

## Workers' ideas brought success at Hanford's K Basins

K East Basin Closure Director Chris Lucas credits the K East Basin workers with adapting to constantly changing conditions and inventing several new tools that advanced the work. "Areas just a few feet apart in the basin could have totally different types of sludge and completely different accessibility," he says. "It could be sticky in one place, completely hidden under debris in another place, and swirling and flaky in yet another place."

During the sludge-pumping endeavor, workers devised new "end effectors" to fit onto the ends of the pumping hoses. Different shapes and sizes were used in different conditions.

Workers gave these tools comical names and even named them for each other. Leon Jackson invented the "Leon Potato-Masher," a device with long "fingers" above a potato-mashing bottom, to break through small debris and prevent large particles of sludge from clogging the hoses. Chris Bunker invented the "Bunkenator," and Manuel Guzman, the "Guzenator."

Looking back, Lucas and Gentry agree that the biggest single turning point in the sludge-collection process came in September 2005 when workers suggested pausing to remove some of the larger

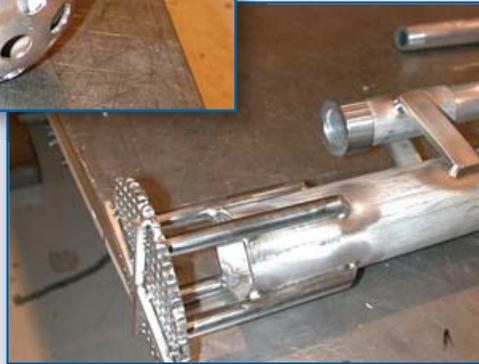
debris, including large metal racks that once held the cans of spent nuclear fuel. By Christmas of that year, workers had taken out 40 tons of large fuel racks. By late February 2006, they had removed another 60 tons of debris, and with the help of workers from the

K West Basin during the summer, removed another 20 tons. Once again, workers had fun with the challenges at the same time they contributed valuable ideas. Engineer J Jeremy Crystal carefully chose a key spot to open the grating above the center bay of the K East Basin to make it easier to remove debris. The location was then dubbed "Crystal Lake." Debris removal manager Rhonda Nissen then selected a second, larger spot in the west bay and named it "Crater Lake."

Now that Fluor's personnel assigned to the K East Basin have become the most experienced sludge handlers in the world, Lucas believes that they have many lessons to share.

"We have served as the test bed and the prototype for this kind of work," he says. "What I would say to other sites in the world that have contaminated sludge in underwater conditions is to be prepared to adapt quickly to changing environments and develop new tooling to overcome adverse conditions. If we hadn't done that, we wouldn't be finished with containerizing the bulk of the sludge today."

**Michele Gerber, Fluor Hanford Communications**



The "Leon Potato-Masher," (bottom) and another uniquely shaped end-effector (top) for vacuuming sludge in the K East Basin.