

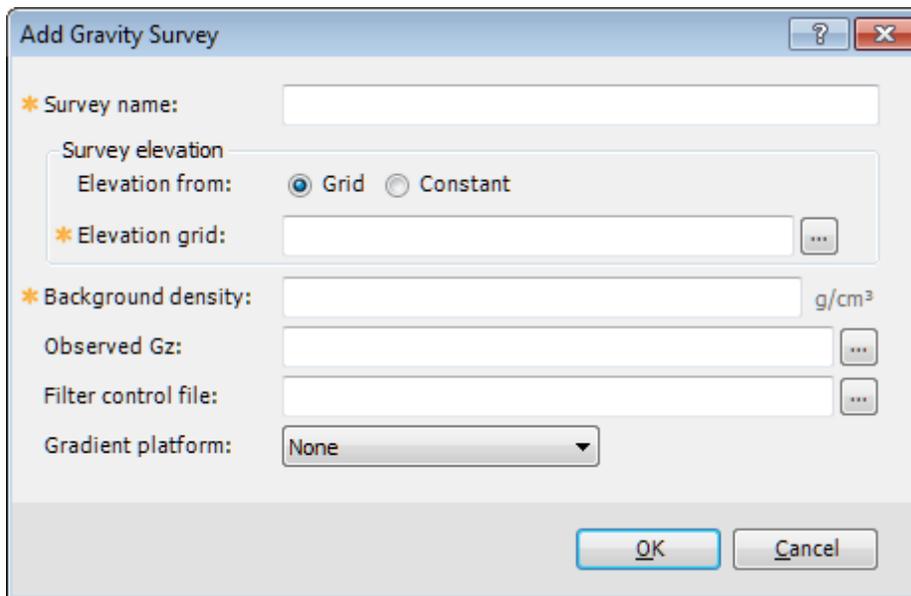
## Add a Gravity Survey in a GM-SYS 3D Model

Adding a Gravity Survey to a model requires defining the measurement locations in X,Y, and Z, specifying a reduction or background density for the survey, and optionally providing a grid of observed gravity values. A survey may be configured for gravity only, or to include Gravity Gradient components, based on a selected gradiometer platform.

In practical terms, this might mean an airborne FTG survey, with Gravity and the six independent tensor components all measured at the same locations and processed with the same reduction density. However, observed data are not required; a theoretical model could be constructed to determine the sensitivity of a particular survey configuration to a specific target.

### To Add a Gravity Survey

1. From the *Survey* menu, select **Add Gravity Survey**. The *Add Gravity Survey* dialog will appear:



2. Enter a descriptive **Survey name**. This is used to differentiate the surveys in a model.
3. Select whether the survey elevation will be defined by a **Constant** or an elevation **Grid**.
4. If a constant, specify the constant elevation in the indicated units. If an elevation grid, browse to find the grid.  
A survey elevation grid must cover at least 25% of the model, and must encompass all of the observed survey data area. If you have multiple observed survey grids and each grid covers slightly different survey areas, all of the observed data areas must be included in the area of the elevation grid.
5. Enter a **Background density** for the model. For Free Air gravity, the value will be 0.0. For Bouguer gravity or other residual gravity grids, enter the reduction density for your survey.
6. Browse to select the grid containing the **Observed Gravity Anomaly** values for your survey.
7. Browse to select the **Filter control file** used to filter the observed data, if any. The same filter will be applied to the calculated model response.

8. Select the **Gradient platform** that is appropriate for your model. Options are **None** and **FTG**.

The selected platform determines which observed data components you will be allowed to import, as well as determining which components you may calculate from the model. Observed data are not required to calculate a component. If you are not interested in Gravity Gradient calculations, select **None**.

If **FTG** is selected, the *Add Gravity Survey* dialog will reflect the FTG **Gradient components** available for your selection.

The screenshot shows the "Add Gravity Survey" dialog box. It includes the following fields and options:

- Survey name:** An empty text input field.
- Survey elevation:** A section containing:
  - Elevation from:** Radio buttons for "Grid" (selected) and "Constant".
  - Elevation grid:** An empty text input field with a browse button (...).
- Background density:** An empty text input field with the unit "g/cm<sup>3</sup>".
- Observed Gz:** An empty text input field with a browse button (...).
- Filter control file:** An empty text input field with a browse button (...).
- Gradient platform:** A dropdown menu currently set to "FTG".
- Gradient Components:** A section containing six empty text input fields, each with a browse button (...):
  - Observed Gxx
  - Observed Gxy
  - Observed Gxz
  - Observed Gyy
  - Observed Gyz
  - Observed Gzz

At the bottom of the dialog are "OK" and "Cancel" buttons.

9. When you have defined the survey to your satisfaction, click the **OK** button.

If all of the inputs pass validation, the survey will be added to the model and its properties displayed. If any of the inputs fail validation, you will be allowed to correct the inputs.

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