Education evenings 2018

Practical introduction to groundwater modelling

Computer exercises
04 03 MODFLOW LGR

1

Purpose

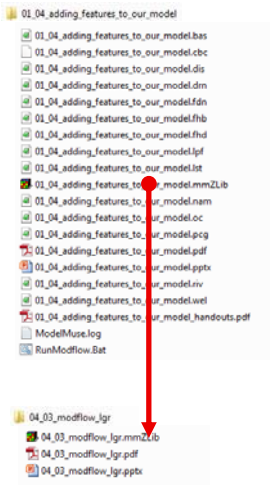
In this exercise, we will

- ✓ use the model we designed in the first session,
- ✓ define a child model to refine the grid locally,
- ✓ run MODFLOW-LGR,
- ✓ and visualize the results.

2

Copy file first session

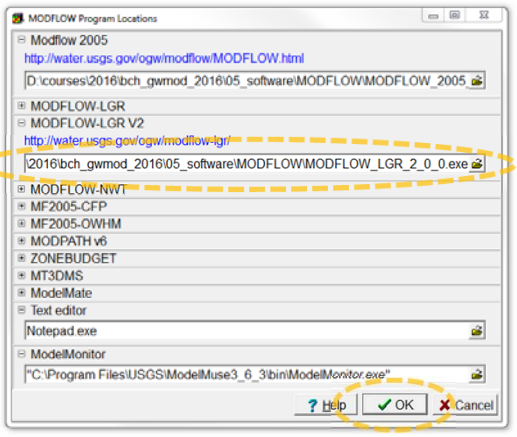
- ✓ Copy file “01-04_adding-features-to-our-model.mmZLib” to folder “/04-03_modflow-lgr/”.
- ✓ Change the file name to “04-03_modflow-lgr.mmZLib”,
- ✓ and open the file in ModelMuse.



3

Set MODFLOW-LGR program location

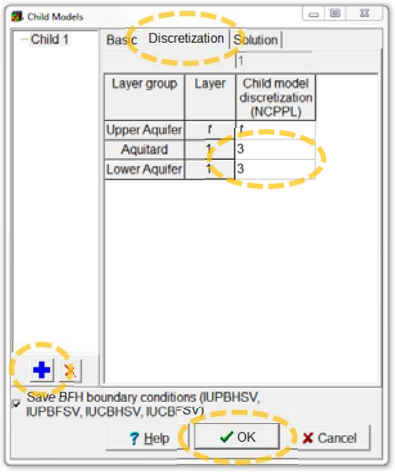
- ✓ Select **Model | MODFLOW Program Locations…**,
- ✓ and set the **MODFLOW-LGR V2** path to “/05_software/modflow/modflow-lgr-2.0.00.exe”.
- ✓ Then click **OK**.



4

Define child model (1/3)

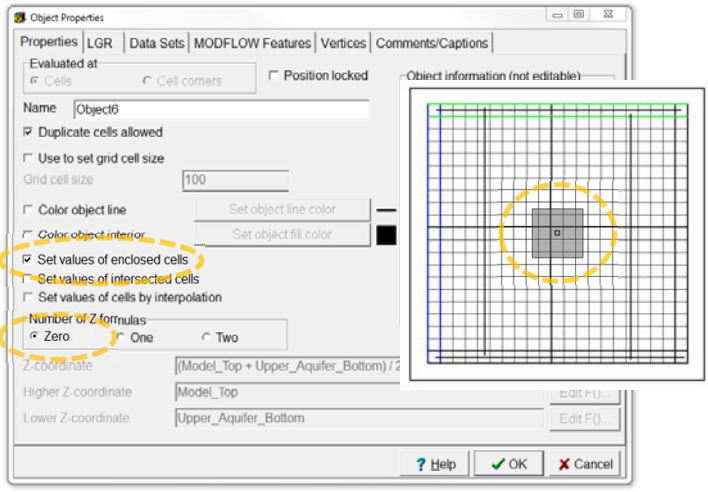
- ✓ Select **Model | MODFLOW-LGR V2**,
- ✓ and the **Child Models** dialog box will open.
- ✓ Add one child model, and switch to the **Discretization** tab.
- ✓ Set the **Child model discretization** for the **Aquitard** and **Lower Aquifer** to 3.
- ✓ Then press **OK**.



5

Define child model (2/3)

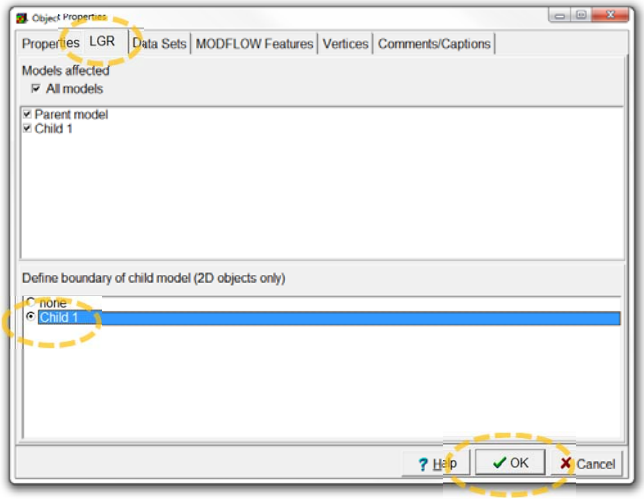
- ✓ Now draw a rectangle object surrounding the well in the center of the grid.
- ✓ In the **Object Properties** dialog box, set the **Number of Z formulas** to **Zero**,
- ✓ and check the **Set values of enclosed cells** check box.



6

Define child model (3/3)

- ✓ Switch to the **LGR** tab,
- ✓ and select **Child 1** for **Define boundary of child model**.
- ✓ Press **OK**,
- ✓ and hide all objects.



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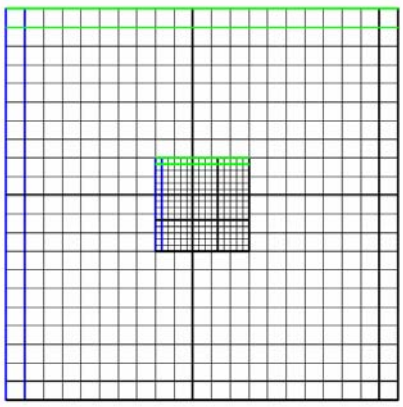
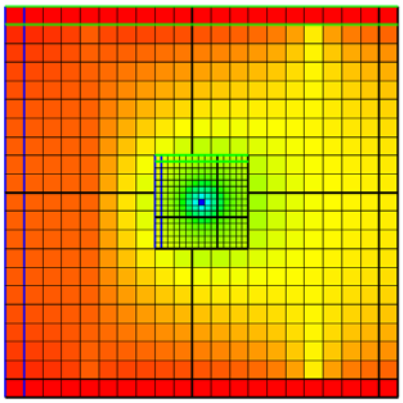
This is what you should get



8

Run model and visualize results

- ✓ Now save and run the model,
- ✓ and import the head results of the final time step.
- ✓ The coloured grid should look like the one on the right.
- ✓ Change the selected row and column to see the local grid refinement in the front and side view panes.



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Questions? Found an error?
Please contact B. Rogiers at brogiers@sckcen.be.

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