

Don Rice – Hydrologist, GS-12

I serve as a project chief in the Geohydrologic Studies Program of the New Jersey Water Science Center. I have worked on the following projects:

1. Estimated low-flow characteristics of streams and ground-water capacity in the New Jersey. This work was done for the New Jersey Geological Survey. My work was hands on and oversight of delineating more than 600 basins, determining basin characteristics such as land use, water use, and geology, and report preparation. Project site data were stored in geodatabases and linked to project data stored in a relational database developed for the project.
2. Estimated low-flow characteristics of streams and ground-water capacity in the New Jersey Highlands Preservation and Planning areas. This work was done for the New Jersey Highlands Council in support of their Regional Master Plan. Station basins and HUC14 basin characteristics were obtained using ModelBuilder. All project data was documented and turned over to the Highlands Council. Results were presented both in reports and at public meetings.
3. Hydrologic characterization of the New York/New Jersey Highlands. My work for this project included water-quality database construction, GIS database construction, GIS analysis of hydrologic data, presentation of significant findings to the U.S. Forest Service and other interested public organizations, and report preparation.
4. Sustainable water supply study for Cape May County My work for this project is ongoing and includes development of GIS layers that characterize: water use, hydrogeologic characteristics of Cape May aquifers, water-quality, land use, elevation, and vernal pond research.
5. Valley-wide ground-water flow model for Picatinny Arsenal, New Jersey. Work included model development, prediction scenarios, Geographic Information System (GIS) analysis of hydrologic data, field collection of hydrologic data and report preparation
6. Description of the source and distribution of naturally occurring radionuclides in the ground water of the New Jersey coastal plain. My work for this project included supervision of well drilling, water-quality sampling, ground-water flow modeling, GIS analysis of hydrologic data, and report preparation.
7. Ground-water contaminant sites. My work at these sites has included innovative packer testing to determine the hydrologic characteristics of bedrock aquifers, particle fraction sampling to investigate colloidal transport of radionuclides, two and three-dimensional GIS analysis of hydrologic data, ground-water flow model development, presentations of significant findings to U. S. Environmental Protection Agency, U.S. Navy, and the U.S. Air Force. I have worked at the following sites with their corresponding contaminants:
 - a. Naval Air Warfare Center, West Trenton, NJ /Trichloroethylene (TCE)
 - b. BOMARC Missile Base, Ocean County, NJ /Radionuclides and TCE
 - c. Cadmus well field, Fair Lawn, NJ /TCE and other volatile organic compounds
 - d. Municipal well field, Rocky Hill, NJ /TCE

- e. Fair Lawn municipal well field, Fair Lawn, NJ /TCE
- f. Puchack municipal well field, Pennsauken, NJ /Hexavalent chromium and other volatile organic compounds
- 8. Water-quality of the Delaware & Raritan Canal. My work for this project included GIS database construction, GIS analysis of water-quality data, report preparation, and presentation of significant findings to the New Jersey Water Supply Authority.
- 9. Water-quality of Barnegat Bay and its drainage basin. My work for this project included GIS database construction, GIS analysis of water-quality data, and report preparation.

SELECTED PUBLICATIONS

Gibs, Jacob, Gray, B., Rice D.E., Tessler, S, and Barringer, T.H., 2001, Water quality of the Delaware and Raritan Canal, New Jersey 1998-99: U.S. Geological Survey Water-Resources Investigations Report 01-4072, 60 p.

Hoppe, Martina C. (compiler) 2003, New York - New Jersey Highlands regional study technical report, U.S Forest Service. Digital report available at: http://www.na.fs.fed.us/highlands/maps_pubs/technical_report/technical_report.shtm. (My contribution to this report was as coauthor of the Water Resources section)

Lewis-Brown, Jean C., Rice, D.E., Rosman, R., and Smith, N.P., 2005, Hydrogeologic Framework, ground-water quality, and simulation of ground-water flow at the Fair Lawn Well Field Superfund Site, Bergen County, New Jersey: U.S. Geological Survey Scientific Investigations Report 2004-5280, 109p. *Received the David A. Aronson Report of the Year Award for technically focused reports.*

Lewis-Brown, Jean C., Rice, D.E., 2002, Simulated ground-water flow, Naval Air Warfare Center, West Trenton, New Jersey, U.S. Geological Survey Water-Resources Investigations Report 02-4019, 44p.

Phelps, Marcus G., and M.C. Hoppe (compilers), 2002, New York - New Jersey Highlands regional study: 2002 update, U.S. Forest Service 209p. Digital report available at: http://www.na.fs.fed.us/highlands/maps_pubs/regional_study/regional_study.shtm. (My contribution to this report was as coauthor of the Water subsection of the Resource Assessment and Conservation Values section and as coauthor of the Changes in Water Resources subsection in the Potential Changes and Resources at Risk section)

Rice, Donald E., and Szabo, Z., 1997, Relation of ground-water flowpaths and travel time to the distribution of radium and nitrate in current and former agricultural areas of the Kirkwood-Cohansey Aquifer System, New Jersey Coastal Plain: U.S. Geological Survey Water-Resources Investigations Report 96-4165B, 41 p.

Rice, Donald E., and Voronin, L.M., 1997, Analysis of ground-water flowpaths near water-supply wells Picatinny Arsenal, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 96-4228, 26 p.

Szabo, Zoltan, Rice, D.E., Plummer, L.N., Busenberg Eurybades, Drenkard, Stefan, and Schlosser, Peter, 1996, Age-dating of shallow ground water with chlorofluorocarbons, tritium/helium-3, and flow-path analysis in an unconfined aquifer of the southern New Jersey Coastal Plain: Water Resources Research, v. 32 no. 4, p. 1023-1038.

Voronin, Lois M., and Rice, D.E., 1996, Hydrogeology and simulation of ground-water flow, Picatinny Arsenal and vicinity, Morris County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 96-4061, 64 p.