

Water Docket EPA-HQ-OA-2011-0154
and
General docket EPA-HQ-OA-2011-0156
Comments Filed in Response to Federal Register Noticed
Dated February 23, 2011
by U.S. Environmental Protection Agency

Improving U.S. Environmental Protection Agency Regulations

Submitted by the **Texas Whole Effluent Toxicity Coalition** (Coalition) comprised of Texas Association of Clean Water Agencies, Water Environment Association of Texas, Texas Section American Water Works Association, and Texas Water Conservation Association.

Contact:

Carol Batterton, Executive Director
Water Environment Association of Texas
1825 Fort View Rd. Suite 102
Austin, TX 78704
carol@weat.org

The following comments are submitted in response to a notice published in the Federal Register by the U.S. Environmental Protection Agency (EPA) on February 23, 2011. In the notice, EPA requested public input to a retrospective review of its rules.

The comments address the implementation of Title 40 Code of Federal Regulations (CFR) Part 122.44(d) as it relates to sublethal Whole Effluent Toxicity (WET) tests. It should be noted that the concerns and recommendations of the Coalition do not relate to the regulation, itself, but, rather, to the proposed EPA program to apply the regulation to the control of sublethal effects exhibited in WET tests of wastewater treatment plant effluents. The following areas which EPA has identified as being of interest are applicable to this program:

- The intended environmental results can be achieved using less costly methods; the proposed sublethal WET program has high cost and no benefit.
- The program is excessively burdensome to the regulated community.
- The program can be made more flexible within the existing legal framework. There are alternatives that ensure environmental objectives are met that do not place an undue burden on permittees and the communities they serve and support.
- Consistently avoiding sublethal effects is beyond the control of permittees, and attempts to do so are time-consuming and expensive.

40 CFR 122.44(d) states that, where necessary to achieve or maintain water quality standards for receiving waters, appropriate limitations must be included in wastewater effluent discharge permits. In accordance with the requirements of Section 101 (a)(3) of the Federal Clean Water Act, the States have adopted water quality standards that include a requirement that there be no discharge of toxic pollutants in toxic amounts. It is not always practical to control toxic effects by establishing permit limits for specific pollutants. Therefore, the WET test was developed by EPA. It assesses the overall potential that an effluent discharge may have toxic effects on aquatic life by measuring the combined toxic effects of all substances in an effluent discharge. In the test, living organisms are exposed to effluent samples, and their response is measured. If there is a response, it may be exhibited as lethality (death of organisms) and/or sublethality (reduced growth or reproduction of organisms).

When WET testing requirements were initially established for permittees, the focus was on discharges that exhibited strong lethal effects. This was a meaningful result and, in many of these cases, the control programs that were subsequently implemented have been beneficial to the environment.

However, EPA's current attempt to attach regulatory significance to sublethal effects that may be observed in the WET tests is inconsistent with the reliability and significance of the test. While persistent, significant lethality observed in a WET test may be indicative of adverse impacts on aquatic life in receiving waters, there is no evidence that sublethal

effects in the WET tests are indicative of adverse impacts. The proposed EPA requirement to establish permit limits in which a sublethal effect in a single WET test is a permit violation will be excessively burdensome to permittees and their customers but will have no demonstrable environmental benefit.

The studies on which EPA relies to support its position that effluent WET test results can be indicative of adverse aquatic life impacts were conducted in the 1980s and in the early 1990s. Based on these studies, an evaluation of the use of WET tests as permit limits, published by EPA in 1999,¹ reported the following:

- While significant lethality can be indicative of adverse impacts on aquatic life, no such connection has been demonstrated for sublethal effects.
- It recommended that the results of a single WET test should not be characterized as a violation of an effluent permit limit or a water quality standard.

No studies have been conducted since 1999 that support any other position or interpretation. In spite of this fact, EPA is requiring States to issue permits in which a single WET test with only sublethal effects is a permit violation.

This requirement is not only unjustified from an environmental protection standpoint but, also, excessively burdensome for the following reasons:

- Random lethal and sublethal effects in the WET test occur due to organism variability. A permittee has no ability to avoid these test organism responses and the associated permit noncompliance.
- Studies are required to determine how to eliminate the causes of lethality and sublethality in WET tests. These studies, which are referred to as Toxicity Reduction Evaluations (TREs), are expensive (costs over \$100,000 are not uncommon). Costs are substantially greater when only sublethal effects are observed.
- In 2009, the Texas Whole Effluent Toxicity Coalition (Coalition) filed a Freedom of Information Act (FOIA) request with EPA asking for information on successful

¹ de Vlaming, Victor and Teresa Norberg-King. [A Review of Single Species Toxicity Test: Are the Tests Reliable Predictors of Aquatic Ecosystem Community Response?](#) EPA 600/R-97/114. 1999.

TREs that had been performed when there were only sublethal effects. A successful TRE was defined as one where a control strategy was identified that resulted in the elimination of sublethal WET test effects. In the responses provided by EPA, no successful TREs were identified when only sublethal effects were present. However, a number of TREs were identified that were either inconclusive or resulted in the implementation of control strategies that did not eliminate WET test effects, even when lethal effects were present.

- The Coalition has since become aware of a sublethal TRE conducted by the City of Sacramento, California². The sublethal effects were not consistently present. After spending \$1.3 million, the City concluded that the effects were due to bacterial growths in the tubing in their effluent sampler. The bacteria were present in the sample being analyzed but not in the discharge to the receiving waters.
- Permittees incur substantial cost burdens as a result of sublethal WET limits. Costs are incurred for (1) TRE studies, (2) enforcement penalties for WET test effects that cannot be eliminated, and (3) capital and operational costs for new or modified facilities that are subsequently determined not to eliminate the cause of the WET test effects. Even if the capital and operational costs should result in the elimination of sublethal WET test effects, they are unwarranted because there is simply no evidence that this expenditure of valuable resources provides any additional protection for the environment or human health.
- There can be significant adverse economic impacts to businesses in the community. One of the first activities in a TRE investigation for a publicly owned treatment works is an evaluation of the industries in the community that discharge to the collection system. There are documented cases in the FOIA response where industrial dischargers invested funds to change process operations or wastewater treatment processes based on TRE conclusions, but WET test effects were not eliminated.

²Maidrand, M., C. Irvine, J. Miller, M. Miller, B. Sample, and R. Parales. "A Toxicity Reduction Evaluation at a Wastewater Treatment Plant." Water Environment Laboratory Solutions, Volume 16, Number 1. 2009

In conclusion, 40 CFR 122.44(d) is being inappropriately used as a basis to require sublethal WET permit limits. Sublethal WET permit limits should not be imposed unless scientific evidence is developed that disproves the existing conclusion that sublethal WET test effects are not indicative of adverse impacts on aquatic life. If it should be found that sublethal WET permit limits are justified, the establishment of permit limits should be subject to the following conditions:

- Permit limits are developed based on magnitude and frequency conditions consistent with the magnitude and frequency of sublethal WET effects that are indicative of adverse impacts on aquatic life.
- There are reliable, practical methods that permittees can use to identify and eliminate the causes of sublethal WET test effects.

The Coalition believes that WET testing can have a significant positive role in helping ensure that wastewater treatment is effective and protective of the environment. Significant, persistent lethal effects require a response on the part of the wastewater plant operator. Furthermore, repeated sublethal effects can be a useful indicator that lethal effects may be present and, thus, could appropriately trigger a response of more frequent testing to confirm or refute this potential. However, sublethal WET permit limits, particularly in the form where every test exhibiting a sublethal effect is a permit noncompliance, are excessively burdensome to the community or industry that must spend substantial funds in an attempt to solve a non-existent problem.