3745-2-09 **Whole effluent toxicity provisions and water quality based effluent limit calculation procedures.**

(A) For discharges of whole effluent toxicity (WET) to flowing receiving waters, the WQBEL for WET shall be calculated using the following mass balance equation:

$$\frac{WQC\ (Q_{eff} + Q_{up})\ -\ Q_{up}\ (WQ_{up})}{Q_{eff}}$$

Where:

WQC = toxicity level as established in paragraph (A) of rule 3745-1-44 of the Administrative Code.

Q_{eff} = effluent flow as established in paragraph (A)(4) of rule 3745-2-05 of the Administrative Code.

Q_{up} = stream design flow as established in paragraphs (A)(1) and (A)(2) of rule 3745-2-05 of the Administrative Code.

WQ_{up} = background water quality as established in paragraph (C) of this rule.

An alternative modeling method may be used if the discharger demonstrates to Ohio EPA's satisfaction that it is appropriate and protective of water quality criteria.

(B) Background water quality for WET calculations shall be determined using the following requirements.

(1) Use 0.0 chronic toxic units (TU_c) for background chronic toxicity unless there is specific information indicating additivity between the discharge and another source or sources in the background waters. If there is evidence of additivity, use 0.5 TU_c for background chronic toxicity. If sufficient data exists, use the average value of the data for background chronic toxicity.

(2) To establish background levels of acute toxicity, Ohio EPA shall consider the likelihood for acute toxicity to exist in the background waters of the discharge using available information on the following factors:

(a) The degree and type of biological effects in the background waters determined with biological index measurements.

(b) The frequency and magnitude of acute toxicity occurrences in the background waters used in toxicity tests.

(c) Data on additive, synergistic, or antagonistic effects of a discharge when it

is combined with receiving water.

(d) The quality and quantity of each type of data available.

(e) Other relevant factors.

(3) After an analysis of the likelihood for acute toxicity to exist in the background waters of the discharge, background toxicity shall be set equal to one of the following values:

(a) If there is likelihood, use 0.15 acute toxic units (TU_a) or if sufficient data are available and indicate that acute toxicity levels are routinely exceeded, use the average value of the data.

(b) If there is no likelihood or there are no data available to make an assessment of the likelihood, use 0.0 TU_a.

(c) If background toxicity is due to an identifiable discharge that has not yet achieved toxicity limits required by paragraph (B) of rule 3745-33-07 of the Administrative Code, use 0.0 TU_a.

(C) Wasteload allocation (WLA) results for acute toxicity shall not exceed 1.0 TU_a unless the provisions in paragraph (B) of rule 3745-33-07 of the Administrative Code are met.

(D) Multiple discharges. When the director determines that it is necessary to consider multiple discharges in a WLA, the procedures defined in paragraph (A)(8) of rule 3745-2-05 of the Administrative Code shall be followed.

(E) WQBELs for WET for direct discharges to lakes or non-flowing receiving waters.

(1) WLAs to maintain chronic toxicity levels for direct discharges to non-flowing receiving waters shall be determined using the following equation:

11 (WQC) - 10 (BACK)

Where:

WQC = chronic toxicity level as established in paragraph (A) of rule 3745-1-44 of the Administrative Code.

BACK = background water quality as established in paragraph (C)(B) of this rule.

(2) WLAs for acute levels shall be set equal to 1.0 TU_a.

(3) A mixing demonstration may be conducted in accordance with rule 3745-1-06 of the Administrative Code to justify a different quantity of receiving water in the WLA determination for chronic levels. Allocation results for acute toxicity shall not exceed 1.0 TU_a unless the provisions in paragraph (B) of rule 3745-33-07 of the Administrative Code are met.

(4) An alternate modeling method may be used if the discharger demonstrates to Ohio EPA's satisfaction that it is appropriate and protective of water quality levels.

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