

### Groundwater training mock-up successful

Karin Nickola, *Fluor Hanford*

The Fluor Hanford-managed Groundwater Protection Program drills wells — mostly to monitor groundwater for contaminants and, if it is contaminated, to treat it. The program also drills boreholes to obtain soil samples for the characterization of inactive waste sites.

Well drilling is not technically considered a high-risk activity. Even so, planning and training are a big part of the program — minimizing the risks to workers, the environment, and the general public.

When the Groundwater Protection Program must drill into contaminated soil, the risk increases. But the program continues to seek ways to maintain or improve worker safety in these special situations, while adhering to its accelerated cleanup schedule.



Groundwater Protection Program workers remove a waste drilling drum from the 200 PW-2 Waste Site Investigation drilling enclosure.

### In contaminated soil

One way the Groundwater Protection Program meets the challenges associated with drilling into contaminated soil is through the Enhanced ALARA (As Low As Reasonably Achievable) Committee.

“We review overall plans, history files, estimates for exposure, and equipment,” said Bob DeMarah, ALARA coordinator for the Central Plateau Remediation Project. “Among other things, we consider the potential for personnel contamination from soil-handling, drill-rig contamination, airborne contamination and contamination spread from equipment that extracts soil samples. We also look at safety considerations posed by heavy equipment — like a drill rig’s rotating machinery, noise levels and heavy loads.”

Knowing the Groundwater Protection Program would be drilling into contaminated soil this past July, Russ Fabre, Dorman Blankenship, Gary Hastings, Tom Bradfield, Steve Jerkins and Ed Rafuse of the Groundwater Protection Program made a presentation to the Enhanced ALARA Committee in May. Incorporating principles of the Integrated Safety Management System, the Voluntary Protection Program, Automated Job Hazard Analysis and work planning, the presentation outlined the challenge they faced and how they would meet it.

“I can’t say enough about the planning and preparation that went into the Groundwater Protection Program team’s presentation to our committee,” said DeMarah. “It was one of

*Continued on page 2.*

## Groundwater training mock-up successful, cont.

the best I have seen. In essence, the team described step-by-step how they intended to safely drill into the contaminated soil, and how they would test some innovative new engineered safety measures during a regularly scheduled low-risk well-drilling activity.”

### The mock-up

“Basically, what we wanted to do was create negative air flow through an engineered ducting system,” said Groundwater Protection Program Operations manager Russ Fabre. “That way, we could move airborne contaminants out of the borehole and into a HEPA filter before the contaminants could enter the workers’ air space. If it worked as we thought it would, the practice would lower the requirements for putting people in respiratory protective equipment. And that would help us perform the work that lay ahead more safely, quickly and cost-effectively.”

With a few minor modifications, the Enhanced ALARA Committee agreed with the GPP team’s plans. So employees began constructing their on-the-job mock-up.

The mock-up had several features:

- a sample table, where cylinder-shaped soil samples could be unloaded from a hollow drilling device called a “split spoon”
- a HEPA-filtered enclosure over the sample table to control the majority of potential contamination on the table
- a portable Kelly building made of steel supports, a portable roof, and walls to enclose the entire sampling-table operation from the environment
- HEPA-filtered exhausters to prevent potentially contaminated soil particles from becoming airborne.

For overall safety during the mock-up, hydraulically operated wrenches were used to minimize the effort required to open the split spoons. Appropriate personal protective equipment was used to prevent personnel contamination, and workers wore lapel air-sampling devices for air monitoring.



**Bruce Ford, Larry Hulstrom, Ed Rafuse and Jeff Pope of the Groundwater Protection Program give Bryan Foley of the DOE Richland Operations Office a tour of the 200 PW-2 Waste Site. In the background are a borehole drilling rig and drilling enclosure.**

### Finished on schedule

In July, the Groundwater Protection Program team safely completed its high-risk drilling workscope on schedule. In the final analysis, it seems the comparatively small amount of time and money spent preparing and practicing for the higher-risk job in a safe, controlled environment actually saved time and money for the program and the taxpayers. ■