PALOS VERDES SUPERFUND SITE PILOT CAPPING PROJECT VIRTUAL TEAMS AND INNOVATIVE TECHNOLOGIES ON THE HIGH SEAS

Mamie S. Brouwer, Environmental Scientist
U.S. Army Corps of Engineers Seattle District
Seattle, WA 98124

CO-AUTHOR LIST:
Fred Schauffler, USEPA Region 9, San Francisco, CA, (415) 744-2359
Joe Ryan, USACE, LA District, Los Angeles, CA, (213) 452-3679
Larry Smith, USACE, LA District, Los Angeles, CA, 213-452-3846
Michael Palermo, USACE, WES, Vicksburg, MS, (601) 634-3753
James Clausner, USACE, ERDC, Vicksburg, MS (601) 634-2009
Thomas Fredette, USACE, New England District, Concord, MA, (978) 318-8291
Scott McDowell, SAIC, Newport, RI, (401) 847-4210

In September 2000, the US Army Corps of Engineers (USACE), Science Applications International Corporation (SAIC), and Region 9 of the US Environmental Protection Agency (USEPA) completed a pilot cap study on the Palos Verdes Shelf (PV Shelf) Superfund Site. The PV Shelf is located in an area of the coastal Pacific Ocean offshore between Point Fermin and Point Vicente on the Palos Verdes Peninsula near Los Angeles, California. The Pilot Capping Team consisted of multidisciplinary, experienced technical staff from USEPA, SAIC, as well as the Los Angeles, Seattle, and New England Districts, and the Engineer Research and Development Center (ERDC) at the Waterways Experimental Station (WES) of the USACE. This presentation will focus on the organization and performance of the virtual team (i.e., a team whose members may not be in the same location or the organization) and use of innovative technologies to monitor the pilot cap placement.

USEPA began the Superfund investigation of the 43-square kilometer area of dichloro-diphenyl-trichloroethane (DDT) and polychlorinated biphenyl (PCB)-contaminated sediments in 1996. The sediments, called effluent-affected [or EA], are present as a result of discharges from the ocean outfall system operated by the Los Angeles County Sanitation Districts. USEPA evaluated a number of options for sediment restoration and identified in-situ capping as the most feasible cleanup action that could be taken in the near term to address human health and ecological risks at the site.

The PV Shelf Pilot Capping Project consisted of capping all or a portion of three 0.18 square kilometer (45-acre) cells at water depths ranging from approximately 40 to 60 meters. Two types of cap material were used in the pilot project (a fine-grained sediment and a coarser-grained sand) and a variety of sediment disposal (i.e., cap placement) methodologies were tested. The characteristics and behavior of the cap materials and placement methods used were predicted using numerical models (i.e., STFATE and MDFATE) developed by ERDC, both before and during cap placement activities.

The overall objective of the field pilot study is to demonstrate that a cap can be placed on the Palos Verdes Shelf and to obtain field data on the short-term processes and behavior of the cap as placed. An extensive environmental monitoring program collected data before, during and after cap placement that will be used by USEPA to address key short and intermediate term questions relative to the feasibility and effectiveness of in-situ capping on the Palos Verdes Shelf. Data was collected using a variety of technologies, included side-scan sonar, underwater video, sub bottom seismic profiling, sediment profile imaging, sediment coring, water column measurements, and moored measurements of currents and water turbidity.

Mamie S. Brouwer, Environmental Scientist
U.S. Army Corps of Engineers Seattle District
4735 East marginal Way, South
Seattle, WA 98124
Phone: (206) 764-3577
Fax: (206) 764-3702
Email: mamie.s.brouwer@nws02.usace.army.mil