

# New Hanford database tool receiving rave reviews

Karin Nickola, *Fluor Hanford*

Accessing information from a database called the Hanford Environmental Information System, or HEIS, has just become infinitely easier for Hanford Site and off-site users, thanks to a new tool developed for the U.S. Department of Energy Richland Operations Office.

"I am so happy to see this new product," said Dib Goswami, site-wide groundwater/vadose zone specialist for the Nuclear Waste Program at the Washington State Department of Ecology. "It is so user-friendly and so easy to access. And it fills a gap that has existed far too long. We regulators will be using this tool frequently in the future."

## Expanding capabilities

Fluor Hanford's Groundwater Protection Program manages Hanford environmental databases, ensuring that site-wide users have easy access to a wealth of technical information about the site. The databases include the following:

- The Hanford Environmental Information System (HEIS)
- The Hanford Well Information System (HWIS)
- The Hanford Geographic Information System (HGIS)
- The Waste Information Data System (WIDS).

The program also supports project-specific databases within the Groundwater Protection Program, including databases for pump-and-treat operations and "in-situ" redox manipulation.

HEIS contains chemical and radiological monitoring data dating back to about 1950. There are more than 600 chemicals in the HEIS database, for a total of approximately 2.5 million records from more than 1,700 wells for monitoring water quality.

In the past, site access to some of the most commonly used information in the database required a fairly sophisticated knowledge of system operations, while off-site access was very difficult. So last year the Department of Energy set out to improve things.

To do that, DOE entered into a small-business contract with a firm specializing in processing and presenting large amounts of environmental data in a Web-based format. Design work for the new HEIS instrument was completed and ready in December 2002. Several security and logistical hurdles were cleared early in 2003, allowing the tool to be launched on the Hanford Internet.



A new monitoring well is drilled near the Columbia River.



The new HEIS database tool provides an efficient means of viewing chemical data in four ways — "all wells," "well series," "groundwater operable units" and "RCRA TSD sites."

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## New Hanford database tool receiving rave reviews, cont.

### The new technology

Perhaps of greatest significance, the new HEIS database technology presents users with centralized data in an accurate “real-time” fashion that doesn’t require time-consuming extracting and plotting. Specific features include the following:

- Nine categories from which to select data — GenChem, Physical, Metals, Organics, Pesticides, Radionuclides, Semi-volatiles, Volatiles, and Well Plot Summary
- Chemical data tables for the entire site, as well as specific sub-sites
- A U.S. Environmental Protection Agency hyperlink to chemical properties and regulation descriptions
- Links from well names to chemical plots and well details
- Concise displays for well locations, rainfall, water levels, geology, well-construction details and plots of all chemicals monitored at the wells
- Historical groundwater plots with corresponding construction and location details.



In FY 2002, more than 650 Hanford monitoring wells were sampled at least once.

Doug Hildebrand, DOE-RL environmental scientist and project lead for the new HEIS database access tool, is excited about the new capability. “It affords Internet users a quick way to sort or discern contaminants in particular areas,” Hildebrand said. “With this tool, you don’t have to be an SQL [Structured Query Language] scriptwriter to query a database. You just point and click.”

### Access, future plans

Users may access and explore the new database tool through the Groundwater Protection Program Web site at <http://www.hanford.gov/cp/gpp/>. From the sidebar selections, choose “Modeling and Site-wide Assessments.” The sub-category is “Hanford Database Integration.” The “Groundwater Chemical Data Summary Tables” link is found at the bottom of the page.

Several organizations have already taken advantage of training sessions. People who attended a Groundwater Protection Program open meeting on June 2 were briefed on the capabilities of the new tool. The Washington State Department of Ecology took part in a training session on May 28.

According to John Morse, DOE-RL’s program manager for Groundwater Protection Program, several system upgrades are already planned for the near future.

“In the next several months, we hope to add a ‘dynamic links’ capability in which users will be able to narrow the data search by year, chemical type and location,” Morse said. “We also plan on developing a geographic information system for selecting and presenting data.” ■