Mosaed Alrashidi

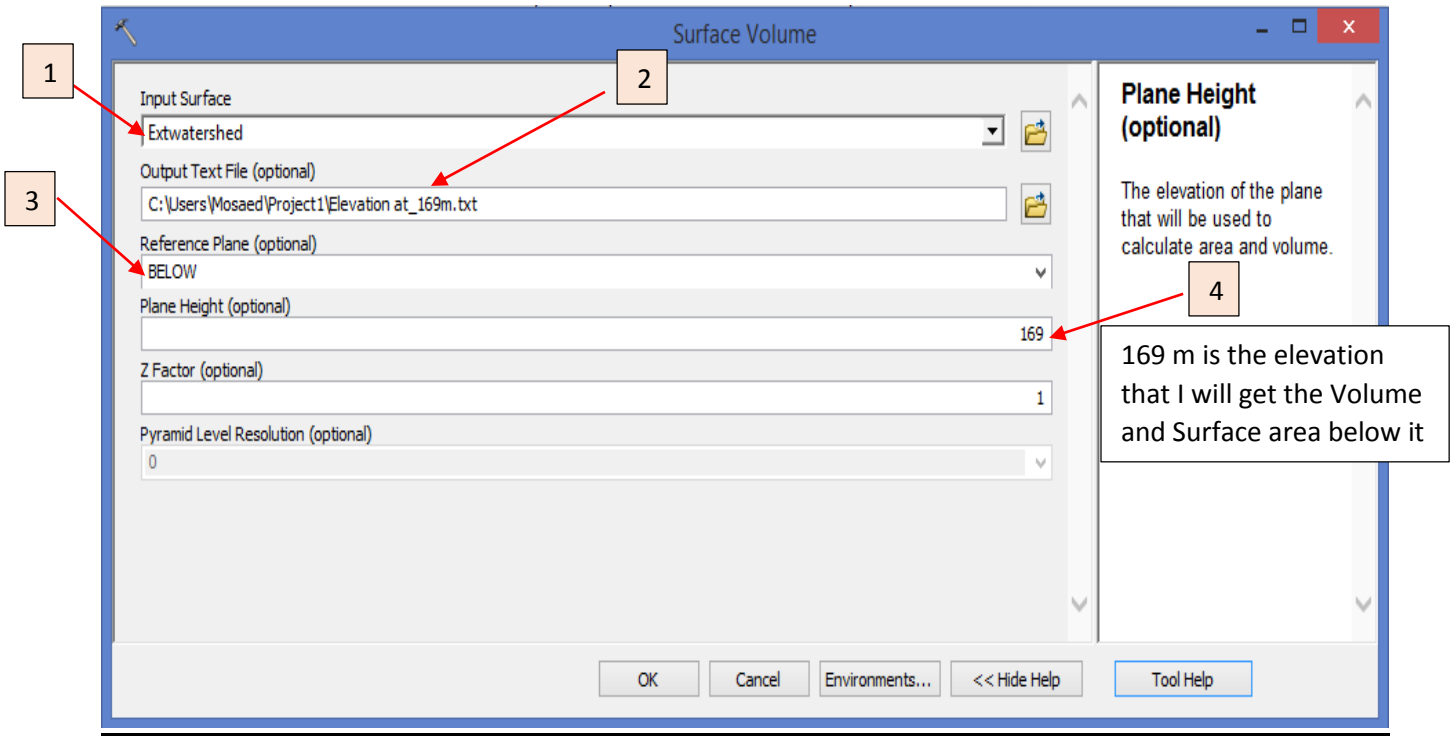
Surface Volume tool

Surface Volume tool allows to calculate the area and volume of a raster, triangulated irregular network (TIN), or terrain dataset surface above or below a given reference plane.(ArcGIS_Help)

To calculate Reservoir Volumes and Surface Areas considering different elevations in the Watershed, I did the following steps:

- Go to: ArcToolbox -> 3D Analyst Tools -> Functional Surface -> Surface Volume
- Click the "Surface Volume" tool and enter in:
  - Input Raster = Watershed DEM or TIN
  - Specify an output file name (this will be a Text File that I can open up to get the computed volume and surface area)
  - Reference Plane = "Below"
  - Specify Plane Height.
  - No need to change Z factor or Pyramid Level Resolution!!!
  - Run the tool and open the Text File that is created to get Volume and Surface Area.

Here is an example:



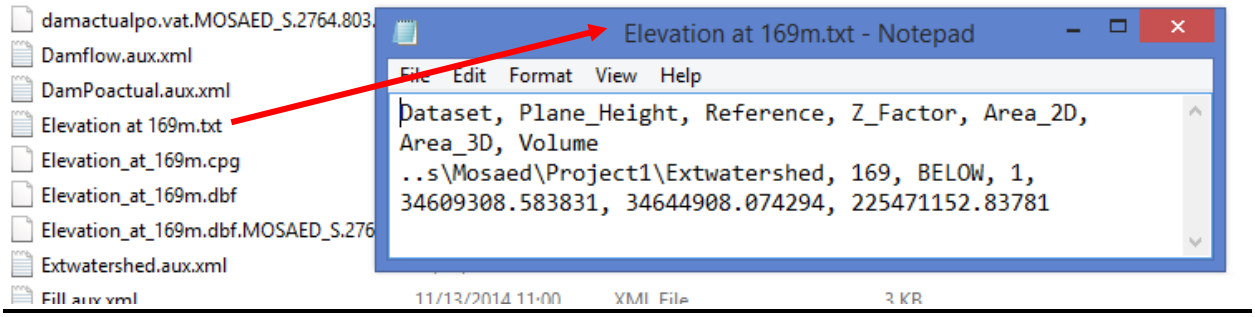
Results

Table

Elevation at 169m

Dataset	Plane_Height	Reference	Z_Factor	Area_2D	Area_3D	Volume
..s\Mosaed\Project1\Extwatershed	169	BELOW	1	34609308.583831	34644908.074294	225471152.83781

or



Reference :

http://resources.arcgis.com/search/?do=search&start=0&lg=en&product=&version=&collection=&subject=&q=surface+volume