EDMONTON Examiner

CITY EMBARKS ON WASTE WATER TECHNOLOGY PILOT PROJECT
Edmonton Examiner
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Byline: BY PATRYCIA CHALUPCZYNSKA, EXAMINER STAFF

Edmonton has become the first customer for a new technology that removes pollutants from liquid sewage and recycles them into environmentally-safe commercial fertilizer. The technology, owned by Vancouver based **Ostara** Nutrient Recovery Technologies Inc., will save the city money, says K.C. Er, director of waste water management.

"We're spending $100,000 a year cleaning pipes. We won't have to clean the pipes anymore if the technology is successful," he says.

Currently, high amounts of phosphorus in waste water cause build up in pipes, reducing their diameter.

"It impedes our operational efficiency," says Er.

With the new technology recovering phosphorus from the waste water, the clogging problem should be reduced.

The Edmonton project, approved by city council Nov. 22, begins with a $150,000 temporary pilot plant being set up at the Gold Bar waste water treatment facility.

The pilot plant, which will remove phosphorus and nitrogen from liquid waste flowing at 50,000 litres per day, will begin operating in early 2006.

It must meet a target of capturing and removing of 75 per cent of the phosphorus from the waste.

The pilot plant will then be dismantled and moved to another demonstration site in the United States.

In Edmonton, a $1-million commercial plant will then be built at Gold Bar in 2006-2007 to treat 20 per cent of the plant's liquid waste stream with the technology.

Ostara will fund the operation and maintenance of the facility.

Eventually, five commercial reactors may be built to treat the plant's entire liquid waste stream.

"We are very cautious with this approach. We want to make sure the pilot demonstrates we'll get a good yield on the phosphorus before we put any money into it," says Er.

Approximately 1,000 tonnes of phosphorus will be removed from the waste stream and converted into **Ostara**-brand Crystal Green fertilizer every year, which will be sold in garden centres and nurseries, and to large end-users such as parks and golf courses.

The city will receive $50 in royalties for every tonne of fertilizer sold.

"It isn't very much revenue, but it's a bonus," says Er.

The technology will also help the city more easily meet stringent environmental regulations for releasing treated effluent into the river.

As many as 400 municipalities in North America and 500 in Europe are potential customers for the **Ostara** process. The company plans to sign similar deals with other cities next year.

EDMONTON JOURNAL

City to experiment turning human waste into fertilizer

Vancouver firm to test technology at Gold Bar
Noemi LoPinto, The Edmonton Journal
Published: Saturday, November 26, 2005

EDMONTON - The City of Edmonton will experiment with recycling technology that turns human waste into fertilizer.

On Tuesday, the transportation and public works committee approved a plan to build a reactor that transforms human waste into a high-grade, all natural fertilizer. The agreement is with

Ostara Nutrient Recovery Technologies Inc.

The fertilizer is made from the muck that collects in the pipes leading to the lagoon at the Edmonton Waste Management Centre.

Ostara microbiologist and CEO Phillip Abrary says the material chokes waterways and contributes to oversaturation in soil.

"The technology removes pollutants from the waste stream, allowing the facility to run better," Abrary said on the phone from Vancouver.

"Phosphorous plugs pipes and equipment. It forms a solid buildup and is costly to deal with. It's a win-win situation because it's a high-value fertilizer and the city can benefit from part of the revenue."

The city will contribute $150,000 towards renovating a facility to house the reactor, which is provided by Ostara. The site is located by the lagoon of the Clover Bar recycling facility.

The centre treats close to 100,000 cubic metres of sewage a year.

Phosphorous is recycled within the piping system, where it combines with magnesium and ammonia to make a very hard crystal called struvite.

The buildup is costly, says K.C. Er, director of the Gold Bar wastewater treatment plant.

"We're using a bacterial cocktail in the sewer to eat up the excess phosphorous," Er said. "The bacteria excrete a sludge which is pumped into the lagoon, where it settles. The struvite basically coats the inside of our pipe."

Struvite tends to collect in the last two kilometres, at the mouth of the lagoon.

Er said they spend $100,000 a year to replace or clean the pipes.

For the project to become a permanent fixture, Ostara must demonstrate that the plant can recover 75 per cent of the phosphorous from the city's waste.

Er hopes to eventually be able to process 1,000 tonnes of phosphorous each year.

"It's definitely worthwhile to pursue," he said. "It's good for the environment, good for the city and good for everybody. So we're very excited about it."

The city has agreed to a 17-month testing phase before entering a long-term commitment.

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FRIDAY, NOVEMBER 25, 2005 VANCOUVER

From flushing to fertilizing

By TIA ABELL
for Metro Vancouver

A Vancouver company is teaming up with an Edmonton sewage treatment plant to turn toilet flushings into a garden-variety fertilizer.

"Yes — it's not very glamorous but we turn it into something useful," said Phillip Arbrary, president and CEO of Ostara Nutrient Recovery Technologies Inc.

"People have preconceptions but when they see the little pellets that look and smell like fertilizer, they're amazed."

The Edmonton project, partially funded by the National Research Council, begins in 2006 with a $150,000 commercial demonstration plant that uses a "fluidized bed reactor" technology developed by a University of B.C. research team. The project will remove phosphorus and nitrogen from liquid waste flowing at 50,000 litres per day.

EDMONTON SUN
SUN BUSINESS News

Council OKs fertilizer pilot

November 24, 2005

A pilot project approved by Edmonton city council removes pollutants from liquid sewage to produce environmentally sound fertilizer.

The pilot project, which begins early next year, could result in a permanent plant at an initial cost of $1 million. But it will reduce the city's costs, improve system efficiency and even provide a little revenue. Ostara Nutrient Recovery Technologies Inc. of Vancouver, which will operate the pilot, uses proprietary technology developed at the University of British Columbia.

Each year, the city must clean away accumulated pollutants which crystalize in the sewage pipelines. The Ostara process prevents accumulations, recovers phosphorus and produces fertilizer. Ostara will pay the city $50 per tonne as a royalty on fertilizer sold.

The pilot will run for about 17 months. Ostara must prove that its process, in addition to being economically feasible, removes and captures 75% of the phosphorus. If proven, the city will go ahead with permanent facilities.

Ostara has signed a non-exclusive collaboration for the marketing of its wastewater technology with Edmonton-based Stantec Inc