For Immediate Release

Portage la Prairie Looks to Nutrient Recovery Technologies to Reduce Pollution

Ostara's Pearl® process to recover phosphorus part of pilot program

26 June 2014 - Portage la Prairie, MB and Vancouver BC – A pilot program underway at the City of Portage la Prairie's Water Pollution Control Facility (WPCF) is evaluating innovative technologies to help manage nutrient loads treated at the plant, including one developed by Ostara Nutrient Recovery Technologies that recovers phosphorus from treated wastewater streams and transforms it into an eco-friendly, slow-release fertilizer.

The Ostara Pearl process will not only help the facility meet new phosphorus discharge limits, but would provide an additional source of revenue to the City – all while helping to protect the local watershed.

"While the primary goal of this pilot program is to provide strategic options to help us meet nutrient discharge obligations, it also allows us to play an active role in supporting the province's efforts to reduce the environmental impact of nutrient pollution on the Lake Winnipeg watershed" said Kelly Braden, Director of Operations at the facility.

Portage la Prairie is a part of the massive lake Winnipeg watershed, which is the focus of a concerted provincial environmental policy effort designed to reduce nutrient runoff entering the Lake. Excess phosphorus contributes to the growth of algae, which chokes off sunlight and oxygen, destroying aquatic life. As part of its comprehensive Water Strategy, the province has identified nutrient management initiatives as a key driver of water quality.

Over 55% of the 15 million litres of influent treated every day at the WPCF is industrial wastewater, originating from local food processors such as Simplot and McCain Foods, and containing significantly higher concentrations of phosphorus and nitrogen compared to non-industrial sources. According to Braden, the new technologies could help the facility treat these elevated nutrient loads.

Ostara's Pearl® process, recovers up to 85% of the phosphorus and 25% of the nitrogen from treated wastewater streams, helping plants overcome operational issues caused by the unintentional build-up of struvite scale, a concrete-like mineral deposit caused by excess nutrients that chokes process equipment, increases operating costs, and undermines plant reliability. The recovered nutrients are transformed into a slow-release, eco-friendly fertilizer called Crystal Green®.

Unlike conventional water-soluble fertilizers, Crystal Green is highly insoluble in water. Instead, it is Plant-Activated™ releasing nutrients in response to root growth, resulting in greater efficiency, lower application rates, and reduced risk of nutrient loss through leaching and runoff.

"The Ostara process represents a new paradigm in sustainability for wastewater treatment plants around the world," said Ostara President and CEO Phillip Abrary. "It provides a proven and affordable means of helping cities become better stewards of their environment through sound nutrient management practices."

A nutrient recovery system at Portage la Prairie could potentially recover close to 100 tonnes of phosphorus each year, enough to produce 650 tonnes of Crystal Green.

In addition to the Ostara process the City is also evaluating a solution to remove ammonia. Veolia's ANITA™ Mox system helps treatment plants manage ammonia loads in their wastewater streams with a removal efficiency of over 80%. This is the first time the Pearl process will be deployed with an ammonia removal system, potentially providing greater efficiencies in nutrient recovery and management.

The City expects the pilot program to be completed by July 30, 2014.

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About Portage la Prairie Water Pollution Control Facility

The Water Pollution Control Facility is a Class 4 treatment plant that treats, on average, 15 million litres of wastewater per day. Wastewater is received from four main sources;

1. Municipal wastewater is pumped to the WPCF through a force main system by 10 sewage lift stations situated throughout the City of Portage la Prairie.
2. Municipal wastewater is pumped from Southport via a force main under the Assiniboine River parallel to Highway 240.
3. Industrial wastewater is pre-treated at the low rate anaerobic reactor at Poplar Bluff Industrial Park and pumped through a 10 km force main to the WPCF.
4. Industrial strength wastewater from the McMillan Industrial Park in the N. E. of the City is pumped to a low rate anaerobic reactor on the plant site for pre-treatment.

Municipal influent is initially processed through screening and grit removal. Pre-treated industrial waters then combine with the municipal source in the four sequencing batch reactors for secondary treatment, which effectively remove solids and reduce ammonia and organic loading. The final stage is UV disinfection before being discharged to the Assiniboine River. Waste activated sludge (WAS) from the sequencing batch reactors is pumped to an equalization basin and from there to a thickening facility utilizing gravity belt thickeners. The thickened WAS is then pumped through a heat exchanger to an anaerobic digester. The anaerobically digested sludge is then pumped to one of two domed storage tanks for storage until it is injected into agricultural land as fertilizer on an annual basis. The facility is designed for an average monthly

flow of 25.4 MLD, 19,500 kg of COD per day, 5415 kg of BOD per day and 8564 kg of Suspended Solids and 2675 kg of Total Keldahl Nitrogen per day.

About Ostara Nutrient Recovery Technologies

Vancouver-based Ostara helps protect precious water resources by changing the way cities around the world manage nutrients in wastewater streams. The company's Pearl® technology recovers phosphorus and nitrogen at municipal and industrial wastewater treatment plants and transforms them into a high-value, eco-friendly fertilizer, Crystal Green®. The process greatly reduces nutrient management costs and helps plants meet increasingly stringent discharge limits while improving operating reliability. Crystal Green is marketed through a global network of blenders and distributors to growers in the turf, horticultural and agriculture sectors. Its unique plant-activated mode of action improves crop yields, enhances turf performance and significantly reduces the risk of leaching and runoff, thus protecting local waterways from the nutrient pollution. Ostara operates facilities throughout North America and Europe and recently partnered with the City of Chicago to build what will be the largest municipal nutrient recovery facility in the world when launched in 2015. The company is the recipient of numerous awards including a World Economic Forum 2011 Technology Pioneer, the Global Cleantech 100 and Deloitte's Technology Green 15. For more information please visit www.ostara.com and www.crystalgreen.com.

For more information:

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