

## Did you know ...

... there may be mercury at a wastewater treatment plant (WWTP) after repairing or upgrading a trickling filter? Abandoned or replaced trickling filters, which are sitting unused, may be spreading mercury into other parts of the system.

**Several hundred pounds of mercury may be contained in the center columns of trickling filters and pivot arm bearings.**

## 30 Years Ago

In the 1980s, companies discontinued manufacturing and selling trickling filters with mercury bearings because of documented instances of mercury contamination. It was revealed mercury seals had been leaking hundreds of pounds of mercury and causing contamination throughout wastewater treatment systems. As a result, mercury seals are no longer recommended for this use.

## Trickling Filters

Trickling filters are used in WWTPs to:

- Aid in the oxidation of ammonia to nitrates
- Reduce levels of total suspended solids
- Reduce levels of biological oxygen demand

*Trickling Filter at WWTP.*

*Photo: Food & Agriculture Organization (FAO)*



## 0% Interest Rate Loans Available for Mercury Cleanup Costs at Wastewater Treatment Plants

As an incentive to protect public health and the environment, the WI DNR Environmental Loans Program is offering a 0% interest rate loan for mercury cleanup costs at wastewater treatment plants (WWTP) through the Clean Water Fund Program (CWFP).

We encourage **proactive detection** of mercury contamination **before** doing repairs and upgrades to primary and secondary wastewater treatment facilities to avoid mercury's ill-timed discovery.

**For more information about funding for mercury cleanup at your WWTP, call 608-267-7530.**



Contact Information for Environmental Loans Program

<http://dnr.wi.gov/Aid/EIF.html>

Phone 608-267-7530 | Fax 608-267-0496

Wisconsin Department of Natural Resources

Bureau of Community Financial Assistance

Environmental Loans Program - CF/2

101 S Webster St, P.O. Box 7921, Madison WI 53707-7921

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# got mercury?



**You may have,  
if your wastewater  
treatment facility  
uses or used  
trickling filter  
technology**

### Look inside for:

-  0% interest rate funding
-  Resources for testing, cleanup and disposal
-  Summary of mercury

<http://dnr.wi.gov/Aid/EIF.html>

## Mercury Cleanup and Disposal

Mercury spills should be handled by hazardous material cleanup professionals or an environmental contractor who has the proper response and cleanup equipment. The contractor will collect samples to document if the cleanup is adequate and to monitor the air in the area to determine whether harmful mercury vapor levels are gone.

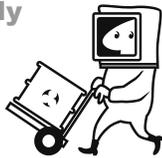
As part of the cleanup planning process, contact your regional hazardous waste specialist to identify hazardous waste regulations that may apply. Information can be found at: [dnr.wi.gov/staffdir/newsearch/contactsearchext.aspx](http://dnr.wi.gov/staffdir/newsearch/contactsearchext.aspx), search the subject "hazardous waste requirements."

## Detection, Testing and Cleanup

Call your regional DNR Spill Coordinator for help in finding mercury professional services.

Northern Region	715-392-7822
Northeast Region	920-303-5410
Southeast Region	414-263-8685
South Central Region	608-275-3303
West Central Region	715-839-1604

**Any liquid mercury at the scene should be isolated and removed by professionals as expeditiously as possible to avoid tracking it to other locations.**



## DNR Spill Response

Report all mercury spills immediately to Wisconsin's 24-hour spill emergency hotline 800-943-0003.

## For More Information about Mercury

- WI DNR Waste Program [dnr.wi.gov/topic/Mercury/](http://dnr.wi.gov/topic/Mercury/)
- WI DNR Spills Program [dnr.wi.gov/topic/Spills/Mercury.html](http://dnr.wi.gov/topic/Spills/Mercury.html)
- U.S. Environmental Protection Agency (EPA) [epa.gov/hg/spills/](http://epa.gov/hg/spills/)
- WI Department of Health Services (DHS) [dhs.wisconsin.gov/eh/mercury/resources.htm](http://dhs.wisconsin.gov/eh/mercury/resources.htm)

## 0% Interest Rate Loans Available for Mercury Cleanup Costs at Wastewater Treatment Plants

Many wastewater treatment plants (WWTP) that used trickling filter technology may have a hidden threat of mercury contamination. Some trickling filters used mercury as a lubricant for their bearings. Investigations have found that spilled mercury from these systems can cause significant, but often undetected, contamination. Mercury can be in your wastewater effluent or the air your workers breathe.

**We encourage proactive detection of mercury contamination before doing repairs and upgrades to primary and secondary wastewater treatment plants to avoid mercury's ill-timed discovery.**

As an incentive to protect public health and the environment, the WI DNR Environmental Loans Program is offering a 0% interest rate loan for mercury cleanup costs at your WWTP under the authority of the Clean Water Fund Program.

**For more information about funding for mercury cleanup at your WWTP, call 608-267-7530.**

## Benefits of Proactive Detection

-  Less exposure to your WW operators
-  Avoid doubling the cost of your project
-  Avoid expensive emergency cleanup costs
-  Avoid unplanned financing and/or emergency budget adjustments
-  Avoid project delays or halting construction for unexpected cleanup

## Mercury

Inorganic, elemental mercury, once known as quicksilver, is a naturally occurring element in rocks and soils. Mercury does not break down or go away. When mercury is spilled, it shatters into tiny beads and spreads in many directions. These tiny droplets can accumulate in the smallest places.

## Mercury Vapor

When mercury vaporizes it turns into toxic, odorless gas. Small beads of mercury evaporate the quickest. The rate of evaporation increases with rise in temperature. **It is best to cleanup mercury during the winter months.**

## Methylmercury

Methylmercury is formed when inorganic, elemental mercury binds with organic molecules in a complex biogeochemical process which can occur in **effluent sludge**, soils and sediments.



## Health and Environmental Hazards

Questions about the health impacts of mercury can be directed to the Department of Health Services, Bureau of Environmental and Occupational Health at 608-266-1120.

The majority of human exposure to elemental mercury is through inhalation of mercury vapor. It is absorbed through the lungs and then into the bloodstream where it can impact the central nervous system. Very high exposures can lead to kidney failure, respiratory failure and even death.

Methylmercury is, per the U.S. EPA, a chemical that is toxic, persists in the environment and bio-accumulates in food chains. Thus, it poses risks to nature and to human health. Repeated or continuous exposure to methylmercury can result in irreversible damage to the nervous system and kidneys, especially during fetal development.