commenting on this action should do so at this time.

DATES: Comments on this proposed rule must be received in writing by November 21, 1996.

ADDRESSES: Written comments on this action should be addressed to Mr. Thomas H. Diggs, Chief, Air Planning Section (6PD-L), at the EPA Regional Office listed below. Copies of the documents relevant to this proposed rule are available for public inspection during normal business hours at the following locations. Interested persons wanting to examine these documents should make an appointment with the appropriate office at least 24 hours before the visiting day.

Environmental Protection Agency, Region 6, Multimedia Planning and Permitting Division, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202–2733, telephone (214) 665–7214.

Louisiana Department of Environmental Quality, Office of Air Quality and Radiation Protection, H. B. Garlock Building, 7290 Bluebonnet Blvd., Baton Rouge, Louisiana 70810.

Documents which are incorporated by reference are available for public inspection at the Air and Radiation Docket and Information Center, Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: Ms. Jeanne McDaniels, Air Planning Section (6PD-L), Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, Texas 75202–2733, telephone (214) 665–7254.

SUPPLEMENTARY INFORMATION: See the information provided in the direct final action of the same title which is located in the rules section of the Federal Register.

Dated: September 30, 1996.

Jerry Clifford,

Acting Regional Administrator.

[FR Doc. 96–27003 Filed 10–21–96; 8:45 am]

BILLING CODE 6560–50–P

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40 CFR Parts 132

[FRL–5617–8]

Proposed Revisions to the Polychlorinated Biphenyl Criteria for Human Health and Wildlife for the Water Quality Guidance for the Great Lakes System

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: EPA is proposing revisions to the polychlorinated biphenyl (PCB) ambient water quality criteria for human health and wildlife for the final Water Quality Guidance for the Great Lakes System (the Guidance). The Guidance was published on March 23, 1995. Following publication, several industries and trade associations challenged the human health and wildlife criteria for PCBs in the Guidance. Among the issues they raised was the equation used to calculate the weighted geometric mean baseline bioaccumulation factor (BAF) for PCBs. EPA re-examined the issue, and decided that a different approach for calculating a composite baseline BAF would be preferable because it would be more consistent with the definition of bioaccumulation factors since it more appropriately relates the concentrations of the PCB congeners in tissue to the concentrations of the PCB congeners in water. The proposed revisions are limited to the method for deriving a composite BAF for PCBs and for deriving a composite octanol-water partition coefficient (K_{ow}) for PCBs. The human health cancer criteria for PCBs would change from 3.9 E–6 ug/L to 6.8 E–6 ug/L. The wildlife criteria for PCBs would change from 7.4 E–5 ug/L to 1.2 E–4 ug/L. EPA believes the proposed revisions more accurately represent the numerical limits necessary to protect human health and wildlife in the Great Lakes System. Finally, EPA is not proposing to revise any other aspect of the BAFs for PCBs or the PCB criteria for human health and wildlife.

DATES: EPA will accept public comments on the proposal until November 21, 1996.

ADDRESSES: An original and 4 copies of all comments on the proposal should be addressed to Mark Morris (4301), U.S. EPA, 401 M Street., SW, Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: Mark Morris (4301), U.S. EPA, 401 M Street, SW, Washington, D.C. 20460 (202–260–0312).

SUPPLEMENTARY INFORMATION:

I. Introduction

A. Potentially Affected Entities

Entities potentially affected by this action are those discharging pollutants to waters of the United States in the Great Lakes System. Potentially affected categories and entities include:

Category	Examples of potentially affected entities
Industry	Industries discharging PCBs to waters in the Great Lakes System as defined in 40 CFR 132.2.
Municipalities.	Publicly-owned treatment works discharging PCBs to waters of the Great Lakes System as defined in 40 CFR 132.2.
States and Tribes.	Great Lakes States and Tribes must adopt criteria consistent with EPA's criteria by March 1997.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. This table lists the types of entities that EPA is now aware could potentially be affected by this action. Other types of entities not listed in the table could also be affected. To determine whether your facility may be affected by this action, you should examine the definition of Great Lakes System in 40 CFR 132.2 and examine 40 CFR 132.2 which describes the purpose of water quality standards such as those established in this rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. Great Lakes Water Quality Guidance

In March 1995, EPA promulgated the final Water Quality Guidance for the Great Lakes System (the Guidance) required under section 118(c)(2) of the Clean Water Act, 33 U.S.C. 1268(c)(2). See 60 FR 15366–425 (March 23, 1995). The Guidance protects the waters of the Great Lakes and their tributaries by establishing water quality criteria for 29 pollutants to protect aquatic life, wildlife and human health, and detailed methodologies to develop criteria for additional pollutants. It also establishes implementation procedures to help Great Lakes States and Tribes develop more consistent, enforceable water-quality based effluent limits in discharge permits for the Great Lakes System. For a description of the environmental significance of the Great Lakes System and the serious environmental threats it faces (particularly from persistent, bioaccumulative chemicals), see 58 FR 20802.

The ambient water quality criteria (AWQC) included in the Guidance to protect human health and wildlife set maximum ambient concentrations for harmful pollutants to be met in all waters in the Great Lakes System. See 40 CFR Part 132, Tables 3 and 4. Great Lakes States and Tribes must adopt criteria consistent with EPA's criteria by March of 1997. CWA section 118(c)(2)(c). If any State or Tribe fails to meet that deadline, EPA must

promulgate criteria that will apply in that State or Tribe's jurisdiction. *Id.* Once the criteria take effect, permits for discharges of such pollutants into the Great lakes System must include limits as necessary to attain the criteria.

EPA promulgated human health and wildlife criteria for a class of closely-related toxic pollutants known as polychlorinated biphenyls (''PCBs''). The PCB criteria for human health and wildlife incorporate ''bioaccumulation factors'' (''BAFs'') which reflect the fact that PCBs magnify at several steps in aquatic food chains, so that humans and wildlife eating fish from the Great Lakes can be exposed to PCB concentrations many times higher than the PCB concentration in the waters of the Lakes. Different members of the class of PCBs (called ''congeners'') have differing potentials to bioaccumulate. In the final Guidance, EPA derived a single baseline BAF (explained further below) for PCBs by computing a weighted geometric mean baseline BAF from the BAFs for approximately 50 PCB congeners.

Several industries and trade associations challenged the human health and wildlife criteria for PCBs. *AISI* v. *EPA*, D.C. Cir. No. 95–1348 and consolidated cases. Among the issues they raised was the equation used to calculate the weighted geometric mean baseline BAF for PCBs. The *AISI* petitioners alleged that the equation was mathematically inappropriate for a variety of reasons. EPA re-examined the issue, and decided, for reasons set out in section III below, that a different approach for calculating a composite baseline BAF would be preferable. Consequently, EPA is proposing to revise the approach for calculating the composite baseline BAF for PCBs and for deriving a composite K_{ow} for PCBs. The new approach produces both a new composite baseline BAF and different BAFs for use in the derivation of human health and wildlife criteria. EPA has recalculated the human health and wildlife criteria using the new BAFs and is proposing to revise the criteria for PCBs codified in Tables 3 and 4 to Part 132.

As explained in more detail below, EPA is not proposing any other revisions to the criteria for PCBs. Moreover, EPA does not intend to respond to comments addressing other issues.

II. Background

A. EPA's Methodology for Deriving BAFs

The human health and wildlife criteria establish ambient concentrations of pollutants which will protect humans and wildlife species from adverse impacts due to the ingestion of both aquatic organisms and water. To establish the criteria, EPA obtained data on health effects thresholds and derived bioaccumulation factors for individual pollutants. EPA also obtained data on rates of food and water consumption for humans and wildlife species.

As explained in the preamble and supporting documents for the final Guidance, bioaccumulation refers to the uptake and retention of a pollutant by an aquatic organism from surrounding water and from food. For certain pollutants, uptake through the food chain is the most important route of exposure for humans and wildlife, as such pollutants magnify at some steps in the aquatic food chain, so that humans and wildlife can consume aquatic organisms containing concentrations of pollutants many times higher than the concentrations of the pollutants in Great Lakes waters. For a more complete discussion of bioaccumulation, refer to 58 FR 20803.

The BAFs in the Guidance compare concentrations of pollutants measured in water to concentrations of the same pollutant measured in fish tissue. Under the methodology for the Guidance, the derivation of a BAF for a non-polar organic pollutant that is to be used for calculating AWQC involves two general steps. The first step is deriving the baseline BAF for the pollutant of interest. For PCBs, this is performed by adjusting the field-measured BAF to reflect the freely dissolved fraction of the pollutant in the water at the site measured and the lipid content of the organism assessed. The second step involves calculating a BAF that takes into account the freely-dissolved fraction of the chemical in the water and lipid content of the organism(s) at the site where the AWQC would apply. For a more detailed discussion on this two step process and for additional information on the importance of expressing the baseline BAF on a freely-dissolved and lipid-normalized basis, refer to the Great Lakes Water Quality Technical Support Document for the Procedure to Determine Bioaccumulation Factors (''TSD for BAFs'') (EPA–820–B–95–005).

An important factor in the derivation of a BAF for an individual PCB congener is the K_{ow} for that pollutant. The K_{ow} is a measurement of the affinity of a pollutant to partition between the lipids (fatty tissues) of an aquatic organism and water. The higher the K_{ow}, all other factors being constant, the greater the affinity for the pollutant to concentrate in fish tissue. Each of the PCB congeners has a K_{ow} value. The K_{ow} values are usually reported as log K_{ow}s for each congener. When deriving BAFs for individual PCB congeners, the congener-specific K_{ow} is used for estimating the freely dissolved fraction of the PCB congener in the water. When deriving a composite baseline BAF for all PCBs, it is necessary to use a composite K_{ow} value for the composite BAF. This composite K_{ow} is needed for estimating the freely dissolved fraction of the class of PCBs in the Great Lakes waters.

B. BAFs for PCBs in the Final Guidance

EPA based the PCB BAFs in the final Guidance on a field study conducted in the Great Lakes by Oliver and Niimi (1988). The study collected data on numerous PCB congeners, and EPA derived separate baseline BAFs for these congeners using separate, congener-specific K_{ow}s. EPA, however, needed to derive a composite BAF representing all congeners in order to calculate AWQC for human health and wildlife. This is the case because there is a single ''cancer potency factor'' which is used for evaluating human health cancer risk for all PCBs. Similarly, for wildlife, there is a single toxicity factor which is used in the derivation of the wildlife criteria. Consequently, composite BAFs were needed in order to be consistent with the toxicity data available to derive human health and wildlife criteria.

In response to comments on a notice of data availability (August 30, 1994, 59 FR 44678), EPA derived a composite baseline BAF for PCBs for trophic level 3 and for trophic level 4 by computing a weighted geometric mean of the BAFs for individual PCB congeners using the following equation:

Weighted geometric mean=$10^{\text{Mean log BAF}}$

$$\text{Mean log BAF} = \frac{\sum \text{Wi log BAFi}}{\sum \text{Wi}}$$

Where:

Wi=concentration of PCBs in ng/g for each congener in fish tissue.

log BAFi=log BAF as reported in Table F–1 of TSD for BAFs (logs are to base 10).

The weighted geometric mean BAF for trophic level 3 was 55,281,000 and 116,553,000 for trophic level 4.

As discussed above, when deriving a composite BAF for PCBs it is necessary to use a composite K_{ow}. In the final Guidance, a weighted geometric mean K_{ow} of 3,885,000 (mean log K_{ow} of 6.589) was estimated by weighting the log K_{ow}s for the individual PCB congeners by the concentrations of the PCB congeners in fish. The mean log K_{ow} of 6.589 was then used when estimating the freely dissolved fraction for PCBs. The log

K_{ow}s for the individual PCB congeners used in the final Guidance came from Hawker and Connell (1988).

Using these composite baseline BAFs and the mean log K_{ow} of 6.589, EPA derived BAFs of 520,900 for trophic level 3 and 1,871,000 for trophic level 4 for use in calculating human health criteria. The PCB human health cancer criteria derived using these BAFs was 3.9E–6 µg/L. For wildlife, the BAF was 1,850,000 for trophic level 3 and 6,224,000 for trophic level 4 for use in calculating wildlife criteria. The PCB wildlife criterion derived using these BAFs was 7.4E–5 µg/L.

Various industries and trade associations challenged the human health and wildlife criteria for PCBs. *AISI* v. *EPA*, D.C. Cir. No. 95–1348 and consolidated cases. Among the issues they raised was the equation used to calculate the baseline BAF using the weighted geometric mean for PCBs. The *AISI* petitioners alleged that the equation was mathematically inappropriate for a variety of reasons. As a result of this challenge, EPA re-examined the basis for the calculation of the composite baseline BAF using the weighted geometric mean. For the reasons explained in section III below, EPA has concluded that a different approach would be correct. Consequently, EPA has moved the Court to remand this issue to the Agency for reconsideration. EPA represented in that motion that it would expeditiously propose and take final action on the approach used to calculate the composite baseline BAF for PCBs. This proposal serves that purpose.

EPA emphasizes that this proposal is very limited in scope. EPA is only requesting comment on the approach used to derive a composite baseline BAF for PCBs and the composite K_{ow} used in estimating the freely dissolved fraction of PCBs. EPA is not proposing to revise any other aspect of the data or methodology underlying the composite baseline BAFs for PCBs or any other aspect of the data or methodology underlying the human health and wildlife criteria for PCBs. For those issues beyond the limited scope of today's proposal, the Agency believes that full opportunity for public comment and consideration by the Agency was provided in the rulemaking for the Guidance.

III. Proposed Revision to Method for Deriving Baseline BAF for Total PCBs

As discussed previously, the baseline BAF for PCBs in the final Guidance was calculated as a weighted geometric mean of the BAFs for the individual congeners. EPA is requesting comment on an alternative approach for deriving the composite baseline BAF for PCBs. This approach uses the sum of all concentrations of PCB congeners in tissue and the sum of all concentrations of PCB congeners in the ambient water, as reported in Oliver and Niimi (1988), to derive a baseline BAF for PCBs (see Table 1). This approach is equivalent to using a weighted arithmetic mean of all the BAFs from the PCB congeners, where the weights are the concentrations of the PCB congeners in water. EPA believes this approach is more consistent with the definition of bioaccumulation factors since it more appropriately relates the sum of the concentrations of the PCB congeners in tissue to the sum of the concentration of the PCB congeners in water. EPA further believes that this approach will provide a more accurate prediction of the composite BAF for the class of PCBs.

The derivation of the composite baseline BAFs for PCBs, the revised BAF to be used in the calculation of AWQC for wildlife and human health, and the PCB criteria for wildlife and humans using the revised PCB BAFs are presented below. EPA is requesting comment on the approach for deriving the composite baseline BAF and the composite K_{ow} used in the derivation of the baseline BAF. EPA is not requesting comment on the data used in the derivation of the composite baseline BAF or composite K_{ow} or other aspects related to the derivation of the human health and wildlife criteria for PCBs. The fish tissue data, water column data, and log K_{ow} values used to derive the new composite BAF are identical to those used in the final Guidance.

A. Derivation of Baseline BAF for PCBs

The equations used for deriving the baseline BAFs in this proposal are the same as were used in the final Guidance (60 FR 15400 or TSD for BAFs). As in the final Guidance, baseline BAFs for PCBs are derived for both trophic level 3 and trophic level 4. The equation for deriving a baseline BAF when a field-measured BAF is available for a chemical, as is the case with PCBs, is (each of the three components for deriving a baseline BAF are discussed below):

$$\text{Baseline BAF} = \left[\frac{\text{Measured BAF}_T^t}{f_{fd}} - 1\right]\left(\frac{1}{f_l}\right)$$

Where:

Measured $BAF_T{}^t$=BAF based on total concentration in tissue and water.

f_l=fraction of the tissue that is lipid.

f_{fd}=fraction of the total chemical that is freely dissolved in the ambient water.

1. Measured PCB $BAF_T{}^t$

To estimate a measured PCB $BAF_T{}^t$ for trophic level 4, information is needed on the total concentration of the pollutant in the tissue of a trophic level 4 species and the total concentration of the chemical in ambient water at the site of sampling. The trophic level 4 species used in the final Guidance and this proposal were salmonids. To estimate a measured PCB $BAF_T{}^t$ for trophic level 3, information is needed on the total concentration of the chemical in the tissue of a trophic level 3 species and the total concentration of the chemical in ambient water at the site of sampling. The trophic level 3 species used in the final Guidance and in this proposal to calculate a BAF for PCBs are sculpins and alewives. The average of the values for the sculpins and alewives are used to represent the trophic level 3 values. The equation to derive a measured PCB $BAF_T{}^t$ is:

$$\text{Measured PCB BAF}_T^t = \frac{\text{Total concentration of chemical in tissue}}{\text{Total concentration of chemical in ambient water}}$$

The total concentration of PCB congeners in fish tissue (salmonids) from Table 1 is 4057.3 ng/g and the total concentration of PCB congeners in ambient water is 1006.1 pg/L. The average of the total concentrations of PCB congeners in tissue from sculpins and alewife (trophic level 3 species) from Table 1 is 1393.15 ng/g. The resulting measured PCB $BAF_T{}^t$ for trophic level 4 is 4,033,000 and 1,385,000 for trophic level 3 (rounded to 4 significant figures as discussed on page G–2 of the TSD for BAFs).

$$\text{Measured PCB BAF}_T^t \text{ for trophic level 4} = \frac{(4057.3\text{ ng/g})(1000\text{ pg/ng})(1000\text{ g/L})}{1006.1\text{ pg/L}} = 4{,}033{,}000$$

$$\text{Measured PCB BAF}_T^t \text{ for trophic level 3} = \frac{(1393.15\text{ ng/g})(1000\text{ pg/ng})(1000\text{ g/L})}{1006.1\text{ pg/L}} = 1{,}385{,}000$$

2. Fraction Freely Dissolved

To determine the fraction of PCBs that are freely dissolved in the ambient water requires information on the particulate organic carbon (POC) and dissolved organic carbon (DOC) in the ambient water where the samples were collected and the K_{ow} of the chemical. The equation for estimating the fraction freely dissolved is as follows:

$$f_{fd} = \frac{1}{\left[1 + (POC \times K_{ow}) + (DOC \times K_{ow}/10)\right]}$$

Where:

POC=concentration of particulate organic carbon (kg/L).
DOC=concentration of dissolved organic carbon (kg/L).
K_{ow}=n-octanol water partition coefficient for the chemical.

The log K_{ow}s used for the individual PCB congeners reported in Table 1 come from Hawker and Connell (1988). As explained above, it is necessary to compute a log K_{ow} for use in the deriving the fraction freely dissolved for the composite PCB BAF. EPA is today proposing to use the median log K_{ow} from the log K_{ow}s presented in Table 1. The median log K_{ow}s for the PCBs congeners listed in Table 1 is 6.35 (K_{ow} of 2,238,721). The median, a commonly used measure of central tendency, is the ''middle'' value (or 50th percentile) of a set of measurements arranged in order of magnitude. The median has the advantage of not being dependent on the shape of the underlying distribution of the variable of interest, in this case, the log K_{ow}s of the PCB congeners. Also, the median is not sensitive to extremely high or low values. EPA is proposing to use this value in place of the log K_{ow} of 6.589 used in the final Guidance.

EPA is soliciting comments on an alternative method for deriving a composite K_{ow}. The formula for calculating the alternative method is:

$$\text{Composite } K_{ow} = \left(\frac{1}{\frac{DOC}{10} + POC}\right)\left(\frac{\sum_{i=1}^{n} C_w^t}{\sum_{i=1}^{n} C_w^{fd}} - 1\right)$$

Where:
i=1, 2, * * * n congeners.
C_w^t=total concentration of the chemical in water.
C_w^{fd}=freely dissolved concentration of the chemical in water.

The alternate formula for calculating the composite K_{ow} is based on the following equation for calculating the K_{ow} for a single congener.

$$K_{ow} = \left(\frac{1}{\frac{DOC}{10} + POC}\right)\left(\frac{C_w^t}{C_w^{fd}} - 1\right)$$

This formula for calculating the K_{ow} for a single congener was derived algebraically from the following definition of the fraction of a freely dissolved congener, f_{fd} :

$$f_{fd} = \frac{C_w^{fd}}{C_w^t} = \frac{1}{1 + (POC)(K_{ow}) + \frac{(DOC)(K_{ow})}{10}}$$

In the alternate formula for the composite K_{ow}, the ratio of the sum of the total concentrations of the congeners in water over the sum of the total freely dissolved concentrations of the congeners in water is substituted for the ratio of the total over freely dissolved concentrations of the congener in water for a single congener.

In the final Guidance, the POC value used was 0.0 kg/L and the DOC value used was 2.0×10^{-6} kg/L. EPA is not proposing to change these values which represent the POC and DOC values from Lake Ontario where the Oliver and Niimi samples were collected.

3. Fraction Lipid

In addition, EPA is not proposing to change the fraction lipid content of the salmonids (0.11) or sculpin (0.08) or alewife (0.07) that were used in the final Guidance. The average fraction lipid for sculpin and alewife is 0.075.

The freely dissolved fraction used in the final Guidance for deriving the composite baseline BAF was 0.4837. This value was based on the POC and DOC values presented above and a log K_{ow} of 6.589. The fraction freely dissolved in this notice is 0.6907. The differences between the fraction freely dissolved in the final Guidance and this notice is the use of a different log K_{ow} as explained above.

$$f_{fd} = \frac{1}{\left[1 + (0.0 \times 2{,}238{,}721) + \left(2.0 \times 10^{-6} \times 2{,}238{,}721/10\right)\right]} = 0.6907$$

4. Derivation of Baseline PCB BAFs

Based on the information presented above and using the equation for deriving baseline BAFs, EPA today proposes a composite baseline BAF for PCBs for trophic level 4 of 53,080,000 and a composite baseline BAF for PCBs for trophic level 3 of 26,735,000.

$$\text{Baseline PCB BAF TL3} = \left[\frac{1{,}385{,}000}{0.6907} - 1\right]\left(\frac{1}{0.075}\right) = 26{,}735{,}000$$

TABLE 1.—WATER AND TISSUE CONCENTRATIONS AND LOG K_{ow}S for PCB Congeners

Congener	Water conc. (pg/L)	Tissue conc. (ng/g)			Log K_{ow}
		Sculpin	Alewife	Salmonid	
28+31	46	7.8	14	36	5.67
18	72	5.2	12	4.3	5.24
66	31	53	61	160	6.20
70+76	45	32	50	140	6.17
56+60+81	9.7	18	32	74	6.19
52	63	28	27	62	5.84
47+48	41	4.1	18	60	5.82
44	50	16	23	45	5.75
74	10	12	12	38	6.20
49	24	10	14	31	5.85
64	9.3	9.2	11	28	5.95
42	3.3	2.8	5.0	10	5.76
101	130	140	110	270	6.38
84	15	110	68	260	6.04
118	34	94	58	250	6.74
110	55	76	78	230	6.48
87+97	21	42	82	200	6.29
105	14	39	27	110	6.65
95	52	31	40	80	6.13
85	9.4	17	22	58	6.30
92	5.4	15	22	53	6.35
82	2.6	6.3	10	29	6.20
91	40	7.0	12	29	6.13
153	50	170	86	430	6.92
138	28	110	65	260	6.83
149	34	27	69	190	6.67
146	3.8	37	21	88	6.89
141	8.3	37	23	83	6.82
151	2.7	25	15	51	6.64
132	17	20	19	39	6.58
136	16	13	15	31	6.22
180	27	110	48	200	7.36
187+182	18	42	30	130	7.19
170+190	2.7	54	23	84	7.37
183	2.5	31	12	71	7.20
177	1.1	11	7.8	36	7.08
174	1.9	7.4	12	32	7.11
203+196	2.6	29	12	52	7.65
194	7.8	15	6.7	23	7.80
Totals	1006.1	1513.8	1272.5	4057.3	Median=6.35

The tissue and water concentrations are from Oliver and Niimi (1988). The Log K_{ow} values are from Hawker and Connell (1988). Oliver and Niimi (1988) report the concentrations of congeners 22, 16, 33, 17, 32, 53, 40, and 99 for water and fish tissue, but did not report the concentrations in sculpin and/or alewife. Because the concentrations were not reported for sculpin and alewife they were not included in this table nor in the calculation of the BAF. This is consistent with the approach used in the final Guidance.

B. Calculation of BAF for Use in AWQC

After a composite baseline BAF has been derived, the next step is to calculate a BAF that can be used for deriving AWQC for human health and wildlife. The data required to calculate a BAF are the composite baseline BAF, the fraction lipid of the aquatic species consumed by the population of interest whether that is humans or wildlife and the fraction of the chemical that is freely dissolved in the ambient water for the area of interest.

BAF for AWQC=[(baseline BAF)(fraction lipid of aquatic species consumed)+1](f_{fd})

1. Baseline BAF

EPA is proposing to use the new, composite baseline BAFs derived above in section III.A: 53,080,000 for trophic level 4 and 26,735,000 for trophic level 3.

2. Freely Dissolved Fraction

The equation for estimating the freely dissolved fraction is presented above. EPA is proposing to use the composite log K_{ow} of 6.35 described above in section III.A. of this notice. EPA, however, is proposing to use the same values for POC and DOC used in the final rule ($4.0\times10-8$ kg/L for POC and $2.0\times.10-6$ kg/L for DOC). These values represent POC and DOC concentrations from Lake Superior and were used for all BAFs for AWQC in the final Guidance. Due to the change in the log K_{ow} value, the freely dissolved value that EPA is today proposing to use is 0.6505.

3. Lipid Fraction

EPA is not proposing any change to the lipid values used in the final

Guidance. The lipid fraction of the aquatic species consumed by humans in the Great Lakes region is 1.82 for trophic level 3 and 3.10 for trophic level 4 (60 FR 15404). For wildlife, the lipid fraction for trophic level 3 is 6.46 and for trophic level 4 is 10.31 (60 FR 15404).

4. Calculation

Using the revised value for the freely dissolved fraction, EPA today proposes the following BAFs to be used in the human health and wildlife AWQCs for PCBs

Human Health BAF for trophic level 4=[(53,080,,000)(0.0310)+1] 0.6505=1,070,000

Human Health BAF for trophic level 3=[(26,735,000)(0.0182)+1] 0.6505=317,000

Wildlife BAF for trophic level 4=[(53,080,000)(0.1031)+1] 0.6505=3,560,000

Wildlife BAF for trophic level 3=[(26,735,000)(0.0646)+1] 0.6505=1,123,000

IV. Human Health Cancer Criteria

Based on the BAFs presented above, EPA today proposes to change the human health cancer criteria for PCBs in Table 3 of the final Guidance from 3.9E–6 ug/L to 6.8E–6 ug/L. EPA derived this revised value using the same equations used in the Great Lakes Water Quality Initiative Criteria Documents for the Protection of Human Health (EPA–820–B–95–006). The only value EPA changed was the BAF value. The calculations are:

$$\mathrm{RAD} = \frac{\text{Risk Level}}{\text{q1*}} = \frac{1\times10^{-5}}{7.7\left(\mathrm{mg/kg/d}\right)^{-1}} = 1.30\times10^{-6}\ \mathrm{mg/kg/d}$$

Drinking Water Sources:

$$\mathrm{HCV} = \frac{\mathrm{RAD}\times\mathrm{BW}}{\mathrm{WC_d} + \left[\left(\mathrm{FC_{TL3}}\times\mathrm{BAF_{TL3}}\right) + \left(\mathrm{FC_{TL4}}\times\mathrm{BAF_{TL4}}\right)\right]}$$

$$= \frac{1.30\times10^{-6}\ \mathrm{mg/kg/d}\times70\mathrm{kg}}{2\,1/\mathrm{d} + \left[\left(0.0036\times317{,}000\right) + \left(0.0114\times1{,}070{,}000\right)\right]}$$

$$= 6.8\times10^{-6}\ \mathrm{ug/L}$$

Non-Drinking Water Sources:

$$\mathrm{HCV} = \frac{\mathrm{RAD}\times\mathrm{BW}}{\mathrm{WC_r} + \left[\left(\mathrm{FC_{TL3}}\times\mathrm{BAF_{TL3}}\right) + \left(\mathrm{FC_{TL4}}\times\mathrm{BAF_{TL4}}\right)\right]}$$

$$= \frac{1.30\times10^{-6}\ \mathrm{mg/kg/d}\times70\mathrm{kg}}{0.011/\mathrm{d} + \left[\left(0.0036\times317{,}000\right) + \left(0.0114\times1{,}070{,}000\right)\right]}$$

$$= 6.8\times10^{-6}\ \mathrm{ug/L}$$

V. Wildlife Criteria

For wildlife, EPA today proposes to change the PCB criteria from 7.4E–5 ug/L to 1.2E–4 ug/L based on using the BAFs presented above. The equations and calculations of mammalian wildlife values are presented below. With the exception of the revised BAF values described above, the equations and data are identical to those used in the Great Lakes Water Quality Initiative Criteria Documents for Protection of Wildlife (EPA–820–B–95–008).

$$WV\,(\text{mink}) = \frac{TD \times \left[1 / \left(UF_{A(\text{mink})} \times UF_S \times UF_L\right)\right] \times Wt_{(\text{mink})}}{W_{(\text{mink})} + \left[\left(F_{(\text{mink,TL3})} \times BAF_3\right) + \left(F_{(\text{mink,other})} \times BAF_{(\text{other})}\right)\right]}$$

$$WV\,(\text{mink}) = \frac{0.30\ \text{mg/kg} - \text{d} \times \left[1 / (1 \times 1 \times 10)\right] \times 0.80\ \text{kg}}{0.081\ \text{L/d} + \left[(0.159\ \text{kg/d} \times 1{,}123{,}000\ \text{L/kg}) + (0.0177\ \text{kg/d} \times 0\ \text{L/kg})\right]}$$

$$WV\,(\text{mink}) = 134.4\ \text{pg/L}$$

$$WV\,(\text{otter}) = \frac{TD \times \left[1 / \left(UF_{A(\text{otter})} \times UF_S \times UF_L\right)\right] \times Wt_{(\text{otter})}}{W_{(\text{otter})} + \left[\left(F_{(\text{otter,TL3})} \times BAF_3\right) + \left(F_{A(\text{otter,TL4})} \times BAF_4\right)\right]}$$

$$WV\,(\text{otter}) = \frac{0.30\ \text{mg/kg} - \text{d} \times \left[1 / (1 \times 1 \times 10)\right] \times 7.4\ \text{kg}}{0.60\ \text{L/d} + \left[(0.976\ \text{kg/d} \times 1{,}123{,}000\ \text{L/kg}) + (0.244\ \text{kg/d} \times 3{,}560{,}000\ \text{L/kg})\right]}$$

The geometric mean of these two mammalian wildlife values results in

$WV\ (\text{mammalian}) = e^{([\ln WV(\text{mink}) + \ln WV(\text{otter})]/2)}$

$WV\ (\text{mammalian}) = e^{([\ln 134.4\ \text{pg/L} + \ln 113.0\ \text{pg/L}]/2)}$

WV (mammalian)=123 pg/L (two significant digits)=1.2 E–4 ug/L

VI. Request for Public Comment

EPA is requesting comment on the approach for deriving a composite baseline BAF for PCBs and on the use of the composite K_{ow} for PCBs used in estimating the fraction freely dissolved for PCBs. Specifically, EPA is requesting comment on whether using the total concentration of PCBs in tissue and the total concentration of PCBs in the ambient water to develop a composite baseline BAF for those congeners in Table 1 is preferable to the weighted geometric mean used in the final Guidance. EPA is also requesting comment on whether the composite K_{ow} should be estimated using the median of the K_{ow}s for those congeners presented in Table 1. EPA also requests comments on the alternate method proposed for deriving the composite K_{ow}. EPA also requests comments on whether it accurately computed the revised composite baseline BAF values, the revised composite K_{ow}, the revised BAFs used for calculating the AWQC, and the revised human health and wildlife criteria. EPA is not requesting comment on the general methodology or the data used for deriving the baseline BAF. EPA is also not requesting information on the methodology or data used for deriving the BAF used in calculating AWQC. In addition, EPA is not requesting comment on the methodology or data (other than the BAFs) used to derive the human health cancer criteria or the wildlife criteria. These issues were fully addressed in the rulemaking for the final Guidance.

VII. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), EPA must determine whether the regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is not a ''significant regulatory action'' and is therefore not subject to OMB review.

VIII. Regulatory Flexibility Act as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996

The Regulatory Flexibility Act (RFA) provides that, whenever an agency is required under 5 U.S.C. 553 to publish a general notice of rulemaking for any proposed rule, an agency must prepare an initial regulatory flexibility analysis unless the head of the agency certifies that the proposed rule will not have a significant economic impact on a substantial number of small entities. 5 U.S.C. 603 & 605. The purpose of the RFA is to establish procedures that ensure that Federal agencies solicit and consider alternatives to rules that would minimize their potential disproportionate impact on small entities.

EPA has determined that the proposed rule, if promulgated, would not have a significant economic impact on a substantial number of small entities for the following reasons. As EPA has previously explained, until actions are taken to implement the final Guidance, there will be no economic effect of the final Guidance on any entities, large or small. States and Tribes must both adopt their own criteria and implement them before impacts are felt. The implementation regulations provide States and Tribes with a variety of flexible alternatives which can affect the burden felt by any small entity affected by this rule, including total maximum daily load (TMDL) calculations and waste load allocations (WLAs). Impacts

will not be felt until States and Tribes select and put in place implementation measures.

Furthermore, today's proposal, if adopted, will result in human health cancer criteria and wildlife criteria less stringent than those currently in the final Guidance. If States or Tribes adopt criteria consistent with today's proposal, they will reduce any adverse economic impact that might have been imposed by State or Tribal adoption of the 1995 criteria. Consequently, the economic effect of today's proposal relative to the 1995 Guidance should be positive. Any adverse economic impact on small entities associated with measures taken to implement the current provisions of the final Guidance should be reduced by adoption of the proposed revisions. For these reasons, the Administrator certifies, pursuant to section 605(b) of the RFA, that the proposed rule, if promulgated, will not have a significant economic impact on a substantial number of small entities.

IX. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal Mandates'' that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of the affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

As noted above, this rule is limited to the method for deriving a composite BAF for PCBs and for deriving a composite K_{ow} for PCBs, which will result in human health cancer criteria and wildlife criteria for PCBs less stringent than those currently in the final Guidance. If States or Tribes adopt criteria consistent with today's proposal, they will reduce any adverse economic impact that might have been imposed by State or Tribal adoption of the 1995 criteria. Consequently, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. EPA has also determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and Tribal governments, in the aggregate, or the private sector in any one year. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA.

X. Paperwork Reduction Act

There are no information collection requirements in this proposed notice and therefore there is no need to obtain OMB approval under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*

XI. References

Great Lakes Water Quality Technical Support Document for the Procedure to Determine Bioaccumulation Factors (EPA–820–B–95–005). NITS Number: PB95187290. ERIC Number: D049.

Great Lakes Water Quality Initiative Criteria Documents for the Protection of Human Health (EPA–820–B–95–006). NITS Number: PB95187308. ERIC Number: D050.

Great Lakes Water Quality Initiative Criteria Documents for Protection of Wildlife: DDT; Mercury; 2,3,7,8–TCDD; PCBs (EPA–820–B–95–008). NITS Number: PB95187324. ERIC Number: D052.

Hawker D.W. and D.W Connell. 1988. Octanol-Water Partition Coefficients of Polychlorinated Biphenyl Congeners. Environ. Sci. Technol., 22(4):382–387.

Oliver, B.G. and A.J Niimi. 1988. Trophodynamic Analysis of Polychlorinated Biphenyl Congeners and Other Chlorinated Hydrocarbons in the Lake Ontario Ecosystem. Environ. Sci. Technol., 22(4):388–397.

U.S. Environmental Protection Agency. Water Quality Guidance for the Great Lakes System and Correction; Proposed Rules. Vol. 58, No.72. April 16, 1993. pp.20802–21047.

U.S. Environmental Protection Agency. Water Quality Guidance for the Great Lakes System; Notice of Data Availability. Vol. 59. August 30, 1994. pp.44678–44685.

U.S. Environmental Protection Agency. Final Water Quality Guidance for the Great Lakes System; Final Rule. Vol. 60, No.56. March 23, 1995. pp.15366–15425.

List of Subjects in 40 CFR Part 132

Environmental protection, Administrative practice and procedure, Great Lakes, Indians-lands, Intergovernmental relations, Reporting and recordkeeping requirements, Water pollution control.

Dated: October 11, 1996.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble Title 40, Chapter I of the Code of Federal Regulations is proposed to be amended as follows:

PART 132—WATER QUALITY GUIDANCE FOR THE GREAT LAKES SYSTEM

1. The authority citation for Part 132 continues to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*

2. Table 3 to Part 132 is amended by revising the entry for PCBs(class) to read as follows:

TABLE 3.—WATER QUALITY CRITERIA FOR PROTECTION OF HUMAN HEALTH

Chemical	HNV (ug/L)		HCV (ug/L)	
	Drinking	Nondrinking	Drinking	Nondrinking
* * *	*	*	*	*
PCBs(class)			6.8E–6	6.8E–6
* * *	*	*	*	*

3. Table 4 to Part 132 is amended by revising the entry for PCBs(class) to read as follows:

TABLE 4.—WATER QUALITY CRITERIA FOR PROTECTION OF WILDLIFE

Chemical	Criteria (ug/L)
* * * * *	
PCBs(class)	1.2E–4
* * * * *	

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