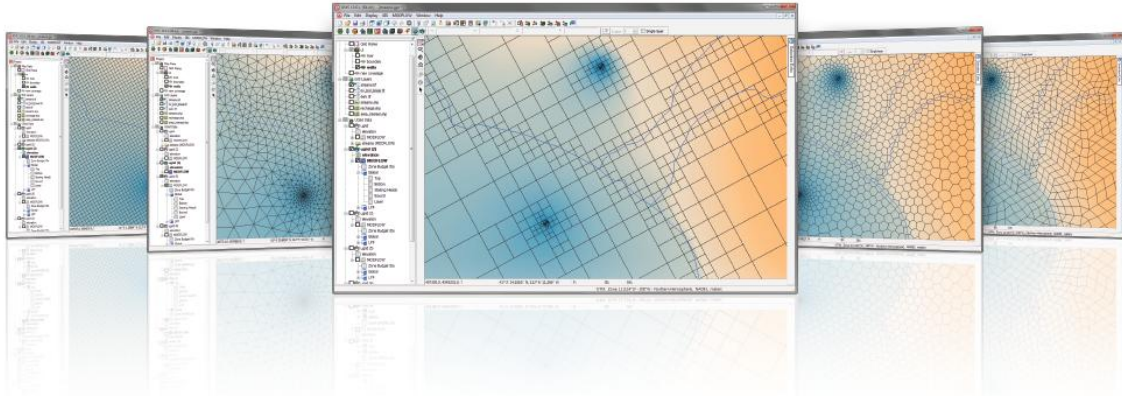


# GMS 10.0

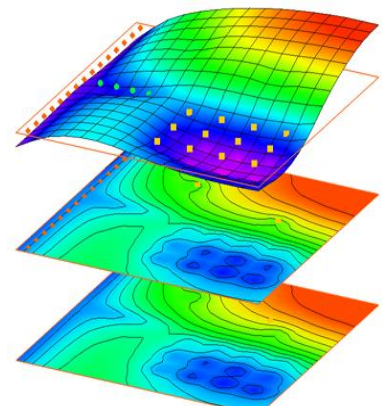
## Speed & Simplicity in 3D Advanced 3D groundwater modeling

GMS is the premier groundwater software solution to develop, characterize & visualize groundwater models in a 3D environment



### ➤ Flexible modeling approaches

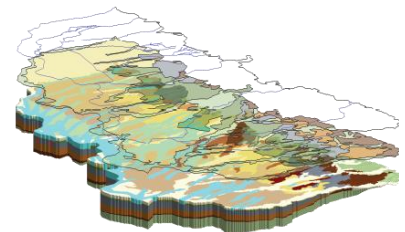
GMS pioneered the conceptual model approach. Build a conceptual model by constructing a high level representation of the model using familiar GIS objects: points, arcs and polygons. Work with large, complex models in a simple and efficient manner by using the **conceptual modeling approach** and easily update or change the model as needed. For models with simple geometry and boundary conditions, use the grid approach and edit values directly in the grid.

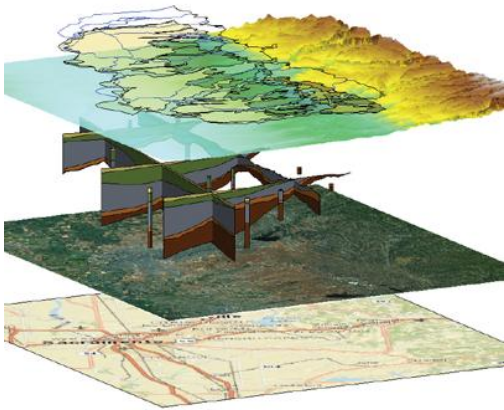


### ➤ 3D visualization optimized for performance

GMS is the most advanced software system available for performing groundwater simulations in a three-dimensional environment.

- Interact with models in true 3D
- Optimized OpenGL graphics for improved hardware rendering
- Create photo-realistic renderings
- Generate animations for PowerPoint or web presentations
- Drape images over the model and control the opacity
- Annotations – Add north arrows, scale bars, reference images, company logos, and more





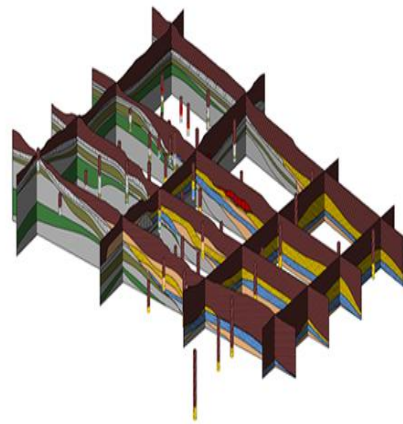
## Import what you need

- Models require data from many different sources. That's why GMS is built to easily import numerous file types:
  - Raster images including georeference and projection support
  - Topographical maps & elevation data
  - Borehole data including stratigraphy and geophysical data
  - Native MODFLOW files
  - MODFLOW files from Visual MODFLOW, Groundwater Vistas and PM Win
  - Web data services such as TerraServer
  - ArcGIS geodatabases and shapefiles
  - CAD files including .dwg, .dgn, and .dxf formats
  - Worldwide projection support including Cartesian and Geographic Systems
  - File Import wizard for delimited text files

## Advanced subsurface characterization

From cross-section editing to advanced probability statistics, GMS offers unparalleled subsurface modeling tools.

- Generate iso-surfaces from 3D data to visualize plumes
- Cut cross-sections anywhere through 3D data
- 2D & 3D geostatistics – Kriging, IDW and Natural Neighbor
- Robust and fast algorithms to create solids from horizons



## Software from an Industry Leader

GMS is developed by Aquaveo, an engineering services company with many years of experience developing groundwater modeling solutions.

- Step-by-step tutorials and how-to videos
- Online community forum and product documentation
- Phone and email technical support
- Regularly scheduled training courses taught by expert modelers
- On-site training available
- Professional consulting services

## What's new in GMS 10.0

The following is a list of the more significant changes in GMS 10.0.

### 1. MODFLOW-USG

### 2. Unstructured Grid module

- Horizons -> UGrid
- Map -> UGrid

### 3. Improved MODFLOW native text output

### 4. Improved Model Checker results with color

### 5. Selection Echo window

### 6. Overhauled and improved Plot Axes

### 7. New tutorials

- MODFLOW-USG: Complex Stratigraphy
- MODFLOW-USG: Converting From MODFLOW 2005
- MODFLOW-USG: Quadtree
- MODFLOW-USG: Regional to Local
- UGrid Creation
- MODFLOW-LGR: Regional to Local
- MODFLOW-Save Native Text

### 8. Miscellaneous

- TINs can now be used for SFR2 elevations in a coverage
- Units in areal packages dialog
- Improved export of 3D grid shapefiles
- Export faces to CAD files
- Added rasters as an alternative to TINs for getting elevations of drains and other BCs in the map module.
- Added button to the MODFLOW Source Sink packages (DRN, WEL, GHB...) to bring up a spreadsheet to edit Use previous for all
- Stress periods.
- Added button to the MODFLOW Areal Source Sink packages (RCH, EVT, ETS) to bring up a spreadsheet to edit Use previous and
- Multiplier of active array for all stress periods.
- Added button to the MODFLOW Array Editor dialog (HK, SS, SY...) to bring up a spreadsheet to edit multiplier for all layers in the
- Grid.
- HFB default line thickness now 3 and color is orange
- moles/liter units added (for PHT3D)
- Solids root item in Project Explorer includes Projection menu
- Select By Dataset Value command
- "Check All" added in Project Explorer
- Display projection text moved from bottom right of Graphics Window to bottom right in status bar of main window.
- Module toolbar default location changed to top of GMS window.
- Some icons changed to be consistent with SMS, WMS.
- Pin/unpin Project Explorer

### 9. More shortcut keys added

- F2 edits labels in the Project Explorer
- Ctrl+U unselects all

- Ctrl+O opens a file
- Ctrl+H hides the selected objects
- Ctrl+W shows the hidden objects

**The list of the more significant changes that were introduced in GMS 9.2.**

**1. MODFLOW-LGR Support**

**2. MT3D improvements**

- MT3D menus and dialogs renamed to reflect MT3D, RT3D, SEAM3D or PHT3D
- MT3D starting concentrations much easier to enter in new spreadsheet in Basic Package dialog

**3. FEFLOW support for import/export of 2D & 3D finite element meshes**

**4. MODFLOW improvements**

- Streamflow Out data shown in a table via command on CCF file
- Starting heads can be set to always match the grid top elevations for convenience
- ISTCB1 option added in both MODFLOW STR and SFR2 packages
- Partial support for MODFLOW-USG on structured 3D grids. You cannot create any sort of unstructured grid yet (nested grids, quad-tree, voronoi etc) but you can run MODFLOW-USG on a regular, structured grid. Unstructured grid creation is coming soon.

**5. Projection improvements**

- Display projection can define units even if there is no projection defined
- New objects are assigned the display projection if one exists
- Vertical projection saved to .prj files and restored

**6. Miscellaneous**

- Update to PEST 12.3
- "Don't Register" button on Welcome dialog
- Ability to add points to a TIN without wiping out all data sets
- Properties for the Project item in the Project Explorer
- 3D grid cell selection: can now select range of cells by holding the shift key
- Changing scatter point activity now asks what to do with transient data sets
- Wider database fields allowed when exporting shapefiles
- Nodes no longer displayed at 2D mesh quad element centroids
- DGN (Microstation) CAD file import (via convert to temp DWG file). Results vary.
- Pathlines can be exported even if there are no capture zones defined