new **Element**.
 - **Click** on an **Open Node** to close the new **Element**.



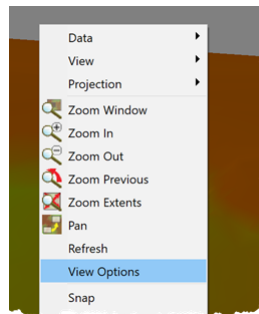
VIEW PROPERTIES

Use the **View Options Dialog** to set **Surface** visual properties:

- Either:
 - **Click Edit > View Options**, or
 - **Right click** on the **DTM View** and select **View Options**.

Node and **Element** properties define **Surface** visual properties.

- **Highest Elevation:** The highest node elevation will be used.

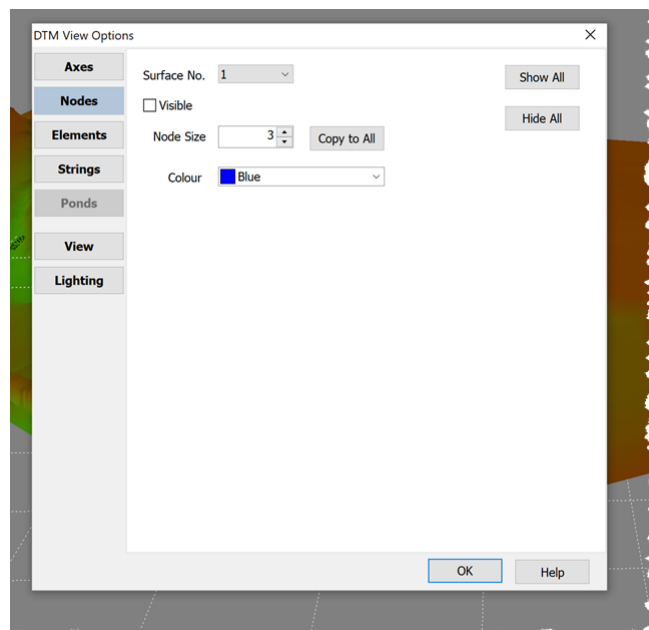


NODE PROPERTIES

Use the **Surface No. Drop-down Box** to **select** the **surface** to operate on.

Properties are:

- **Visible:** Show or hide the nodes.
- **Node Size:** The Node display size.
- **Copy to All:** Copy the node size to all Surfaces.
- **Colour:** The colour used to render nodes.
- **Hide All:** Hide the Nodes for all Surfaces.
- **Show All:** Show the Nodes for all Surfaces.

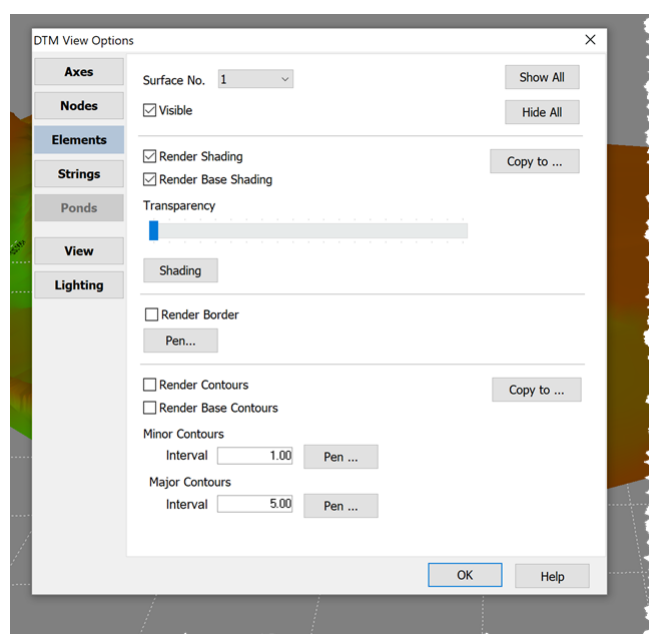


ELEMENT PROPERTIES

Use the **Surface No. Drop-down Box** to select the surface to operate on.

Element Properties are:

- **Visible:** Render the current surface.
- **Render Shading:** Render current surface shading.
- **Render Base Shading:** Render based surface shading for the current deposition surface.
- **Transparency:** The current surface transparency.
- **Shading:** The current Surface shading colours.
- **Render Border:** Render the element border (triangle).
- **Render Contours:** Render the current surface contours.



- **Render Base Contours:** Render the base surface contours.
- **Major Contours:** Set the:
 - Set the major contour interval.
 - Pen used to render the major contours.
- **Minor Contours:**
 - Set the minor contour interval.
 - Pen used to render the minor contours.

A **Base Surface** is:

- The Surface on which deposition has taken place; or
- A surface for which a value set is defined and the values being used to define surface shading.

SET ELEMENT SHADING

To set element shading colours:

- **Click** the **Shading Button**.
- **Enter** a Start Elevation.
- **Use** the **Start Colour Box** to set a colour associated with the Start Elevation. Repeat the process to set the End Elevation colour.
- **Enter** a End Elevation.
- **Use** the **End Colour Box** to set a colour associated with the End Elevation.
- **Click Ok.**

