

NLM TOXMAP GIS

Aquilent helped develop TOXMAP, which allows users to create maps to visually explore environmental data such as the amount and location of toxic chemicals released and then overlay census, economic and health data.

the objective_

To create a web-based Geographic Information System (GIS) for the National Library of Medicine (NLM) that enables users to explore environmental health data such as the amount and location of toxic chemicals released into the environment or present in hazardous waste sites.

the solution_

Aquilent worked with NLM to develop TOXMAP to show the geographic distribution of chemical releases and to illustrate how these releases change over time. The tool uses chemical and geographic terms to search bibliographic files and provides context-sensitive links to authoritative sources of chemical information from the NLM. The system provides:

- > Ability to access, search, and geographically display and download data derived from the EPA's Toxics Release Inventory (TRI) and Superfund programs, which provide information on the release of toxic chemicals into the environment as reported annually by industrial facilities across the United States.
- > Links to the Hazardous Substances Data Bank (HSDB), ChemIDplus, and the Toxicology Data Network (TOXNET) toxicology and environmental health databases.
- > Overlay of census, income, and cancer/disease mortality data.



the payoff_

Focus groups, usability testing, and direct user feedback were key elements in TOXMAP's design and success. It has been featured at American Public Health Association annual meetings, the Urban and Regional Information Systems Association conference, the Medical Library Association, the TRI National Training Conference, and several ESRI trade Conferences.

HIGHLIGHTS

- > Allows users to visually explore environmental health data.
- > Gives users access to crucial data on toxic chemicals and other contaminants.
- > Provides valuable census-, income- and disease-related data.
- > Successfully used by citizens, medical institutions, teachers, researchers, and various organizations.
- > Offers ability to create custom maps and download search results.

The screenshot displays the TOXMAP web application interface. At the top, the header includes the United States National Library of Medicine logo and the TOXMAP title. Below the header is a navigation menu with options like Home, TRI Facilities, TRI Releases, TRI Trends, Superfund, and Combo. The main content area shows search results for 'All TRI Reporting Facilities: All Chemicals' and 'All Superfund NPL Sites: All Chemicals' in Maryland. A map of Maryland is visible, with various locations marked. On the right side, there is a 'MAP DETAILS' section with a list of facilities reporting to TRI, including 'BRANDON SHOES & WAGNER COMPLEX', 'MILLENNIUM INORGANIC CHEMICALS INC HAWKINS POINT PLANT', and 'C.P. CRANE GENERATING STATION'. The interface also includes a search bar, a 'ZOOM TO' section, and a 'Toxicology References for this Map' section.