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Cracking the Brownfield Market in British Columbia



South East False Creek and 2010 Olympic Village Site, Vancouver, BC - Site was a former zinc plating plant. A small portion of the total hazardous volume was considered leachable. Approximately 280 tonnes was treated using a percentage of Type 10 portland cement. The cement reduced the leachability characteristics of the lead in the soil and raised the pH, therefore rendering it non-hazardous. It was then shipped to an Alberta landfill.

With as many as 100,000 brownfields sites across Canada, there is an enormous potential for cement to be used in land re-development efforts. On many sites, particularly those with inorganics, such as heavy-metals like lead and arsenic, and organic contaminants, like creosote and petroleum products, cement-based solidification / stabilization can be an ideal solution.

Solidification / stabilization (S/S) is a treatment technology that is used to prevent migration of harmful chemicals from contaminated soil, sludge, sediment or waste. There are different processes by which binding reagents immobilize hazardous constituents. Solidification refers to changes in the physical properties of a hazardous constituent. Stabilization refers to chemical changes of the hazardous constituents in a medium or waste.

The U.S.

Environmental Protection Agency (EPA) considers S/S an established treatment technology, and since the program's inception in 1980, 24% of selection Superfund site source control remedies have included S/S. In Canada, regulatory and liability barriers are the major hurdles preventing or slowing the commercialization of this remediation technology.

In British Columbia, the Cement Association of Canada S/S committee has taken steps to break through these barriers. In part, the strategy has been to educate environmental consultants and contractors, seek out test sites to demonstrate S/S use, and create a portfolio of projects where cement-based solidification or stabilization has been innovatively used in different ways. Showcasing projects where S/S has been effectively used is helping overcome liability concerns by establishing a performance standard for a given site condition. The success of S/S in the US provided leverage for marketing to Canadian consultants and developers.



Example of a contaminated site in Eastern US where S/S was proposed for remediation.



Rodger Kennedy of Lehigh Inland.

To promote cement-based S/S, Rodger Kennedy (Lehigh Inland) and Linda McKinley (Lehigh NW) attended Remediation Technologies, Symposium 2006 in Banff, Alberta. This symposium provides a unique forum for delegates to gain exposure to innovative environmental technologies in an education setting with other environmental professionals and decision makers. In addition to its technical strengths, S/S is also marketed as a sustainable solution.

The intent of LEED-NC v.2.1, Sustainable Sites Credit 3 is to: Rehabilitate damaged sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land.

New development starts with site selection, and the opportunity to take a site that is contaminated and revive it to again become a functional part of the community, is the start of a true sustainable project. Cement contributes to many aspects of sustainable design – and is more than just a structural building product.

Consider promoting S/S as part of sustainable project solutions Lehigh is able to offer.



Linda McKinley of Lehigh Pacific