The Naval Facilities Engineering Service Center (NFESC) and the Environmental Security Technology Certification Program (ESTCP) are investigating the use of 3-D seismic reflection (3DSR) surveys to plan remediation at hazardous waste sites.

Seismic reflection has been used for the exploration of oil and gas since the 1970s. Recent advances in instrumentation now enable this technique to be used to explore shallow depths. This geophysical survey method can identify subsurface features such as faults, confining layers, and preferential pathways (Figure 1). This technique works by recording the response to seismic signals introduced at the surface and reflected off of subsurface features.

Resolution 3-D model of the subsurface features. This 3-D model can then be used to identify subsurface regions that are likely to contain contamination.

Demonstration. Four sites have been selected to test the ability of high-resolution 3DSR surveys to accurately model the subsurface features of hazardous waste sites. These sites are located across the United States and provide a wide variety of subsurface conditions including saturated sediments, sand and shale, Karst, and fractured bedrock. Testing is expected to be completed in the Fall of 1998.

For more information, contact:

Naval Facilities Engineering Service Center
1100 23rd Avenue
Port Hueneme, CA 93043-4370