SRS Citizen's Advisory Board

Recommendation No. 122

May 23, 2000

Total Maximum Daily Loads (TMDLs)

Background

Under Section 303(d) of the Clean Water Act, States are required to identify water bodies for which water quality standards are not being met and establish priorities for action among the listed water bodies. In addition, the States must establish the total maximum daily loads (TMDLs) for pollutants that exceed the water quality standard that a listed water body can receive and determine needed restrictions in pollutant loads from point and nonpoint sources to achieve the TMDL. Therefore, the TMDL program is actually a two phased process – identification of polluted waters and restoration of the health of these waters.

A TMDL is in effect a "pollution budget" for an impaired waterbody. It is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meets water quality standards. It is the total allowable load for a single pollutant from all contributing point and nonpoint sources, and includes a margin of safety and consideration of seasonal variations.

Dissatisfied with the way that the States and EPA were implementing the 303(d)/TMDL program; environmental groups (i.e. Sierra Club) instituted legal action in 34 states, including Georgia. EPA is now under a consent decree per the Sierra Club's lawsuit to establish TMDLs for each of Georgia's watershed basins. On February 8, 2000, EPA issued the TMDL development document for mercury in the middle/lower Savannah River basin. This section of the river includes the Savannah River Site (SRS). The public comment period for this document closed on April 10, 2000 and the proposed TMDL will become effective on June 7, 2000 unless EPA can obtain an extension through the court system.

EPA used the State of Georgia's fish advisory for mercury to identify the seven segments of the middle/lower Savannah River basin as being impaired. EPA based the mercury TMDL for point sources on whether permit limits for mercury were set to adequately protect water quality criteria protective of fish consumption. Due to the complexity of nonpoint sources of mercury, inadequate data and difficulty in quantifying nonpoint source loads, nonpoint sources were not considered. One such nonpoint source not evaluated at this time, which provides a major source of mercury entering the Savannah River, was atmospheric deposition (dry and wet).

The target concentration of mercury for point sources is 1 part per trillion (ppt). EPA using data on bioaccumulation rates from EPA's Mercury Report to Congress, two fish consumption rates, and a conservative methylation translator calculated this target concentration for mercury. The current SRS permit limit for mercury is based upon the water quality standard of 12 ppt. This standard is based upon EPA's aquatic life freshwater final residue value for methylmercury presented in the 1984 Ambient Water Quality Criteria for mercury document and also in the December 1992 National Toxics Rule (NTR). Because some data from both Georgia and South Carolina indicate some fish samples with tissue values exceeding the U.S. Food and Drug Administration (FDA) action level of 1 mg/kg, EPA determined that the 12 ppt permit water quality standard was not protective for fish consumption. Therefore the 1 ppt TMDL was proposed.

Comment

The SRS CAB is highly concerned that excessive taxpayer money will be spent to meet the new proposed TMDL with little or no improvement in the overall quality of the water in the middle/lower Savannah River basin. This statement is based upon the fact that even EPA believes that air deposition is a major source of mercury in the Savannah River but has decided to ignore this complex issue when establishing point source permit limits.

Furthermore, the use of the fish advisory to formulate the basis of the TMDL seems to be flawed. Just because some of the fish tissue data exceed the FDA action level does not mean that the existing mercury limit for permitted sources (NPDES) is not protective of human health, since other outside

sources of mercury were not considered (i.e., air deposition and other non-point sources*).* No qualitative or specific analytical data has been presented as a reason to lower the existing permit limit.

The SRS CAB also has doubts that the proposed limits can be achieved by today's treatment technology. The SRS CAB can not justify transferring funds from projects and missions, currently, which are actually being protective of human health, safety, and the environment to a project (i.e., WET), which is being imposed, based upon a hasty response to a court ordered consent decree

Recommendation

The SRS CAB recommends the following actions by the two agencies (EPA and DOE) be undertaken:

1. EPA, in coordination with the State of Georgia, use more river specific data, not the FDA's fish advisory data to evaluate whether the middle/lower Savannah River Basin needs to be placed on the impaired waters body list. EPA should take at least six to twelve months to collect new analytical data from the Savannah River to decide whether a TMDL is appropriate for the Savannah River and DOE provide any technical support as required.
2. By July 25, 2000, DOE identify and provide a briefing to the CAB on: (a) which SRS outfalls can currently meet the proposed TMDL limit with out further treatment and which ones will require further treatment and/or upgrades; (b) potential treatment technologies currently available that might be used to meet the proposed TMDL; and (c) the anticipated budget required to comply with the proposed TMDL including analytical, installation, and operating costs.
3. DOE track the progress of the EPA pilot project to determine background mercury levels derived from airborne deposition and when complete, present the findings of the report and its applicability to mercury levels in the Savannah River Basin to the SRS CAB.
4. EPA formally request an extension of no less than six to twelve months to the court imposed effective TMDL date of June 7, 2000, and if appropriate, after new data have been analyzed, reissue a new Savannah River Basin TMDL development document based upon a more practical TMDL, and issue new phased implementation dates.

References

1. Total Maximum Daily Load (TMDL) Development Document, EPA, February 8, 2000.
2. Testimony of Carol Browner Administrator US Environmental Protection Agency before the Committee on Agriculture, Nutrition, and Forestry United States Senate. February 23, 2000 and May 6, 2000.
3. Public Comment Period Letter from Jim Mackey to Ms. Yvonne Martin, EPA Region 4, Water Management Division, April 10, 2000,
4. Total Maximum Daily Load (TMDL) for Mercury in the Savannah River Basin, presentation to the CAB ER Committee Bill Payne, April 25, 2000.
5. Draft EPA Mercury Action Plan, November 16, 1998.

Agency Responses

Department of Energy-SR
U.S. Environmental Protection Agency