**D - Help File (not part of rule—just provides helpful information)**

**Folder A**

Folder A contains the shapefile NDMV5\_ACTIVE\_LIMITS.shp. This shapefile represents the active limits of the Northern District Model Version 5 (NDMV5) (i.e., the entire model domain), but is not needed to run the model. If you wish to view the geographic extent of the active limits of the model (i.e., the entire model domain), you may use a GIS viewer to view the shapefile.

The shapefile can be viewed using software such as GIS or ArcGIS Explorer Desktop, a free GIS viewing software that can be downloaded from http://www.esri.com/software/arcgis/explorer-desktop/download, or a similar software program. If you choose to use ArcGIS Explorer Desktop, here are suggested step-by-step instructions:

a. Click on “Map” on the far right side of the top menu bar.

b. Click on “Add Content” and scroll down (and click on) “Shapefiles.”

c. Go to wherever the following folder from the disk is located “A\_MODEL\_ACTIVE\_LIMITS\_SHAPEFILE” then click on the shapefile labeled “NDMV5\_ACTIVE\_LIMITS.shp” and then hit the “Open” button. That should show the active limits of the Model geographically.

There are other open source GIS and freeware GIS applications that are widely available. See https://www.gislounge.com/open-source-gis-applications/ for some examples.

**Folder B**

Folder B contains the executable program (MFSF\_NDM5.exe) for NDMV5.

**Folder C**

Folder C (zip archived folder titled "C\_NDMV5\_MODFLOW\_FILES") contains most of the necessary files to run the End of Permit Simulation for NDMV5, except for the two well files that will vary over time (see paragraph 3 below) and the executable program (which is in Folder B).

Here are some suggested step-by-step instructions for running the model:

1. Unzip the contents of Folder C (D170404NDMV5.zip) to a folder of your choice (ex: C:\).

2. The executable file required to run the model is MFSF\_NDM5.exe, which is located in Folder B (folder titled "B\_MODFLOW\_EXECUTABLE"). Place this executable file in the same chosen folder (ex: C:\).

3. There are two well files (.fwl and .wel) that must also be included in the chosen folder (ex: C:\) to obtain meaningful results from running the model. Please contact SJRWMD’s Bureau of Resource Evaluation & Modeling at (386)329-4500 to obtain the most current version of these two well files, which will vary over time as groundwater uses change.

a. Permitted groundwater wells will be specified in the fracture well package file named .fwl.

b. Non-permitted groundwater wells (e.g., exempt domestic self supply and permit by rule water uses) will be specified in the file named .wel.

c. To add or modify a proposed consumptive use of groundwater for the End of Permit Simulation, the appropriate well file must be modified.

4. To run the model with a Windows operating system, right click on the file MFSF\_NDM5.exe.

5. Select the "Run as administrator" option from the menu that pops up after Step 4 (above).

6. Select the "Run" button from the "Open” File-Security Warning" pop-up. If you cannot run your computer as an administrator, either: (a) right click on the file MFSF\_NDM5.exe and then select “Open” and then select “Run” when the security warning appears, or (b) double left click on the MFSF\_NDM5.exe and then select “Run” when the security warning appears.

7. The model will open up in a separate command prompt window (black with white text). This window will close itself when the model is done running.

8. Upon successfully running the model, there will be three new output files that have been generated. They are as follows:

a. \*.cbb. This is the cell-by-cell flow term summary. File size should be approximately 21,000 KB.

b. \*.hds. This is the final array of heads from the model. File size should be approximately 1,600 KB.

c. \*.out. This is the MODFLOW output file which provides a summary of the model simulation. File size should be approximately 11,000 KB. The contents of this output file can be viewed by right clicking on it and opening it with Notepad, WORD, or a similar word processing program.

9. The Northern District Model Version 5 (NDMV5) model may be viewed with a graphic user interface (GUI) such as:

(1) Groundwater Vistas, http://www.groundwatermodels.com/;

(2) Visual MODFLOW, https://www.waterloohydrogeologic.com/tag/visual-modflow-classic/

(3) GMS, http://www.aquaveo.com/software/gms-groundwater-modeling-system-introduction/; or

(4) Argus ONE, http://www.argusone.com/.

If you choose to do this, please contact SJRWMD’s Bureau of Resource Evaluation & Modeling at (386)329-4500 for assistance.