

## Protecting the Columbia River from radioactive waste

When routine sampling revealed higher than normal levels of tritium in the groundwater around a solid nuclear waste landfill, CH2M HILL Hanford, Inc., used an innovative technique to assess the extent of the contamination.

"We were able to bore 20 feet into the ground and insert soil/gas probes around the landfill to measure the size of the 'tritium plume' and how far it was spreading," said William McMahon, the project's technical lead. "Traditionally, we've had to bore all the way to groundwater using much more expensive and time consuming drilling methods. For what it would



**CH2M HILL Hanford, Inc., employees install the GeoProbe soil/gas testing device to look for indications of tritium contamination.**

cost to bore one hole for groundwater testing, we were able to install and sample 20 soil gas probes."

Tritium is a radioactive form of hydrogen that is produced both by natural and human-made processes. Like all radioactive substances, excessive tritium can cause cancer,

genetic mutations and developmental defects in unborn children.

"The tritium levels generated some attention in the press before we assessed the significance of the situation," said Tim Lee, client service manager. "But our client, the U.S. Department of Energy, is pleased with our innovative money-saving approach and was also happy to learn that the plume is smaller than anticipated and currently is posing no threat to groundwater or the Columbia River. We'll continue to work together to determine the next steps."