Waste not, want not for local firm

Process developed at UBC helps turn sewage into commercial fertilizer


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Ostara CEO and president Philip Abrary: a simple solution for a problem that has existed at sewage plants for years

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A Vancouver company's business is down the drain and it couldn't be happier.

Ostara Nutrient Recoveries Technologies Inc. has completed successful trials of a new technology developed at the **University of British Columbia** that turns environmentally harmful nutrients in sewage sludge into a marketable commercial fertilizer.

The company's first major customer is the **City of Edmonton**, where Ostara's system will be used at an Edmonton sewage plant that treats the waste of 200,000 residents.

The technology's most recent trials were completed at the Nansemond sewage treatment plant in Suffolk, Virginia, between October 2005 and March 2007.

It's a simple solution for a problem that has existed at sewage plants for years, said Ostara CEO and president **Philip Abrary**.

After waste solids are removed at a sewage treatment plant, nutrients such as phosphorus, ammonia and magnesium can remain in the wastewater system. Called struvite when they combine, these nutrients can build up in pipes as concrete-like scales and can occupy up to 50% of a treatment plant's nutrient-removal capacity.

Ostara's technology collects the struvite into roughly three-millimetre pearls, which, after they sink to the bottom of a sewage treatment column, can be harvested, bagged and sold to commercial fertilizer blenders and distributors.

The technology has been around for more than a decade in Japan, but North America has not seen it as a necessity until now, said **Don Mavinic,** head of the environmental engineering group at UBC's department of civil engineering.

As the world's traditional resources of phosphorus, which come from phosphate rock mines, become depleted, companies are looking to alternative sustainable fertilizer resources, said Mavinic.

Mavinic began the UBC research program that developed the North American version of the technology after being approached by **BC Hydro** in 1999. The utility was looking for commercial fertilizer to use for salmon enhancement in nutrient-depleted salmon spawning grounds in hydro station reservoirs.

Numerous municipalities across North America have shown interest in the technology, Mavinic said, but they're waiting to see the results of Ostara's first full-scale plant in Edmonton.

A single Ostara reactor column can treat effluent from 200,000 residents. The Edmonton treatment plant has one column now and will eventually add four to treat Greater Edmonton's entire million-plus population.

It costs between $2 million and $5 million to install an Ostara treatment process in a wastewater treatment plant. The company claims the operation will pay itself off within three to five years.

BC Hydro, the **Natural Sciences and Engineering Research Council of Canada**, **Stantec Inc.** and the **City of Penticton** have invested more than $2 million in research and development of the technology, which is patented by UBC and licensed to Ostara.

The Nansemond plant in Suffolk was forced to upgrade its nutrient-removal processes because of stricter environment regulations instituted to protect Chesapeake Bay's tidal waters. ■

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