Groundwater Program Reaches Anticipated Model Evaluation Phase

The groundwater program at the Nevada National Security Site enters a significant phase as work begins on two new wells in the historic Frenchman Flat area. These *model evaluation* wells will help scientists test the performance of three-dimensional computer models of the Frenchman Flat subsurface—models that shed light on potential contaminant flow paths.

Drilling activities for model evaluation well ER-5-5 in Frenchman Flat (July 2012).

The new Frenchman Flat wells, for which drilling began in late July 2012, are part of a checks-and-balances system the U.S. Department of Energy, National Nuclear Security Administration's Nevada Site Office worked into its groundwater strategy years ago. The Frenchman Flat area is the first of four designated "underground test areas" to reach the model evaluation stage of the strategy, following rigorous sampling, data collection, and model development.

"The model evaluation stage is a critical part of the process," said Environmental Management activity lead, Bill Wilborn. "It is our opportunity to test whether groundwater is behaving the way our computer models indicate it should behave."

For over two decades, a team of groundwater experts has been working to understand the long-term effects of historic underground nuclear testing on the subsurface environment at the NNSS. Workers have drilled dozens of deep groundwater wells around former underground testing areas, collecting vital data that becomes the building blocks for computer models. NNSS scientists use these models to make forecasts about where contaminants reside, whether or not contaminants are moving, and if so … at what speed.

Model evaluation is planned for each of the three remaining historic underground test areas… including Pahute Mesa, which is currently in the data collection and characterization stage. In addition to the two Frenchman Flat model evaluation wells, two new c*haracterization* wells are scheduled to be drilled in Pahute Mesa starting in the September 2012 timeframe. These wells will play an important role in model development in the area and provide information necessary to place model evaluation wells in the future.

Meanwhile, much attention will focus on model evaluation results at Frenchman Flat. "We are optimistic the results will be reasonably consistent with our model forecasts," explained Wilborn. "If model evaluation results are approved by the State of Nevada, we can move toward closure and long-term monitoring – the final stage in our strategy."

All components of the Nevada Site Office groundwater program will be discussed at an upcoming *Groundwater Open House* on September 18, 2012, at the Amargosa Community Center in Amargosa Valley, Nevada (821 E. Amargosa Farm Road). Members of the public will have the opportunity to talk one-on-one with Nevada Site Office groundwater experts, as well as State and County representatives. For more details on the Groundwater Open House, or for additional information on the NSO groundwater program, call 702-295-3521or visit www.nv.energy.gov/emprograms/groundwater.aspx.