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Tigard's wastewater soon to be bringing in the bucks

CWS' Tigard wastewater treatment facility first in country to use nurtrient recovery technology

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Wastewater has never been so profitable. The process of turning liquid sludge into water clean enough to flow back into the Tualatin River has a new by-product anticipated to bring in millions of dollars – commercial fertilizer.

Starting in Spring 2009, Clean Water Services will have the first wastewater treatment plant in the country to use a new kind of chemical technology that recycles nutrients from wastewater into a slow-dissolving fertilizer for golf courses, nurseries and agriculture. The Durham Advanced Wastewater Treatment Facility in Tigard is anticipated to generate 40 tons of this eco-friendly fertilizer a month.

Called Crystal Green, the fertilizer – and the technology that produces it – were created by Ostara Nutrient Recovery Technologies Inc., a company in Vancouver, British Columbia that specializes in developing equipment to recycle nutrients from wastewater into valuable products.

CWS has signed a 15-year contract with Ostara to use the technology. The multi-reactor Ostara plant at the Tigard facility will cost about $2.5 million to construct and will be owned and operated by CWS. The fertilizer will be dried and bagged in the facility and purchased by Ostara, which will market Crystal Green in Oregon and throughout the Pacific Northwest.

How does it work?

According to Mark Poling, wastewater treatment department director for CWS, the Ostara chemical reactor system uses magnesium to pull nutrients such as phosphorus and nitrogen out of wastewater and recycles them into a fertilizer pellet.

The process doesn't have a significant impact on how wastewater is treated, though it does require one of the internal waste water streams to go through primary treatment and skip secondary treatment since phosphorous and other nutrients have already been removed.

Poling said CWS conducted a pilot of the process about a year and a half ago, and plans on using the fertilizer-producing technology long term.

What's in it for CWS?

CWS already produces more than 30 tons of biosolids a day that are distributed to local farms and rangeland as soil amendments. So why pay for technology to create more compost?

For one, Crystal Green has its own market as the only slow-release fertilizer with a combination of nitrogen, phosphorus and magnesium. It dissolves over a nine-month period and, according to Jim Zablocki, vice president of nutrient operations for Ostara, the anti-leaching properties of Crystal Green make it more environmentally-safe.

Another benefit of the technology is that it extracts nutrients that can clog pipes and otherwise reduce wastewater treatment capacity.

Finally, the financial gain is expected to outweigh the multi-million dollar cost of constructing and maintaining the chemical reactor. Bill Gaffi, general manager of CWS, said he anticipates a net payback of the investment within five years.