Presented below are water quality standards that are in effect for Clean Water Act purposes.

EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.

3745-2-07 Additive effects of pollutants.

(A) Carcinogens.

(1) The incremental risk of each known or suspected carcinogen present in a discharge shall be considered additive in accordance with this rule. A known or suspected carcinogen is considered present if its preliminary effluent limitation (PEL) falls within group three, four or five of the reasonable potential procedures contained in rule 3745-2-06 of the Administrative Code.

(2) Except as provided in paragraphs (A)(3) and (A)(4) of this rule, the following equation shall be used to protect against additive effects associated with simultaneous human exposure to multiple chemicals.

$$MAC_1 /HHWLA_1 + MAC_2 /HHWLA_2 + ... + MAC_n /HHWLA_n \leq 1$$

Where:

MAC = average concentration of all samples collected within the month for each limited or monitored carcinogen; and

HHWLA = wasteload allocation (WLA) to meet human health criteria determined in accordance with rule 3745-2-05 of the Administrative Code.

(3) If the discharger demonstrates to the director's satisfaction that the carcinogenic risk is not additive for a pollutant, the director shall exclude that pollutant from paragraph (A)(2) of this rule.

(4) Adjustments to the equation in paragraph (A)(2) of this rule to account for the interaction among discharges to the same receiving water may be made on a case-by-case basis by the director.

(5) Carcinogens shall be considered to be conservative pollutants in the absence of other information.

(B) Noncarcinogens.

(1) Noncarcinogenic effects of individual pollutants shall not be considered to be additive unless available scientific information supports a reasonable assumption that the pollutants produce additive effects through the same mechanism of action.

(2) For noncarcinogens which have human health effects that have been shown by scientific evidence to be additive, the following equation shall be used to protect against additive effects associated with simultaneous human exposure to multiple chemicals.

$$PEL_1 /HHWLA_1 + PEL_2 /HHWLA_2 + ... + PEL_n /HHWLA_n \leq 1$$

Where:

PEL = average PEL of each separate noncarcinogen; and

HHWLA = WLA to meet human health criteria determined in accordance with rule 3745-2-05 of the Administrative Code.

(C) Other requirements.

(1) For discharges containing one or more 2,3,7,8-substituted chlorinated dibenzo-p-dioxins or 2,3,7,8-substituted dibenzofurans, the 2,3,7,8-TCDD toxicity equivalence concentration (TEC_{tcdd}) shall be determined.

(2) The values listed in table 1 of this rule shall be used to determine the TEC_{tcdd} using the following equation.

$$TEC_{tcdd} = \sum \left(C_x * TEF_x * BEF_x \right)$$

Where:

C_x = concentration of total chemical X in effluent;

TEF_x = TCDD toxicity equivalency factor for X; and

BEF_x = TCDD bioaccumulation equivalency factor for X.

(3) The TEC_{tcdd} concentration of a discharge shall be considered as one pollutant for purposes of the equation in paragraph (A)(2) of this rule (if carcinogenic) or paragraph (B)(2) of this rule (if noncarcinogenic).

(4) The procedure in paragraph (C)(2) of this rule is also applicable when noncarcinogenic furans and dioxins are present in an effluent.

Table 1. TEFs and BEFs for chlorinated dibenzo dioxins and chlorinated dibenzo furans.

Congener	TEF	BEF
2,3,7,8-TCDD	1.0	1.0
1,2,3,7,8-PeCDD	0.5	0.9
1,2,3,4,7,8-HxCDD	0.1	0.3
1,2,3,6,7,8-HxCDD	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.05
OCDD	0.001	0.01
2,3,7,8-TCDF	0.1	0.8
1,2,3,7,8-PeCDF	0.05	0.2
2,3,4,7,8-PeCDF	0.5	1.6
1,2,3,4,7,8-HxCDF	0.1	0.08
1,2,3,6,7,8-HxCDF	0.1	0.2
2,3,4,6,7,8-HxCDF	0.1	0.7
1,2,3,7,8,9-HxCDF	0.1	0.6
1,2,3,4,6,7,8-HpCDF	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.4
OCDF	0.001	0.02

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