

MEMORANDUM

TO: Members of Environmental Services Committee

FROM: Erin Mahoney, Commissioner, Environmental Services

DATE: September 12, 2012

RE: **Wastewater Systems Effluent Regulations under the *Fisheries Act***

On July 18, 2012, the final *Wastewater Systems Effluent Regulations* under the *Fisheries Act* ("the Regulations") were published in the Canada Gazette. The Regulations deliver on a federal commitment in the 2009 Canadian Council of Ministers of the Environment (CCME) Canada-wide Strategy for the Management of Municipal Wastewater Effluent (CCME Strategy), which was previously reported to Council in April 2010.

Staff have been monitoring and preparing for requirements of the CCME Strategy including facilitating meetings and coordinating activities with local municipalities, engaging in Municipal Enforcement Sewer Use Group activities and meetings, consulting with the Province, and providing feedback to various organizations, such as the Federation of Canadian Municipalities, to advocate on the Region's behalf.

Regulations establish national baseline effluent quality standards and other requirements

The Regulations set national baseline effluent quality standards that are representative of secondary wastewater treatment, or equivalent. The overall objectives of the Regulations are to reduce threats to fish, fish habitat and human health from fish consumption by decreasing the level of harmful substances deposited to Canadian surface water from wastewater effluent.

In addition to national effluent quality standards for specified deleterious substances, the Regulations also specify other requirements to be met, such as requirements concerning toxicity, effluent monitoring, record-keeping and reporting. The national effluent quality standards for deleterious substances specified under the Regulations include carbonaceous biological oxygen demanding matter (CBOD matter), suspended solids, total residual chlorine, and un-ionized ammonia. For CBOD matter and suspended solids, the Ontario Ministry of the Environment has typically set compliance limits that are lower than the national baseline effluent quality standards.

York Region Water Pollution Control Plants are well positioned to meet requirements of the Regulations

Based on effluent performance in 2011, York Region's seven WPCPs, as well as Duffin Creek WPCP are well positioned to meet the national baseline effluent quality standards, with the exception of total residual chlorine at Keswick WPCP (Table 1). Facility upgrades at Keswick WPCP, including membrane filtration and UV disinfection will eliminate final effluent chlorination and are expected to be commissioned in June 2013.

Table 1
National Baseline Effluent Quality Standards

Deleterious Substance	National Standard	York Region Performance (2011)
Carbonaceous biological oxygen demand	25 mg/L	0.46-4.98 mg/L
Suspended solids	25 mg/L	2.61-8.48 mg/L
Total residual chlorine	0.02 mg/L	0.01-0.16 mg/L
Un-ionized ammonia expressed as nitrogen	1.25 mg/L	0.001 mg/L

Additional effluent monitoring, reporting and record keeping can be incorporated into current programs

Minimum sampling frequencies and type of sample to be collected from wastewater effluent is prescribed by the Regulations. The deleterious substances listed above are currently sampled and monitored by York Region. The sampling frequencies required in approvals for York Region's seven WPCPs are more stringent than those prescribed by the Regulations. Although the sampling frequencies in the approval for Duffin Creek are lower than those prescribed by the Regulations, the current sampling program will meet the Regulations. Additional sampling and testing will be required for acute lethality of the effluent on a quarterly basis for York Region's seven WPCPs as well as Duffin Creek WPCP.

Acutely lethal is defined as effluent that, at 100 per cent concentration kills more than 50 per cent of rainbow trout subjected to it for a 96-hour period. The test for acute lethality must be conducted according to methods specified in the Regulations. The acute lethality tests will cost approximately \$20,000 per year for York Region's seven WPCPs. If a sample is found to be acutely lethal, testing frequency will be required to increase to twice a month. If three consecutive quarterly samples are not found to be acutely lethal, testing frequency may be reduced to yearly.

The Regulations will require York Region to provide quarterly monitoring reports for each of the seven WPCPs. Records, copies of reports and supporting documentation are required to be kept for at least five years at a location where the documentation can be inspected. York Region's Records Retention Bylaw currently satisfies this requirement.

These additional operating and reporting requirements will be accommodated through existing Environmental Services budgets.

Transitional and temporary authorizations permitted

Wastewater systems not able to meet the national effluent quality standards for any deleterious substance may apply for a transitional authorization, which would specify conditions the system may continue to operate under and set the risk-based timeline to meet the standards. Wastewater facilities in Canada were ranked based on the level of treatment and the receiving environment. Wastewater systems posing a high risk are required to meet the effluent quality standards by December 31, 2020, those pending medium risk by December 31, 2030, and those posing low risk by December 31, 2040. While this information has not been released, York Region's seven wastewater systems are expected to be ranked as Low Risk.

Temporary bypass authorizations are required if an owner or operator of a wastewater system will bypass at least one treatment process under certain conditions specified in the Regulations and will discharge effluent that does not meet the standards.

Regulations will come into force through a phased approach

January 1, 2013 – effluent monitoring requirements, record-keeping and report requirements, provisions allowing for transitional or temporary authorizations to be applied for and issued

January 1, 2015 – requirement to meet effluent quality standards with exception of standard for total residual chlorine

January 1, 2021 – requirement to meet effluent quality standard for total residual chlorine

Environmental Effects Monitoring requirements still outstanding

The draft Wastewater Systems Effluent Regulations published in March 2010 included environmental effects monitoring, which were intended to help evaluate the effectiveness of the effluent quality standards in protecting fish and fish habitat. Many concerns were raised during the comment period. As a result, environmental effects monitoring requirements have been removed from the Regulations. It is expected that the requirements will be included at a later date as a regulatory amendment in consultation with stakeholders and interested parties.

In summary, all York Region WPCPs are well positioned to be in compliance with the Regulations as these requirements take effect.

Erin Mahoney, M. Eng.
Commissioner of Environmental Services