



DEPARTMENT OF ENVIRONMENTAL QUALITY
POLICY AND PROCEDURE

Subject: Evaluating Mercury in Groundwater Plumes Relative
to the Groundwater/Surface Water Interface (GSI)
Pursuant to Part 201

Number: 09-014

Date: June 20, 2012

Page 1 of 2

Category: Internal/Administrative External/Non-Interpretive External/Interpretive

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

ISSUE:

Evaluation of mercury venting to surface waters via groundwater needs to be conducted relative to the environmental risks and standards available, considering Section 20120e of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

POLICY:

This policy will allow for the use of United States Environmental Protection Agency (USEPA) Method 245.1 to quantify the level of mercury in groundwater that is venting to surface waters as part of an evaluation of the GSI pathway. This method has a quantification level of 200 nanograms per liter (ng/l). If mercury is quantified above this level, a sequence of activities will occur to determine if the data are correct and what the source of mercury is, including response actions appropriate to achieve a goal of the surface water quality standard of 1.3 ng/l of mercury at the GSI. This approach recognizes that there may be practical limitations to achieving the surface water quality standard.

This approach was developed based on consideration of the various contributions of mercury to Michigan's environment and the environmental benefits that would occur with response actions. Currently, mercury loading to surface waters in Michigan is almost entirely comprised of atmospheric deposition. As a result, there has been essentially no change in fish tissue concentrations in Michigan over the past 30 years. The mercury concentration in fish appears to be greatly dependent on the mercury from atmospheric deposition. In Michigan, current air emissions of mercury are about 4,000 pounds per year, while National Pollutant Discharge Elimination System (NPDES) permitted point source wastewater facilities discharge less than 20 pounds per year. Further, the volume of venting groundwater contaminated by a mercury release (as defined in Part 201) is much less than the NPDES permitted point source discharges, so this GSI mercury loading is also much less and very minor relative to atmospheric loading of mercury. Therefore, if mercury is not quantified above the quantification

DEQ POLICY AND PROCEDURE

Subject: Evaluating Mercury in Groundwater Plumes Relative
to the Groundwater/Surface Water Interface (GSI)
Pursuant to Part 201

Number: 09-014

Date: June 20, 2012

Page 2 of 2

level of 200 ng/l in venting groundwater using USEPA Method 245.1, this is considered to be a *de minimis* condition pursuant to Section 20120e of Part 201 and activity beyond evaluations will not be required.

Furthermore, it was recognized that localized mercury contamination could still occur due to mercury releases to groundwater, and a mechanism is needed to determine when a response action would be necessary to address this issue. The use of USEPA Method 245.1 provides the ability to determine when a response action may be needed and addresses the issue of relative loadings and environmental benefit. USEPA Method 245.1 was the method used for many years to determine mercury levels in discharges and the environment, so the method is well understood and widely used in laboratories. The method is also less expensive, less labor intensive, and quicker to perform than other mercury methods that achieve lower quantification levels, thereby streamlining this process.

Approved:



Dan Wyant, Director