Appendix G

B2. The Stage 1 DBPR

Purpose

The purpose of this summary is to acquaint State decision-makers and public health officials with the Stage 1 Disinfectants/Disinfection Byproducts Rule (Stage 1 DBPR). The Stage I DBPR, published in the Federal Register on December 16, 1998 (63 FR 69389; *www.epa.gov/OGWDW/mdbp/dbpfr.html),* is the first part of a series of rules, the "Microbial-Disinfectants/Disinfection Byproducts Cluster" (M-DBP Cluster), to be published over the next several years that are intended to control microbial pathogens while minimizing the public health risks of disinfectants and disinfection byproducts (DBPs). The Stage I DBPR specifically addresses risks associated with disinfectants and DBPs. This rule was published concurrently with the Interim Enhanced Surface Water Treatment Rule (IESWTR), which will address control of microbial pathogens.

Background

Many water systems treat their water with a chemical disinfectant in order to inactivate pathogens that cause disease. The public health benefits of common disinfection practices are significant and well recognized; however, disinfection poses risks of its own. While disinfectants are effective in controlling many harmful microorganisms, they react with organic and inorganic matter (disinfection byproduct precursors—DBPs) in the water and form DBPs, some of which pose health risks at certain levels. Since the discovery of chlorination byproducts in drinking water in 1974, numerous toxicological studies have been conducted that show DBPs to be carcinogenic and/or cause reproductive or developmental effects in laboratory animals. Additionally, exposure to high levels of disinfectants over long periods of time may cause health problems, including damage to blood and kidneys. While many of these studies have been conducted at high doses, the weight-of-evidence indicates that DBPs present a potential public health problem that must be addressed. One of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants (see the IESWTR Executive Summary). Much of the population is exposed to these risks; therefore, a substantial concern exists.

Health risks associated with some DBPs are currently addressed by the Total Trihalomethanes (TTHM) regulation for public water systems (PWSs) serving 10,000 or more people. EPA, however, believes that the promulgation of the Stage 1 DBPR will significantly decrease the risks posed by DBPs and disinfectants. The Stage 1 DBPR will broaden public health protection by covering many PWSs not currently regulated for TTHM or other DBPs.

Development of the Stage 1 DBPR

The new rules are a product of 6 years of collaboration among the water supply industry,

environmental and public health groups, and local, State, and Federal governments. To address the complex issues associated with regulating microbial pathogens, EPA first launched a rule-making process in 1992 and convened a Regulatory Negotiation (RegNeg) Advisory Committee under the Federal Advisory Committee Act (FACA), representing a range of stakeholders affected by possible regulation. The RegNeg Committee met repeatedly over a period of 10 months and arrived at a consensus proposal for taking progressive steps toward addressing both DBPs and microbial pathogens. The 1992 consensus building process resulted in the three following regulatory proposals—

Requirements of the Rule: Public Water Systems

MCLGs and MCLs for disinfection byproducts

The Stage 1 DBPR sets maximum contaminant level goals (MCLG5) for some of the regulated DBPs, sets a more stringent maximum contaminant level (MCL) for TTHM, and sets new MCLs for HAA5, bromate, and chlorite. MCLGs are set at concentrations at which no known or anticipated adverse health effects are expected to occur. They are non-enforceable public health goals. MCLs are enforceable contaminant standards that are feasible to achieve.

Disinfection Byproduct	**MCLG (mg/L)**	**MCL (mg/L)**
Total Trihalomethanes (TTHM)		**0.080**
Chloroform	0	
Bromodichloromethane	0	
Bromoform	0	
Dibromochloromethane	0.06	
Five Haloacetic Acids (HAA5)		**0.060**
Monochloroacetic Acid		
Dichloroacetic Acid	0	
Trichloroacetic Acid	0.30	
Monobromoacetic Acid		
Dibromoacetic Acid		
Chlorite	**0.80**	**1.0**
Bromate	**0**	**0.010**

MRDLGs and MRDLs for disinfectant residuals

To protect against potential health risks caused by high levels of residual disinfectants, the Stage 1 DBPR sets the following maximum residual disinfectant level goals (MRDLGs) and maximum

residual disinfectant levels (MRDLs). Like MCLGs and MCLs, respectively, MRDLGs are non-enforceable, while MRDLs are enforceable.

Disinfectant	MRDLG (mg/L)	MRDL (mg/L)
Chlorine	4.0	4.0
Chloramines	4.0	4.0
Chlorine Dioxide	0.8	0.8

Laboratory methods and certification

The rule specifies analytical methods for measuring each relevant water quality parameter, disinfectant, contaminant, and DBPP. Consistent with current regulations, only certified laboratories can analyze samples for compliance with the MCLs. For disinfectants and other specified parameters that EPA believes can be adequately measured by other than certified laboratories, and for which there is good reason to allow on-site analysis *(e.g.,* for samples that may deteriorate before reaching a certified laboratory), EPA is requiring that analyses be conducted by a party approved by the State.

Requirements of the Rule: States or Other Primacy Agents

State primacy, recordkeeping, and reporting requirements

The Stage 1 DBPR requires States to adopt several new regulatory requirements including public notification requirements, MCLs for DBPs, MRDLs for disinfectants, and the requirements of Subpart L. In addition, States are required to adopt special primacy requirements and keep records of their activities, records of decisions, and PWS monitoring results. State reporting to EPA is covered under existing regulation.

More information can be obtained from:

A. The Stage 1 Disinfectants/Disinfection Byproducts Rule
63 FR 69389 (December 16, 1998); and

www.epa.gov/OGWDW/mdbp/dbpfr.html

B. The EPA Safe Drinking Water Hotline,
Telephone: 1.800.426.4791

Notes: