

Reducing Mercury in Wastewater and Stormwater Discharges

by Shayne Mitchell



There are more fish consumption advisories based on mercury contamination than for all other pollutants combined.

Image courtesy of Timothy Knepp, US Fish and Wildlife Service

There is a global mercury water quality problem. Mercury is present in rainfall, stormwater runoff and wastewater discharges at concentrations that contribute to this problem. Mercury levels are commonly high enough to cause contamination of fish. Fortunately, mercury concentrations are not elevated enough to render drinking water supplies unsafe or to cause acute toxicity to fish and wildlife.

Considering these problems, questions have arisen concerning appropriate control of stormwater and wastewater discharges to prevent further water pollution. For example, if mercury levels in rainfall exceed a state's water quality standards then who should be accountable for the mercury in stormwater runoff? If sewage treatment plants cannot achieve mercury water quality standards, then should they be required to install mercury treatment facilities? Is an industry responsible for the mercury present in the contaminated water it withdraws from an adjacent river? Do treatment technologies exist that can achieve the water quality standard? What analytical methods should be used when testing for mercury?

The answers to these questions can be found in a policy that the New York State Department of Environmental Conservation (NYSDEC) has developed to address the mercury water quality problem. This policy, which covers more than 10,000 State Pollution Discharge Elimination System (SPDES) permitted discharges in New York State, was finalized in October 2010 after several years of study and public outreach. It is noteworthy that this policy includes a statewide water quality discharge variance for mercury. Together, the policy and variance require a significant reduction in wastewater and stormwater mercury discharges while not imposing requirements which are technologically unachievable.

The two most significant elements addressed in the policy are SPDES permit limits and the Mercury Minimization Program (MMP). Simply achieving a permit limit may not be enough. The

goal of an MMP is to reduce mercury discharge levels beyond the permit limit in pursuit of the water quality goal. An MMP is an ongoing policy consisting of:

- Periodic monitoring designed to quantify and track the reduction of mercury
- An acceptable control strategy for reducing mercury discharges via cost effective measures
- Submission of periodic status reports

A number of municipal sewage treatment plants and industrial facilities that are major sources of mercury will be required to comply with stringent permit limits and to implement a comprehensive MMP. Other municipal sewage treatment plants will receive simplified MMP requirements in their SPDES permits.

New York State has implemented several mercury minimization initiatives in the last several years (these are listed in the policy document). The scale and success of these initiatives are such that the majority of wastewater and stormwater dischargers do not need to address mercury individually since the state has, in essence, performed an MMP on their behalf.

This is a very brief overview of the mercury problem and one state's policy to deal with water quality issues. Details on this policy, *DOW Policy 1.3.10 Mercury – SPDES Permitting, Multiple Discharge Variance, and Water Quality Monitoring*, can be found on the NYSDEC website at: http://www.dec.ny.gov/docs/water_pdf/tog1310final.pdf. Visit <http://www.dec.ny.gov/chemical/285.html> for information on the sources of this mercury pollution and what the various NYSDEC units are doing about it.

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