

AquaBlok® Installation Profile



Site Location: Fraser River, Burnaby, British Columbia

Project Status: Completed Summer 2003

Setting / Purpose: River (freshwater) - Encapsulation of contaminated sediments, within the context of a wetland restoration project. Cap area equals 4,170 square meters (44,800 square feet).



Photo #1: View of River Shoreline Before Remediation

Contaminant(s) of Concern: Organic (DNAPL Creosote-related) contaminants. Additional site concern centered on ongoing potential for gas generation (ebullition), due to high levels organics.

From the January 2009 Site Profile by British Columbia Ministry of Environment: "The site in Burnaby operated for 50 years as a wood preservation facility. Contamination resulted when creosote used in the preservation operations was lost to the environment. As a dense non-aqueous phase liquid (DNAPL), the creosote contamination permeated soil, groundwater, and sediment far below the site's surface and in the nearby Fraser River."

For more information, contact the Environmental Management Branch



site@gov.bc.ca

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AquaBlok Cap Design / Site Area: Multi-layer design.



Photo #2: AquaBlok Placement Along Sheet Pile Wall

AquaBlok Cap Design / Site Area: Continued

The design comprised up to a one meter-thick gas vent layer as the initial cap base layer. Vent piping installed in this layer was secured to the sheet pile walls. The vent layer was followed with an AquaBlok layer of a targeted hydrated thickness of ~12-15 inches or ~31 to 38 cm. A sand/gravel bedding layer covered the AquaBlok (~12 inches or ~31 cm in target thickness), followed by a geotextile and a marsh topsoil (~24 inches or ~61 cm in target thickness). Structural features included offshore densification piles for seismic resistance and both onshore and offshore berms to provide stability and erosion protection.

Method of AquaBlok Placement: Crane with concrete bucket.



Photo #3: Installation of Marsh Topsoil for Wetland

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Complete Project: Below are photos of the cap area at completion of construction and after recovery of marsh riparian zone.



Photo #4: View of Completed Marshland, Riparian Zone, and Wharf Area



Photo #5: Marsh Area After Re-Vegetation