

WAC 173-205-050 Effluent testing for toxicity. (1) The department shall require dischargers meeting the risk definition of WAC 173-205-040(1) to characterize the effluent for toxicity during permit application or during the first year of the permit term.

(a) Each effluent sample during effluent characterization shall be tested for toxicity using multiple species which shall at a minimum include a fish, an invertebrate, and, if deemed appropriate by the department, a plant.

(b) The sampling frequency during effluent characterization and compliance monitoring shall be at least twice per year and sampling shall be timed to cover the seasonal extremes of the year such as wet-dry or cold-hot.

(c) The duration of an acute toxicity test performed for effluent characterization or compliance monitoring shall be forty-eight hours for an invertebrate and ninety-six hours for a fish.

(d) For effluent characterization and compliance monitoring, the department shall use toxicity tests published in 40 C.F.R. Part 136, in EPA toxicity test manuals, or those methods approved by the department considering the following criteria:

(i) The existence of a detailed written description of the test method;

(ii) Interlaboratory comparisons of the method;

(iii) Adequate testing with complex wastes such as wastewater;

(iv) Measurement of an effect that is clearly adverse to the production of the species such as reduced survival or growth, abnormal development, or failed reproduction; and

(v) Use of test organisms that represent taxonomic families native to the state.

(e) Toxicity testing for effluent characterization under this section, compliance monitoring as described in WAC 173-205-070, and additional monitoring as described in WAC 173-205-090 or 173-205-120 (2)(d) shall be performed by laboratories accredited by the department for the specific toxicity test in accordance with chapter 173-50 WAC.

(f) Upon request, the department may approve the performance of toxicity tests for effluent characterization or compliance monitoring for publicly owned treatment works discharging less than one-half million gallons per day and small businesses as defined in RCW 43.31.025(4) as effluent screening tests using one hundred percent effluent for the acute toxicity tests and the acute critical effluent concentration for the chronic toxicity tests.

(i) If an acute one hundred percent effluent screening test demonstrates less than eighty percent survival, the test shall be repeated as soon as possible on a fresh sample using the full dilution series test described in the permit or regulatory order.

(ii) The chronic screening tests shall be expected to have no statistically significant difference in response between the acute critical effluent concentration and the control using the method in Appendix H of EPA/600/4-89/001 or an equivalent method approved by the department, or the test shall be repeated as soon as possible on a fresh sample using the full dilution series test described in the permit or regulatory order. The chronic effluent screening tests shall also meet the chronic statistical power standard.

(2) Effluent characterization shall be used to establish:

(a) Whether a reasonable potential under 40 C.F.R. 122.44 (d)(v) for acute or chronic toxicity exists which would require a whole effluent toxicity limit.

(i) If at the end of effluent characterization the median survival in one hundred percent effluent is less than eighty percent, or if any individual test result shows less than sixty-five percent survival in one hundred percent effluent, then a reasonable potential for acute conditions in the receiving water has been demonstrated, and the whole effluent acute toxicity limit described in WAC 173-205-070 shall be applied to the discharge.

(ii) If during effluent characterization any chronic toxicity test using the method in Appendix H of EPA/600/4-89/001 or an equivalent method approved by the department demonstrates a statistically significant difference in response between the control and the acute critical effluent concentration, then a reasonable potential for chronic conditions in the receiving water has been demonstrated, and the whole effluent chronic toxicity limit described in WAC 173-205-070 shall be applied to the discharge.

(iii) If the acute critical effluent concentration is unknown during effluent characterization, all chronic toxicity tests shall determine the NOEC for comparison to the acute critical effluent concentration when it becomes available.

(A) The determination of these NOECs shall comply with the chronic statistical power standard.

(B) If effluent characterization is completed and neither the acute critical effluent concentration nor the chronic critical effluent concentration is known, then the department may require the permittee to continue the toxicity testing as conducted in effluent characterization except using single species tests rather than multiple species tests.

(b) The permittee shall analyze the toxicity test data during effluent characterization to establish a baseline toxicity level by calculating appropriate point estimates such as the LC_{50} , the IC_{50} , or the EC_{50} .

[Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 122.44. WSR 93-20-110 (Order 91-54), § 173-205-050, filed 10/6/93, effective 11/6/93.]