

Michigan Department of Environmental Quality

Groundwater Modeling Program

Groundwater Modeling Application and Documentation Checklist

The purpose of this checklist is to identify the suggested elements for applying a groundwater model to a site and for properly documenting the groundwater model. It is intended to assist DEQ staff in ensuring that a groundwater model submitted to the DEQ for review has been applied correctly and the documentation contains all the elements necessary for DEQ review. This checklist can also be provided to groundwater modelers to inform them of the process and suggested tasks that should be completed prior to submitting a model to DEQ for review. Some of the elements identified in this checklist may not be applicable to a particular situation. Justification for omission of elements should be provided to DEQ prior to model development.

The suggested elements for applying and documenting a groundwater modeling application are as follows:

1. Model Conceptualization Meeting – Prior to developing a model, during the work plan development stage of a project, it is often useful for the model developer to meet with the DEQ Groundwater Modeling Program Manager and the DEQ Project Manager. The purpose of this meeting is to discuss the site issues, develop a conceptualization of the site hydrogeology, select a model program which is appropriate for the issues and hydrogeology of the site, and develop an approach for applying a model for the site. A work plan outlining the approach discussed in the conceptualization meeting should be prepared.
2. Work Plan Review – The work plan prepared by the model developer which describes the proposed application of a model to a site should be submitted to the Groundwater Modeling Program for review.
3. Groundwater Modeling Guidance – The groundwater model developer should review the *DEQ Groundwater Modeling Guidance and Evaluation Document (10/02)*. The purpose of this review is to acquaint the modeler with concepts that should be used in the model development and application process. A copy of the guidance may be downloaded from the Groundwater Modeling Program web page. Any questions regarding the guidance or work plan development should be addressed to the Groundwater Modeling Program through the DEQ Project Manager.
4. Groundwater Model Documentation Report – A report identifying the purpose and goal of the modeling and the process by which the model was

selected, developed, calibrated, verified and utilized should be prepared and presented to DEQ for review. The model report should be organized in a format which facilitates DEQ review. Guidance for preparing a model documentation report is found on the Groundwater Modeling Program web page where it may be downloaded in Word 97 or Adobe Acrobat format.

5. Groundwater Model Input Files in Digital Format – The model input files for all simulations presented in the model documentation report should be presented in digital format, either on CD-ROM or diskette. Any questions concerning the formatting or transmittal of these files should be directed to the Groundwater Modeling Program.

6. Groundwater Model Review Request – The DEQ Project Manager should fill out the *Model Review Request* form found on the Groundwater Modeling Program web page. This form may be sent as an e-mail attachment to the Groundwater Modeling Program Manager.

Any questions concerning the elements outlined in this checklist should be directed to the Groundwater Modeling Program Manager, Rick Mandle, by telephone (517) 241-9001 or e-mail mandler@michigan.gov.