

SOLUTIONS

A weekly publication of highlights and progress of the Hanford Tank Operations Contractor, Washington River Protection Solutions

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SGE work helps identify underground contamination

Soil characterization activities are under way at Hanford's C and U Farms, where surface geophysical exploration (SGE) crews have been working this summer. SGE is an imaging tool that works by placing a grid of sensors at the ground surface, injecting electrical current and measuring the resulting voltage gradient. The resulting information allows geophysicists in the Washington River Protection Solutions (WRPS) Closure and Corrective Measures organization to generate a 3D image of in-ground contaminants. The image shows areas of low and high resistivity, which can be attributed to areas of increased moisture content and the presence of salts associated with the known waste streams.

The images at U Farm will be used to evaluate the need for interim surface barriers or other interim measures. This work represents the first full-farm, true-3D electrical resistivity deployment. Technological and manufacturing developments by hydroGEOPHYSICS, Inc. (HGI) have resulted in a data acquisition system that far surpasses the ability of the previous off-the-shelf systems and leads to a more accurate model of the subsurface. The new system also increases the speed and quality of data acquisition, reduces field work duration and cuts overall project costs.

The C-Farm work will be used to support various environmental characterization activities. This process helps provide better understanding of the contamination in the soil under and around the waste storage tanks.

Field activities for the U-Farm resistivity imaging were completed in June. The C-Farm field investigation will be completed the first week of August.



Tank farm workers place cable protectors for an SGE survey at Hanford's C Farm. Pictured L to R: Michael McNeill, hydroGEOPHYSICS, Inc.; Ricky Sharp, WRPS nuclear chemical operator; Justin Dubois, WRPS electrician, and Charles Taylor, Jr., WRPS electrician.

HGI's climate-controlled operating station.



222-S Lab emergency exercise first-of-its-kind

The 200 employees at the 222-S Laboratory recently evacuated the entire complex as part of a first-of-its-kind emergency exercise. The emergency scenario was a major earthquake with severe shaking that damaged the 222-S buildings and the adjacent REDOX canyon facility, which is highly contaminated with legacy radioactivity.

In the aftermath of the March 2011 Fukushima disaster, where an earthquake and tsunami seriously damaged four nuclear power plants, DOE sites are looking at emergency response to major disasters. At Hanford, the most likely event that would affect facilities site-wide is a major earthquake.

“The 222-S Laboratory is the first facility at Hanford to take an MSA-evaluated emergency exercise to this level,” says **Mike Bamberger**, Emergency Preparedness specialist for the 222-S complex. “Our scenario included major structural damage to all the 222-S buildings, requiring their total evacuation, and the collapse of the REDOX roof that resulted in the release of a ‘puff’ of contamination.”

“We had outstanding support from 222-S employees who volunteered to help with first aid for injured personnel, be runners to communicate information and helping with the staging areas,” Bamberger said. “Everyone stayed involved during the entire exercise.”

The normal staging area had to be abandoned due to its proximity to damaged and unsafe buildings. The staging area was then moved a second time following the collapse of the REDOX roof.

“Among our lessons learned was to be flexible and be ready to react to changing conditions,” says Bamberger. “We also learned that, when evacuating buildings during a seismic event, we need to bring first aid kits and anything else that may be needed for response. You won’t be able to go back into the buildings.”

DOE requires an evaluation of emergency preparedness of the 222-S Laboratory every three years. Lessons learned from the emergency exercise are expected to be implemented in Hanford site-wide emergency procedures.



John Smith, left, simulates giving first aid to fellow 222-S employee Les Miller during a recent emergency exercise.



All 200 employees of the 222-S Laboratory complex were evacuated during the emergency exercise after a simulated earthquake damaged the buildings.

Charity ride gets wheels rolling to help combat Cystic Fibrosis

Tri-Cities cyclists participating in the third annual Aptalis Cystic Fibrosis (CF) Cycle for Life in Richland next month are riding with a purpose: to bring much-needed attention and funding to a debilitating disease affecting some 30,000 Americans.

CF is a life-threatening genetic disease that targets the lungs and digestive system. It causes difficulty breathing, lung infections, sinus infections, poor growth and poor weight gain. It is passed along by an often-symptomless carrier of a defective gene.

Funds raised by the Cycle for Life are used for research, prevention, and development of medication and treatments.

A passionate volunteer

Tom Ardamica, Washington River Protection Solutions (WRPS) Tank Farm Projects field work supervisor, rode for the first time last year knowing almost nothing about CF. His subsequent research led him to get more involved, and this year he's serving as ride chairman.

"The CF ride is the best charity ride I have done, and I have done one every year for the past 12 years," Ardamica said. "It's the only 65-mile ride you can do and still gain weight because the rest-stop families feed you so well."

The event is not a race, but an experience. Each rest stop is manned by local children affected by CF, with each checkpoint featuring a particular activity or theme. Riders can choose from a 10-, 23- or 65-mile ride.

Why ride 65 miles?

In 1965, Mary G. Weiss became a volunteer for the Cystic Fibrosis Foundation after learning that her three little boys had CF. One of Weiss' sons had difficulty pronouncing his disease, and Cystic Fibrosis became 65 Roses. Since then, the term has been used by children of all ages to describe their disease, and the number 65 has taken on an obvious significance for the Foundation.

Get involved

The ride takes place Saturday, Aug. 24, at the Richland Jacks-sons. WRPS is covering the \$25 registration fee to encourage employees, their families and friends to support the effort. Each participant is responsible for raising a minimum of \$165 in donations. WRPS will match 25 percent of all donations up to \$5,000.

To sign up, a hard-copy registration form (found using the link below) should be completed and returned to **Terese Meyer**, WRPS External Affairs, H6-04. Those who have already registered for the WRPS team and paid the registration fee should expect a call from ride organizers.

"From one WRPS employee to another, I urge you to get involved," Ardamica said. "We may not be able to cure CF, but we can make a difference in a young person's life."

WRPS team riders from 2012.



Watch Hunter's story, a local 7 year old living with CF.



Click for the event website.



Click for the registration form.

