

Water Quality Standard Guidance	Assuring attainment of biological criteria when metals limits are developed under the dissolved metals procedures	
	2 Final	Rule reference: OAC 3745-1-05(C)(1); OAC 3745-1-07(A)(6); OAC 3745-2-04 (F); and ORC 6111.03(J)
Ohio EPA, Division of Surface Water Revision 0, July 31, 1998		
This internal guidance does not affect the requirements found in the referenced rule or statute.		

When to use this guidance

Use this guidance if the application of the dissolved metals procedures in OAC rule 3745-2-04(F) result in an effective total recoverable metal criteria higher than the total recoverable metal criteria in OAC 3745-1.

Background and basis for guidance

Paragraph (C)(1) of rule 3745-1-05 requires that existing instream water uses be maintained and protected and that there may be no degradation of water quality that results in a violation of the applicable water quality criteria for the designated uses. Paragraph (A)(6) of rule 3745-1-07 identifies the biological criteria in Table 7-14 of rule 3745-1-07 as direct measures of attainment of the warmwater habitat, exceptional warmwater habitat and modified warmwater habitat aquatic life uses. Therefore, degradation of water quality that will result in non-attainment of the biological criteria must not be permitted.

The Agency’s biological and water quality data bases were examined in 1997 when the Great Lakes Initiative rules were under evaluation. A report was prepared that indicated attainment of biological criteria is unlikely above thresholds of effective total recoverable metal concentrations (Technical Bulletin MAS/1997-12-4). Thus, staff must use caution when establishing permit limits that would result in instream total recoverable metal concentrations higher than the total recoverable metal criteria contained in OAC Chapter 3745-1.

Procedure to follow

The staff and supervisors responsible for NPDES permit issuance should evaluate the following questions when writing a permit where dissolved metal translators are used. The questions are depicted in form of a flow chart on page 3.

A. When will the biological criteria affect the permit limit for a metal?

This depends upon the aquatic life use attainment status and whether or not higher permit limits are requested by the applicant.

1. If the appropriate aquatic life use is **not** being attained in a particular water body **and** the reason for the non-attainment is the discharge of metals from the discharger(s), then OAC rule 3745-1-07(A)(6) provides that:

“Where the designated use is attainable and the cause of the nonattainment has been established, the director shall, wherever necessary and appropriate, implement regulatory controls or make other recommendations regarding water resource

management to restore the designated use.”

Staff should proceed to develop permit limits that will allow attainment of the aquatic life use as explained in section B below.

2. In all other situations,
 - a. **if the discharger requests higher permit limits:**

an antidegradation review showing that, at a minimum, the aquatic life use will be protected is required. OAC rule 3745-1-05 requires that any significant increase in the load of a metal discharged to a water body must be reviewed to ensure appropriate biological criteria are protected. This review will include the provisions in section B below.

- b. **if the discharger does not request higher permit limits:**

permit limits resulting from implementation of the dissolved metals procedures of OAC rule 3745-2-04(F) of up to the current limits need no further review under this guidance.

B. How is the level of a metal that is protective of the biological criteria determined?

The staff who are developing the water quality-based effluent limits will need to determine this on a case-by-case basis following discussions with staff from the Ecological Assessment Unit (EAU). EAU staff will consult Technical Bulletin MAS/1997-12-4 which compares instream metal concentrations to attainment of aquatic life uses. The following information should be considered:

1. sediment metal concentrations (where available);
2. stream size and sampling methods;
3. ecoregion;
4. existing and designated aquatic life use;
5. use attainment status;
6. evidence that the point source(s) are the primary contributing cause of the nonattainment;
7. the application of additional or alternate treatment or technology can reasonably be expected to lead to attainment of the designated use;
8. evidence relating to the technical feasibility and economic reasonableness of removing polluting properties from the effluent; and
9. evidence relating to conditions calculated to result from the limits and their relation to benefits to the people of the state and the goal of restoring or maintaining water quality.

A total recoverable metal concentration judged to be consistent with the attainment of the applicable aquatic life use designation and biological criteria should be specified in the NPDES permit.

Supplemental information

Technical Bulletin MAS/1997-12-4 Using biological criteria to validate applications of water quality criteria: dissolved and total recoverable metals. February 3, 1997 Ohio EPA Division of Surface Water, Monitoring and Assessment Section. 38p.

For more information contact:

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Biological Criteria and Dissolved Metals



