GMS User Manual v9.2, vol. 4

Importing/Exporting and Appendix

Contents

Articles

8. Importing/Exporting Data

Importing Non-native GMS Files

GMS can import many files generated by other software in their native format. The files that can be imported to GMS are shown in the tables below. Each file type is identified by the file extension. The file filter corresponding to the desired extension should be selected in the *Open File* dialog.

File Import Wizard

In addition to the file types listed below, several other types of data can be imported via the *File Import Wizard*. Refer to the section on the *File Import Wizard* for more information.

| File Type	File Ext	Description
Model Super Files	*.mfs, *.rsp, *.mts, *.rts, *.sms, *.uts, *.fws, *.ats, *.sps	GMS uses super files to help organize model files, which can be numerous. Opening the super file will import the entire model and all associated model files. This will NOT open any GMS specific data, such as Map data or TIN data etc. The file models associated with each super file extension are as follows: *.mfs = MODFLOW, *.rsp = MODPATH, *.mts = MT3DMS, *.rts = RT3D, *.sms = SEAM3D, *.uts = UTCHEM, *.fws = FEMWATER, *.ats = ART3D, *.sps = SEEP2D
Text files	*.txt	Text files where the data is in columns, as you might export from a spreadsheet. This brings up the GMS File Import Wizard. Many different types of data can be brought in to GMS by using the File Import Wizard.
DXF/DWG	*.dxf, *.dwg	Vector drawing data used for background display or for conversion to feature objects.
JPEG - TIFF	*.jpg, *.tif	Raster image files used for background display or for texture mapping to a surface.
Shapefiles	*.shp	ArcView shapefiles.
DEM / Grid	*.asc, *.ddf, *.ggd, *.dem	ASCII 2D grid exported from Arc/Info or ArcView, ASCII 2D grid exported from GRASS
Surfer Grid	*.grd	ASCII 2D grid exported from Surfer.

File Import Wizard

GMS can import many files generated by other software in their native format. Refer to Importing Non-native GMS Files for a list. For files that are not included in the list, GMS provides the *File Import Wizard*.

The *File Import Wizard* enables users to import many different types of data into GMS. The *File Import Wizard* is initialized by selecting a *.txt file in the **Open** command from the *File* menu. The wizard has two steps.

Step 1 – Delimiting Columns

The first step in the wizard allows users to delimit the data into columns. Two options exist to delimit the data: **Delimited**, **Fixed Width**.

For the Delimited option, typical delimiters are included as well as an option for users to specify a delimiter. Columns can also be specified with a fixed width by clicking on the ruler bar or the window with the data. Break lines can be dragged, and they can be deleted by double-clicking on the break line or dragging them off the screen. The user can specify the starting row the data will be imported at. If your data has a row of headings, you can indicate such and GMS will use the headings in the next step to determine what kind of data each column represents.
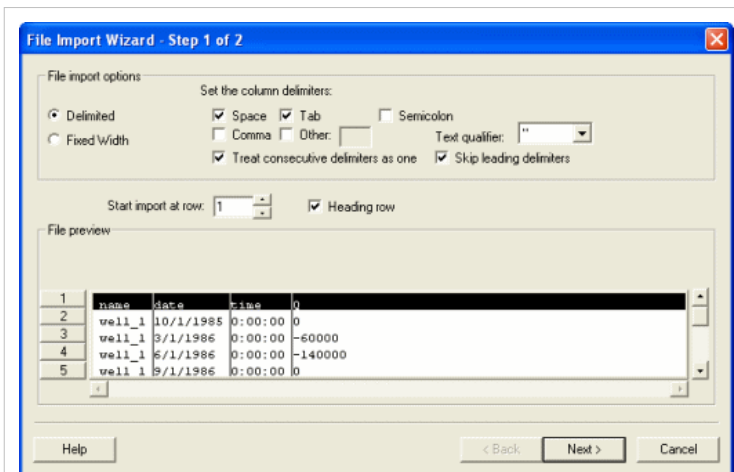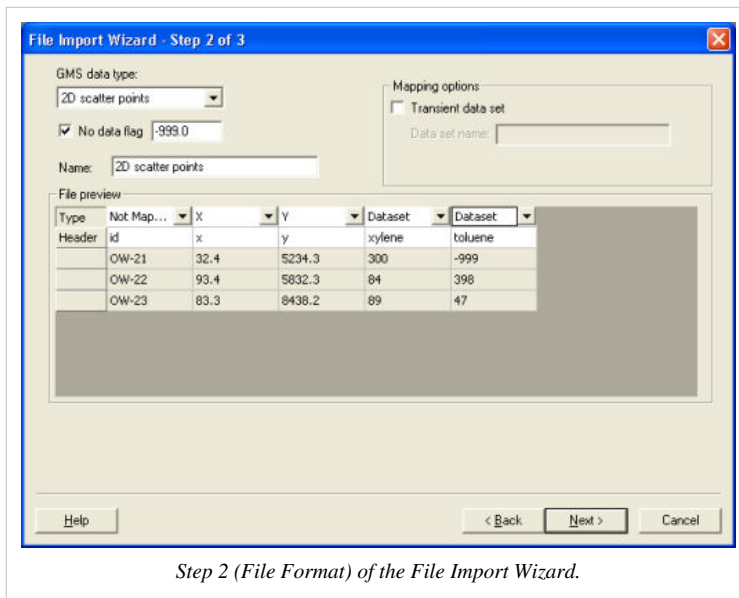

Step 1 File import options of the File Import Wizard.

Step 2 – Assigning Column Types

The first 20 lines of the file are displayed in a spreadsheet according to the file outline specified in step 1. This step lets you pick what kind of data you are importing (see Supported File Formats). A "no data flag" can be specified for the file. This is a number that, when encountered in the file, tells GMS to mark the value as "NULL" or "no data".

The data in the columns are identified by selecting the type in the combo box at the top of each column in the spreadsheet. If a row of headings exists, GMS will automatically select the proper type if it recognizes the heading. Otherwise they are Not Mapped by default. The available column types changes depending on the GMS data type selected. Certain column types must be mapped for each file format before the user can progress to the next step in the wizard. The name of each column is changed by editing the Header cell.

Step 2 (File Format) of the File Import Wizard.

After the data have been imported, the coordinate transformation tools can be used to transform and translate the data.

File Import Wizard Supported File Formats

The File Import Wizard can import various types of data as described in the tables below.

2D scatter points

This will create new scatter points in a new 2D scatter set. Optionally the imported points can be filtered using the filter options available by selecting the **Filter Options** button.

Field	Type	Required	Comments
X	Number	yes	
Y	Number	yes	
Label	Text	no	
Dataset	Number	no	Any number of steady-state or transient datasets can be imported. When importing transient datasets, a dataset name and a time step must be specified for each transient column. Names and time steps are entered into the header row, separated by a vertical slash using the following format: "Name|Timestep". For example, "Dataset1|January 1, 1900". All time steps of a transient dataset should be given the same name.

Examples

These examples can be copied and pasted into GMS.

Steady state

```
"id"        "x"        "y"        "xylene"       "toluene 0.0"       "toluene 2.0"
"OW-21"       32.4       74.3        300       999       999
"OW-22"       93.4       32.3        84       398       401
"OW-23"       83.3       48.2        89       47       52
"OW-24"       46.8       29.1        207       147       134
```

Transient

```
"id"        "x"       "y"       "xylene|01/01/2000 00:00"     "xylene|01/01/2000 12:00"     "xylene|01/02/2000 00:00"

"OW-21"     32.4      74.3      300       87        276

"OW-22"     93.4      32.3      84        310       187

"OW-23"     83.3      48.2      89        148       198

"OW-24"     46.8      29.1      207       147       134

"OW-25"     40.3      50.1      158       213       32

"OW-26"     60.7      52.0      27        41        300

"OW-27"     78.7      72.9      264       275       206
```

3D scatter points

This will create new scatter points in a new 3D scatter set.

Field	Type	Required	Comments
X	Number	yes	
Y	Number	yes	
Z	Number	yes	
Label	Text	no	
Material ID	Number	no	
Dataset	Number	no	Any number of steady-state or transient datasets can be imported. When importing transient datasets, a dataset name and a time step must be specified for each transient column. Names and time steps are entered into the header row, separated by a vertical slash using the following format: "Name|Timestep". For example, "Dataset1|January 1, 1900". All time steps of a transient dataset should be given the same name.

Examples

These examples can be copied and pasted into GMS.

Steady state

```
"id"        "x"         "y"         "z"         "xylene"       "toluene 0.0"       "toluene 2.0"
"OW-21"     32.4        74.3        10.1        300       87        999
"OW-22"     93.4        32.3        25.7        84        310       187
"OW-23"     83.3        48.2        5.3         89        148       198
"OW-24"     46.8        29.1        -42.2       207       147       134
```

Transient

```
"id"      "x"     "y"     "z"     "xylene|01/01/2000 00:00"     "xylene|01/01/2000 12:00"     "xylene|01/02/2000 00:00"

"OW-21"   32.4    74.3    10.1    300       387       276

"OW-22"   93.4    32.3    25.7    84        310       187

"OW-23"   83.3    48.2    5.3     89        148       198

"OW-24"   46.8    29.1    -42.2   207       147       134
```

Observation data

This creates new feature points in the existing, active coverage. The active coverage must exist and have a steady state observation attribute (like "Head") defined.

Field	Type	Required	Comments
Point Name	Text	no	
X	Number	yes	
Y	Number	yes	
Z	Number	no	
Layer	Number	no	The 3D grid layer the point is associated with.
Measurement	Text	no	Measurement name. Multiple measurements allowed.
Interval	Number	no	Use Interval and Confidence, or Std. Dev. but not both.
Confidence	Number	no	Use Interval and Confidence, or Std. Dev. but not both.
Standard Deviation	Number	no	Use Interval and Confidence, or Std. Dev. but not both.

Example

```
"id"        "x"        "y"        "z"        "lay"       "hd"        "int"       "conf"
"OBS_Q5"     23.3       44.2       32.2        1          567.5        1.2         95
"OBS_Q6"     83.3       84.3       32.2        1          555.3        1.4         90
"OBS_Q7"     85.3       39.3       33.2        1          999          0           0
```

Transient observation data

This adds time series curves to existing points in an existing observation coverage. The targeted coverage must be the active coverage.

The existing points and the data being imported are matched by **Name** or **ID**. If both **Name** and **ID** are specified then **ID** will take precedence.

Both **Date** and **Time** can be specified although data can be imported with only **Date** or only **Time** specified (at least one of these fields must be specified). If only the **Date** is specified then the time is set to 12:00:00 AM. If only **Time** is specified then it is assumed that the user is not using date/time format and the time is treated as a relative time.

Field	Type	Required	Comments
Name	Text	no	Either Name or ID must be specified
ID	Text	no	Either Name or ID must be specified
Date	Date	no	Either Date or Time or both must be specified
Time	Time	no	Either Date or Time or both must be specified

Example

```
"id"        "date"        "time"        "head"
"OBS_Q5"     12/3/1999      18:00:00       238.5
"OBS_Q5"     1/30/2000      07:38:25       834.7
"OBS_Q6"     3/27/2000      18:00:00       878.3
"OBS_Q6"     12/3/1999      18:00:00       733.2
```

Well data

This creates new feature points in an existing coverage. The point types are set to "well" and the flow rate and other data are assigned to the points. A coverage with the "Wells" attribute must already exist and be the active coverage.

Field	Type	Required	Comments
Name	Text	no	
X	Number	yes	
Y	Number	yes	
Z	Number	no	Elevation of top of well.
Depth	Number	no	Depth to top of screen.
Screen Length	Number	no	
Flow Rate	Number	no	Positive for injection, negative for extraction.

Example

```
"id"        "x"        "y"        "z"        "depth"        "len"        "Q"
"well_1"     123.5      843.2      62.0      51.4           6.0          120.5
"well_2"     134.2      789.4      62.8      60.7           5.4          100.3
"well_3"     147.2      678.1      61.4      110            10.0         300.5
```

MODFLOW Well Package data

This creates new well BCs in an existing MODFLOW simulation. Both steady state (one flow rate per well) or transient data (multiple flow rates at different times per well) can be imported. With transient data, multiple rows are used to list flow rates at different times (or date/times) and the Well Name field is used to associate the flow rates with the correct well. The times for changes in flow rate do not need to match the model stress period times. Flow rate curves are treated as stair step data and the rate for each stress period is found by temporal (time) interpolation. The user is asked if they want to use the average flow rate for each stress period, or use the flow rate at the beginning of each stress period.

Field	Type	Required	Comments
Layer	Number	yes	
Row	Number	yes	
Column	Number	yes	
Well Name	Text	yes	Any text used as the well identifier.
Flow Rate	Number	no	Positive for injection, negative for extraction.
Date	Date	no	If neither Date nor Time is specified, all stress periods will have the same Q.
Time	Time	no	Use this field for relative times (starting from 0.0), or if specifying an actual time of day (5:00) to go with the Date field. If neither Date nor Time is specified, all stress periods will have the same Q.

Example

```
"Layer"      "Row"      "Column"      "Rate"       "Well Name"       "Date"          "Time"
1     2     2      -502      City Well #1      Jan 1, 1940       5:00
1     2     2      -431      City Well #1      July 1, 1940       5:00
1     4     4      0        W5088341       July 1, 1940       5:00
1     4     4      -1000     W5088341       July 1, 1941       6:00
```

Pumping data

This adds time series curves to existing points in an existing coverage containing wells. The targeted coverage must be the active coverage. The existing points and the data being imported are matched by name.

Field	Type	Required	Comments
Well Name	Text	yes	Must match an existing well, or else data is ignored.
Date	Date	No	Either Date or Time or both must be specified.
Time	Time	No	Either Date or Time or both must be specified.
Flow Rate	Number	yes	Positive for injection, negative for extraction.
Depth	Number	no	Depth to top of screen.
Screen Length	Number	no	

Example

```
"id"       "date"         "time"        "Q"
"well_1"      12/3/1999      18:00:00      625.0
"well_1"      1/30/2000      07:38:25      0
"well_2"      12/3/1999      18:00:00      0
"well_2"      3/3/2000       14:48:32      100.0
```

Borehole data

This creates new boreholes. Optionally, a borehole folder name can be specified to organize the imported boreholes.

Field	Type	Required	Comments
Borehole Name	Text	yes	
X	Number	yes	X location of the contact.
Y	Number	yes	Y location of the contact.
Z	Number	yes	Z location of the contact.
HGU ID	Number	yes	HGU Material below the contact
Material ID	Number	no	Material below the contact.
Horizon ID	Number	no	

```
"id"       "x"       "y"       "z"       "material"       "horizon"
"borehole_1"      0.0      0.0      0.0      3      1
"borehole_1"      0.0      0.0      10.0      1      2
"borehole_1"      0.0      0.0      15.0      6      4
"borehole_2"      5.0      0.0      1.0      2      3
```

```
"borehole_2"       5.0        0.0       6.0       2       4
```

Borehole sample data

This creates new sample data on existing boreholes, or new sample data on new boreholes if no boreholes with matching names exist. All existing sample data is replaced with that being imported.

Field	Type	Required	Comments
Name	Text	yes	New Borehole Name
X	Number	yes	X location of the borehole.
Y	Number	yes	Y location of the borehole.
Z	Number	yes	Z location of the borehole.
Dataset	Number	yes	

```
"id"        "x"       "y"        "z"        "data"
"borehole_1"      0.0        0.0       0.0        495
"borehole_1"      0.0        0.0       10.0        484
"borehole_1"      0.0        0.0       15.0        454
"borehole_2"      5.0        0.0       1.0        259
"borehole_2"      5.0        0.0       6.0        248
```

Transient point data

This creates new time series curve data on existing feature points similar to the "Pumping data" option above. This option is more generic than the "Pumping data" option, however, because it will work with feature points of any type and any attribute (that can be transient) of that feature point.

The existing points and the data being imported are matched by **Name** or **ID** or **X** and **Y**. The order of precedence for these fields is **ID**, **Name**, then **X** and **Y**.

Both **Date** and **Time** can be specified although data can be imported with only **Date** or only **Time** specified (at least one of these fields must be specified). If only the **Date** is specified then the time is set to 12:00:00 AM. If only **Time** is specified then it is assumed that the user is not using date/time format and the time is treated as a relative time.

Data for more than one attribute can be imported at the same time. The attributes of the active coverage are listed as available fields that can be mapped.

Field	Type	Required	Comments
Name	Text	No	Name or ID or X and Y must be specified.
ID	Number	No	Name or ID or X and Y must be specified.
Date	Date	No	Either Date or Time or both must be specified.
Time	Time	No	Either Date or Time or both must be specified.
X	Number	No	Name or ID or X and Y must be specified.
Y	Number	No	Name or ID or X and Y must be specified.
[Attribute1...]	Number	No	The value of the selected attribute at the given date/time.
[AttributeN]	Number	No	The value of the selected attribute at the given date/time.

```
"id"        "date"        "time"        "x"        "y"        "Flow rate"
"well_1"       12/3/1999        18:00:00        123.5        843.2        625
```

```
"well_1"      1/30/2000      07:38:25      123.5      843.2      0
"well_2"      3/27/2000      18:00:00      134.2      789.4      0
"well_2"      12/3/1999      18:00:00      134.2      789.4      100.0
```

Transient node data

Similar to Transient point data but for nodes. Since nodes don't have names they must be matched by ID or XY location.

Field	Type	Required	Comments
ID	Number	No	Either ID or X and Y must be specified.
Date	Date	No	Either Date or Time or both must be specified.
Time	Time	No	Either Date or Time or both must be specified.
X	Number	No	Either ID or X and Y must be specified.
Y	Number	No	Either ID or X and Y must be specified.
[Attribute1...]	Number	No	The value of the selected attribute at the given date/time.
[AttributeN]	Number	No	The value of the selected attribute at the given date/time.

Transient arc data

Similar to Transient point data but for arcs. Since arcs don't have a single XY location they must be matched by ID or Name.

Field	Type	Required	Comments
Name	Text	No	Either Name or ID must be specified.
ID	Number	No	Either Name or ID must be specified.
Date	Date	No	Either Date or Time or both must be specified.
Time	Time	No	Either Date or Time or both must be specified.
[Attribute1...]	Number	No	The value of the selected attribute at the given date/time.
[AttributeN]	Number	No	The value of the selected attribute at the given date/time.

Transient polygon data

Similar to Transient point data but for polygons. Since polygons don't have a single XY location they must be matched by ID or Name.

Field	Type	Required	Comments
Name	Text	No	Name or ID must be specified.
ID	Number	No	Name or ID must be specified.
Date	Date	No	Either Date or Time or both must be specified.
Time	Time	No	Either Date or Time or both must be specified.
[Attribute1...]	Number	No	The value of the selected attribute at the given date/time.
[AttributeN]	Number	No	The value of the selected attribute at the given date/time.

Importing/Exporting CAD Data

Importing

GMS can import DWG or DXF files via the *File*|**Open** command. If there is already CAD data in memory, GMS will replace the existing data with the data being imported. Currently, GMS cannot merge the incoming data with the data in memory.

Exporting

GMS data can be exported to a DWG or DXF file that can then be read into a CAD software package. If there is CAD data in memory when a GMS project is saved, GMS creates a new DWG file from the CAD data. The file is put in the same folder with the other project files and named using the project prefix.

Any CAD data in memory can be exported by right-clicking the CAD folder in the Project Explorer and selecting the *Export* command. The *DWG/DXF Filename* dialog will appear, and you can select either the DWG of DXF file types to save the CAD data. GMS objects must first be converted to CAD data before CAD data can be exported. To convert GMS data to CAD data, use the **Convert To CAD** command in the *Display* Menu.

Starting at GMS 9.0, multiple CAD files can be included in the project at once. GMS does not write to these files when the GMS project is saved, it merely links to the CAD files.

CAD Properties

The *CAD Properties* dialog displays data about the CAD file such as: path on disk, extents in xy, and file version.

Importing USGS DEMs

The *Import USGS DEMs* dialog is used to examine the limits of DEM files as well as defining a clipping boundary to eliminate regions outside the area of interest prior to actually reading the elevations in. The **Add** button is used to add a new file to the list of files (you can now select multiple DEM files at the same time rather than adding them one at a time, but they must all be of the same format) that will be read. The standard file opening dialog appears from which you may select DEM files. Once the file(s) are added to the list a bounding rectangle is displayed in the small graphics window in the center of the dialog. As additional files are added the graphics region is updated with new rectangles in order to provide an understanding of where DEMs are located in relation to one another.

A small black rectangle is displayed in the central graphics window. Only elevation points inside this rectangular region will be read in when hitting OK from this dialog. This boundary rectangle can be modified in three different ways.

Import USGS DEMs dialog

- **DRAGGING –** Using the mouse you can click near one of the four edges of the bounding rectangle and drag it to a new location. If you click near a corner both edges will be adjusted. If you click in the center of the rectangle then the entire rectangle can be translated to a new location. As you drag edges to new locations their corresponding values are automatically updated in the Edit Fields.

- **EDIT FIELDS –** Any one of the western, eastern, northern, or southern boundaries can be explicitly set by changing the values in their corresponding edit fields. As new values are entered the display in the small graphics window can be updated by tabbing or by clicking the cursor outside the current edit field.

- **ENCLOSE ALL DEMs –** This button can be used to force the edges of the bounding rectangle to correspond to the limits of the DEM files which have been added to this point. By default when a new DEM file is added the bounding rectangle is adjusted to enclose all DEMs.

The thinning factor can be used to reduce the number of elevation points read. A thinning factor of 2 means that every other row and column would be read, reducing the number of total points by a factor of 4. A factor of three means that every third row and column would be read reducing the total by a factor of 9, etc.

The elevation units toggle can be used to specify whether imported DEM points have meter or feet for units of elevation. If a DEMs base elevation units are feet and the toggle specified meters, all elevations are converted when reading. This is particularly important when trying to read two adjacent DEMs with different base elevation units. Also see about transforming coordinate systems.
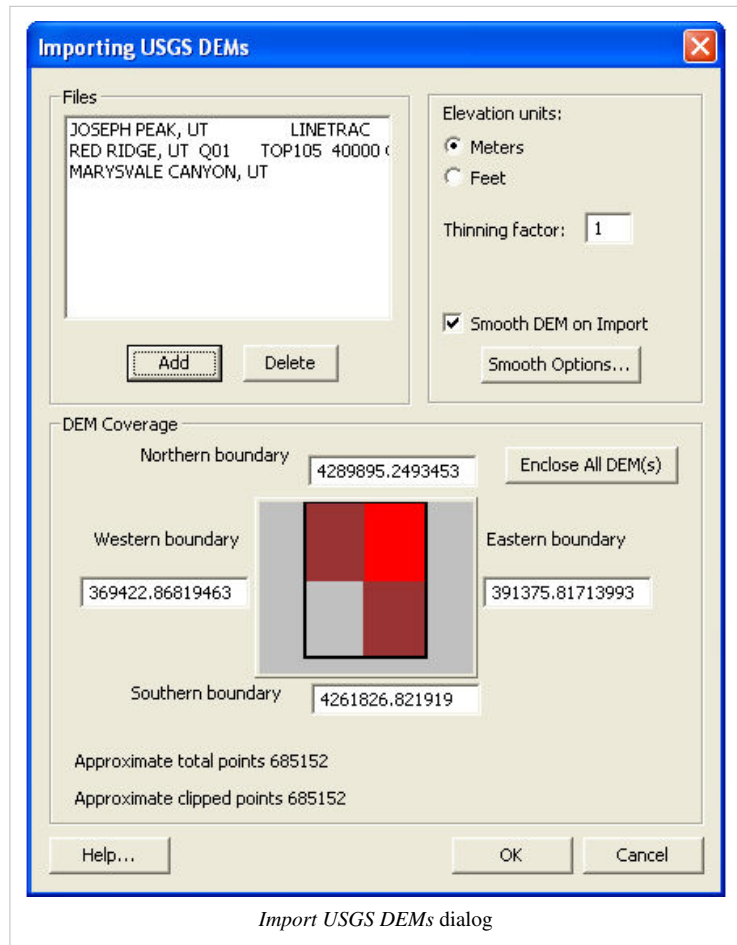
NOTE: This option does not change the base planimetric units of the DEM and you should make the elevation units consistent with the planimetric units in order to ensure that slopes are computed properly when computing basin geometric parameters.

At the bottom of this dialog the total number of DEM points from all DEM files which have been added and the approximate number of points inside the bounding rectangle are displayed. These numbers can be used to determine how many points your system is capable of reading. For example, each DEM point requires 5 bytes of memory, so that if you read an entire 1:250,000 DEM with about 1.4 million points, 1.4 meg * 5 bytes = 7 meg of memory would be required (in addition to whatever other memory being used by GMS). This means that you would need at least 8 meg of RAM, or some type of virtual memory capabilities would be required to read in the entire DEM file.

This same dialog is used for all five types of DEMs supported in the GMS import options: USGS, ARC/INFO®, GRASS, DTED, and SDTS.

DEMs in Different UTM Zones

Occasionally two adjacent USGS DEM files will be read in but do not appear adjacent in the import dialog. This occurs because while the two DEMs are adjacent, they lie in different UTM zones. X coordinates within UTM zones repeat and therefore the DEMs do not lie adjacent to one another as they should. WMS does not contain the utility functions necessary to transform a DEM from one UTM coordinate zone to another. However, GMS, ARC/INFO® and possibly other GIS software can be used to convert from one zone to another.

Importing/Exporting GIS Grids

GMS includes an option to import and export grid files from/to either the GRASS or ARC/INFO (ArcView) geographic information systems formats.

Importing

Grids are imported using the *Open* command in the *File* menu.

With GRASS and ARC/INFO grid files, the grid and the attributes are saved to a single file. When a grid file is imported, GMS constructs the grid, and then reads in the attribute matrix as a dataset.

When a grid in GRASS or ARC/INFO contains multiple attributes (datasets), each attribute is written to a separate grid file. In such cases, it is possible to read in one instance of the grid file to create a grid with a single dataset, and then read in the other grids as extra datasets on the first grid. This can be accomplished as follows:

1. Select the *Open* command from the *File* menu.
2. Choose either the GRASS or ARC/INFO file filter.
3. Select the grid file.
4. Select the **OK** button.

At this point, the first grid file is imported resulting in a grid with a single dataset. For the additional datasets, steps 1-5 are repeated but now GMS will detect that there is already a 2D grid in memory that matches the grid being imported and will ask whether you want to replace the existing grid, or add the new grid as a dataset of the existing grid.

Exporting

Grids can be exported from GMS in the GRASS or ARC/INFO format by right-clicking on the grid in the Project Explorer and selecting the ***Export*** menu command. Only grids with equal row heights and equal column widths can be exported. When a grid is exported, the grid and the active dataset are written to the GIS file. If multiple datasets are associated with the grid, each dataset should be made the active dataset and the grid should be exported repeatedly so that each dataset is written to a separate grid file.

Importing/Exporting Shapefiles

The data model used for feature objects (points, nodes, vertices, arcs, polygons) was patterned after the vector GIS data model used in Arc/Info and ArcView. As a result, feature objects can be imported from Arc/Info or ArcView into GMS or exported from GMS to either Arc/Info or ArcView using shapefiles. A shapefile is a binary file used to store points, arcs, and polygons. Each object type is typically saved to a separate shapefile.

When a shapefile is saved from ArcView or Arc/Info, three files are saved. The files are described in the following table. When the shapefile (*.shp) is imported to GMS, the database file (*.dbf) is automatically imported at the same time.

File Extension	Decription
*.shp	This file contains the geometry of the points, lines, or polygons.
*.dbf	This is a relational database file. The properties of the feature objects are stored in this file.
*.shx	This is an index file. It is ignored by GMS.

Importing Shapefiles

Shapefiles are imported to GMS using ***Open*** command in the *File* menu and selecting the *.shp extension. A dialog comes up that prompts the user whether to import the shapefile as a scatter set or feature objects.

If the scatter set option is selected and the file must is a point file, the points are imported. If the option selected is Feature Objects, the *Map Shapefile Properties* Dialog appears. The list of coverage attributes in the top right portion of the dialog are the properties for the current GMS coverage type. The list of database fields in the top left portion of the dialog are the properties that GMS found in the specified shapefile. The bottom portion of the dialog shows how the shapefile properties will be mapped to the GMS coverage properties. GMS will attempt to automatically set up the mapping by looking for shapefile attribute names that match the names of the GMS coverage properties. The user can manually change the attribute mapping using the **Map** and **Unmap** buttons. Database fields that are not mapped will be ignored by GMS.

The order for importing is first polygons, then arcs, then points. For example, when importing both an arc and a node shapefile, it is important to import the arc shapefile first. The properties that a node can have depend on the arcs it is attached to so GMS must find the arcs attached to nodes being imported. The points on the arcs need to be nodes and not vertices for GMS to match them up. That is, the points on the arcs that correspond with the points being imported in the point shapefile must be nodes, not vertices. Even if they're in the exact same location, GMS won't match them up if they're vertices, only if they're nodes.

With the current version of GMS, only steady state data can be imported from a shapefile. Transient properties are not supported. Transient well data can be imported using a Pumping Well Data file. Transient observation point data can be imported using a Tabular Obersvation Point file.

Exporting Shapefiles

GMS feature objects are saved to shapefiles by right-clicking a coverage in the Project Explorer and using the *Export* command. Saving shapefiles brings up the *Export Shapefile* dialog. The *Export Shapefile* dialog shows the path and filename where the shapefile will be saved. In GMS, a single coverage can contain points, nodes, arcs and polygons. Shapefiles, however, can only contain one type of attribute. Thus, GMS can export up to three shapefiles depending on the type of objects in the GMS coverage. For example, if the GMS coverage contains arcs, points and nodes, the user can export the arcs to one shapefile and the points and nodes to a separate point shapefile. The user can control which shapefiles GMS will create when more than one is possible. The names for the shapefiles come from the prefix listed at the top of the dialog, appended with "_pts" for the point shapefile, "_arcs" for the arc shapefile, and "_polys" for the polygon shapefile.

The Export Shapefile dialog allows the user to specify the format of fields containing floating point numbers in the shapefile. The total width of the field and the number of digits to the right of the decimal can be specified. All float fields in the shapefile will be formatted according to these settings.

With the current version of GMS, only steady state data can be exported to a shapefile. Transient properties are not saved to the file.

The table of attributes that is exported matches the table that is displayed in the properties dialog when editing feature objects.

Currently, you can only export one coverage at a time to shapefiles.

Shapefile Properties

The tables below indicate how GMS imports and exports shapefile properties. A "type" field must exist as an attribute when importing so GMS knows what kind of attribute to assign to the object. If the "type" field is not found, GMS will import the objects as generic objects without properties and the *Map Shapefile Properties* dialog will not appear.

A single shapefile may contain objects with different attribute types. Different attribute types require different fields, as shown in the tables. The X's in the table indicate which fields correspond with which attribute types. GMS writes -999 to empty cells when exporting because shapefiles have no way of flagging "null" or "no data" fields. If a field is not required based on the attribute types of the objects to be exported, the field will not be included.

GMS only supports importing of steady state data (one moment in time) from shapefiles.

MODFLOW/MT3D Local Sources Sinks Coverage

For MODFLOW/MT3D local source/sink coverages, if a node is attached to more than one arc, it can have more than one attribute type. When GMS exports these nodes, it exports one node for every attribute type the node has. So the shapefile might end up with several points in the same location, each with different properties. When importing, GMS will resolve all nodes found in the same location to one node and assign the node the union of the properties of all the nodes.

Note that the following options only work for steady state data. Transient well data can be imported using the Pumping Well Data File formats.

Type	Z	Cond	Elev	Stage	Flux	Screentop	Screenshot	Beginlayer	Endlayer
Generic	X								
Shead	X		X					X	X
Sconc	X							X	X
Ghead	X	X	X					X	X
Drn	X	X	X					X	X
Riv	X	X	X	X				X	X
Well	X				X	X	X	X	X

Point Properties For MODFLOW/MT3D Local Source/sink Coverage.

Type	Z	Elev	Stage	Topelev	Botelev
Shead	X	X			
Sconc	X				
Ghead	X	X			
Drn	X	X			
Riv	X	X	X		
Strm	X		X	X	X

Node Properties For MODFLOW/MT3D Local Source/sink Coverage.

Type	Cond	Elev	Stage	Beginlayer	Endlayer
Generic					
Shead		X		X	X
Sconc				X	X
Ghead	X	X		X	X
Drn	X	X		X	X
Riv	X	X	X	X	X

Polygon Properties for MODFLOW/MT3D Local Source/sink Coverage.

MODFLOW/MT3D Areal Coverage

The fields exported for MODFLOW/MT3D layer coverages depend on what properties are defined for the polygons. They also depend on which flow package (LPF, BCF or HUF) is selected in the *Coverage Properties* dialog. Similarly when importing GMS looks for the appropriate fields based on the selected flow package.

The following table lists the attributes that go with each flow package.

Shapefile Field	Meaning	LPF	BCF	HUF
Type	The attribute type ("Layer")	X	X	X
Topelev	Top Elevation	X	X	X
Botelev	Bottom Elevation	X	X	X
Trans	Transmissivity		X	
Kh	Horizontal hydraulic conductivity	X	X	
KV	Vertical hydraulic conductivity	X		
Leak	Leakance		X	
Hanis	Horizontal Anisotropy	X		
Vanis	Vertical Anisotropy	X		
Specstore	Specific storage	X		
Specyield	Specific yield	X		
Pstore	Primary storage coefficient		X	
Sstore	Secondary storage coefficient		X	
Wetdry	Wet/dry flag	X	X	X
Zonecode	Zone code	X	X	X
Porosity	Porosity	X	X	X
Longdisp	Longitudinal dispersivity	X	X	X
Bulkdens	Bulk density	X	X	X
Imporosity	Immobile porosity	X	X	X
Material	Material	X		

Polygon Properties for MODFLOW/MT3D Layer Coverage.

Observation Coverage

When importing shapefiles into an observation coverage, information should exist in the Int (interval) and Conf (confidence) fields, or in the Stdev (standard deviation) field but not both. The confidence value should be an integer between 0 and 100 (i.e., 95 means 95% confidence). GMS will assign default values if there is any information missing.

Type	Name	Z	Layer	Value	Int	Conf	Stdev
Obs	X	X	X	X	X	X	X

Point Properties for Observation Coverage.

Shapefiles

One of the most common methods for creating feature objects is to import a shapefile. The concept of a shapefile was established by Environmental Systems Research Institute (ESRI) [1] in their ArcView® program and it has become the defacto standard for sharing GIS vector data (points, lines, and polygons).

A shape file is actually comprised of three or more files. The primary file is the *.shp and it contains the geometric information (coordinates and if necessary connectivity of the points, lines, polygons). The *.dbf file is a standard database file and stores the attributes of the feature objects. Finally, there will be a *.shx file which is an indexing file. There may be a few other files that accompany the shapefile and so you should always move them around together if you are copying or moving them to a new directory.

Only one "theme" or type of feature can exist in a shapefile. For example you cannot store points and polygons in the shapefile, or boundaries and so you may be required to import multiple files.

XMS software includes all of the tools necessary to import shapefiles and convert the geometric and attribute information into feature objects. This can be done by directly opening the shapefile and converting to feature objects in the active coverage or by loading the shapefile in the GIS module.

References

[1] http://www.esri.com/

Import From Database

The "Database Import Wizard" allows users to access data stored in a database and import it. The wizard is invoked by selecting the *Import from Database* command from the *File* menu. The data types that can be imported by the **Database Import Wizard** are the same data types that are supported by the "File Import Wizard".

The *Database Import Wizard* has four steps:

Step 1 – Connecting to a Database

Step 1 of the wizard lets you set up a connection to a database. To connect to a database either on the same computer or on a network press the **Connect to Database** button. Once a database connection is created, a path to the database and the different tables in the database are displayed. When a table is selected its columns are displayed along with the number of rows in that table.

Step 2 – Querying Information from a Database Table

Step 2 allows you to create, copy, delete, and import queries that retrieve data from a database. To help in writing the queries, the tables in the database are displayed, as well as the columns in the selected table.

Some SQL Basics The query is an SQL (Structured Query Language) statement. The SQL statement is entered in the **Query SQL statement** edit field. An example of an SQL statement would be: "SELECT x, y, z, toluene FROM multipledatasets". This statement means that columns x, y, z, and toluene from the table multipledatasets will be retrieved from a database. SQL statements are case sensitive. SQL statements also require brackets around table or column names that have spaces. For example, to query data from a table titled "x coordinate" in the SQL statement it would be written as [x coordinate]. A full explanation of SQL is beyond the scope of this document.

You can write a short description for each query in the **Query description** edit field. The **New** button creates a new query that has a default name, description, and SQL statement. The **Copy** button creates a copy of the currently

selected query. The **Delete** button deletes the currently selected query.

The queries you define are saved automatically by GMS in a file called gmsquery.ini, located in the folder where GMS is installed. The **Import** button allows you to import a list of queries from any file that follows the same format as the gmsquery.ini file.

Step 3 – Viewing the Results of the Query

Step 3 displays the results of the database query. Only the first 20 rows are displayed in a spreadsheet. If the results are not what you wanted, you can go back to Step 2 and modify the query.

Step 4 – Assigning Column Types

The first 20 lines of the file are displayed in a spreadsheet according to the file outline specified in step 1. This step lets you pick what kind of data you are importing (see Supported File Formats). A "no data flag" can be specified for the file. This is a number that, when encountered in the file, tells GMS to mark the value as "NULL" or "no data".

The data in the columns are identified by selecting the type in the combo box at the top of each column in the spreadsheet. If a row of headings exists, GMS will automatically select the proper type if it recognizes the heading. Otherwise they are Not Mapped by default. The available column types changes depending on the GMS data type selected. Certain column types must be mapped for each file format before the user can progress to the next step in the wizard. The name of each column is changed by editing the Header cell.

After the data have been imported, the GMS:Coordinate Transformation tools can be used to transform and translate the data.

Get Online Maps

The **Get Online Maps** button allows you to select online data from a variety of different sources. Once online maps has been selected, the data resolution will be automatically adjusted based on your zoom parameters. Online maps can only be viewed in plan view.

Online maps are raster datasets that can contain imagery, elevation, or land use information. If you have online maps in your program, you can right-click on each of the maps to convert them to static images that can be saved to your local hard drive. You can convert or interpolate online maps containing elevation data to various elevation formats.

Note that online data sources are on external servers that we have no

Get Online Maps Dialog

control over. The data may draw/export very slowly or become unavailable at any time. We have no control over this.
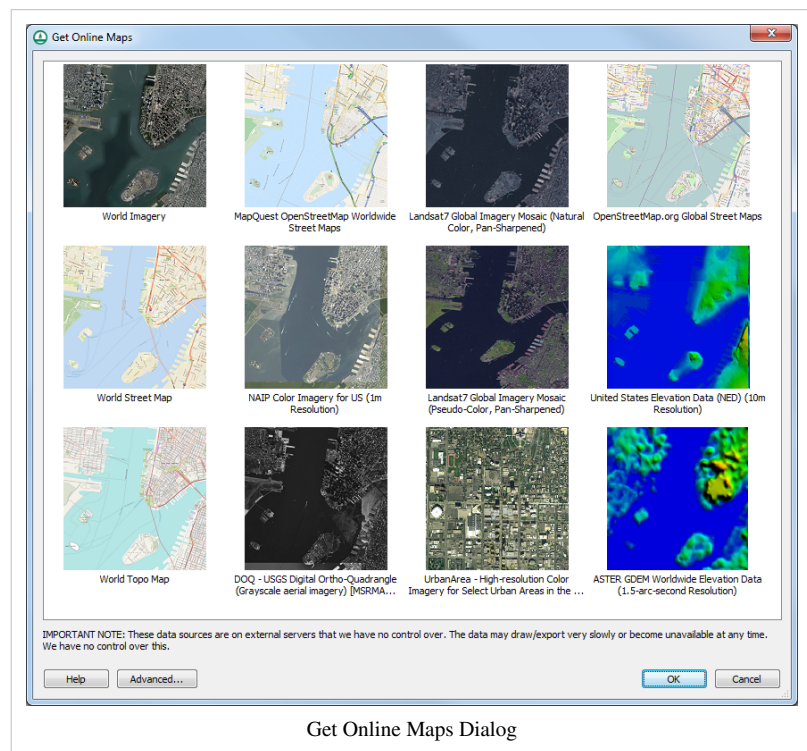
The **Advanced** button allows you to select from other data sources and to use other online data query functions that may not be fully supported. In the *Advanced* dialog, the **Add Sources From File** button allows you to add new Web Map Service (WMS) sources from an external text file.

More information about the various types of online data can be found by visiting the following links:

- NED data – USGS [1]
- ASTER and SRTM data – USGS & NASA [2]
- NLCD and CORINE (European) Land Cover data [3]
- World Imagery [4] More Info [5]
- World Street Maps [6] More Info [7]
- World Topo Maps [8] More Info [9]
- MapQuest OpenStreetMap Worldwide Street Maps [10]
- USA Topo Maps [11] More Info [12]
- Other data sources-Geologic data, land cover, etc. (use the advanced button)

Exporting to a File

An online map can be exported to a file and loaded into the project. You may want to do this to save a local copy and not be dependent on internet access. Also, there may be more commands and options available with a local file, such as interpolation or conversion to other object types, than with online maps.

References

[1] http://ned.usgs.gov/

[2] http://srtm.usgs.gov/

[3] http://seamless.usgs.gov/nlcd.php

[4] http://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer

[5] http://www.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9

[6] http://services.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer

[7] http://www.arcgis.com/home/item.html?id=3b93337983e9436f8db950e38a8629af

[8] http://services.arcgisonline.com/ArcGIS/rest/services/World_Topo_Map/MapServer

[9] http://www.arcgis.com/home/item.html?id=30e5fe3149c34df1ba922e6f5bbf808f

[10] http://developer.mapquest.com/web/products/open

[11] http://services.arcgisonline.com/ArcGIS/rest/services/USA_Topo_Maps/MapServer

[12] http://www.arcgis.com/home/item.html?id=99cd5fbd98934028802b4f797c4b1732

Exporting Non-native GMS Files

GMS can export files that can be used in other software. There are two methods to export data from GMS. Data can be exported through the *Save As* dialog or by right-clicking on items in the Project Explorer.

Exporting through the Save Dialog

The file types that can be exported are shown in the table below. To export a particular file type, the file filter corresponding to that file type should be selected in the *Save* dialog.

File Type	File Ext	Description
Shapefile	*.shp	Creates a shapefile from either the active coverage, or from the active 2D scatter point set, depending on the choice made in a pop-up dialog.
Tabular Text Files	*.txt	Exports the active 2D or 3D scatter point set as a tab-delimited text file.
Arc/Info Grid	*.asc	Exports a 2D grid to an ASCII grid file that can be read by Arc/Info or ArcView. See Importing/Exporting GIS Grids for more information.
GRASS Grid	.ggd	Exports a 2D grid to using the GRASS ASCII grid file format. See Importing/Exporting GIS Grids for more information.

Exporting from the Project Explorer

Item in the Project Explorer can be exported to different formats by right-clicking on an item and selecting the *Export* command. The table below lists the file formats that will be shown depending on the type of Project Explorer object selected:

Project Explorer Object	File Ext	Description
TINs	*.tin	Text GMS TIN File
DXF/DWG	*.dxf, .dwg	Saves the current CAD data to a DXF or DWG file. You can convert your GMS data to CAD data by using the *Data→CAD* command in the CAD menu in the Map module.
Boreholes	*.bor	Text GMS Borehole File, Text Tab Delimited Borehole File
Solids	*.sol	Text GMS Solid File
2D Mesh Data	*.2dm	Text GMS 2D Mesh File
2D Grid Data	*.2dg, *.asc, *.ggd	Text GMS 2D Grid File, ARC/INFO Ascii Grid Files, Grass Grid Files
2D Scatter Sets	.xy,.txt,.shp	Text GMS 2D Scatter Point File, Text Tab Delimited 2D Scatter Point File, Shapefile
3D Mesh Data	*.3dm	Text GMS 3D Mesh File
3D Grid Data	*.3dg, *.asc, *.ggd	Text GMS 3D Grid File, ARC/INFO Ascii Grid Files, Grass Grid Files
3D Scatter Sets	*.xyz, *.txt, *.shp	Text GMS 3D Scatter Point File, Text Tab Delimited 3D Scatter Point File, Shapefile
Coverages	*.shp	Shapefile
Datasets	*.dat, *.dat	Binary Dataset Files, ASCII Dataset Files
Particle Sets	*.txt	Text Tab Delimited Pathlines

Multiple Objects

If multiple objects are selected and they are all of the same type, they will all be exported to the same text file.

Folders

If a folder of objects is selected, then all of the geometric objects in the folder will be exported. Datasets will not be exported. If there are subfolders in the folder, all of the geometric objects will be recursively exported in all subfolders.

Images

An image is typically a scanned map or aerial photo in TIFF or JPEG format. Images can be imported to GMS and displayed in the background to aid in the placement of objects as they are being constructed or simply to enhance a plot. Images can also be draped or "texture mapped" onto a TIN, 2D grid, 2D mesh, or the top of a 3D grid or 3D mesh.

Image display options are changed in the Project Explorer. The options are as follows:

Scanned USGS Quad Map Texture Mapped to the Top of a 3D Grid.

- **Visibility** – The Visibility of an Image is turned off by toggling the check box next to the image in the Project Explorer.

- **Transparency** – The Transparency of the images can be changed by right-clicking on the image folder in the Project Explorer and selecting the *Transparency* command.

- **Crop Collar** – USGS quad sheet collars can be removed from an image by right-clicking on an image in the Project Explorer and selecting the *Crop Collar* Command.
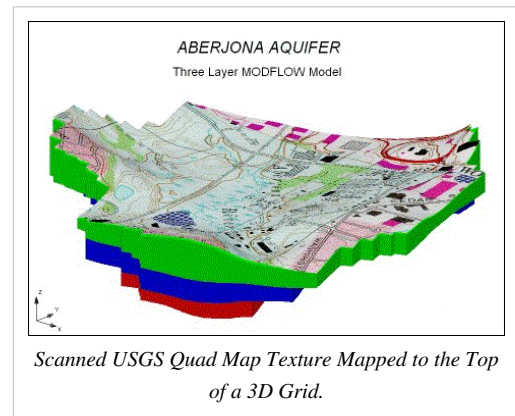
Getting Images via Online Maps

Free imagery can be obtained from the internet via the Get Online Maps feature. A local image file can be created from an online map via the *Export* command.

Importing an Image

Images are read into GMS by using the *File | Open* command. GMS supports many different image file types.

Image Pyramids

Image pyramids can be created when an image is imported into GMS. Image pyramids are multiple resolution copies of the original image that are created and saved to speed up display. With pyramids, a lower resolution copy of the image displays quickly when drawing the entire image. As you zoom in, copies of the original image resampled at finer resolutions are then drawn. This option allows for optimal performance and clear image display.

See Image Pyramids for more information.

Multiple Images

GMS allows more than one image at a time; however, you will want to insure that each image is in the same coordinate system.

Geo-Referenced Images

Some images have the coordinate system embedded in the file. Also, some images will have a separate file called a world file (for example: a tiff world file, *.tfw). These files are "geo-referenced." When these files are opened GMS automatically registers the image to the real world coordinate location specified. In the case where a separate world file is used, GMS will automatically find it and register the image if the world file has the same filename prefix as the image file and is in the same folder.

If the image file is not geo-referenced then you will have to register the image manually. (See Registering an Image)

When the GMS project is saved, a link to the image is saved in the project file, along with the current image registration information so that the image is re-registered to the same coordinates every time the project is opened. The original image file and world file (if one exists) are not altered.

Exporting Images

An image can be exported by right-clicking on the image in the *Project Explorer* and selecting the *Export* command. When exporting, the image file type and the resolution can be specified. Only the image which is open in GMS is exported, not the entire *Graphics Window*.

The entire *Graphics Window* can also be saved to an image file via the *File|Save As* command. A number of different image file types are supported such as: *.bmp, *.png, *.jpg, *.tif.

Texture Mapping Images

GMS allows you to drape an image over the top of a TIN, grid, or mesh. However, only the first image listed in the project explorer will be texture mapped onto the TIN, grid, or mesh. You can change the order of the images in the project explorer by selecting the image and dragging it to a new location in the project explorer.

Image Properties

The *Image Properties* dialog can be opened by right-clicking on an image in the *Project Explorer* and selecting the *Properties* command from the pop-up menu. This dialog displays information about the image, such as name, path, type, pixel size etc.

DEMs / Rasters

See Rasters.

Registering an Image

If an image file is not geo-referenced then the user must define the coordinate system of the image. The register dialog allows the user to specify the coordinate system for the image. When an image is opened, if the image is not self-referenced, XMS attempts to find world file with the same name as the image (*.wld or *.jpgw extension). If neither of these is found, the register dialog opens.

What is Image Registration?

Before an image can be displayed, the image must be "registered" or geo-referenced. Registering an image involves identifying points on the image corresponding to locations with known real world (XY) coordinates. Once these points are identified, they are used to scale and translate the image to the proper location when it is drawn with the other objects in the Graphics Window. If an image is not registered properly, any objects which are created using the background image as a guide will have the wrong coordinates.

Register Image Dialog

An image is registered using the *Register Image* dialog. The main feature of the *Register Image* dialog is a large window in which the image is displayed. Two or three points (shown by "+" symbols) are also displayed in the window. These points are used to identify locations with known real world coordinates. The real world coordinates (X,Y) and image coordinates (U,V) of the registration points are listed in edit fields below the image. The points are moved to the desired locations on the image by dragging the points using the tools described below. Once the points are located, the real world coordinates can be entered in the corresponding edit fields. The dialog contains the following options:

- **2 point or 3 point registration** – Two point registration rotates and uniformly scales an image. Three point registration allows for non-uniform scaling to account for some parallax.
- **Import World File** – Used to import a TIFF world file (*.tfw). A TIFF world file has the information needed to set the (X,Y) and (U,V) coordinates in order to place the image in the correct world coordinates.
- **Image name** – Used to associate a name with the file. This name will appear in the project explorer.

Register Image Dialog Tools

The following tools can be used to help position the registration points:

Tool	Tool Name	Description
✛	Select Point Tool	The Select Point tool is used to select and drag register points to a location on the map for which real coordinates are known so that they can be entered in the corresponding XY edit fields.
🔍	Zoom Tool	In some cases, it is useful to magnify a portion of the image so that a registration point can be placed with more accuracy. The Zoom Tool is used to zoom in a portion of the image.
✋	Pan Tool	After zooming in on a portion of the image, the Pan Tool is used to pan the image vertically or horizontally.
🔘	Frame Macro	The Frame Macro is used to automatically center the entire image within the drawing window of the dialog after panning and zooming in on a specific location.

Import World File

The **Import World File** button can be used to automatically define the registration data. A world file is a special file associated with a previously registered image that is exported from ArcView® [1] or Arc/Info® [2]. The file contains registration data that can be used to register the image.

Saving/Reading Image Registration Data

When a project file is saved, a link to the image is saved in the project file, along with the current image registration information so that the image is re-registered to the same coordinates every time the project is opened. The original image file and world file (if one exists) are not altered.

Convert Point Coordinate System

The x, y coordinates of each register point must be specified. If the user has the (x,y) coordinates in a different coordinate system than their project, the coordinates will need to be converted.

GMS Point Conversion

The **Convert Point** button in the image registration dialog will allow the user to convert the coordinates.

SMS Point Conversion

The Single Point Conversion command in the *Edit* menu can be helpful if you need to convert between any two coordinate systems. You should perform this conversion and record the locations in the correct coordinate system prior to entering the registration dialog.

An alternative approach is to convert the coordinate system after importing by right clicking on the image in the Project Explorer and choosing *Coordinate Conversion* from the right click menu.

WMS Point Conversion

The Single Point Conversion command in the *Edit* menu can be helpful if you need to convert between any two coordinate systems. You should perform this conversion and record the locations in the correct coordinate system prior to entering the registration dialog.

References

[1] http://www.esri.com/software/arcview/
[2] http://www.esri.com/software/arcgis/arcinfo/

KMZ files

XMS software can export KMZ files. KMZ [1] files can be imported into Google Earth [2]. KMZ files cannot currently be imported into XMS.

A 2D Mesh inside Google Earth

Raster vs. Vector

The KMZ file format supports both vector data (lines, points, polygons, triangles etc.) and raster data (images). When exporting raster data, the image shown in the XMS main graphics window is saved as a PNG image file with georeferencing data. The data is clipped to match the window bounds of the current view. When exporting vector data, all data displayed, as specified by the display options and project explorer, is exported to a raster KMZ file. The following versions of XMS software support vector export:

- GMS − 7.1
- SMS − 10.1
- WMS − 8.1

How To Export − Screen Capture

- You must be in plan view before you can export a KMZ file.
- You can export a KMZ file by using the standard *File*|**Save As** dialog and selecting either the **Google Earth© Raster KMZ File (*.kmz)** or **Google Earth© Vector KMZ File (*.kmz)** option in the *Save as type* field.
- To specify a resolution higher than the screen resolution:
  - GMS − Select the **Options** button in the *Save As* dialog.
  - SMS − Change the copy to clipboard scale factor in the Preferences dialog

The background color is made transparent in the exported KMZ file so the Earth can be seen through the overlayed image in Google Earth©.

How To Export − Transient Data Animation

Export a KMZ transient data animation using the Film Loop Wizard. This will export a series of raster images which can be animated in Google Earth©. The background color can be specified in the Film Loop Wizard. It is recommended that the option for no background be used so the Earth can be seen through the overlayed image in Google Earth©. You must be in Plan View to export a KMZ transient data animation.

By default, Coordinated Universal Time (UTC) [3] is assumed when exporting KMZ files. An offset from UTC can be specified. A list of time zone offsets from UTC is given here [4].

See "Viewing a Timeline" on page 90 of the Google Earth© user Guide [5] or here [6] for an explanation of how to change the time zone used by Google Earth©.
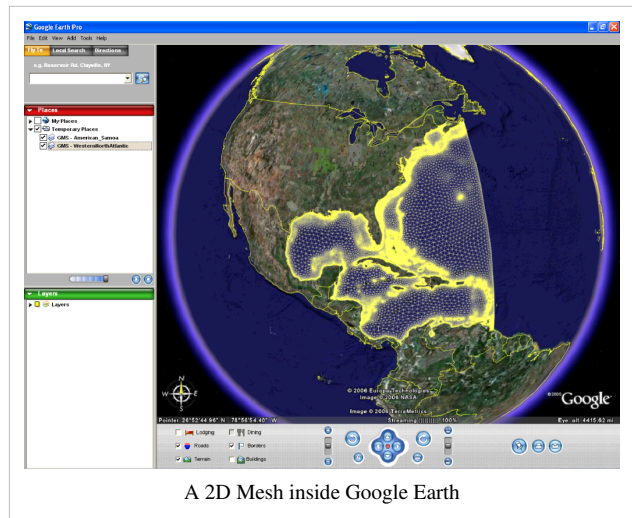
Coordinate System

KMZ files contain latitude and longitude information to define the location of the image. If your current coordinate system type is a projection, like UTM for example, and not a geographic system (which uses latitude and longitude), XMS will attempt to determine the latitude and longitude using coordinate conversion. It's possible that the coordinate conversion may fail, or that the distortion from converting from the current coordinate system to a geographic system is too high. In either case, XMS will issue a warning.

Transparency

The background color is made transparent in the exported PNG image which is in the KMZ file. This makes it so that the Earth can be seen through the overlayed image.

See Also

- Official Google Earth website [2]
- KML documentation [1]

Back to XMS

References

[1] http://code.google.com/apis/kml/documentation/
[2] http://earth.google.com/
[3] http://en.wikipedia.org/wiki/Coordinated_Universal_Time
[4] http://en.wikipedia.org/wiki/Timezones
[5] http://earth.google.com/userguide/v4/google_earth_user_guide.pdf
[6] http://earth.google.com/userguide/v4/ug_gps.html

GeoStudio Import

Importing a GeoStudio file

A GeoStudio file may be opened from either the File menu or by drag-dropping the file into the GMS window. A dialog similar to the figure below will appear asking which SEEP or Stability analyses to import. Only one of each method can be selected at once. Click **OK** when selections have been decided and GMS will display the imported information.
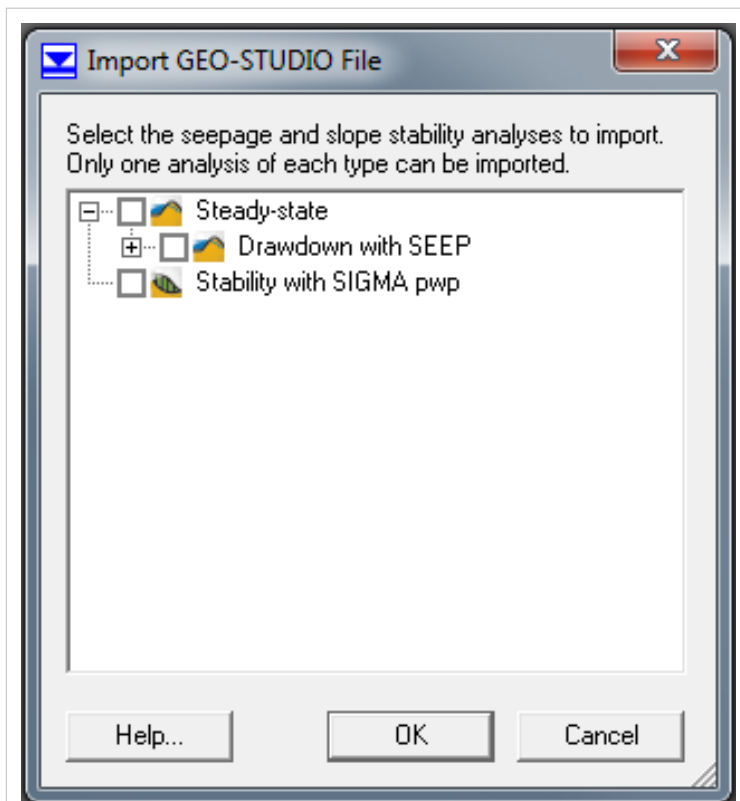
Import GeoStudio File dialog

9. Appendix

File Formats

Old GMS file formats

This PDF file [1] documents file formats used by GMS previous to version 6.5. Current versions of GMS can still read these files.

GMS version 6.5 and up

Starting at version 6.5 the GMS project file switched to a binary HDF5 [2] format. The format is proprietary and not documented but you can examine the contents of the project file using a free HDF5 browser [3] application. Some things in the project file, like TINs and Meshes, follow the XMDF standard [4]. Editing the HDF5 project file can corrupt it and make it unreadable by GMS and is highly discouraged.

Import formats

GMS can import various formats as documented on the File Import Wizard Supported File Formats page.

References

[1] http://gmsdocs.aquaveo.com.s3.amazonaws.com/fform30.pdf

[2] http://www.hdfgroup.org/HDF5/

[3] http://www.hdfgroup.org/hdf-java-html/hdfview/index.html

[4] http://www.xmswiki.com/xms/XMDF

Dataset Files

ASCII Dataset Files

Datasets can be stored to either ASCII or binary files. The default format is binary. Datasets can be saved in ASCII format by right clicking on the dataset in the Project Explorer and selecting the *Export* command from the pop up menu. For both file formats, multiple datasets can be stored in a single file and both scalar and vector datasets can be saved to the same file. The file format is identical for 2D and 3D datasets.

For scalar dataset files, one value is listed per vertex, cell, node, or scatter point. The points are listed sequentially in ascending order according to the ids of the nodes, points, vertices, or cells. For vector dataset files, one set of XYZ vector components is listed per vertex, cell, node, or scatter point. If necessary, a set of status flags can be included in the file. If the status flag is false (0), the corresponding item (node, cell, etc.) is inactive. If status flags are not included in the file, it is assumed that all items are active.

The ASCII Dataset file format is as follows:

```
DATASET         // File type identifier

OBJTYPE type    // Type of object  dataset is associated with

REFTIME reftime // A value corresponding to  beginning date/time of dataset

BEGSCL          // Beginning  of scalar dataset

OBJID id        // Object id

ND numdata      // Number  of data values

NC numcells     // Number of cells or elements

NAME "name"     // Dataset name

ACTTS time      // Marks the active time step

MAPTS  time     // Marks the time step which is mapped as elevations

TS istat time   // Time step of the following data

stat1           // Status  flags

stat2

.

.

statnumcells

```

```
val1            // Scalar data  values

val2

.

.

valnumdata

// Repeat TS card for each time  step

ENDDS           // End of dataset

BEGVEC          // Beginning of  vector dataset

VECTYPE type    // Vector at node/gridnode or  element/cell

OBJID id        // Object id

ND numdata      // Number of  data values

NC numcells     // Number of cells or elements

NAME "name"      // Dataset name

TS istat time   // Time step of the following  data

stat1           // Status  flags

stat2

.

.

statnumcells

vx1 vy1 vz1

vx2 vy2  vz2

.

.

vnumdata vnumdata vnumdata
```

```
// Repeat TS card for each time  step

ENDDS          // End of dataset

// Repeat BEGSCL and BEGVEC  sequences for each dataset
```

Sample ASCII Dataset File:

```
DATASET

OBJTYPE grid2d

REFTIME 945.348729

BEGSCL

ACTTS 1.00000000e+00

ND 8

NC 8

NAME  "trichloroethylene"

TS 1  1.00000000e+00

0

0

0

1

1

1

1

0

0.00000000e+00

0.00000000e+00

0.00000000e+00
```

```
3.24000000e+00

4.39000000e+00

2.96000000e+00

7.48000000e+00

0.00000000e+00

ENDDS

BEGVEC

VECTYPE  0

ND 8

NC 8

NAME "velocity"

TS 1  5.00000000e+00

0

0

0

1

1

1

1

0

1.60000000e+01  1.60000000e+01 3.20000000e+01

6.40000000e+01 6.40000000e+01  1.28000000e+02

1.44000000e+02 1.44000000e+02 2.88000000e+02
```

```
1.96000000e+02  1.96000000e+02 3.92000000e+02


2.25000000e+02 2.25000000e+02  4.50000000e+02


9.21600000e+03 9.21600000e+03 1.84320000e+04


9.60400000e+03  9.60400000e+03 1.92080000e+04


9.80100000e+03 9.80100000e+03  1.96020000e+04


ENDDS
```

If variograms have been defined for a dataset or time step of a dataset within GMS, the variograms are saved in the dataset file. The variogram cards are not documented.

The card types used in the scalar dataset file format are as follows:

Card Type	**DATASET**
Decription	File type identifier. Must be on first line of file. No fields.
Required	YES

Card Type	**OBJTYPE**
Decription	Identifies the type of objects that the datasets in the file are associated with.
Required	YES. If card does not exist, the file can only be read through the Data Browser. The datasets would then be assigned to the objects corresponding to the active module.
Format	OBJTYPE type
Sample	OBJTYPE tin

Field	*Variable*	*Value*	*Description*
1	type	tin	TINs
		mesh2d	2D meshes
		grid2d	2D grids
		scat2d	2D scatter points
		mesh3d	3D meshes
		grid3d	3D grids
		scat3d	3D scatter points

Card Type	**REFTIME**
Decription	A value corresponding to the beginning date/time of the dataset.
Required	NO
Format	REFTIME reftime
Sample	REFTIME 3982.897459

Field	*Variable*	*Value*	*Description*
1	reftime	" +/- "	A value corresponding to the beginning date/time of the dataset.

Card Type	**BEGSCL**
Decription	Scalar dataset file identifier. Marks beginning of scalar dataset. No fields.
Required	YES

Card Type	**BEGVEC**
Decription	Vector dataset file identifier. Marks beginning of vector dataset. No fields.
Required	YES

Card Type	**ACTTS**
Decription	Used to mark the active dataset. The card should be placed after the BEGSCL or BEGVEC card of the active dataset and the active time step should be listed.
Required	NO
Format	ACTTS time
Sample	ACTTS 0.00

Field	*Variable*	*Value*	*Description*
1	time	" +/- "	The time corresponding to the active time step. Use 0.0 for steady state datasets.

Card Type	**MAPTS**
Decription	Used to mark the dataset which is mapped to the object elevations. The card should be placed after the BEGSCL or BEGVEC card of the mapped dataset and the mapped time step should be listed.
Required	NO
Format	MAPTS time
Sample	MAPTS 0.00

Field	*Variable*	*Value*	*Description*
1	time	" +/- "	The time corresponding to the mapped time step. Use 0.0 for steady state datasets.

Card Type	**OBJID**
Decription	The unique id of the object the dataset is associated with.
Required	This card is required for datasets associated with TINs and scatter point sets.
Format	OBJID id
Sample	OBJID 2383

Field	Variable	Value	Description
1	id	" + "	The unique id of the object.

Card Type	**VECTYPE**
Decription	Identifies the type of vector data that will be read and where to apply it.
Required	This card is only required if the vector data is associated with elements/cells. If this card is not present, it is assumed that the data are associated with nodes/gridnodes.
Format	VECTYPE tpye
Sample	VECTYPE 0

Field	Variable	Value	Description
1	type	" 0,1 "	0 = The vectors will be applied to the nodes/gridnodes. 1 = The vectors will be applied to the elements/cells

Card Type	**ND**
Decription	The number of data values that will be listed per time step. This number should correspond to the total number of vertices, nodes, cells centers (cell-centered grid), cell corners (mesh-centered grid), maximum node id (meshes) or scatter points.
Required	YES
Format	ND numdata
Sample	ND 10098

Field	Variable	Value	Description
1	numdata	" + "	The number of items. At each time step, numdata values are printed.

Card Type	**NC**
Decription	This number should correspond to the maximum element id (meshes) or the number of cells (grids).
Required	YES
Format	NC numcells
Sample	NC 3982

Field	Variable	Value	Description
1	numcells	" + "	The number of elements or cells

Card Type	**NAME**
Decription	The name of the dataset
Required	YES
Format	NAME "name"
Sample	NAME "Total head"

Field	*Variable*	*Value*	*Description*
1	"name"	str	The name of the dataset in double quotes.

Card Type	**TS**
Decription	Marks the beginning of a new time step, indicates if stat flags are given, and defines the time step value, status flags, and scalar data values for each item.
Required	YES
Format	TS istat time stat1 stat2 . . stat numcells val1 val2 . . valnumdata
Sample	TS 1 12.5 0 1 1 1 34.5 74.3 58.4 72.9

Field	*Variable*	*Value*	*Description*
1	istat	0,1	-
2	time	+	The time step value. If only one time step exists, the time is not required
3 - (nd+2)	stat	0,1	The status of each item. If active, stat=1. If inactive stat=0. Omitted if i=0 on STAT card.
(nd+2) - (2nd+2)	val	" +/- "	The scalar data values of each item

Cardtype	*ENDDS*
Description	Marks the end of a scalar opr vector dataset. No fields
Required	YES

Binary Dataset Files

Datasets saved with a GMS project are saved in the binary format. The binary format is patterned after the ASCII format in that the data are grouped into "cards". However, the cards are identified by a number rather than a card title. The card ids are four byte integers. The binary format is as follows:

Card	Item	Size	Description
	version	4 byte integer	The GMS binary dataset file format version. value = 3000.

100	object type	4 byte integer	Identifies the type of objects that the datasets in the file are associated with. Options are as follows:
			
			`1 TINs`
			`2 Boreholes`
			`3 2D meshes`
			`4 2D grids`
			`5 2D scatter points`
			`6 3D meshes`
			`7 3D grids`
			`8 3D scatter points`

110	SFLT	4 byte integer	The number of bytes that will be used in the remainder of the file for each floating point value (4, 8, or 16).
120	SFLG	4 byte integer	The number of bytes that will be used in the remainder of the file for status flags.
130 or 140	BEGSCL or BEGVEC		Marks the beginning of a set of cards defining a scalar or vector dataset.
220	ACTTS	SFLT real	Marks the active dataset and time step
230	MAPTS	SFLT real	Marks the mapped dataset and time step
150	VECTYPE	4 byte integer	(0 or 1) In the case of vector dataset files, indicates whether the vectors will be applied at the nodes/gridnodes or the elements/cells.
160	OBJID	4 byte integer	The id of the associated object. Value is ignored for grids and meshes.
170	NUMDATA	4 byte integer	The number of data values that will be listed per time step. This number should correspond to the number of vertices, nodes, cell centers (cell-centered grid), cell corners (mesh-centered grid) or scatter points.
180	NUMCELLS	4 byte integer	This number should correspond to the number of elements (meshes) or the number of cells (mesh-centered grids). Value is ignored for other object types.
190	NAME	40 bytes	The name of the dataset. Use one character per byte. Mark the end of the string with the '\0' character.
195	REFTIME	8 bytes	A value corresponding to the beginning date/time of the dataset.
200	TS		Marks the beginning of a time step.
	ISTAT	SFLG integer	(0 or 1) Indicates whether or not status flags will be included in the file.
	TIME	SFLT real	Time corresponding to the time step.
	statflag1	SFLG integer	Status flag (0 or 1) for node 1
	statflag2	SFLG integer	Status flag (0 or 1) for node 2
...			
	val1	SFLT real	Scalar value for item 1
	val2	SFLT real	Scalar value for item 2
...			
			Repeat card 200 for each timestep in the dataset.
210	ENDDS		Signal the end of a set of cards defining a dataset.

The cards in the binary dataset file are as follows:

Card Type	Version
Card Id	3000
Description	File type identifier. No fields.
Required	Yes

Card Type	ObjType
Card Id	100
Description	Identifies the type of objects that the datasets in the file are associated with.
Required	YES. If card does not exist, the file can only be read through the Data Browser. The datasets would then be assigned to the objects corresponding to the active module.

Feild	Variable	Size	Value	Description
1	id	4 byte int	1,2,3,4,5,6,7,8,	TINs, Boreholes, 2D meshes, 2D grids, 2D scatter points, 3D meshes, 3D grids, 3D scatter points

Using Vector and Scalar Data with Grids

For meshes, TINs, and scatter point sets, the order that the values are listed in the file is simply the sequential order of the node, TIN, or scatter point ids. However, vector and scalar data can also be associated with the nodes or cells of a 2D or 3D grid. T For 2D grids, data values are ordered using a row-column (I-J) priority. For 3D grids, data values are ordered using a layer-row-column (K-I-J) priority.

The following C source code examples illustrate how a 2D or 3D array of scalar values corresponding to the nodes of a grid would be written to the main portion of an ASCII scalar file.

2D Grid Example:

```
for(i=0; i<nrow; i++){

for(j=0; j<ncol; j++){

fprintf(fp, "%f\n", scalar[i][j]);

}

}
```

3D Grid Example:

```
for(k=0; k<nlay; k++){

for(i=0; i<nrow; i++){

for(j=0; j<ncol; j++){

fprintf(fp, "%f\n", scalar[k][i][j]);

}
```

```
}


}
```

What's New in GMS 9.2

The following is a list of the more significant changes that will be introduced in GMS 9.2.

1. MODFLOW-LGR Support
2. MT3D improvements
    1. MT3D menus and dialogs rename to reflect MT3D, RT3D, SEAM3D or PHT3D
    2. MT3D starting concentrations much easier to enter in new spreadsheet in *Basic Package* dialog
3. FEFLOW import/export
4. MODFLOW improvements
    1. Streamflow Out data shown in a table via command on CCF file
    2. Starting heads can be set to always match the grid top elevations for convenience
    3. ISTCB1 option added in both MODFLOW STR and SFR2 packages
    4. 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
    1. Display projection can define units even if there is no projection defined
    2. New objects are assigned the display projection if one exists
    3. Vertical projection saved to .prj files and restored
6. Miscellaneous
    1. Update to PEST 12.3
    2. "Don't Register" button on *Welcome* dialog
    3. Ability to add points to a TIN without wiping out all datasets
    4. Properties for the Project item in the Project Explorer
    5. 3D grid cell selection: can now select range of cells by holding the shift key
    6. Changing scatter point activity now asks what to do with transient datasets
    7. Wider database fields allowed when exporting shapefiles
    8. More options for exporting 3D grids to shapefiles with multiple datasets.
    9. Nodes no longer displayed at 2D mesh quad element centroids
    10. DGN (Microstation) cad file import (via convert to temp DWG file). Results vary.
    11. Pathlines can be exported even if there are no capture zones defined

Bugfixes GMS

Important Note

If you download and install the latest update and your software maintenance has expired, you will not be able to run that install of GMS. You will need to install an earlier build of GMS or purchase maintenance. Please make sure your GMS maintenance license has not expired before downloading. You can determine your maintenance expiration date by selecting the Help | Register command from GMS. You can renew your maintenance by visiting Aquaveo's web page [1] or by contacting a sales representative. Prices and other information about renewing your license are available on the GMS Pricing Page [2]. The latest update to GMS can be downloaded here [3].

GMS 9.1.6 October 22, 2013

Bug ID-Date Submitted-Updated-Summary

- 6543 09-18-2013 09-19-2013 GMS Freezes When Using Data Calculator Second Time
- 6527 09-05-2013 09-24-2013 Crash After Failing to Open MODFLOW Model with Invalid H5
- 6550 09-24-2013 09-24-2013 Crash Reading Simulation
- 6542 09-17-2013 10-01-2013 GMS Crashes When Not Saved On TPROGS Simulation
- 6645 10-16-2013 10-16-2013 Turning Off Observations With Space Causes Crash
- 6652 10-18-2013 10-18-2013 Unable to Toggle Off HFB Barrier
- 6654 10-18-2013 10-18-2013 Invalid MNW1 Gms2Mf2k Export When Number of Wells Changes Each Stress Period

GMS 9.1.4 July 17, 2013

Bug ID-Date Submitted-Updated-Summary

- 6352 06-21-2013 07-02-2013 Crash When Creating Child Grid or Redistributing
- 6353 06-21-2013 07-03-2013 Model Check Warning that cells change more than 50% at exactly 50% User: Christopher Mobus
- 6355 06-21-2013 07-05-2013 Can't Select Borehole Contacts User: Thomas Lange
- 6401 07-02-2013 07-08-2013 Measure Tool Uses Feet Even when Projection Not Set
- 6357 06-24-2013 07-08-2013 Borehole Bug-TIN Destruct

GMS 9.1.3 - June 27, 2013

- File|Save Crash Bug

GMS 9.1.2

Bug ID-Date Submitted-Updated-Summary

- 6309 06-04-2013 06-10-2013 Covert Mesh to Scatter Crash User: Andrzej Druzynski
- 6270 05-22-2013 06-10-2013 Kriging Options Not Saved with Project User: Julian Weir
- 6279 05-23-2013 06-07-2013 UZF MODFLOW Error
- 6237 05-15-2013 06-07-2013 Paste in MF Array Editor Dialog Crashes
- 6203 05-06-2013 06-07-2013 Units on Mass Loading BC

GMS 9.1.1 - May 7, 2013

1. PHT3D interface
2. Improvements to importing transient data including new tutorials
3. Transient TIN data sets can be used in Map -> MODFLOW
4. New tutorials:

   - MODFLOW - Transient Calibration Pump Test
   - MODFLOW - Transient Calibration
   - PHT3D - Ion Exchange And Surface Complexation
   - PHT3D - Transport And Mineral Reactions

5. Framing improvements
6. Snap Boreholes to TINs command
7. Exporting material names/colors/patterns/tranparency
8. Computed flow and Residual flow columns added to the map attribute table for flow observations
9. Iso-surface transparency
10. Copy feature objects to another coverage
11. Activate / Inactivate scatter points command
12. More bitmaps in pop-up menus
13. Simplified and consistent main menus and pop-up menus

GMS 9.0.5 - April 17, 2013

Bug ID-Date Submitted-Updated-Summary 6309 06-04-2013 06-10-2013 Covert Mesh to Scatter Crash User: Andrzej Druzynski 6270 05-22-2013 06-10-2013 Kriging Options Not Saved with Project User: Julian Weir 6279 05-23-2013 06-07-2013 UZF MODFLOW Error 6237 05-15-2013 06-07-2013 Paste in MF Array Editor Dialog Crashes 6203 05-06-2013 06-07-2013 Units on Mass Loading BC

GMS 9.0.5 - April 17, 2013

Bug ID-Date Submitted-Updated-Summary

- 6082 2013-03-25 2013-04-09 Reaction Parameter Values in RT3D Chemical Reaction Package get Mixed up when mapped to cells User: Terrence Stanley
- 6030 2013-03-12 2013-03-12 SEEP2D Flow Lines Not Updated
- 6096 2013-04-02 2013-04-02 GMS 2Mf2K Exports Bad Array Values when Multiplier is Zero
- 6042 2013-03-13 2013-04-08 GMS Model Checker Suppresses Errors When you Check the Option to Suppress Warnings
- 6083 2013-03-26 2013-04-09 Not Enough Memory Message when Opening GMS Super File User: Rob Healy User: Rob Healy
- 6066 2013-03-21 2013-04-09 VK/VANI does not Display Final Array Values from Pilot Points
- 6118 2013-04-09 2013-04-11 GMS Crash when Saving Project
- 6137 2013-04-16 2013-04-17 Problems Loading Online Images
- 6136 2013-04-15 2013-04-18 GMS Crashes when you try converting Shapefile to 2D Scatter Points

GMS 9.0.4 - March 25, 2013

Bug ID-Date Submitted-Updated-Summary

- 5885 2-1-13 2-5-13 Pathline to Arcs does not create Arcs
- 5877 1-31-13 2-4-13 Option to generate MODPATH particles at selected wells permanently grayed out
- 5829 1-15-13 2-1-13 velocity vectors not displaying in MODFLOW solution
- 5845 1-22-13 1-31-13 Horizons and Raster's not matching Tutorial
- 5840 1-8-13 1-23-13 crash when interpolating raster's to MODFLOW layers
- 5967 2-26-13 2-27-13 Crash when copying and pasting borehole data into borehole editor
- 5931 2-14-13 2-27-13 GMS Crash when creating new T-Progs Simulation

GMS 9.0.3 - January 16, 2013

Bug ID-Date Submitted-Updated-Summary

- 5761 2012-12-13 2012-12-17 3D mesh shell doesn't display
- 5739 2012-12-04 2012-12-06 Water table displays as spiky near dry cells in MODFLOW model
- 5758 2012-12-13 2012-12-13 Attempting to drag tin vertex without associated triangle crashes
- 5729 2012-11-30 2013-01-02 Retriangulate after deleting with 2D mesh
- 5730 2012-11-30 2013-01-02 swap edges tool
- 5765 2012-12-14 2013-01-02 Crash when you open and close a MODFLOW array and use the Add K boundary tool
- 5797 2013-01-04-2013-01-07 Crash in *Select Dataset Dialog* User: William Frederick
- 5759 2012-12-13 2013-01-07 Cannot tell where the Particle Sets folder is exported in GMS
- 5753 2012-12-11 2013-01-02 Can't assign a negative flowrate value for SEEP2D User: Kip Solomon
- 5790 2013-01-02 2013-01-07 Can't get rid of error message when cutting cross sections
- 5770 2012-12-19 2013-01-03 Changing layer to confined and reopening file results in message saying "Error reading flow package file." Iser" Julian Weir

GMS 9.0.2 - November 28, 2012

Bug ID-Date Submitted-Updated-Summary

- 5702 2012-11-20 2012-11-29 Reading in old map file doesn't set conceptual model type to MODFLOW
- 4141 2011-09-16 2012-11-30 line object: cancel button, anchoring
- 5543 2012-10-04 2012-11-06 GMS repeats the unit codes for the text files in MODFLOW 2005 which causes a crash - User: Julian Weir
- 5580 2012-10-12 2012-11-06 GMS crashes when you hit the Import button in the Define Parameters dialog - User: Christian Johnson
- 5617 2012-10-24 2012-11-07 Convert boreholes to cad
- 5582 2012-10-12 2012-11-07 Active and Qdes times/values different in MODFLOW source sink dialog for same well - User: Julian Weir
- 5633 2012-10-26 2012-11-07 Number of decimal places that user specifies always defaults to 3 when exporting grid as shapefile
- 5681 2012-11-12 2012-11-15 Zone codes revert back to default value of 1 when performing Map -> MODFLOW/MODPATH - User: Christoph Mobus
- 5676 2012-11-09 2012-11-15 Can't move nodes in 3D grids - User: Christoph Mobus
- 5636 2012-10-29 2012-11-15 Interpolate from Transient data to TIN

GMS 8.3.7 - November 12, 2012

Bug ID-Date Submitted-Updated-Summary

- 5543 2012-10-04 2012-11-06 GMS repeats the unit codes for the text files in MODFLOW 2005 which causes a crash - User: Julian Weir
- 5580 2012-10-12 2012-11-06 GMS crashes when you hit the Import button in the Define Parameters dialog - User: Christian Johnson
- 5617 2012-10-24 2012-11-07 Convert boreholes to cad
- 5597 2012-10-17 2012-11-07 Observed values are plotted multiple times even if GMS is only plotting one solution - User: Chris Mobus
- 5582 2012-10-12 2012-11-07 Active and Qdes times/values different in MODFLOW source sink dialog for same well - User: Julian Weir
- 5632 2012-10-26 2012-11-07 Transient Head observation times all become zero if check and uncheck the date/time option. - User: Colin Smith
- 5633 2012-10-26 2012-11-07 Number of decimal places that user specifies always defaults to 3 when exporting grid as shapefile
- 5681 2012-11-12 2012-11-15 Zone codes revert back to default value of 1 when performing Map -> MODFLOW/MODPATH - User: Christoph Mobus
- 5676 2012-11-09 2012-11-15 Can't move nodes in 3D grids - User: Christoph Mobus

GMS 9.0.1 – October 18, 2012

Bug ID-Date Submitted-Updated-Summary

- 5365 2012-08-06 2012-08-30 Crash when adding boundary - User: Shuangshuang Xie
- 5509 2012-09-24 2012-09-26 Horizons -> Solids Crash - User: Julie Butler
- 5500 2012-09-20 2012-09-26 GMS crash with the Create Grid Dialog
- 5502 2012-09-20 2012-09-26 2D Interpolation issue
- 5480 2012-09-11 2012-09-26 GMS crashes when attempting to create a 2D xz grid in 3D grid module - User: Carina Carlsen
- 5481 2012-09-11 2012-09-27 GMS always maps a zero pumping rate when you check the well screen option
- 5504 2012-09-21 2012-09-27 MT3D Source/Sink mixing package dialog always shows the type as "river" even if the use stream package option is checked - User: Julian Weir
- 5510 2012-09-24 2012-09-27 GMS averages concentrations between two coverages when an entire conceptual model is mapped to MT3DMS - User: Julian Weir
- 5499 2012-09-20 2012-09-28 Map->MODFLOW well screens, HK by material with HK parameters
- 5451 2012-09-04 2012-09-28 GMS displays weird Cell when Cell is activated and then deactivated - User: Lance Jones
- 5485 2012-09-12 2012-09-28 Velocity vector calculation does not use the porosity from Material IDs
- 5514 2012-09-25 2012-09-28 Contour populate values
- 2702 2010-10-22 2012-09-28 Add RLAMDA1 and RLAMFAC to PEST interface
- 5501 2012-09-20 2012-10-04 parameter estimation option is dimmed out when switching to BCF package - User: Colin Smith
- 5473 2012-09-07 2012-10-04 Text background does not update in display options dialog
- 5475 2012-09-10 2012-10-04 Select intersecting object does not work with multiple polygons
- 5488 2012-09-13 2012-10-04 Annotation tools do not display
- 5531 2012-10-01 2012-10-04 GMS crashes when moving a vertex - User: Christoph Mobus
- 5532 2012-10-02 2012-10-04 Crash when importing .par file that doesn't match model - User: Colin Smith
- 5475 2012-09-10 2012-10-04 Select intersecting object does not work with multiple polygons

- 5533 2012-10-02 2012-10-04 Interpolating scatter to MODFLOW layers is not working
- 5537 2012-10-03 2012-10-09 Crash when closing pump capacity curve window without any data

GMS 8.3.6 - October 18, 2012

Bug ID-Date Submitted-Updated-Summary

- 5365 2012-08-06 2012-08-30 Crash when adding boundary - User: Shuangshuang Xie
- 5509 2012-09-24 2012-09-26 Horizons -> Solids Crash - User: Julie Butler
- 5500 2012-09-20 2012-09-26 GMS crash with the Create Grid Dialog
- 5502 2012-09-20 2012-09-26 2D Interpolation issue
- 5480 2012-09-11 2012-09-26 GMS crashes when attempting to create a 2D xz grid in 3D grid module - User: Carina Carlsen
- 5481 2012-09-11 2012-09-27 GMS always maps a zero pumping rate when you check the well screen option
- 5504 2012-09-21 2012-09-27 MT3D Source/Sink mixing package dialog always shows the type as "river" even if the use stream package option is checked - User: Julian Weir
- 5510 2012-09-24 2012-09-27 GMS averages concentrations between two coverages when an entire conceptual model is mapped to MT3DMS - User: Julian Weir
- 5499 2012-09-20 2012-09-28 Map->MODFLOW well screens, HK by material with HK parameters
- 5451 2012-09-04 2012-09-28 GMS displays weird Cell when Cell is activated and then deactivated - User: Lance Jones
- 5485 2012-09-12 2012-09-28 Velocity vector calculation does not use the porosity from Material IDs
- 5514 2012-09-25 2012-09-28 Contour populate values
- 5501 2012-09-20 2012-10-04 parameter estimation option is dimmed out when switching to BCF package - User: Colin Smith
- 5473 2012-09-07 2012-10-04 Text background does not update in display options dialog
- 5475 2012-09-10 2012-10-04 Select intersecting object does not work with multiple polygons
- 5488 2012-09-13 2012-10-04 Annotation tools do not display
- 5531 2012-10-01 2012-10-04 GMS crashes when moving a vertex - User: Christoph Mobus
- 5532 2012-10-02 2012-10-04 Crash when importing .par file that doesn't match model - User: Colin Smith
- 5475 2012-09-10 2012-10-04 Select intersecting object does not work with multiple polygons
- 5537 2012-10-03 2012-10-09 Crash when closing pump capacity curve window without any data

GMS 8.3.5 - Sept 21, 2012

Bug ID-Date Submitted-Updated-Summary

- 5361 2012-08-03 2012-08-30 Intensity color ramp not saved
- 5366 2012-08-06 2012-08-30 Crash when redistributing grid cells in GMS - User: Shuangshuang Xie
- 5428 2012-08-28 2012-09-04 Source/Sinks toggles are mixed up when creating Flow Budget versus Time plots in GMS - User: Christopher Zell
- 5351 2012-08-01 2012-09-04 Projection changed when importing an image
- 5403 2012-08-16 2012-09-05 Warning window does not have enough info
- 5363 2012-08-03 2012-09-06 GMS not reading the SFR2 input data correctly - User: Mary Halstead
- 5401 2012-08-16 2012-09-06 values less than 1e-6 not displayed in Edit XYZF toolbar - User: Christoph Mobus
- 5404 2012-08-16 2012-09-06 color for the borehole edges cannot be changed - User: Tatevik Tadevosyan
- 5320 2012-07-23 2012-09-06 MNW2 wells don't show up in Sources/Sinks dialog
- 5458 2012-09-04 2012-09-10 Flow budget plot bugs - Nightly Build On August 30th
- 5459 2012-09-04 2012-09-10 MNW2 Output flow budget changed
- 5427 2012-08-28 2012-09-11 Open in current project option does not work

- 5377 2012-08-08 2012-09-11 spreadsheet values don't update - User: kevin couch
- 5365 2012-08-06 2012-08-30 Crash when adding boundary - User: Shuangshuang Xie

GMS 8.3.4 - Aug 24, 2012

Bug ID-Date Submitted-Updated-Summary

- 4714 2012-02-14 2012-08-14 Vertical conductivity/vertical anisotropy units not updating - User: Shuangshuang Xie
- 5282 2012-07-16 2012-08-14 CCF file reports as invalid when SUB package VerticalDisplacement dataset included
- 5316 2012-07-23 2012-08-14 Stochastic Options crash
- 5256 2012-07-02 2012-08-14 mf2k5_h5_parallel.exe does not work
- 5261 2012-07-02 2012-08-14 MODFLOW does not run in Stoch Params tutorial
- 5314 2012-07-23 2012-08-14 Units label for LAK leakance in map
- 5089 2012-05-08 2012-08-14 GMS stalls while using Online Maps
- 5300 2012-07-18 2012-08-14 Water table symbol is a 'D' - User: Beth Rowan
- 5307 2012-07-20 2012-08-14 Reseting factory preferences in 32 bit change model execuable paths in 64 bit
- 5203 2012-06-18 2012-08-14 File reference for model executables is wrong
- 5347 2012-07-31 2012-08-14 file says H5 file corrupt or invalid when trying to open
- 5301 2012-07-18 2012-08-14 Borehole material transparency does not work (always solid) - User: Beth Rowan
- 5357 2012-08-02 2012-08-14 GMS crashes when deleting conceptual model - User: Christoph Moebus
- 5349 2012-07-31 2012-08-15 crash when vertical displacement times differs from head or drawdown
- 5194 2012-06-13 2012-08-15 Error when running femwater
- 5359 2012-08-02 2012-08-16 crash when mapping to MT3D - User: James Wieck
- 5387 2012-08-13 2012-08-16 MODFLOW files that run in USGS MODFLOW do not load into GMS - User: Christoph Moebus
- 5292 2012-07-17 2012-08-17 Model checker doesn't pay attention to use last checking for zero values
- 5341 2012-07-30 2012-08-22 MODPATH fails with multiple steady state stress periods

GMS 8.3.3 - July 19, 2012

Bug ID-Date Submitted-Updated-Summary

- 5210 2012-06-19 2012-06-25 reset factory preferences fails on model executables page
- 4792 2012-03-02 2012-07-11 MT3D inefficient io with SEAWAT - User: David Li
- 5222 2012-06-22 012-07-11 translator error with LMG solver
- 5231 2012-06-27 2012-07-11 Delete vertex crash when retriangulate on delete is on
- 5241 2012-07-02 2012-07-11 dry cell flag being used to calculate root mean squared value when using MF2K5 - User: Tran Vu Long
- 5192 2012-06-12 2012-07-11 Mesh centered 3D grid crashes
- 5211 2012-06-19 2012-07-11 Extra Legend Appearing
- 4673 2012-02-03 2012-07-11 "Unable to contact server" error message when trying to download SRTM data from Web Services - User: John Quinn
- 5102 2012-05-11 2012-07-11 Importing from an Excel Database - User: Fady Hadba
- 5267 2012-07-09 2012-07-17 Cannot open the CCF results
- 5270 2012-07-11 2012-07-17 No gage files appear
- 5267 2012-07-09 2012-07-17 Cannot open the CCF results
- 5273 2012-07-12 2012-07-17 premature end of ccf2 file
- 5283 2012-07-16 2012-07-17 Cannot open STR properties

- 5284 2012-07-16 2012-07-17 Restore factory preferences not working correctly
- 5281 2012-07-16 2012-07-17 Invalid CCF file using double precision
- 4692 2012-02-09 2012-07-17 View values not correct and other issues
- 5290 2012-07-16 2012-07-17 CCF → Datasets result in datasets with bad max and min values

GMS 8.2.6 - July 18, 2012

Bug ID-Date Submitted-Updated-Summary

- 5222 2012-06-22 012-07-11 translator error with LMG solver
- 5231 2012-06-27 2012-07-11 Delete vertex crash when retriangulate on delete is on
- 5241 2012-07-02 2012-07-11 dry cell flag being used to calculate root mean squared value when using MF2K5 - User: Tran Vu Long
- 5192 2012-06-12 2012-07-11 Mesh centered 3D grid crashes
- 5211 2012-06-19 2012-07-11 Extra Legend Appearing
- 5102 2012-05-11 2012-07-11 Importing from an Excel Database - User: Fady Hadba

GMS 8.3.2 - June 21, 2012

Bug ID-Date Submitted-Updated-Summary

- 4925 2012-03-30 2012-05-03 Incorrect LAK package symbol elevations
- 4790 2012-03-01 2012-05-03 VSC package dialog in SEAWAT
- 4848 2012-03-14 2012-05-03 Run ZONEBUDGET tool does not run on some computers - User: Freddy Cortez
- 4941 2012-04-03 2012-05-03 GMS crashes when attempting to enter information the number of instances in the MODFLOW - Parameters - User: Caroline Ballard
- 4948 2012-04-04 2012-05-03 crash when attempting to enter a new stochastic parameter in MODFLOW | Parameters window - User: Caroline Ballard
- 4951 2012-04-04 2012-05-03 GMS freezes (or takes several hours) while trying to save a project - User: Julian Weir
- 5051 2012-05-01 2012-05-03 running mf2k without model wrapper gives error message
- 5049 2012-05-01 2012-05-03 Geostatistics 32 animation does not work
- 4958 2012-04-06 2012-05-03 model checker crashes after deleting model
- 4965 2012-04-10 2012-05-03 Observation files print to SEAWAT Folder when running SEAWAT - User: Medhat El Bihery
- 5042 2012-04-26 2012-05-03 dialog resulting from opening VK/VANI array from project explorer is labeled wrong when using "Specify anisotropy factors"
- 5127 2012-05-21 2012-06-21 horizontal MNW2 wells can cause MODFLOW to exit with an allocation error
- 5129 2012-05-22 2012-06-21 pathlines can only be loaded with File | Open (not dragging and dropping does not work) - User: Jim Teo
- 5108 2012-05-16 2012-06-21 "Run MODPATH automatically for steady state models" option controls format of .sum MODPATH output file - User: Caitlin Current
- 5094 2012-05-09 2012-06-21 freeze when trying to build polygons in GMS 8.3.1 - User: Bruce Campbell
- 5087 2012-05-08 2012-06-22 Saving a MODFLOW simulation as a namefile does not create a namefile - User: Mark Bentley
- 5079 2012-05-07 2012-06-22 GMS freezes while attempting to convert shapefile imported through GIS module to 2D scatterpoints - User: Dale Bridgeford
- 5083 2012-05-07 2012-06-22 Change in font type, style, or size, in display options for nodes does not actually change the font - User: Carina Carlsen
- 5058 2012-05-02 2012-06-22 Error when saving an animation

- 5125 2012-05-21 2012-06-22 Can't delete entry for boreline (MNW2) in the conceptual model
- 5027 2012-04-24 2012-06-22 TIN legend disappears when zooming
- 4934 2012-04-02 2012-06-22 MT3D timer always says "1 seconds remaining total" even when it still requires many minutes to run - User: Bernard Brixel
- 5139 2012-05-29 2012-06-22 well screen looks differently when hiding other coverages
- 5142 2012-05-30 2012-06-22 MODFLOW model with parameter clusters fails to import
- 5126 2012-05-21 2012-06-22 GMS does not map MNW2 horizontal well screen (same elevation with layer's border)
- 5181 2012-06-08 2012-06-22 "attempted an unsupported operation" error when selecting "Scatter Points | Scatter Point Settings" with certain modules - User: Michael Wallace
- 5144 2012-05-31 2012-06-25 GMS returns an error saying that it cannot open the namefile then crashes - User: Bruce Campbell
- 5210 2012-06-19 2012-06-25 reset factory preferences fails on model executables page

GMS 8.2.5 - June 20, 2012

Bug ID-Date Submitted-Updated-Summary

- 4790 2012-03-01 2012-05-03 VSC package dialog in SEAWAT
- 4848 2012-03-14 2012-05-03 Run ZONEBUDGET tool does not run on some computers - User: Freddy Cortez
- 4941 2012-04-03 2012-05-03 GMS crashes when attempting to enter information the number of instances in the MODFLOW - Parameters - User: Caroline Ballard
- 4948 2012-04-04 2012-05-03 crash when attempting to enter a new stochastic parameter in MODFLOW | Parameters window - User: Caroline Ballard
- 5051 2012-05-01 2012-05-03 running mf2k without model wrapper gives error message
- 4965 2012-04-10 2012-05-03 Observation files print to SEAWAT Folder when running SEAWAT - User: Medhat El Bihery
- 5129 2012-05-22 2012-06-21 pathlines can only be loaded with File | Open (not dragging and dropping does not work) - User: Jim Teo
- 5108 2012-05-16 2012-06-21 "Run MODPATH automatically for steady state models" option controls format of .sum MODPATH output file - User: Caitlin Current
- 5087 2012-05-08 2012-06-22 Saving a MODFLOW simulation as a namefile does not create a namefile - User: Mark Bentley
- 5079 2012-05-07 2012-06-22 GMS freezes while attempting to convert shapefile imported through GIS module to 2D scatterpoints - User: Dale Bridgeford
- 5027 2012-04-24 2012-06-22 TIN legend disappears when zooming
- 5181 2012-06-08 2012-06-22 "attempted an unsupported operation" error when selecting "Scatter Points | Scatter Point Settings" with certain modules - User: Michael Wallace
- 5144 2012-05-31 2012-06-25 GMS returns an error saying that it cannot open the namefile then crashes - User: Bruce Campbell

GMS 8.3.1 – April 26, 2012

- 3D scatter does not interpolate to grid correctly
- crash when saving the project after changing the subset value - User: Julian Weir
- north arrow path cannot change in "edit | preferences" window - User: Mark Bentley
- ZONEBUDGET last line of CSV2 file not displayed
- changing pilot point value and rerunning MODFLOW produces same results as before the change - User:Julian Weir
- "error opening dataset" after adding additional pilot point and rerunning MODFLOW - User: Julian Weir
- Pilot point starting values not saved accurately - User:Tony Melcher
- rotate tool jumps far away with slight change while certain cross sections are displayed - User: Daniel Fisher
- dry cells symbol shown in non-dry cells when selecting drawdown dataset - User: Saeed Jorat
- Crash when importing files created in GMS 3.0 - User: Gary Gregory

GMS 8.2.4 - April 26, 2012

- 3D scatter does not interpolate to grid correctly
- crash when saving the project after changing the subset value - User: Julian Weir
- north arrow path cannot change in "edit | preferences" window - User: Mark Bentley
- ZONEBUDGET last line of CSV2 file not displayed
- changing pilot point value and rerunning MODFLOW produces same results as before the change - User:Julian Weir
- "error opening dataset" after adding additional pilot point and rerunning MODFLOW - User: Julian Weir
- Pilot point starting values not saved accurately - User:Tony Melcher
- rotate tool jumps far away with slight change while certain cross sections are displayed - User: Daniel Fisher
- dry cells symbol shown in non-dry cells when selecting drawdown dataset - User: Saeed Jorat
- Crash when importing files created in GMS 3.0 - User: Gary Gregory

GMS 8.2.3 - March 22, 2012

- Dataset calculator and scientific notation
- Bad Help button links
- Image does not load correctly
- Animations and dry cells - User: John Czarnecki
- observation point values not printed correctly to MT3D Transient Observation file (*.tob) - User: Greg Pohll
- Duplicating display themes crashes GMS
- annotation line properties help button crashes visual studio
- framing on a 3D shapefile doesn't work
- Coverage Setup Dialog Modified when opening old GMS Project Files - User: Soheil Afshari

GMS 8.2.2 - Feb 21, 2012

- FEMWATER doesn't read in the correct card id in 3bc file - User: Julian Weir
- Flow vectors not accurate

GMS 8.2.1 − Feb 21, 2012

- GMS freeze when mapping to MODFLOW - User: Sarah Lyle
- Grid cell not displaying correctly
- Adding contacts to TIN command causes freeze - User Michael Popp
- FEMWATER - GMS can't read in the solution after FEMWATER run
- FEMWATER - Contour color isn't displayed correctly in GMS
- Scatter set appearing behind grid
- "Boreholes | Cross Section Editor" command always greyed out - User: Colin Smith
- MODFLOW-NWT Tutorial Testing
- Plot Issues with large datasets - User:Chaoying Jiao
- SEAWAT: Misspelled DENSEREF in VDF dialog
- SEAWAT: Disable input option incorrectly
- SEAWAT: Parameters named incorrectly in VSC package dialog.
- Errors when import MODPATH solution. - User: Toru Itazu
- fnMapFunctionToGridXSections
- flow vector displayed in cell with all flow leaving through well - User: Richard Peralta
- Crash in MT3D areal source/sinks dialog
- make a test for mtiCheckRt3dChemica
- Double Precision MODFLOW/MT3D Bug - Christian Winde Pedersen
- crash after trying to open locked project
- GMS 8.2 beta hangs when mapping SFR2 coverage to MODFLOW - User: Bruce Campbell
- Cells look spiky in LAK package tutorial
- Vertical conductivity/vertical anisotropy units not updating - Shuangshuang Xie
- Import from web issues
- SEAWAT: Diable input trigger incorrectly in VDF dialog
- deleting TIN node doesn't delete value from dataset
- SEAWAT: Default coefficient values in VSC Package
- Zonebudget will not run

GMS 8.1.7 - Feb 17, 2012

- Scatter points colored by dataset value have limited range of -5 to 5 - User: Phillip C. de Blanc
- MNW with MT3D
- Source/Sink Limit not updating in MT3D - User: Eric Lappala
- Crash when opening project file - User: William Werner
- Stochastic Inverse Model doesn't run with more than one material set combination.
- GMS crashes when converting 3d mesh to 3d scatter
- Crash when deleting time step number
- Crash when exporting to levee analyst DB
- GMS 8.1 - MT3D / GCG solver input labels - User: Toru Itazu
- Converting Mesh to Scatter
- Line properties help
- "Tutfile" Tutorial Text Bug

- TIN contour labels do not show up until you create a new coverage and feature object - User:Calvin Erdman
- Unique values contour option crashes GMS - User: Thomas Mühlbauer
- crashes at end of MODFLOW Translator run - User: David Li
- crash when selecting multiple 3d mesh nodes - User: Lance Jones
- Problem opening "*.bas" file in GMS 8.1.6 32-Bit which opens in 8.1.6 64-bit - User: Mary Halstead
- select cross section and then delete from project explorer
- Starting head values aren't saved after running the model.

GMS 8.1.6 - Dec 13, 2011

- MODFLOW translator problem
- Crash when setting up time series plot in plot wizard - User: Chaoying Jiao
- "Cannot open model output file..." error when running PEST with tutorial file
- grid to CAD data error
- Crash when changing the page orientation to landscape with PDFCreator set as default printer - User: Michael Popp
- Cannot disable arcobjects - User: Eric Lappala
- Problem with multiplier/dataset in Modflow parameters - User: Tim Cowdery
- Parameter estimation box in Modflow | Parameters does not remain checked after saving GMS
- time steps grayed out/unavailable in the 3D Dataset → Grid window - User: Sean Czarniecki
- MODPATH polygon disappears
- crash when opening .gpr file - User: William Werner
- MODFLOW/MT3DMS do not run with 64-bit and parallel options selected - User:Eric Lappala

GMS 8.1.5 - Nov 17, 2011

- Contours on iso-surfaces do not animate correctly
- Display of inactive cells
- block fill
- Intermediate image tests bug
- terraserver not working
- Kriging interpolation in tutorial not working properly
- Mixing up of polygon properties - User: Thomas Mühlbauer
- Improper display of refined points - User: Walid Sabbah
- modflow files do not read into GMS 8.1 - User: Jeff Davis
- Vector legend text should be white with black background
- When redrawing display, z magnification goes to 1
- Error in Generating data from solids tutorial
- Unexpected stranded cell warning
- Project file will not save with SEEP2D
- Scalar values in display options does not work
- GMS hangs when trying to load file - User: Chris Burke
- Inactive Cells not Displayed
- Switching to ortho mode changes layer
- After running MODFLOW flow translator, error reading in files, crash
- water capacity curve button does not work in FEMWATER materials window - User: Julian Weir

GMS 8.1.4 – Sept 28, 2011

- Cell faces option doesn't work properly with inactive cells
- Display issues when the size of symbol attributes.
- GMS crashes when loading the starting file for SEAWAT conceptual approach tutorial
- 3D Grid data to Grid doesn't work
- GMS crashes when assigning upper value for iso-surface. - Geostatistics 3D tutorial.
- Line does not show up with single arrowhead
- FEMWATER saves mass related cards when it's a flow only simulation
- Progress bar when converting point shapes to scatter points
- Exporting shape from 2D scatter
- Linear contours do not disappear when turned off
- 64 bit: Enable ArcObjects delete all existing shape file data
- MODFLOW parallel 64-bit does not run with SAMG solver - User: Thomas Mühlbauer
- Select With Polyline command not enabled correctly
- GMS doesn't load the correct contour option display - related to bug 1252
- Community edition doesn't work until restart
- Times not saved in ADH Time and Output Control
- GMS 2D mode: Attribute table is not visible.
- GMS crashes when testing the save and reload of a shared test project.
- MODFLOW layers display doesn't get updated.
- SEEP2D Tutorial Issue
- SEEP2D Tutorial Issue
- Auto-Fill Blank Cross Section doesn't work correctly.
- 3D grid contour legend diplayed when 3D grid turned off.
- GlobalMapperInterface warning window pop up when importing shapefile/ArcObject data.
- GMS crashes when opening file
- GMS crashes when displaying both iso-surfaces and contours
- Error message when opening the project with existing MODPATH solution
- Cross Section Options window does not appear
- Vector color legend issue
- Text not visible when contours are turned on
- 2D grid cell numbers do not line up with the grid
- Display issues with block fill and color fill
- Crash when enabling specified dataset contours
- Grid node number colors issue
- IJK triad text color issue
- Block fill contours not reflecting contour options
- GMS doesn't show inactive cells for 2D grid data - Image test
- GMS 8.1 doesn't automatically frame image after translation - User: Giep du Toit
- GMS 8.1 doesn't automatically frame image after translation - User: René J. Suárez-Soto
- Texture mapping weird banding
- Inactive cells do not display correctly
- GMS 8.1 - SEAM3D tutorial Crash
- Solids faces are fuzzy

GMS 8.0.11 - Nov 9, 2011

- Vector legend text should be white with black background
- When redrawing display, z magnification goes to 1
- water capacity curve button does not work in FEMWATER materials window - User: Julian Weir

GMS 8.0.10 - Sept 22, 2011

- Unselected polygons shown in polygon attributes window with show selected option active - User: Giep du Toit
- 3D Grid cell edges not displayed - User: Mary Southerland
- Warning pops up after computing particles with Boundary option turned on - User: Julian Weir
- GMS crashes after adding one more layer and saving the project file - User: Richard F. Carbonaro
- Z magnification doesn't work with IJK triad on
- MODFLOW simulation from GMS 6.0 does not load into GMS 8.0 - User: Diesner, Kai
- When editing 3D mesh nodes, a phantom node appears
- Capture Zone Polygon Disappears
- Fill should not be behind text
- Scatter set only partially visible
- When turning the CAD data off, the CAD layers remain checked
- Too many error messages when interpolating
- Enabling IJK triad changes z magnification
- Named layer ranges do not influence T-PROGS output - User: Pasqualino Littera
- Cannot create MODFLOW simulation from bounding 3D grid - User: Kuhn, Thomas
- Warning message when add image with arcobjects enabled
- Cannot select inactive cells in front or side ortho mode
- Max # sources and sinks isn't set correctly in MT3DMS model.
- Map to MODFLOW freezes at 60% for specific model - User: Clarkson, Maria
- Errors when trying to display element faces - User: Julian Weir
- GMS outputs files to MODFLOW that aren't specified in the project - User: Tim Cowdery
- Contour doesn't work correctly with starting heads.
- Change vertical anisotropy ratio input from Kh/Kv to Kv/Kh - User: Julian Weir
- MODFLOW runs in GMS but not in USGS MODFLOW - User: Xiulan He
- Freeze when loading GMS project file
- Data offset by 3 cells after running CCF $\rightarrow$ Datasets
- Inconsistent display of pathlines - User: Thomas Mühlbauer
- Polygon displayed when deleted
- Linear contour legend display issue
- Crash when changing the solution time step
- Crash when generate unsat curve in femwater
- Extra TIN datasets created when reprojecting
- Crash when scrolling through time steps
- FEMWATER manual incorrect on CB2, NB2 cards
- Crash when going to Ortho Mode
- GMS hangs after running SEEP2D.

GMS 8.0.9 - Aug 9, 2011

- Crash when loading *.gpr file - User: Emanual Amen Storey
- Generating MODPATH pathlines takes up more than 2-3 GB of RAM - Jack Dahl
- Interpolate To | MODFLOW Layers command does not run successfully - User: Jack Dahl
- PEST does not run with MODFLOW 2005 - User: Julian Wier
- Problem with Network Hardware Lock with single license in GMS 8.0.7 - Julian Weir
- NEVTOP equals 3 is not available in the "MODFLOW EVT Package" window - User: Kirstin Neff
- Dates will not change in time series windows - User: Medhat El bihery
- "Export" item in MT3D menu should not be there - User: Rene J. Suarez-Soto
- Default observation target scale is 0.0 - User: Todd Wood
- Native MF2K files exported from GMS do not load back into GMS - User: Xiulan He
- Reopening project with HUF materials sets loses material IDs - User: Xiulan He
- 3D grid layer boundary display issue
- Breakpoint triggered - Risk Analysis Wizard Debug assertion failed
- Color is not updated in the Materials window and Layer Ranges Legend
- Cells edges are displayed wrong
- Crash when changing HGU in Borehole editor with attached cross section
- Color fill bug - default dataset range - only happens to the computer with low-end NVIDIA graphic cards
- Color fill bug - transparency doesn't work - only happens to the computer with low-end NVIDIA graphic cards
- FEMWATER polygon properties mass flux units
- FEMWATER right-click menu properties command disabled
- FEMWATER spec. mass flux getting written as variable conc.
- FEMWATER symbols not dissappearing
- Frame Happens on Hitting Transform's Cancel Button
- Grid not appearing when project opens
- Hangs on Converting Map to 2D Mesh
- Import from web doesn't work on the advanced case study 1
- Indices for inactive cells are displayed
- Many error messages when animating
- Map to MT3D Recharge Crashes When No MF Recharge Package
- Model runs in 7.1 but not 8.0
- Named Layer Ranges inconsistencies
- Nothing happens when you select transparency
- Project does not close when you click the projects 'x' button in the upper right corner
- SEAWAT import error
- Screen Capture reverse the drawing order in GMS
- The whites of draped image are transparent

GMS 8.0.8 - Jun 20, 2011

- Crash when opening GMS project file created in GMS 6.5.6 - User: Anne Waitz Vistrup
- Error when attempting to convert solids to modflow - User: Bruce Campbell
- Crash when enabling arcobjects - User: Chad Ballard
- Background color changes to black after importing shapefile through GIS module - User: Chaoying Jiao
- Crash when converting layer contours to arcs - User: Christoph Möbus
- LINK-AMG (LMG) Package control parameters incorrect - User: Christoph Möbus
- GMS 8.0 fails to run PEST with the parallel pest option turned on - User: Julian Weir
- Borehole dataset
- CMainGraphicsWindow constructed but not deleted.
- Crash reading large modflow simulation
- Crash when editing borehole contact elevation
- Reproject scatter points doesn't work
- GMS doesn't automatically set the projection for the project based on the import data
- GMS needs to automatically reproject the importing data to the current projection.
- Image coordinate stays the same when you reproject a project
- Image import has no watch cursor at first
- Memory leak at exit in EnableDockingEx(CBRS_ALIGN_ANY);
- MODFLOW Display Options Check None doesn't change Wells (MNW1) and Drains (DRT1)
- Select all doesn't work with point
- Screen capture with obs targets
- Time value isn't listed properly for plotting

GMS 8.0.7 – May 24, 2011

- TIN vertices "jump" down when you start dragging them in oblique view - User: Stefanie Lamb
- Contours incorrectly displayed when toggling on specify a range - User: Jeffrey Davis
- Problem with frame macro in GMS 8.0.6 - User: Julian Weir
- Grid merge and display Problems - User: Matt Gamache
- "Long Shadows" being displayed when displaying cell faces and inactive cells - User: Christoph Möbus
- Inactive cells not displayed correctly - User: Christoph Möbus
- *.sen file not saved correctly with DRT parameter while running PEST - User: Xiulan He
- KMZ animation with dates/times uses wrong times - User: Suarez-Soto, Rene J. (ATSDR/DHAC/EISAB)
- Animation with 3D Grid Vectors
- Crash when reproject global projection
- Contour Options dlg - legend toggle
- Resize Modflow Observation dialog
- Computed flow with CHOB arc groups
- Remove the following from shared flineutl.cpp since it uses definitions in GMS
- NUZTOP Default Value Incorrect in UZF Package
- Annotations: Anchoring not restored on save/reload
- Annotations: Image Properties dialog, color button dimming
- Annotations: Imported annotation using % isn't sized or positioned right
- Annotations: Properties dialog titles are inconsistent, as are tab names
- Annotations: Scale bar fills behind with the wrong background color
- Annotations: Anchor tab undoes Revert To Original Aspect Ratio
- Annotations: No way to have an image be its native size

- Improper Value in IUZFBND When Mapping to MODFLOW
- SFR package - DLEAK
- GMS kmz animation always saved in default directory, and avi is always saved
- Crash converting layer contours to arcs
- GMS Crashes on Selecting Material Zone Without Grid
- Crash On Material Edit After Deleting Cross-Section
- Export native mf2k text - Array Multiplier
- Flow vs Time plot
- Window named MODFLOW-2000 when running PESTusing MF2K5
- MODFLOW 2K5 doesn't run when using advanced parameter option
- Can't change text format for factor of safety in UTEXAS
- Can't change color for flow line in SEEPD2D
- files not opening correctly in GMS 8.0
- Legend in animation with 3D Grid Vectors
- Transient RCH data

GMS 7.1.10 - March 2, 2011

- GMS 7.1 displaying slower then 6.5 - Andrzej Rodzoch
- False positive in MODFLOW model checker
- Mf stress periods dialog
- Importing mf simulation from state of UT
- Blanks Error message
- Problems running Pest - Bianca Pedersen
- modflow.bf file
- Rotate Tool not being unselected when ortho mode is turn on
- Transform Not working
- Not saving Multiplier for longitudinal Dispersivity - Frank Tsai
- Changing the Ibound in a polygon does not change make the cells inactive - Toni Smith
- Crash when Assigning ELEVUP
- computed flows not displaying - Julian Weir
- Create animation crashes GMS
- Insert 3D grid layer crash
- Gaussian Fields bug

GMS 7.1.9 - January 12, 2011

- 32 bit crash when Auto-Assigning Horizons - Johan Haan
- Edit Projection Crash - Xiaoyong Zhan
- Stream flows
- Layer Contours -> Arcs cannot find existing linear contours
- Transform command on Cross Sections
- Map to WASH123D missing from project explorer right click menu - Jerry Lin
- Problems reading in the ETS Package - Mary Halstead
- Problems with the Contours legend - John Czarnecki
- Crash running simulation check - Rose McAndrew
- Mapping to MODFLOW overwrites data not in specified layer range - Ken Heim
- Nothing happens when right cliking on a coverage and selecting reproject

- Crash when mapping to MODFLOW - Julian Weir
- MODFLOW coverage areal properties layer range attribute
- Oblique view while in ortho mode
- Mesh is patching and now paving - Sittinan Benjasupattananan
- Problems with recharge being deleted - Mary Halstead
- Cannot hide the active coverage when hiding inactive coverages.
- Feature arc Z field functionality
- Mass vs. Time plot crashes when a polygon is selected.
- Problems running MT3D - Julian Weir
- Export arcs into shape file doesn't work.
- MODFLOW files not importing.
- Crash when opening the starting file for the lake package tutorial.

GMS 7.1.8 - November 18, 2010

- MT3DMS computed mass flux is not reported.
- Fieldgen input was being written to the wrong location.
- Grid would shift when selecting a 2D Scatter Dataset.
- Pasting into times dialog for "Print at specified times" would hang GMS.
- GIS layer files now use a relative path.
- Grid's display didn't get updated in normal mode.
- Couldn't merge 2D grid cells.
- Clock display in film loop didn't work.
- GMS didn't convert scatter data imported from web to the correct projection.

GMS 7.1.7 - October 18, 2010

- Sometimes GMS would crash with an error message of "rows, columns, or layers do not match the current grid"
- The cross section display occasionally would not get updated when material color or pattern was changed.
- 2D Mesh was being paved instead of created as a patch.
- Clock animation wasn't displaying correctly. - John Czarneki
- GMS would crash after incorrectly parsing a project. - Bianca Pedersen
- Layer contours could show crazy values.
- Primary and secondary storage coefficients would not load when opening NAM file in GMS. - Jobst Massmann
- MODFLOW translator wouldn't ensure file names were unique. - Mary Halstead
- Reprojection would not always correctly apply to the vertical datum. - Michael Boiardi
- Porocity wouldn't update. - Philippe Perrier
- The Shift key when connection points didn't work correctly.
- GMS wouldn't report when there was a problem creating a 3D Mesh. - James Bellin
- GMS occasionally couldn't locate the MFR file.
- GMS would launch itself when encountering "Error Launching Model".
- Materials were wrong when importing from a GeoStudio file.
- Residuals in modflow output were calculated differently than the residuals in the attribute table. - Rene Suarez-Soto

GMS 7.1.6 - August 19, 2010

- Contour Labels did not convert correctly. - John D. Gallinatti
- Z was displayed uner the wrong Project Explorer item.
- Cross Sections did not always match the Solids. - Matt O'Banion
- Google Earth Vector would include hidden feature points.
- Recharge wouldn't map to MT3D correctly. - Julian Weir
- Cross Section Editor would incorrectly display vertices.
- GMS would write the 2D Mesh file without E6T cards.
- GMS wouldn't recalculate the shading color start value.
- Texture mapped image wouldn't display correctly.
- GMS was not assigning materials when using Solids to MODFLOW Layers. - Bill Simpkins
- Printing would produce faint contours. - Jenny Malmquist
- GMS wouldn't save material properties correctly. - Julian Weir
- GMS would crash opening a file. - Daniel Meyer
- TIN contours were incorrect.
- Map -> MODFLOW with recharge would crash some 32-bit machines. - Julian Weir
- The legend wouldn't show the correct values with recharge. - Julian Weir
- The selected cell in a 3D Grid wouldn't display properly.
- Building a Horizon coverage could crash GMS
- Layered Mesh would display errors and not correct create a 3D Mesh. - James Bellin
- GMS 3.1 files wouldn't read into 7.1. - Reinhard Zapata
- Help button for SEEP2D Materials would display the wrong information.
- Fixed several SEEP2D New Simulation errors.

GMS 7.1.5 - July 15, 2010

- Interpolating a scatter set to a layer would take a really long time. - Val Britton.
- Recharge would change the head more than expected. - Julian Weir
- Pasting information into the Stress Periods dialog would cause a crash.
- Fix problem with invalid NROW/NCOL in binary files.
- Modflow importer problem involved LMB solver data would cause GMS 7.1 to not read GMS 6.0 files.
- Refining 3D Mesh elements with a cross section would cause a crash.

GMS 7.1.4 - June 28, 2010

- Memory issue when reading a particular project with last release. -Bruce Campbell
- Only able to display the computed flux for one FEMWATER node at a time. - Anders Soderstrom
- Coverages could not be rearranged or dropped into folders. - Kevin Winters
- New materials could be created with non-unique IDs when a materialwith ID 0 existed. - Michael Boiardi
- Increased speed on importing large MODFLOW models into GMS.
- Increased speed on reading and saving large MODFLOW models. Can increase speed by disabling option to compress MODFLOW h5 data in Edit | General Preferences. This causes more hard disk memory to be used.
- Was possible to cause GMS to crash by entering a small segment sizewhen redistributing arc vertices.
- Material patterns were not drawn correctly on the sides of a grid.

GMS 7.1.3 - June 15, 2010

- Crash selecting confined radio button in HUF dialog.
- New coverages could appear as child objects of improper project explorer tree items. - Kevin Winters
- Seep2D simulation created even though cancel was selected.
- Creating a bounding 2D Grid could causes a crash.
- Turning on Draw tools and saving in a different location caused crash.
- HUF datasets outside HUF sim folder when reading 6.5 TPROGs HUF sample.
- Pasting larger amount of spreadsheet data into package dialog caused crash.
- Converting dataset to CAD with existing CAD data could cause crash.
- Graphics window does not update after hiding a 3D mesh element selected by clicking.
- Bad cross section extents caused "Convert to Coverage" to fail. - Ken Pattermann
- 2D Scatter -> 2D Mesh can result in 2 meshes.
- Inconsistent feature arcs to 3D mesh cross sections. - Barbara Donnell
- 2D mesh dataset duplication adds to dataset size when nodes have been deleted.
- Not able to move nodes in Cross Section Editor when node display off in Map Display Options.
- File Import Wizard does not ignore missing values in unmapped columns. - Barbara Donnell
- Merging cells with an MT3D simulation results in crash.
- MODFLOW translator fails when reading external binary array. - Shabbir Ahmed
- Unable to open MT3D GCG package dialog.
- MODAEM does not respond to changes in porosity. - Soheil Afshari
- The X, Y cursor location is not updated during process of creating a feature arc. - Kevin Winters
- When displaying vector arrows the view won't zoom, pan, or rotate. - Carl Davies
- The Unselect all tool doesn't update the display.
- Redistribute Vertices fills in bad default spacing and crashes with default. - Kevin Winters
- All row change shouldn't affect non-applicable cells in Attribute Table. - Kevin Winters
- Crash while reading gpr file with invalid map data.
- Plot axes in the graphics view don't pan or rotate.
- Mulitple MT3D plot issues. - Kevin Winters
- Drawing Tools don't display after drawing and not turned on when added to project explorer.
- Project not loaded after double clicking on it in Windows Explorer - David Blackmore
- Crash when reading project file with missing MODFLOW solution.
- Crash when reading project file with missing MT3D solution.
- Crash on importing species in MT3D BTN package dialog.
- Reading the modpath sample gives errors looking for files.
- Importing into an existing project could overwrite existing materials with imported materials without warning.
- Exporting 2D scatter points from tree item and module folder produces different results. - Jerry Lin
- Drag and drop the sample femwater fws and material project explorer item gets created in wrong place.
- Crash could happen when generating particles.
- Scatter Interpolation to Layer taking a really long time. - Val Britton
- Display final array values for pilot points not updating correctly.
- In some cases zone budget doesn't match USGS zone budget.
- Possibility of writing out of bounds when reading FEMWATER BC file.
- SEEP2D Attribute Table does not sort based on BC Type. - Kevin Winters
- Frame current cross section or all cross sections not working in Cross Section Editor.
- Reading in a UTEXAS solution crashes crash.
- Crash while loading project file.
- UTEXAS - When saving in GMS 2D mode it thinks an existing project should be saved as new project.

- UTEXAS - Factor of safety and solution doesn't display.
- UTEXAS - Fixed grid coordinate not saved.
- UTEXAS - Fixed grid display not correct.
- UTEXAS - Fixed grid option not exporting correctly.
- UTEXAS - Display options not saved and restored.
- UTEXAS - Distributed loads not displayed orthogonally.
- UTEXAS - Not exporting GRAPH line.
- UTEXAS - Distributed load arrows linger.
- UTEXAS - Only exporting one distributed load arc.

GMS 7.1.2 - April 26, 2010

- The MODFLOW boundary conditions don't initially appear unless you uncheck and recheck MODFLOW. - Scott Morgan
- Material legend text randomly doesn't appear when copying to an image.
- Modflow translator crashing on import of external binary array. - Erick Powell
- Some wiki links to tutorials not working correctly.
- Converting shapes to feature objects not working. - Hisham Zarour
- WASH123D 1D mesh coordinate conversion not working. - Kevin Winters
- Crash during horizons to solids. - Eskelinen Anu
- MODFLOW Sources/Sinks shows incorrect K value.
- Use last somehow set for first stress period resulting in MODFLOW solutions not matching.
- A particular MODFLOW model crashes in 7.1 when running this model but in 6.5 works great. - Hal Davis
- Opening particular shape file results in incorrect background color and program hangs.
- Crash in 2D mode when creating points using attribute table.
- Modflow translator imports incorrect values for external binary array. - Erick Powell
- When reading 6.5 TPROG HUF sample datasets show up outside HUF sim folder.
- Error appears and pathlines not displayed upon generating particles. - Jeremy Robinson
- Print button not working in borehole cross section editor. - Grzegorz Jeleniewicz
- Sometimes hangs when generating contours.
- GMS hangs when loading RT3D files. - Ki Young Cha
- Grid dimensions are changed during transformation. - Julian Weir
- Zone budget IDs weren't mapping and saving correctly. - Julian Weir

GMS 7.1.1 – March 15, 2010

- Unable to extract 2D water table from FEMWATER. - James Bellin
- Double-click on project (*.gpr) file doesn't load it in GMS.
- Unable to convert CCF file to datasets. - Griet Heuvelman
- Color fill won't display correctly for pore pressure in SEEP2D.
- Unable to import MODFLOW name file with spaces. - Donato Sollitto
- Error message appears when selecting different TIN after using Snap Vertices to TIN. - Jim Wieck
- Merging coverages does not carry the attributes.
- Crash on deleting selected nodes for mesh.
- Button in Shading Options Dialog doesn't handle window resize properly.
- Doesn't delete old SEEP2D simulation when creating a new one.
- No flow head of 999.99 changes to 999.98902 after MODFLOW import.
- MODFLOW translator not importing files. - Julian Weir

GMS 7.0.4 - February 22, 2010

- Don't automatically run model checker.
- GMS crash when deleting MT3D or grid. - Bruce Siegmund
- Crash setting up new RT3D model with user defined reaction.

GMS 7.0.3 - January 4, 2010

- Initial Concentrations Not mapping to MT3D.
- Max Rate of Substrate Utilization not Saved in Seam3d. - Mark Widdowson and Bruce Campbell
- Switching tools redraws the screen when it shouldn't.

GMS 7.0.2 - October 29, 2009

- Convert to CAD Error. - Thomas Burke
- Project that opens in 6.5 but not 7.0. - John Czarnecki
- Crash when trying to interpolate 2D scatter to MODFLOW layers. - Nathan Haws
- GMS 7.0 Crash in MODFLOW Global Options with MT3D. - Nathan Dye
- FEMWATER | Geometry BUG. - Simon Woodward
- Some boreholes don't show on opening file.
- Van Genuchten parameters not saving.
- Duplicate vector dataset.
- CCF time steps don't show times.
- Image doesn't clear switching from plan view to previous view. - Kevin Winters
- Blanks Warning when making a big 2D grid.
- Crash while create new species in MT3D.
- Open 2dg file crashes GMS 7.0.
- GMS Crash saving with empty RIV package. - Scott Morgan
- Display bugs in ortho mode.
- Bad interpolation results using interpolate scatter to mesh. - Kevin Winters
- Observed flow of arcs not displaying. - Val Britton
- Bad help button links. - Kevin Winters
- Borehole labels become frozen in place after screen capture. - Kevin Winters
- ADH Display Options tab title is superfluous. - Kevin Winters
- File Import Wizard crashes when no coverage data exists. - Kevin Winters
- Screen does not update after changing conceptual model types. - Kevin Winters
- Time step window shows incorrect dates for MODFLOW ET datasets. - Craig Altare
- GMS crash during 2D Dataset → Layer. - Scott Morgan
- Unable to edit number of instances in Parameters dialog.
- Dry cells displayed with SFR2 sample.
- Bad use previous after map to MODFLOW for STR Package. - Craig Altare
- MT3D Select Dataset window is missing datasets and crashes. - Craig Altare
- MODFLOW ET Surface dataset values are displayed as zero. - Craig Altare
- ADH coverage properties not working properly. - Kevin Winters
- Failed to load particle tracking points from project file.
- Crash When turning on modflow contours. - Marielle Labadens
- Abort and Read solution doesn't work with MODFLOW.
- Texture mapping - image doesn't go away on new.
- File Import Wizard's Transient node data type is broken for WASH123. - Kevin Winters

- Incomplete MODFLOW STR Package file when exporting native MK2F files. - Craig Altare
- Model Checker Doesn't Display Selected Cells.
- No Sample files with Modpath tutorial. - Scott Morgan
- GMS not printing correctly. - Herman Wolfs
- Water Table Display not Working as it should. - Mark Greenwood
- Pasting point information into Feature Properties window is mishandled. - Kevin Winters
- GMS Save Error with FEMWATER. - Simon Woodward
- Flow budget difference between 6.5 and 7.0. - John Czarneki
- Delete Arcs crash. - Tim Cowdery
- Can't run MT3D even when enabled in certain cases. - Kim Gordon

GMS 7.0.1 – September 9, 2009

- TSIM window title incorrect. - Kevin Winters
- Mapped materials changes from conceptual model not saved in project.
- Crash if using delete key to delete SEEP2D mesh.
- Crash when defining conceptual model species.
- CAD drawing issues when changing views.
- Setting manual contour options doesn't work.
- Lake flow budget not displayed.
- Pathlines sometimes not regenerated for MODAEM.
- Won't show selected cells in second layers if conceptual model displayed.
- Materials with patterns not displaying correctly in ortho mode.
- TIN edge color should be disabled when auto selected.
- Fixed error when using well screens and observations.
- Problems with mesh generation and display issues. - Kevin Winters
- Grid overlay with keq issue. - Sean Czarniecki
- Crash when importing conceptual model species. - Eric Lappala

GMS 6.5.6 - May 29, 2009

- Map -> WASH123D incorrect flow rates. - Clarissa Hansen
- MODPATH not displaying arrows on path line. - Val Britton
- Extra rows in 2D/3D Grid Properties Dialogs.

GMS 6.5.5 - April 22, 2009

- Gaussian MODFLOW simulations don't work.
- Bug when creating new cube and specifying center.
- MT3DMS recharge concentration change doesn't save.
- MT3D bug with calculate mass dialog.
- Update message for images covered by arc objects.
- Fixed help link to xmswiki for color ramp.

GMS 6.5.4 - February 2, 2009

- Snap to Cross Section to Tin Crash. - Bill Simpkins
- Export Mf2k to native text. Error given "no text". - Bruce Campbell
- MT3D New Simulation command continuing after cancel.
- Map->MODFLOW with Transient Specified head not creating a step function. -Clarissa Hansen
- Dry wells symbol for MODAEM wells not working correctly

GMS 6.5.3 - December 30, 2008

- Material edits not saved - David Zuccala
- Moving New Coverage
- Observation Points with 3D meshes
- GMS not saving borehole diameter
- 3D Grid properties incorrectly changing the Y and Z of the grid origin

GMS 6.5.2 - October 17, 2008

- Map -> 2D Mesh doesn't map materials if "Meshing options" isn't on
- Material edits not saved - David Zuccala
- Minor issue with copying scatter sets - Clarissa Hansen
- GMS with ARCGIS Issues - Sean Czarniecki
- Image issues with Arc Objects enabled - Sean Czarniecki
- 3D Dataset to Grid does not always work properly - Christoph Möbus
- SEEP2D coverage with head option causes hang - Cary Talbot

GMS 6.5.1 – September 9, 2008

- Import of Modflow 96 files - error reading the OC file
- Text import wizard crash when setting the text qualifier to 'none'
- Error saving out changes to recharge file
- Transient properties for lakes not mapping correctly
- RT3D preventing assignment of Mass loading bcs
- Iso-surface crash on 3D mesh with 5 node elements
- Crash when executing the Horizons->3D Mesh with a 2D mesh containing duplicate nodes
- UTEXAS tension crack info not written correctly
- Setting the numeric values on a color ramp based on the data from a 3D scatter set
- Converting shape file polylines to arcs where the polylines contain distint separate line segments
- Grid navigation arrowing displayed consistently
- Display of MT3D species concentration in the Point source/sink dialog
- Update to Gms2Mf2k.exe (Export native MF2K files) to handle filenames with spaces and not placing quotes around file names in the name file so that the USGS version of modflow is able to read the file

References

[1] http://www.aquaveo.com

[2] http://www.aquaveo.com/GMS-pricing

[3] http://www.aquaveo.com/downloads/gms

Dialog Help

This is a special page that relates GMS dialogs to wiki pages. GMS reads this page when a user hits the *Help* button in a GMS dialog, and opens the wiki at the page indicated below. Blank Dialog IDs use uniquely generated numbers because the dialog is derived or shared.

Wiki Page | Dialog Number | Dialog ID

1. Create Child Grid | 22081 | IDD_CREATE_CHILD_GRID
2. BFH Package | 22082| IDD_MF_BFH
3. MODFLOW-LGR | 22078| IDD_MF_LGR_OPTIONS
4. PHT3D | 22079 | IDD_MT_PHT3D
5. Transform | 3544 | IDD_CHANGE_GEOMETRY
6. DE4 Package | 22061 | IDD_MF_SOLVER_DE4
7. NWT Package | 22060 | IDD_MF_SOLVER_NWT
8. MODFLOW Translator | 22044 | IDD_MF_TRANSLATOR
9. Color Options | 6 | IDD_COLOROPTIONS
10. Point Display Attributes | 46 | IDD_POINT_DISPLAY_ATTS
11. New Palette | 80 | IDD_NEWPALETTE
12. PEST | 285 | IDD_MF_PARAMEST_PEST
13. MODFLOW Observations | 107 | IDD_MF_OBS_DLOG
14. HUF Package | 109 | IDD_MF_HUF
15. Borehole Editor | 129 | IDD_BH_EDITOR
16. Material Properties | 22040 | IDD_MATERIALS
17. Initialize MT3DMS Time Steps | 131 | IDD_MT_INIT_TIMESTEPS
18. GIS Tables | 137 | IDD_ARCGISTABLE
19. GIS to Feature Objects | 140 | IDD_ARCGISMAPPING
20. MODFLOW Output Control | 143 | IDD_MF_OUTPUT
21. Select Dataset | 144 | IDD_SELECT_DATASET
22. Global Options | 226 | IDD_MF_GLOBALPACKAGE
23. Stress Periods | 231 | IDD_INITIALIZE_TIMES
24. Material ID Editor | 266 | IDD_MF_MATERIALSP
25. MODPATH Particle Sets | 268 | IDD_MP_PARTICLE_SETS
26. Parameter Estimation Dialog | 285 | IDD_MF_PARAMEST_PEST
27. MODFLOW Sources/Sinks | 943 | IDD_MF_SS_TABLE
28. Viewing the Printed Output File | 301 | IDD_CHOOSETEXTEDITOR
29. 3D Mesh Refinement Options | 391 | IDD_3DMESH_REFINEMENTOPTS
30. Stress Periods | 393 | IDD_MF_STRESS_PERIODS_NEW
31. Conceptual Model Properties | 402 | IDD_CONMOD_PROP
32. Coverage Setup | 405 | IDD_COV_SETUP
33. GMS:Feature Objects | 409 | IDD_FPROP
34. 2D Mesh Polygon Properties | 454 | IDD_2DMESH_POLY_PROP
35. Data Calculator | 471 | IDD_DATA_CALCULATOR

Article Sources and Contributors

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File Import Wizard *Source*: http://www.xmswiki.com/xms/index.php?oldid=60451 *Contributors*: Jcreer, Ksmith, Unjedai

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