



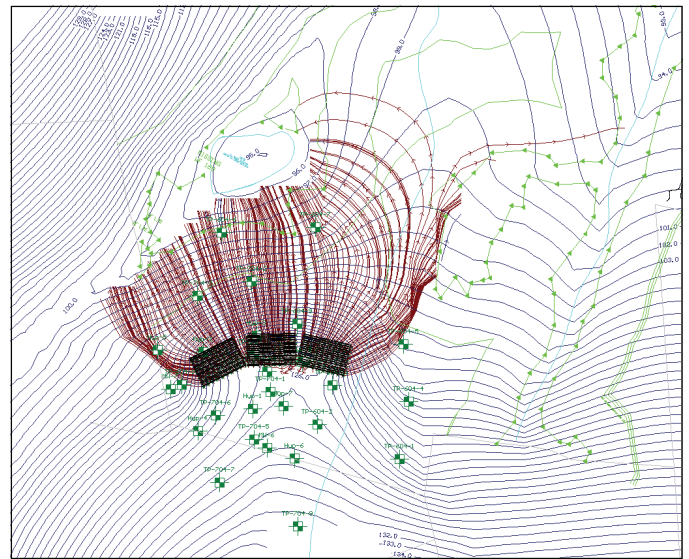
GROUNDWATER MODELING OF PROPOSED SEPTIC SYSTEMS

Septic Mound Height Estimation Littleton , MA

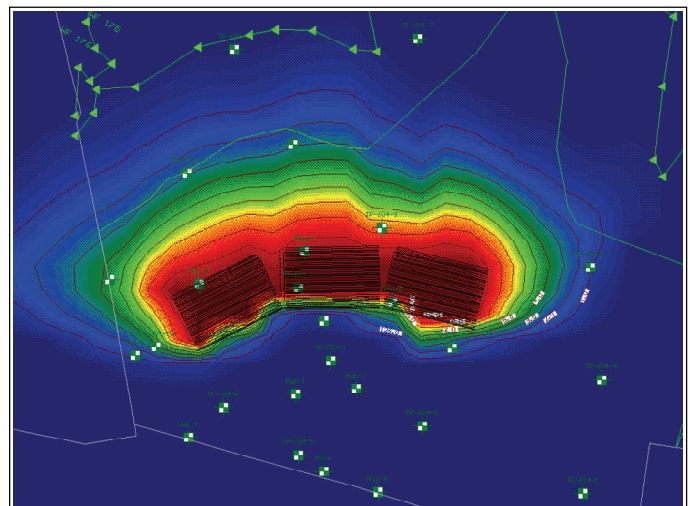
New England Environmental, Inc., has conducted numerous groundwater modeling projects at various residential and commercial properties. In this project, NEE was hired to create a groundwater flow model to predict the height of the mounds under two proposed 12,000 gal./day septic leach fields, and to predict the reaction of natural ecosystems to the placement of these leach fields.

Our groundwater modeling services include the following :

- On-site supervision of monitoring well installation, including soil sample collection, completion of boring logs and well installation diagrams. Utilization of existing groundwater monitoring wells where possible.
- Collection of groundwater samples from the wells in accordance with DEP and EPA guidelines. Submittal of selected samples for laboratory analysis, and review of the analytical data.
- Determination of aquifer hydrologic parameters through the use of slug tests and/or pumping tests.
- Creation and calibration of a 2D or 3D groundwater flow model typically using Visual MODFLOW. Models are as detailed as necessary to address the Site situation and proposed alterations.
- For proposed septic systems under Title V (MA), the concentration of nitrates at the downgradient property line and the height of the groundwater mound under the system are the most common conditions modeled.
- Hydrogeologic Report preparation documenting the conduct and findings of the investigation and modeling efforts in support of a groundwater discharge permit.



Groundwater contours and nitrate particle paths for a proposed septic leach field.



Nitrate plume diagram, indicating acceptable estimated concentrations at the property boundary.

