A TOXICITY DATABASE AS A TOOL FOR WATER-QUALITY EVALUATIONS

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A relational database was developed to consolidate available toxicity data for contaminants analyzed in the U.S. Geological Survey (USGS) National Water-Quality Assessment (NAWQA) Program. The database was developed as part of a pilot project with USGS to communicate the significance of its NAWQA water-quality findings in a human-health context. Historically, USGS has compared NAWQA water concentration data to established drinking-water standards and guidelines. However, because drinking-water standards and guidelines do not exist for many NAWQA analytes, this approach alone is insufficient for placing NAWQA data in a human-health context. For the pilot project, contaminants detected in a New Jersey NAWQA study will be compared to drinking-water standards and guidelines and to newly developed health-based screening level (HBSL) values, as appropriate. HBSL values were developed using U.S. Environmental Protection Agency (USEPA) Office of Water (OW) methodologies after reaching consensus on this approach with several USEPA offices and the New Jersey Department of Environmental Protection. Toxicity data were needed to calculate HBSL values, and these toxicity data were compiled from the USEPA's Integrated Risk Information System (IRIS), OW, Office of Pesticide Programs (OPP), and Health Effects Assessment Summary Tables (HEAST). These data were not previously summarized in any single place, making this database a unique and valuable resource. The database also contains Federal and select State drinking-water standards and guidelines, and more than 25,000 records, including information for pesticides, volatile organic compounds, nutrients, trace elements, and microbiological contaminants. Data-quality audits were performed on all data, and are performed once per month on any new data added to the database. Original data sources are reviewed monthly for any new or revised values. Future work includes providing web access to the database information through the USGS NAWQA website.

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