

REMEDIAL GOALS AND SOLUTIONS USED IN THE CLEAN-UP OF A MERCURY CONTAMINATED CHLORALKALI SITE LOCATED IN SQUAMISH, BRITISH COLUMBIA¹

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ABSTRACT

A case study documenting the mercury treatment technologies used during the remediation of contaminated soils, sludge and water at the mercury contaminated chlor-alkali plant in Squamish, B.C.

The regulatory approval for the remediation work described in this paper is set as a condition of the Amendment to the Remediation Order OS-16149 dated September 11, 2000. The Amendment to the Order required the removal and disposal, or removal and treatment, of special waste contaminated soils above the top of the native silt layer (B Layer) to the maximum extent practicable and suitable restoration by no later than September 29, 2003. The order also required the installation of a system and/or structure for the containment or control of contaminated groundwater discharging from the plant site to the receiving environment by January 31, 2001.

The soils subject to the order were classified as Special Wastes based on mercury leachability, or mercury at concentrations above 100 mg/kg.

Since the Remediation Order and subsequent amendments did not specify a target number for Special Waste soils treatment, the remediation team established a practical remediation clean-up target to protect human health and the environment. The remediation team established mercury residual in soils above the B layer of 40 mg/kg as the numerical target for treating and managing soils up to and including Special Waste.'

The effluent water quality discharged to the receiving environment must meet the criteria of Permit No: PE 0138 requiring the mercury concentration in the effluent to meet levels of 1 ug/l (av. monthly max), and 3 µg/l (average daily max).

Remediation on this 60-acre jewel of a site was completed in December 2003. Due to this successful remediation the property now has the potential to drive revitalization of the Squamish downtown district as a public access site to the water and a residential and commercial waterfront development.

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