

Federal Register notice announcing the proposed revisions (67 FR 79091). These parameters include: BCFs, fish consumption rate, body weight, reference dose or cancer potency factor, and relative source contribution. You can find information relevant to the derivation of these basic parameters (e.g., K_{ow} values used in the derivation of BCFs) in other data sources such as EPA's criteria documents.

The revised human health criteria EPA developed use the BCF values derived from the 1980 Ambient Water Quality Criteria National Guidelines (45 FR 79347). We did not use food chain multipliers in the 1980 Methodology and, therefore, did not use them in deriving the proposed criteria. Rather, the proposed criteria rely on previously-derived BCFs which may have been derived from lab or field studies. Even though these BCFs emphasize bioconcentration, in some instances they may reflect trophic level transfers but not through the use of food chain multipliers.

4. EPA Should Publish All Proposed Changes to the Human Health Water Quality Criteria in the **Federal Register**

Scientific view—One submitter stated that EPA should publish all proposed changes to the human health water quality criteria in the **Federal Register**. In this way, dischargers and other affected parties will be aware of upcoming changes that will affect permits and other activities.

Response—EPA described its process for publishing revised criteria in *National Recommended Water Quality Criteria—Correction* (64 FR 19781; or EPA 822-Z-99-001) and the **Federal Register** notice for the final methodology (65 FR 66444). EPA specifically stated that, when making minor revisions to existing criteria based on new information about individual components of the criteria, the Agency will publish the recalculated criteria directly as the Agency's national recommended water quality criteria. This is a reasonable and efficient way to more frequently publish revised section 304(a) criteria. Based on this approach, EPA partially revised 83 national recommended water quality criteria for the protection of human health. EPA published these updated national recommended water quality criteria in a compilation entitled *National Recommended Water Quality Criteria: 2002* (EPA-822-02-047).

EPA also revised 15 more national recommended water quality criteria for the protection of human health. Although the revision of these criteria represent a partial update of the section

304(a) criteria, EPA decided to solicit scientific views on the criteria because applying the new methodology resulted in significant changes (67 FR 79091; December 27, 2002).

5. The Criteria Compilation Should Clearly Articulate That the Recommended Criteria Are Available for States To Use, as Appropriate, in Adopting Their Water Quality Criteria

Scientific view—A submitter stated that the 2000 Human Health Methodology encourages States to use local fish consumption rates to establish site-specific criteria rather than default fish consumption rates. However, without site-specific fish consumption rates, States cannot develop the most accurate criteria. Therefore, the criteria compilation should clearly articulate that States are not required to adopt EPA's recommended criteria, but that EPA's recommended criteria are available, as appropriate, when adopting criteria.

Response—CWA section 304(a)(1) requires EPA to develop and publish criteria for water quality that accurately reflect the latest scientific knowledge. Under this authority, EPA publishes national criteria that are recommendations to States and authorized Tribes in adopting water quality standards. These criteria are based on national default parameters, such as fish ingestion rates. Nevertheless, as stated in the *National Recommended Water Quality Criteria: 2002* (EPA-822-02-047) compilation, "State and Tribal decision-makers have the discretion to adopt approaches on a case-by-case basis that differ from this guidance when appropriate." In addition, the 2002 compilation document explains that:

"States and authorized Tribes have four options when adopting water quality criteria for which EPA has published section 304(a) criteria. They can: (1) Establish numerical values based on recommended section 304(a) criteria; (2) adopt section 304(a) criteria modified to reflect site-specific conditions; (3) adopt criteria derived using other scientifically defensible methods; or (4) establish narrative criteria when numeric criteria cannot be determined (40 CFR 131.11)."

Thus, EPA clearly stated that States and authorized Tribes are not required to adopt EPA national recommended water quality criteria, and that States and authorized Tribes have the discretion to derive criteria based on site-specific considerations such as local fish consumption rates.

6. Vinyl Chloride

a. The proposed human health water quality criteria for vinyl chloride are too low.

Scientific view—A submitter indicated that improper methods, overly conservative assumptions, and data quality deficiencies result in the proposed human health water quality criteria for vinyl chloride being too low.

Response—In deriving the water quality criteria for vinyl chloride, EPA applied the 2000 Human Health Methodology. In developing this methodology, EPA solicited and incorporated input from many sources, including the EPA Science Advisory Board, several peer review workshops, and the public. EPA believes that the resulting methodology accurately reflects the latest scientific knowledge on the kind and extent of all identifiable effects on health and welfare that can be expected when pollutants are present in any body of water. Thus, the human health water quality criteria for vinyl chloride accurately reflect the relationship between vinyl chloride concentrations and human health effects.

The recommended water quality criteria for vinyl chloride are guidance for States and authorized Tribes to establish water quality standards. State and Tribal decision-makers have the discretion to adopt approaches on a case-by-case basis that differ from this guidance when appropriate.

b. EPA should use a central estimate as a point of departure in deriving vinyl chloride criteria.

Scientific view—Two submitters stated that the revised vinyl chloride human health water quality criteria for consumption of water and organism and consumption of organisms only are too low because EPA used overly conservative assumptions in their derivation. Risk-specific doses derived based on linear low-dose extrapolations using the lower 95 percent confidence limit on a dose associated with a 10 percent extra risk, or, LED_{10} , as the point of departure should not be used to derive criteria. Rather, risk-specific doses based on a central estimate, such as a dose associated with a 10 percent extra risk, or ED_{10} , should be used as a point of departure.

EPA's rationale for using the LED_{10} as the point of departure for model-based dose-response extrapolations in the 1996 proposed guidelines for carcinogen risk assessment is very weak. EPA did not hear the advice from peer review workshops on benchmark dose and the proposed cancer guidelines