

In Situ Stabilization of contaminated sediments at former pesticide facility

Clean-up action was approved by the DEQ for contaminated sediments in West Doane Lake at the former Rhone Poulenc pesticide manufacturing facility site located in Northwest Portland. Contamination of lake sediments resulted from pesticide production wastewater discharge. West Doane Lake is located on a parcel of land owned by Burlington Northern Santa Fe Railroad and leased to Starlink Logistics Inc.



PROJECT DETAILS

West Doane Lake

Design Engineer:
AMEC Earth & Environmental

Construction Manager:
Golder Associates

Contractor: WRS Compass

LOCATION

Portland, OR, USA

PRODUCTS USED

ORGANOCCLAY

BENTOMAT® ST Geosynthetic Clay
Liner

Key components of the removal action are stabilization of lake sediments utilizing ORGANOCCLAY organic adsorption media, and installation of a low-permeability cap. Following stabilization, the lake will be filled in and a low-permeability cap will be constructed over the stabilized sediments. The cap will prevent contact by people and wildlife, minimize stormwater infiltration, and further reduce leachate waste generation from the stabilized sediment.

CHALLENGE:

The objectives of the remedial plan include protection for people and wildlife against potential contact with contaminated surface water and sediment, and to reduce or eliminate potential leaching of contamination from sediment into the sediments.

Due to the significant concentration of organic contaminants, traditional solidification agents were not sufficiently protective. Through a series of bench tests, a mix design was established that included adsorptive material capable of reducing the leaching of contaminants from the solidified mass.

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SOLUTION:

The design engineer was able to create a sufficiently protective remedy for the site by going beyond tradition soil solidification techniques. The solution included stabilization of lake sediments utilizing ORGANOCLAY organic adsorption media and the installation of a low-permeability cap constructed over the stabilized sediments.

RESULT:

The lake sediments were sufficiently solidified with the cement in the mix design and the chemical contaminants stabilized by adding adsorbent media which included CETCO's ORGANOCLAY®. The former lake has been filled in and the surface has been graded and covered with a low-permeability cap that included CETCO's BENTOMAT® ST Geosynthetic Clay Liner (GCL).