

Pennsylvania Environmental Quality Board Final Amendments to Regulations on Wastewater Treatment Requirements

Plain Language Summary

The Pennsylvania Clean Streams Law preserves and improves the purity of our waters and allows for remedies to be developed by the Pennsylvania Department of Environmental Protection (PA DEP). It allows the adoption of rules and regulations, as necessary, to accomplish this protection.

The Pennsylvania Environmental Quality Board recently amended its Chapter 95 Wastewater Treatment Requirements. The result of this amendment is that most new discharges of total dissolved solids (TDS) in wastewaters will have discharge limits for TDS. This amendment is intended to protect Pennsylvanians' drinking water and aquatic life.

What is TDS? Total Dissolved Solids (TDS) are dissolved materials (e.g. chloride, sulfate, sodium, manganese) in water. TDS is naturally present in rivers and streams, but it can be greatly increased as the result of runoff, mining or industrial or municipal treatment of water. The major concerns with high concentrations of TDS in water are the adverse effects it may have on aquatic life, human health, and drinking water supplies. High concentrations of TDS can make waters saltier, harder, and potentially toxic to fish and other wildlife.

Many rivers and streams in Pennsylvania are severely limited in their ability to absorb additional TDS discharges without negative effects. These discharges must be managed through permit limitations that require a stricter approach to wastewater treatment and water quality in our rivers and streams.

How could TDS affect aquatic life, human health, or drinking water supplies? In 2008 there were water quality issues in the Monongahela River basin. The River's water level was very low, and high concentrations of

TDS and sulfates were observed in the River. These high levels exceeded water quality criteria from the border with West Virginia to Pittsburgh. Several environmental agencies studied the effects of TDS, sulfates and chlorides on the River, its tributaries and aquatic life. They observed a clear difference between water organisms in receiving streams living above certain major discharges of TDS and those living below it.

The studies also found that a high percentage of the Disinfection By-Products (DBPs) being formed in the drinking water systems were brominated by-products. (Disinfection By-Products are formed by a chemical reaction between disinfectants such as chlorine, and organic matter in the water). Brominated DBPs present a higher health risk than chlorinated DBPs. There appears to be a strong relationship between the formation of certain DBPs and high bromide concentrations in the River. As a result, water from the Monongahela River presents higher levels of the more toxic DBPs. This creates higher risks of bladder cancer to their consumers.

What Were the Regulations Before the Changes? Before the latest amendments, industries discharging wastewater with high concentrations of TDS were only required to treat and remove heavy metals, but there was no treatment for TDS, sulfates and chlorides. Dilution of the discharge flow with the river or stream flow was the only way to lower the concentrations of TDS. The higher levels of TDS in Pennsylvania's water show that dilution is no longer adequate to control TDS in rivers and streams.

Summary of New Regulatory Requirements Related to TDS

For the purposes of these regulations, a new or expanding mass loading of TDS is a loading that did not exist on August 21, 2010.

The changes to the regulations are mainly related to the establishment of new treatment requirements for new sources of wastewaters containing high concentrations of Total Dissolved Solids (TDS)

Section 95.10. Treatment requirements for new and expanding mass loadings of Total Dissolved Solids (TDS).

- This new section establishes discharge limits for TDS, total chlorides, and explains some exemptions for industries that have established Federal treatment requirements for TDS, sulfates or chlorides.
- Establishes treatment requirements for new wastewater resulting from fracturing, production, field exploration, drilling or completion of oil and gas wells.
- Establishes that the discharge limitations in this section will not apply if a National Pollutant Discharge Elimination System (NPDES) permit has established more stringent limitations than the ones in this section. (An NPDES permit is a Federal permit that regulates the levels and amounts of contaminants that go into the water).
- All new discharges of wastewater from natural gas wells (except for those with an exemption) must comply with the following:
 1. No discharges of wastewater are allowed into waters of Pennsylvania from any direct source or site of fracturing, production, field exploration, drilling, or well completion (this refers to waste water, drilling muds, drill cuttings, and sand).
 2. Treated discharges of wastewater generated from fracturing, production, field exploration, drilling, or well completion may be authorized by DEP. The discharges may only be from centralized waste treatment facilities in accordance with Section 95.10 of the Pennsylvania Code (Title 25). (Click here to see the PA Code or visit: http://www.pacode.com/secure/data/025/chapter95/025_0095.pdf)
 3. The discharge may not contain more than 500 Milligrams per Liter (mg/L) of TDS as a monthly average (this means that not more than .05% of a liter may be TDS).
 4. The discharge may not contain more than 250 mg/L of total chlorides as a monthly average (this means that not more than .025% of a liter may be total chlorides).
 5. The discharge may not contain more than 10 mg/L of total barium as a monthly average (this means that not more than .001% of a liter may be total barium).
 6. The discharge may not contain more than 10 mg/L of total strontium as a monthly average (this means that not more than .001% of a liter may be total strontium).

7. In addition to paragraphs 3 - 6, discharges to groundwater, including land application and discharges to existing mine pools, must comply with 91.51 and 91.52 (Click here to see the General Provisions Chapter 91 or visit:
http://www.pacode.com/secure/data/025/chapter91/025_0091.pdf)
8. Discharges from a Centralized Water Treatment Facility must obey the performance standards found in federal regulations at 40 CFR 437.34 (in addition to complying with requirements 2-4). Click here to see the performance standards or visit:
http://edocket.access.gpo.gov/cfr_2007/julqtr/pdf/40cfr437.34.pdf

To read the full regulation, please visit the Pennsylvania Code on line to download the Regulation.

<http://www.pacode.com/secure/data/025/chapter95/chap95toc.html>

Have any questions or need some clarification about this amendment?

Please contact:

- Ronald C. Furlan, Chief, Division of Planning and Permits (717) 787-8184
- Richard Morrison, Assistant Counsel, Bureau of Regulatory Counsel (717) 787-7060.
- Persons with a disability may use the Pennsylvania AT&T Relay Service by calling (800) 654-5984 (TDD users) or (800) 654-5988 (voice users).