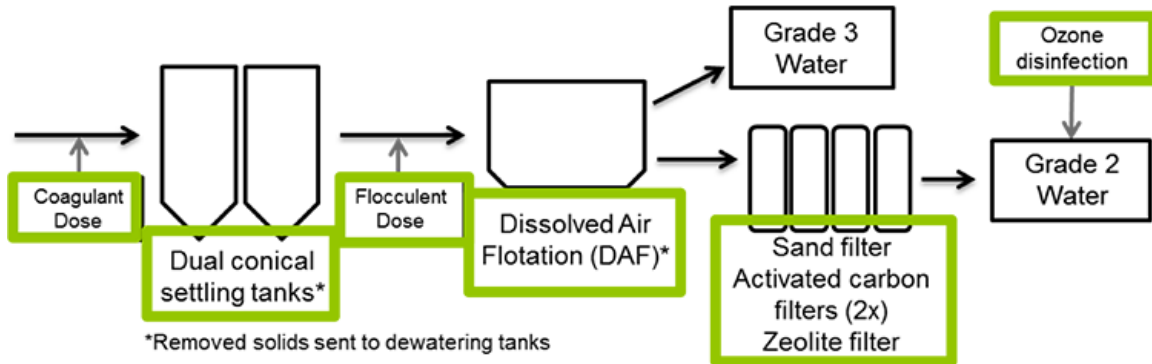


HARD TRUTHS DON'T SOFTEN THE COSTS OF MANAGING WASHWATER

01 Apr, 2016 By Karen Davidson

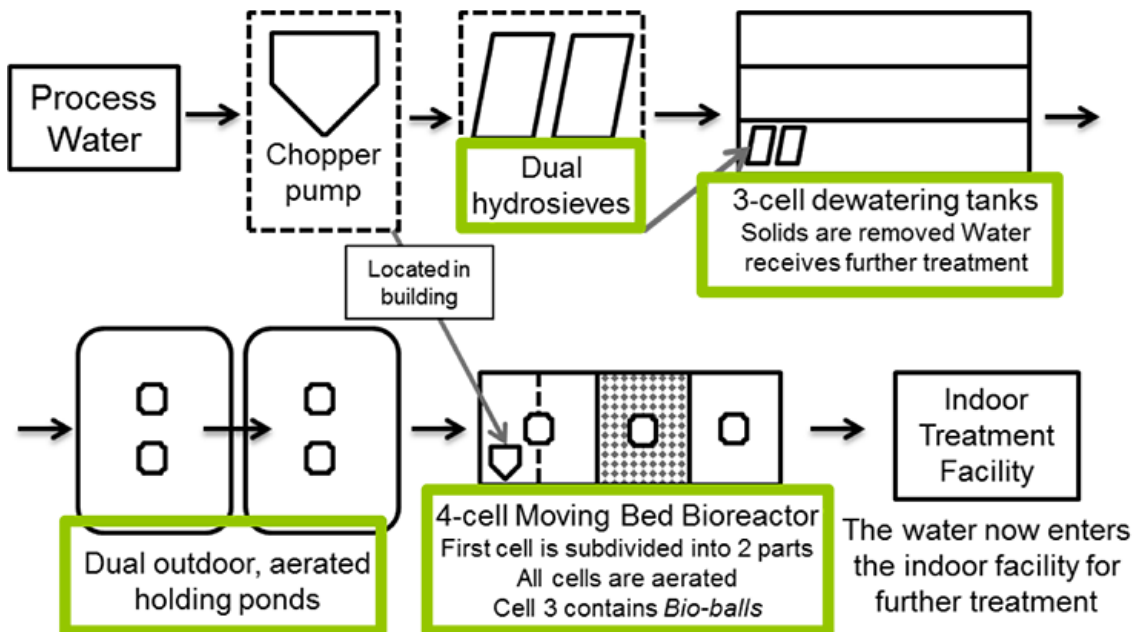
WASHWATER TREATMENT SYSTEM

INDOOR



WASHWATER TREATMENT SYSTEM

OUTDOOR



For Ontario's Holland Marsh growers, nothing is easy about the layers of provincial environmental regulations and complexity of removing muck soils from root crops.

As soon as vegetables such as carrots, beets and parsnips go through a washing facility, they are subject to compliance requirements by the Ministry of Environment and Climate Change (MOECC). Muck soils and sandy soils react differently and therefore washing challenges are different. The

washwater is considered industrial waste.

After two years of water projects funded by the Lake Simcoe-Southeastern Georgian Bay Clean-Up Fund, several lessons are bubbling to the surface.

Soil is not a nutrient and needs to come out first in the water management process, says Charles Lalonde, project manager for the Holland Marsh Growers' Association Water Project. You can't approach soil suspended in water.

"Technology requires attention and optimization," says Lalonde. "You can't buy a new piece of equipment and leave it alone. It needs to be optimized."

What growers have found in installing new equipment is that it demands a new category of maintenance. In many cases, this means licensed electricians, plumbers and information technology (IT) personnel. These new systems require people on the ground at the plant who can deal with electronics.

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~ CHARLES LALONDE

The location of water treatment within your operations is often a challenge. When installing new systems, consider how they will be monitored.

"It's not like you have employees walking by every few minutes to see if equipment is functioning," says Lalonde. "It can be a challenge to work in areas that are far from washing activities."

"We're now dealing with a complex regulatory system, involving MOECC staff who are also searching for beneficial solutions," says Lalonde. "Don't try for a home run."

With 16 growers active on several project sites, these are the lessons learned so far. The project goals are to:

- reduce risks to environment from vegetable washwater discharge
- evaluate technologies to treat washwater from vegetables grown on muck soils
- build capacity in the industry to supply

They are testing technologies to reduce total suspended solids, reduce phosphorus and reduce biological oxygen demand (BOD). The latter is the ultimate gauge of effectiveness of washwater treatment. By definition, it is the amount of dissolved oxygen needed (i. e., demanded) by aerobic biological organisms to break down organic material present in a given water sample at certain temperature over a specific time period.

As Paul Plotz, MOECC reports, "Muck soils are our most complex issue, but we are having some success."

"Don't create a problem and then you don't need to manage the problem," he says. "Don't create more washwater than you need."

With existing facilities, MOECC looks for abatement plans that lead toward full compliance. With expanding facilities, MOECC expects compliance with the expanded portion. With new facilities, MOECC expects full compliance. He says there is a measurable reduction in phosphorus loading to Lake Simcoe.

All of these lessons have been learned and paid for by Smith Gardens, Keswick, Ontario. Three years after running afoul of MOECC, they have invested \$2 million in a state-of-the-art washwater treatment system. With 450 acres of carrots to wash and package, they put an end to any further disputes so they can grow their business and export to the U.S.

The new system allows them to recycle 70 per cent of their water, says Paul Smith. The remainder is lost to attrition. This is a significant savings with 60,000 gallons of water used per day.

Ian Smith shared the flow charts above that outline their new washwater treatment system.

“We are about 10 years ahead of our peers in dealing with washwater, and as such, consider ourselves one of the most sustainable operations in the country.”