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- ✓ TSS > 80% / TP removal > 80
- ✓ Flexible in design & LID compatible

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- ✓ Ideal tool for achieving Phosphorus TMDLs



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## BC port balances economic growth with environmental concerns

By Daniel Wilson

The Deltaport Third Berth Project (DP3) at the Deltaport container terminal at Roberts Bank, British Columbia, was opened last year by government officials and port industry leaders.

The \$400-million expansion project was designed to increase the terminal's capacity from 1.2 million to 1.8 million "twenty-foot equivalent units" (TEUs) by adding a new berth, three quad gantry cranes, 20 hectares of container storage and additional facilities. A TEU is a measure of container volumes based on a standard container 20 feet in length.

However, the fragile ecosystem of the Roberts Bank meant that DP3 needed to be particularly sensitive to aquatic and terrestrial vegetation and wildlife.

Opened in 1997 and located 40 km south of Vancouver's inner harbour, Deltaport is currently the largest container terminal in Canada and a central part of the Port of Vancouver, which ranks number one among North American ports in total foreign exports. Together with other Port of Vancouver sites, Deltaport handles \$43 billion in cargo annually, with 90 trading economies around the world, including many in Asia. Maritime business forecasts indicate that container volumes will double over the next 15 years.

When viewed from a broad perspective, the DP3 project is about regional economic development and job creation. It created about 640 person-years of employment during construction and will add another 356 new jobs as the terminal utilizes the additional capacity created by the new berth.

### Environmental protection

Stringent environmental monitoring is integral to the DP3 project. The area contains critical watersheds and fragile ecosystems essential to the salmon run and the region's entire economy. Deltaport is an intermodal site covering more than 65 hectares of mostly impervious



Deltaport installed 14 Stormceptor stormwater treatment systems, in addition to the original 43 such units installed during Stage 1 development in 1996.

surface, filled with constantly moving trucks, trains and heavy equipment. Hazardous materials are among the wide variety of cargo it handles, with the potential for spills of plastics and numerous chemicals, not to mention hydrocarbon runoff during rainstorms and daily cleaning.

Central to its environmental planning, Deltaport installed 14 Stormceptor stormwater treatment systems, in addition to the original 43 such units installed during Stage 1 development in 1996. The Stormceptor's patented stormwater treatment systems capture and retain stormwater sediment and pollutant loads such as metals, nutrients and hydrocarbons. Its design allows it to trap hydrocarbons in rainwater runoff, as well as oil and chemical spills.

In Phase 1, Deltaport's engineers installed groups of smaller Stormceptor units working in tandem, rather than one or two large end-of-pipe units. This has proven to be the best solution for the site conditions. With less drainage area to handle, and less dilution, concentrations of pollutants are the highest at the immediate sources, and the tandem systems achieve optimum removal capacity.

The DP3 project also installed Stormceptor units in tandem. Port officials needed to have systems in place to trap and completely contain unexpected spills from shipping containers or vehicles, so infiltration was not a preferred option. In coastal development projects, the operative term is "designing for the ultimate contingency".

Deltaport has worked to maintain good relations with environmental activists, First Nations and community leaders in the region, through the use of public outreach and detailed reporting. They retained independent professionals to provide environmental monitoring services throughout all stages of construction.

The Deltaport Third Berth Project Community Liaison Committee was formed approximately four years ago to work with Port Metro Vancouver and port industry leaders to identify community concerns and recommend sensible solutions. Other North American ports have followed Vancouver's example regarding the importance of "giving back" to their regions, and entering into serious dialogue and consultation with local leaders.

Sustainable development was always

a primary goal for the DP3 project. Port Metro Vancouver worked hard to create a win-win situation, so the natural environment and the port community could thrive. Nearly \$25 million was invested to implement a comprehensive fish and wildlife habitat plan. Artificial reefs and habitat benches were created for divers and marine habitat, so that all could enjoy the more than 70 species of fish that live in the waters around DP3.

Port Metro Vancouver developed an innovative research and science-based approach to monitoring and managing the Roberts Bank ecosystem. This allows

for early detection of changes in the ecosystem, so that potential negative trends caused by the DP3 project can be prevented or mitigated. So far, with more than three years of data collected, there have been no negative impacts attributable to DP3.

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## Imbrium® Systems is the #1 Choice in Stormwater Quality Treatment

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Reprinted from

Environmental Science & Engineering, March/April 2011

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