NACWA White Paper: Whole Effluent Toxicity Permit Testing and Limitations For Clean Water Agencies

Appendix C

REGION 2

TRE

6. **Toxicity Testing Requirements**

   a. The permittee shall conduct toxicity tests on its wastewater discharge in accordance with the provisions in this section. Such testing will determine if appropriately selected effluent concentrations adversely affect the test species.

   b. Acute Toxicity Testing Requirements

      i. Acute toxicity tests shall be conducted using the test species and method identified in Part III of this permit.

      ii. Any test that does not meet the specifications of N.J.A.C. 7:18, laboratory certification regulations, must be repeated within 30 days of the completion of the initial test. The repeat test shall not replace subsequent testing required in Part III.

      iii. The permittee shall collect and analyze the concentration of ammonia-N in the effluent on the day a sample is collected for WET testing. This result is to be reported on the Biomonitoring Report Form.

      iv. Submit an Acute Methodology Questionnaire: within 60 days from the effective date of the permit (EDP). The permittee shall resubmit after any change of laboratory occurs. (Activity #: DSW030001 - Effective10/1/2003)

      v. Submit an acute whole effluent toxicity test report: within twenty-five days after the end of every quarterly monitoring period beginning from the effective date of the permit (EDP) The permittee shall submit toxicity test results on appropriate forms. (Activity #: DSW030001 - Effective10/1/2003)

      vi. Test reports shall be submitted to:
      New Jersey Department of Environmental Protection
      Division of Water Quality, Bureau of Point Source Permitting Region 2
      P.O. Box 029
      Trenton, New Jersey 08625.

7. **Toxicity Reduction Implementation Requirements (TRIR)**

   a. The permittee shall initiate a tiered toxicity investigation if two out of six consecutive WET tests demonstrate that the effluent does not comply or will not comply with the toxicity limit specified in Part III of this permit.

      i. If the exceedence of the toxicity limit is directly caused by a documented facility upset, or other unusual event which has been identified and appropriately remedied by the permittee, the toxicity test data collected during the event may be eliminated when determining the need for initiating a TRIR upon written Department approval.

   b. The permittee shall begin toxicity characterization within 30 days of the end of the monitoring period when the second toxicity test exceeds the toxicity limits in Part III. The monitoring frequency for toxicity testing shall be increased to monthly. Up to 12 additional tests may be required.

      i. The permittee may return to the toxicity testing frequency specified in Part III if four consecutive toxicity tests conducted during the Toxicity Characterization do not exceed the toxicity limit.

      ii. If two out of any six consecutive, acceptable tests again exceed the toxicity limit in Part III, the permittee shall repeat Toxicity Reduction Implementation Requirements.

c. The permittee shall initiate a preliminary toxicity identification (PTI) upon the third exceedence of the toxicity limit specified in Part III during toxicity characterization.

   i. The permittee may return to the monitoring frequency specified in PART III while conducting the PTI. If more frequent WET testing is performed during the PTI, the permittee submit all biomonitoring reports to the DEP and report the results for the most sensitive species on the DMR.

   ii. As appropriate, the PTI shall include:
      (1) treatment plant performance evaluation,
      (2) pretreatment program information,
      (3) evaluation of ammonia and chlorine produced oxidants levels and their effect on the toxicity of the discharge,
      (4) evaluation of chemical use and processes at the facility, and
      (5) an evaluation of incidental facility procedures such as floor washing, and chemical spill disposal which may contribute to effluent toxicity.

   iii. If the permittee demonstrates that the cause of toxicity is the chlorine added for disinfection or the ammonia concentration in the effluent and the chlorine and/or ammonia concentrations are below the established water quality based effluent limitation for chlorine and/or ammonia, the permittee shall identify the procedures to be used in future toxicity tests to account for chlorine and/or ammonia toxicity in their preliminary toxicity identification report.

   iv. The permittee shall submit a Preliminary Toxicity Identification Notification within 15 months of triggering TRIR. This notification shall include a determination that the permittee intends to demonstrate compliance OR plans to initiate a CTI.

d. The permittee must demonstrate compliance with the WET limitation in four consecutive WET tests to satisfy the requirements of the Toxicity Reduction Investigation Requirements. After successful completion, the permittee may return to the WET monitoring frequency specified in PART III.

e. The permittee shall initiate a Comprehensive Toxicity Investigation (CTI) if the PTI does not identify the cause of toxicity and a demonstration of consistent compliance with the toxicity limit in Part III can not be made.

   i. The permittee shall develop a project study plan identifying the party or parties responsible for conducting the comprehensive evaluation, establish a schedule for completing the study, and a description of the technical approach to be utilized.

   ii. If the permittee determines that the PTI has failed to demonstrate consistent compliance with the toxicity limit in Part III , a Comprehensive Toxicity Investigation Workplan must be prepared and submitted within 90 days.

   iii. The permittee shall summarize the data collected and the actions taken in CTI Quarterly Reports. The reports shall be submitted within 30 calendar days after the end of each quarter.

   iv. The permittee shall submit a Final CTI Report 90 calendar days after the last quarterly report. The final CTI report shall include the corrective actions identified to reduce toxicity and a schedule for implementing these corrective actions.

f. Upon receipt of written approval from the Department of the corrective action schedule, the permittee shall implement those corrective actions consistent with that schedule.

i. The permittee shall satisfy the requirements of the Toxicity Reduction Implementation Requirements and return to the original toxicity monitoring frequency after corrective actions are implemented and the permittee demonstrates consistent compliance with the toxicity limit in Part III in four consecutive toxicity tests.

ii. If the implemented corrective measures do not result in consistent compliance with the toxicity limit in Part III, the permittee shall submit a plan for resuming the CTI.

REGION 4

TRE

D. BIOMONITORING REQUIREMENTS, CHRONIC

The permittee shall conduct a 3-Brood *Ceriodaphnia dubia* Survival and Reproduction Test and a 7-Day Fathead Minnow *(Pimephales promelas)* Larval Survival and Growth Test on samples of final effluent from Outfall 001.

The measured endpoint for toxicity will be the inhibition concentration causing 25% reduction in survival, reproduction and growth (IC_{25}) of the test organisms. The IC_{25} shall be determined based on a 25% reduction as compared to the controls, and as derived from linear interpolation. The average reproduction and growth responses will be determined based on the number of *Ceriodaphnia dubia* or *Pimephales promelas* larvae used to initiate the test.

Test shall be conducted and its results reported based on appropriate replicates of a total of five serial dilutions and a control, using the percent effluent dilutions as presented in the following table:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
4 X PL	2 X PL	Permit Limit (PL)	0.50 X PL	0.25 X PL	Control
% effluent					
6.4	3.2	1.6	0.8	0.4	0

The dilution/control water used will be moderately hard water as described in EPA/600/4-91/002 (or the most current edition). A chronic standard reference toxicant quality assurance test shall be conducted with each species used in the toxicity tests and the results submitted with the discharge monitoring report.

Toxicity will be demonstrated if the IC_{25} is less than or equal to the permit limit indicated for each outfall in the above table(s). Toxicity demonstrated by the tests specified herein constitutes a violation of this permit.

All tests will be conducted using a minimum of three 24-hour flow-proportionate composite samples of final effluent collected on days 1, 3 and 5. If, in any control more than 20% of the test organisms die in 7 days, the test (control and effluent) is considered invalid and the test shall be repeated within two (2) weeks. Furthermore, if the results do not meet the acceptability criteria of section 4.9.1, EPA/600/4-91/002 (or the most current edition), that test shall be repeated. Any test initiated but terminated before completion must also be reported along with a complete explanation for the termination.

The toxicity tests specified herein shall be conducted semi-annually (1/ 6 months) for Outfall 001 and begin no later than 90 days from the effective date of this permit.

In the event of a test failure, the permittee must start a follow-up test within 2 weeks and submit results from a follow-up test within 30 days from obtaining initial WET testing results. The follow-up test must be conducted using the same serial dilutions as presented in the corresponding table(s) above. **The follow-up test will not negate an initial failed test. In addition, the failure of a follow-up test will constitute a separate permit violation.**

In the event of 2 consecutive test failures or 3 test failures within a 12-month period for the same outfall, the permittee must initiate a Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) study within 30 days and so notify the Division by letter. This notification shall include a schedule of activities for the initial investigation of that outfall. **During the term of the TIE/TRE study, the frequency of biomonitoring shall be once every three months.** Additionally, the permittee shall submit progress reports once every three months throughout the term of the TIE/TRE study. The toxicity must be reduced to allowable limits for that outfall within 2 years of initiation of the TIE/TRE study. Subsequent to the results obtained from the TIE/TRE studies, the permittee may request an extension of the TIE/TRE study period if necessary to conduct further analyses. The final determination of any extension period will be made at the discretion of the Division.

The TIE/TRE study may be terminated at any time upon the completion and submission of 2 consecutive tests (for the same outfall) demonstrating compliance. Following the completion of TIE/TRE study, the frequency of monitoring will return to a regular schedule, as defined previously in this section as well in Part I of the permit. **During the course of the TIE/TRE study, the permittee will continue to conduct toxicity testing of the outfall being investigated at the frequency of once every three months but will not be required to perform follow-up tests for that outfall during the period of TIE/TRE study.**

Test procedures, quality assurance practices, determinations of effluent survival/reproduction and survival/growth values, and report formats will be made in accordance with Short-term Methods For Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-91/002 or the most current edition.

Results of all tests, reference toxicant information, copies of raw data sheets, statistical analysis and chemical analyses shall be compiled in a report. The report will be written in accordance with Short-term Methods For Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-91/002 or the most current edition.

Two copies of biomonitoring reports (including follow-up reports) shall be submitted to the Division. One copy of the report shall be submitted along with the discharge monitoring report (DMR). The second copy shall be submitted to the local Division of Water Pollution Control office address (see table below):

REGION 5

TRE

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE (including any post-TRE biomonitoring requirements) is only required if toxicity is demonstrated as defined by Paragraph e, above.

a. Development of TRE Plan

Within 90 days of determination of toxicity, the permittee shall submit plans for an effluent toxicity reduction evaluation (TRE) to the Program Management Section of the IDEM. The TRE plan shall include appropriate measures to characterize the causative toxicants and the variability associated with these compounds. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications listed below:

Methods for Aquatic Toxicity Identification
Phase I Toxicity Characterization Procedures, Second Edition EPA/600/6-91/003)
Phase II Toxicity Identification Procedures (EPA/600/3-88/035)
Phase III Toxicity Confirmation Procedures (EPA/600/3-88/036)
Methods for Chronic Toxicity Identification
Phase I Toxicity Identification evaluation; Characterization of Chronically Toxic Effluent (EPA/600/6-91/005)

Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070)

Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatment Plans (EPA/600/2-88/062)

b. Conduct the Plan

Within 30 days after submission of the TRE plan to the IDEM, the permittee must initiate an effluent TRE consistent with the TRE plan. Progress reports shall be submitted every 90 days to the IDEM beginning 90 days after initiation of the study.

c. Reporting

Within 90 days of study completion, the permittee shall submit to the Program Management Section of the IDEM the final study results and a schedule for reducing the toxicity to acceptable levels through control of the toxicant source or treatment of effluent toxicity.

d. Compliance Date

The permittee shall complete items a, b, and c and reduce the toxicity to acceptable levels as soon as possible but no later than three years after the date of determination of toxicity.

e. Post-TRE Biomonitoring Requirements (Only Required After Completion of a TRE)

The permittee shall conduct monthly toxicity tests for a period of three months and, provided no toxicity is shown, once every six months thereafter for the duration of the permit. If toxicity is found after the three month period, testing must revert to the monthly monitoring schedule. These tests shall be conducted in accordance with the procedures under the Whole Effluent Toxicity Testing Section above. The permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent.

REGION 6

TRE

4. Persistent Toxicity

The requirements of this Part apply only when a test demonstrates a significant effect at the critical dilution. A significant effect is defined as a statistically significant difference, at the 95% confidence level, between a specified endpoint (survival, growth, or reproduction) of the test organism in a specified effluent dilution when compared to the specified endpoint of the test organism in the control. Significant lethality is defined as a statistically significant difference in survival at the critical dilution when compared to the survival of the test organism in the control. Significant sublethality is defined as a statistically significant difference in growth/reproduction at the critical dilution when compared to the growth/reproduction of the test organism in the control.

a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test. The retests shall also be reported on the DMRs as specified in Part 3.d.

b. If the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in item 4.a.

d. If the two retests are performed due to a demonstration of significant sublethality, and both retests pass, the permittee shall continue testing at the quarterly frequency until such time that the permittee can invoke the reduced testing frequency provision specified in Part 1.e.

e. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

a. Within 45 days of the last test day of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the last test day of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethal effects at the critical dilution for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:

1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;

3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodate situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify CS limits.

REGION 7

TRE

14. Whole Effluent Toxicity (WET) tests shall be conducted as follows:
SUMMARY OF WET TESTING FOR THIS PERMIT
OUTFALL A.E.C. % FREQUENCY SAMPLE TYPE
#001 100% QUARTERLY 24 hr. composite
(a) Test Schedule and Follow-Up Requirements
(1) Perform a single-dilution test in the months and at the frequency specified above. If the effluent passes the test, do not repeat the test until the next test period. Submit test results along with complete copies of the test reports as received from the laboratory within 30 calendar days of availability to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102.
(2) If the effluent fails the test, a multiple dilution test shall be performed within 30 calendar days, and biweekly thereafter, until one of the following conditions are met:
a. THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
b. A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

C. SPECIAL CONDITIONS (continued)
14. Whole Effluent Toxicity (WET) (continued)
(a) Test Schedule and Follow-Up Requirements (continued)
(3) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
(4) Additionally, the following shall apply upon failure of the third test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact WPCP, Planning Section to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
(5) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
(6) If a previously completed TIE has clearly identified the cause of

toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(7) All failing test results shall be reported to WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(8) When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

(9) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October.

(b) PASS/FAIL procedure and effluent limitations:

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:

a. the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the LC50 concentration for the most sensitive of the test organisms; or,

b. all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

(c) Test Conditions

(1) Test Type: Acute Static non-renewal

(2) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

(3) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

C. SPECIAL CONDITIONS (continued)

14. Whole Effluent Toxicity (WET) (continued)

(c) Test Conditions (continued)

(4) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(5) Single-dilution tests will be run with:

a. Effluent at the AEC concentration;

b. 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

c. reconstituted water.

(6) Multiple-dilution tests will be run with:

a. 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;

b. 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

c. reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.