

## ATTACHMENT A – DEFINITIONS

### Acute Toxicity Test

Acute toxicity test is a test to determine the concentration of effluent or ambient waters that causes an adverse effect (usually mortality) on a group of test organisms during a short-term exposure (e.g., 24, 48, or 96 hours). Acute toxicity is determined using statistical procedures (e.g., point estimates or a t-test).

### Ambient Toxicity

Ambient toxicity is measured by a toxicity test on a sample collected from a receiving waterbody.

### Annual Average Effluent Limitation

The highest allowable average of monthly discharges over a calendar year, calculated as the sum of all monthly discharges measured during a calendar year divided by the number of monthly discharges measured during that year.

### Arithmetic Mean ( $\mu$ )

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean} = \mu = \Sigma x / n \quad \text{where: } \Sigma x \text{ is the sum of the measured ambient water concentrations, and } n \text{ is the number of samples.}$$

### Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

For the AMEL concentration limit, it is the sum of the measured sample values divided by the number of samples for the month.

For the AMEL mass loading limit, it is the sum of the product of the flow rate (MGD) x measured sample value (mg/L) x 8.34 divided by the number of samples for the month.

### Average Weekly Effluent Limitation (AWEL)

The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

### Best Management Practices (BMPs)

BMPs are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and non-point discharges including storm water. BMPs include structural and non-structural controls,

and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

### **Bioaccumulative**

Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

### **Biosolids**

Biosolids refer to non-hazardous sewage sludge as defined in 40 C.F.R. section 503.9.

### **Carcinogenic**

Pollutants are substances that are known to cause cancer in living organisms.

### **Chronic Toxicity Tests**

Chronic toxicity tests measure the sub-lethal effects of a discharge (e.g. reduced growth or reproduction). Certain chronic toxicity tests include an additional measurement of lethality.

### **Coefficient of Variation (CV)**

CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

### **Criteria Continuous Concentration (CCC)**

Criteria Continuous Concentration equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (e.g., 4 days) without deleterious effects.

### **Criteria Maximum Concentration (CMC)**

Criteria Maximum Concentration equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (e.g., 1 hour) without deleterious effects.

### **Daily Discharge**

Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

### **Detected, but Not Quantified (DNQ)**

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

### **Dilution Credit**

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

### **Domestic Sewage**

Domestic Sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

### **Effect Concentration (EC)**

Effect concentration is a point estimate of the toxicant concentration that would cause an observable adverse effect (e.g., mortality, fertilization). EC25 is a point estimate of the toxicant concentration that would cause observable 25% adverse effect as compared to the control test organisms.

### **Effluent Concentration Allowance (ECA)**

ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (*Technical Support Document for Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

### **Enclosed Bays**

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

### **Estimated Chemical Concentration**

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

### **Estuaries**

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

### **Existing Discharger**

Any Discharger that is not a new Discharger. An existing Discharger includes an “increasing Discharger” (i.e., an existing facility with treatment systems in place from its current discharge that is or will be expanding, upgrading, or modifying its existing permitted discharge after the effective date of the State Implementation Policy).

### **Geometric Mean**

Geometric mean is a measure of the central tendency of a data set that minimizes the effects of extreme values. The geometric mean used for determining compliance with bacterial standards is calculated with the following equation:

Geometric Mean =  $(C_1 \times C_2 \times \dots \times C_n)^{1/n}$  where n = the number of days samples were collected during the period, and C = the concentration of bacteria (CFU\*/100 mL) found on each day of sampling.

\*Effluent limitations for bacterial density are expressed in units of a Most Probable Number per 100 milliliters (MPN/100 ml). This calculation of geometric mean is also applicable and shall be used to determine compliance with bacterial effluent limitations.

### **Group I Pollutants**

The list of pollutants is based on Appendix A to 40 C.F.R § 123.45. The State Water Board enforcement policy located at [Water Quality Enforcement Policy 2010](#) provides the list in Appendix C: Group 1 Pollutants.

### **Group 2 Pollutants**

The list of pollutants is based on Appendix A to 40 C.F.R § 123.45. The State Water Board enforcement policy located at [Water Quality Enforcement Policy 2010](#) provides the list in Appendix D: Group 2 Pollutants.

### **Hypothesis Testing**

Hypothesis testing is a statistical approach (e.g., Dunnett’s procedure) for determining whether a test concentration is statistically different from the control. Endpoints determined from hypothesis testing are no observed effect concentration (NOEC) and lowest observed effect concentration (LOEC).

### **Incompletely Mixed Discharge**

A discharge that contributes to a condition that does not meet the meaning of a completely-mixed discharge condition.

### **Infeasible**

Infeasible means not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

### **Inhibition Concentration**

Inhibition concentration is a point estimate of the toxicant concentration that would cause a given, percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method). For example, IC25 is a point estimate of the toxicant concentration that would cause a 25 percent reduction in a non-lethal biological measurement.

### **Inland Surface Waters**

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

### **Instantaneous Maximum Effluent Limitation**

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

### **Instantaneous Minimum Effluent Limitation**

The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

### **In-Stream Waste Concentration**

In-stream waste concentration (IWC) is the concentration of a toxicant or effluent in the receiving water after mixing. The IWC is the inverse of the dilution factor. It is sometimes referred to as the receiving water concentration (RWC)

### **LC50**

LC50 (lethal concentration, 50%) is the toxicant or effluent concentration that would cause death to 50 percent of the test organisms.

### **Load Allocation**

The portion of a receiving water's total maximum daily load that is allocated to one of its non-point sources of pollution or to natural background sources.

### **Lowest Observed Effect Concentration**

Lowest observed effect concentration (LOEC) is the lowest concentration of an effluent or toxicant that results in statistically significant adverse effects on the test organisms (i.e., where the values for the observed endpoints are statistically different from the control).

### **Maximum Daily Effluent Limitation (MDEL)**

The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

### **Median**

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements ( $n$ ) is odd, then the median =  $X_{(n+1)/2}$ . If  $n$  is even, then the median =  $(X_{n/2} + X_{(n/2)+1})/2$  (i.e., the midpoint between the  $n/2$  and  $n/2+1$ ).

### **Method Detection Limit (MDL)**

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. part 136, Attachment B, revised as of May 18, 2012.

### **Minimum Level (ML)**

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

### **Minimum Significant Difference (MSD)**

Minimum significant difference is the magnitude of difference from control where the null hypothesis is rejected in a statistical test comparing a treatment with a control. MSD is based on the number of replicates, control performance, and power of the test.

### **Mixing Zone**

The Colorado River Basin Water Board does not have a mixing zone policy in the Basin Plan. Therefore, in order for a mixing zone to be allowed in the Colorado River Basin Region, it would be only pursuant to a state policy. The State Implementation Policy (SIP) allows a mixing zone for priority pollutants and toxicity. Accordingly, a mixing zone applies to the Colorado River Basin Region under this state policy.

The SIP requires a mixing zone analysis be completed before any dilution credit is granted. Following completion of the mixing zone study, the Colorado River Basin Water Board must reconsider the receiving water limitations to ensure that they are as stringent as necessary to fully protect the receiving water.

### **Municipality**

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian

tribal organization, or a designated and approved management agency under section 208 of Clean Water Act.

**New Discharger**

New Discharger includes any building, structure, facility, or installation from which there is, or may be, a discharge of pollutants, the construction of which commenced after the effective date of the State Implementation Policy.

**No Observed Effect Concentration (NOEC)**

No observed effect concentration is the highest tested concentration of an effluent or toxicant that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicant at which the values for the observed responses are not statistically different from the control).

**Not Detected (ND)**

Sample results which are less than the laboratory's MDL.

**Objectionable Bottom Deposits**

Objectionable Bottom Deposits are an accumulation of materials or substances on or near the bottom of a water body, which creates conditions that adversely impact aquatic life, human health, beneficial uses, or aesthetics. These conditions include, but are not limited to, the accumulation of pollutants in the sediments and other conditions that result in harm to benthic organisms, production of food chain organisms, or fish egg development. The presence of such deposits shall be determined by the Colorado River Basin Water Board(s) on a case-by-case basis.

**Ocean Waters**

Not Applicable.

**Percent Effect**

The percent effect represents the difference between the response of the species at the IWC (i.e., 100% effluent) and the response in the control sample, relative to the control sample, as a percentage. The percent effect at IWC can be calculated as follows:

$$\text{Percent Effect} = \frac{(\text{Control Mean Response} - \text{IWC Mean Response})}{\text{Control Mean Response}} * 100$$

**Persistent Pollutants**

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

**PET Tool**

The PET tool is a Microsoft Excel file that allows the Discharger to configure the data into a format that CIWQS will understand and interpret correctly, which is the CIWQS Data Format, or CDR. The Discharger can open the PET Tool in Excel, configure it on

the basis of the Discharger's permit requirements, and then use the configured file as a template for entering data during the different reporting frequency and periods.

### **Pollutant Minimization Program (PMP)**

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Colorado River Basin Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

### **Pollution Prevention**

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Board or Colorado River Basin Water Board.

### **Potable Water**

Water that is safe for drinking and cooking and is in compliance with the State Water Board Division of Drinking Water or local county health department regulations.

### **Public Entity**

Public Entity includes the federal government or a state, county, city and county, city, district, public authority, or public agency.

### **Publicly Owned Treatment Works (POTW)**

POTW means a treatment works as defined in Clean Water Act section 212, which is owned by a state or municipality. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Clean Water Act section 502(4), which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.



### **Quality Assurance (QA)**

Quality assurance is a practice in toxicity testing that addresses all activities affecting the quality of the final effluent toxicity data. QA includes practices such as effluent sampling and handling, source and condition of test organisms, equipment condition, test conditions, instrument calibration, replication, use of reference toxicants, recordkeeping, and data evaluation.

### **Quality Control (QC)**

Quality control is the set of more focused, routine, day-to-day activities carried out as part of the overall QA program.

### **Reference Toxicant Test**

Reference toxicant test is a check of the sensitivity of the test organisms and the suitability of the test methodology. Reference toxicant data is part of a routine QA/QC program to evaluate the performance of laboratory personnel and the robustness and sensitivity of the test organisms.

### **Replicate**

Replicate is two or more independent organism exposures of the same treatment (i.e., effluent concentration) within a whole effluent toxicity test. Replicates are typically separate test chambers with organisms, each having the same effluent concentration.

### **Report of Waste Discharge**

For the purposes of this Individual Board Order, references to the Report of Waste Discharge (ROWD) shall include the California Form 200, USEPA forms and any other application information submitted to the Colorado River Basin Water Board.

### **Reporting Level (RL)**

The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Colorado River Basin Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

### **Sample**

Sample is a representative portion of a specific environmental matrix that is used in toxicity testing.

### **Satellite Collection System**

The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

### **Serious Violation**

For discharges of pollutants subject to the State Water Board's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, or the *California Ocean Plan*, where the effluent limitation for a pollutant is lower than the applicable Minimum Level, any discharge that: (1) equals or exceeds the Minimum Level; and (2) exceeds the effluent limitation by 40 percent or more for a Group 1 pollutant or by 20 percent or more for a Group 2 pollutant, is a serious violation for the purposes of Water Code section 13385(h)(2).

For discharges of pollutants that are not subject to the *State Water Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, or the *California Ocean Plan* (e.g., pollutants that are not addressed by the applicable plan) where the effluent limitation for a pollutant is lower than the quantification limit specified or authorized in the applicable waste discharge requirements or monitoring requirements, any discharge that: (1) equals or exceeds the quantification limit; and (2) exceeds the effluent limitation by 40 percent or more for a Group 1 pollutant or by 20 percent or more for a Group 2 pollutant, is a serious violation for the purposes of Water Code section 13385(h)(2).

### **Sewage Sludge**

Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. Sewage sludge that has been classified as hazardous shall be disposed in accordance with 40 C.F.R. part 261.

### **Sewage Sludge, Class A**

Sewage Sludge to be classified Class A with respect to pathogens shall comply with the requirements in 40 C.F.R. section 503.32(a)(2) and the requirements in either 40 C.F.R. section 503.32(a)(3), (a)(4), (a)(5), (a)(6), (a)(7), or (a)(8).

### **Sewage Sludge, Class B**

Sewage Sludge to be classified Class B with respect to pathogens shall comply with the requirements in either 40 C.F.R. section 503.32(b)(2), (b)(3), or (b)(4).

### **Significant Difference**

Significant difference is a statistically significant difference (e.g., 95 percent confidence level) in the means of two distributions of sampling results.

### **Significant Expansion**

Significant expansion means an increase in permitted design flow of greater than 10% or changes to the Facility and/or changes in the nature and character of the discharge that may result in an incremental increase in pollutants discharged to the receiving water body of greater than 10% of the permitted discharge rates. When a new or existing facility undergoes significant expansion, the discharge shall be evaluated on a pollutant by pollutant basis.

### **Significant Figures**

Significant figures of a number are those digits that carry meaning contributing to its precision. When adding or subtracting values with different degrees of precision, the last digit retained is determined by the least precise number (i.e., the answer should contain no digits farther to the right of the least precise number). For example:

$$\begin{array}{r} 37.24 \\ +10.3 \\ \hline 47.54 \end{array}$$

47.54 is rounded to 47.5

When multiplying or dividing values with different degrees of precision, the number of significant figures in the answer equals that of the quantity that has the smallest number of significant figures. For example:

$$113.2 \text{ (4-digit)} \times 1.43 \text{ (3-digit)} = 161.876 \text{ (6-digit)} \text{ is rounded to } 162 \text{ (3-digit)}$$

Additional Information on significant figures.

1. All nonzero digits are significant.
2. Zeros between nonzero digits are significant (e.g., 1.005 mg has four significant figures).
3. When a number ends in zeros to the right of a decimal point, they are significant (0.00500 has three significant figures).
4. When a number ends in zeros that are not to the right of a decimal point, significant figures are indeterminable (e.g., 10300 kg).
5. Only measurements have a limited number of significant figures. Given values, constants, etc. are assumed to have an infinite number of significant figures.
6. In addition, 40 C.F.R. part 136 specifies for some analytical methods, the number of significant figures to which measurements are made. The Discharger shall ensure laboratory analytical results are consistent with the requirements contained in 40 C.F.R. part 136 with regard to significant figures.

### **Source of Drinking Water**

Any water designated as municipal or domestic supply (MUN) in the Colorado River Basin Water Board's Basin Plan.

### **Standard Deviation ( $\sigma$ )**

Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

Where:

x is the observed value;

$\mu$  is the arithmetic mean of the observed values; and

n is the number of samples.

### **State Implementation Policy (SIP)**

*The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.*

### **Statistic**

Statistic is a computed or estimated quantity such as the mean, standard deviation, or Coefficient of Variation.

### **Technology-Based Effluent Limitation**

A technology-based effluent limitation is a permit limit for a pollutant that is based on the capability of a treatment method to reduce the pollutant to a certain concentration.

### **Teratogenic**

Teratogenic pollutants are substances that are known to cause structural abnormalities or birth defects in living organisms.

### **Test Acceptability Criteria (TAC)**

Test acceptability criteria are test method-specific criteria for determining whether toxicity test results are acceptable. The effluent and reference toxicant must meet specific criteria as defined in the test method (e.g., for the *Ceriodaphnia dubia* survival and reproduction test, the criteria are as follows: the test must achieve at least 80 percent survival and an average of 15 young per surviving female in the control and at least 60% of surviving organisms must have three broods).

### **Total Maximum Daily Load (TMDL)**

A TMDL is the sum of the individual waste load allocations and load allocations for receiving water. A margin of safety is included with the two types of allocations so that any additional loading, regardless of source, would not produce a violation of water quality standards.

### **Total Solids**

Total Solids are the materials that remain as residue when dried at 103 to 105 degrees Celsius.

### **Toxicity Reduction Evaluation (TRE)**

TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the

effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of Facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

### **Toxicity Test**

Toxicity test is a procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect on exposed test organisms of a specific chemical or effluent.

### **Treatment Works**

Treatment works is either a federally owned, publicly owned, or privately-owned device or system used to treat (including recycling and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

### **t-Test**

t-Test (formally Student's t-Test) is a statistical analysis comparing two sets of replicate observations, in the case of WET, only two test concentrations (e.g., a control and IWC). The purpose of this test is to determine if the means of the two sets of observations are different (e.g., if the 100-percent effluent or ambient concentration differs from the control [i.e., the test passes or fails]). The statistical significance (i.e., pass/fail) of a two-sample test can be determined with either a standard t-test (if homogeneity of variance is achieved) or a modified t-test (if homogeneity of variance is not achieved) and where:

**Type I Error (alpha  $\alpha$ )** is the error of rejecting the null hypothesis ( $H_0$ ) that should have been accepted, and

**Type II Error (beta  $\beta$ )** is the error of accepting the null hypothesis ( $H_0$ ) that should have been rejected.

### **Vector Attraction**

Vector Attraction is the characteristic of a material that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

### **Waste Load Allocation (WLA)**

The portion of a receiving water's total maximum daily load that is allocated to one of its existing or future point sources of pollution.

### **Welch's t-Test**

Welch's t-Test is an adaptation of the Student's t-test intended for use with two samples having unequal variances.

**Whole Effluent Toxicity (WET)**

The aggregate toxic effect of an effluent measured directly by a toxicity test.