

New Bedford Harbor Superfund Site – A Case History So Far

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Before New Bedford Harbor was a Superfund site, it was many other things: a land inhabited by the native Wampanoag tribe, a thriving whaling metropolis and mill town, and eventually a commercial port city fueled by fishing and a variety of industries.

With industry came pollution. From the 1940s into the 1970s, two electrical capacitor manufacturing plants in New Bedford discharged PCBs either directly into the harbor, or via the combined sewer overflows. In the mid-1970s, very high levels of PCBs were identified in both the sediment and seafood, triggering bans on fishing which are still in effect today.

New Bedford Harbor was listed as a Superfund site in 1983. The Corps has been supporting the EPA's efforts to characterize and remediate the harbor since the mid-1980s.

A Record of Decision (ROD) was signed in 1990 to address the cleanup of 5 acres in the Acushnet River Estuary where PCB concentrations ranged from 4,000 ppm to over 200,000 ppm. Approximately 10,000 cy of sediment were dredged in the early 1990s for the "hot spot" removal effort, and stored temporarily in an upland lined cell near shore. The plan to move ahead with treatment by incineration was discontinued when the public reversed its support. The EPA put treatment on hold while it considered other alternatives. A revised ROD was signed in 1999, and the stored sediment was subsequently transported and disposed at a TSCA landfill.

After extensive study, public debate, and concensus building, the EPA signed another ROD in 1998 to address the cleanup of the entire rest of the harbor. Cleanup levels of 1 ppm, 10 ppm, 25 ppm, and 50 ppm were established for various zones of the harbor, depending on use and habitat. An estimated 450,000 cy of sediment would be dredged and slurry placed into four confined disposal facilities (CDFs) constructed along the New Bedford Harbor shoreline. The CDFs would provide permanent containment. After capping, the largest CDF (D) would be developed by the town into a multi-modal port facility.

A number of findings have impacted the overall mass balance that was used in the conceptual design, resulting in another round of alternatives analysis. The CDFs were sized to hold the total volume of dredged sediment (slurry placed), estimated at 450,000 cy. The conceptual design for CDF D was a cellular bulkhead structure founded on dense till.

First, the 1999 geotechnical exploration program at CDF D determined that the till was much deeper and thinner than expected, and the overlying sediments were also weak (loose), and posed potential liquefaction problems under seismic loading. Removal of this problematic material (approximately 300,000 cy) is considered more cost effective by the design engineers than efforts to improve the soil in place. While there may be ways to re-use clean subsurface material, the handling, storage, and final disposition of this material does add some complexity.

Second, additional delineation sampling of the harbor sediment, also done during the summer of 1999, resulted in the volume of contaminated sediment ballooning to over 800,000 cy. Third, it was decided that an alignment for CDF D that does not impact the existing navigation channel should be considered. Although the new alignment has less capacity, by mechanically dewatering the sediment and achieving volume reductions of 50%, it's possible to still meet capacity requirements.

The cleanup also includes short and long-term air monitoring, groundwater monitoring, long-term ecological monitoring, long-term seafood monitoring, and habitat restoration above Mean Low Water, as 238,000 cy of contaminated material will be removed from the intertidal zone and vegetated wetlands. The fully funded cost of the project is \$350 million.