

**Standardized Electronic Reporting Format
for
Monitoring Effluent Toxicity:**

October 1994 Format

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**State Water Resources Control Board
California Environmental Protection Agency**

Standardized Electronic Reporting Format for Monitoring Effluent Toxicity: October 1994 Format

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Standardized Electronic Reporting Format for Monitoring Effluent Toxicity: October 1994 Format*

Overview

California Regional Water Quality Control Boards (Regional Water Boards) suggest that National Pollutant Discharge Elimination System (NPDES) dischargers submit their acute and chronic toxicity data in an electronic format. The State Water Resources Control Board (State Water Board) established a standardized computer file format so that Regional Water Board staff may efficiently evaluate toxicity data. This document establishes in detail the structure of the computer file, lists the codes to be used, and outlines the submission process. For more information or to suggest changes to the standard format contact:

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Introduction

In California, the U. S. Environmental Protection Agency (USEPA) has delegated the authority to issue NPDES permits to the State Water Board and the Regional Water Boards. Many NPDES permits require acute and chronic toxicity testing of effluent water. Estimating the chronic toxicity of effluent water (often called *whole effluent toxicity*) requires toxicity testing on aquatic organisms during critical life stages (such as fertilization and larvae development). Acute toxicity measures the mortality induced in aquatic organisms by short-term exposure to effluent water. Wastewater dischargers must submit toxicity test results to the appropriate Regional Water Board office. Most toxicity test data is submitted to the Regional Boards in a paper format, often as part of an NPDES monitoring report.

In 1991, the State Water Board decided to centrally store the results of chronic toxicity tests conducted on effluent waters from throughout the state. When grouped together, this data will comprise the **California Effluent Toxicity Database**. This database will help Regional and State Water Board staff to assess compliance with NPDES toxicity objectives. In addition, this database will enable Water Board staff to examine general toxicity trends, statistical procedures, test precision, and other aspects of toxicity test performance using actual data from throughout California.

Use of this format is not mandatory and failure to do so is not a violation of your NPDES permit. However, it is to the advantage of dischargers to submit their data in a consistent and uniform manner as described in this document.

A standardized format for reporting toxicity data enables information to be easily assessed because a common set of essential data is obtained. Moreover, this data is in a consistent and uniform format for combining into a central database. Other west coast states are now establishing similar toxicity databases.

Electronic access to this information allows regulators to easily determine NPDES compliance, evaluate laboratory performance and assess test protocols. This is of benefit to both dischargers and regulators because it ensures that compliance limits are met, poor laboratory performance does not go unnoticed, and inadequate test protocols can be improved.

Reporting Toxicity Tests in the Standardized Format

This document replaces the format established in a previous State Water Board document entitled, *Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity, August 1993*. The current document includes changes to the file format that allow the electronic transfer of either acute or chronic data, or both. These changes are the result of meetings held in October 1994 among representatives from the USEPA and the states of California, Oregon, and Washington. This standardized format currently incorporates all raw test data, summary information, statistical analyses, water quality data, and comments. In addition, new standardized codes were added to the code lists in the appendix.

The State Water Board recommends that NPDES permittees submit acute and chronic toxicity test data in a text file on an electronic computer disk. The file must only contain ASCII (American Standard Code for Information Interchange) characters. Data files are created by testing laboratories and dischargers then sent directly to the appropriate Regional Water Quality Control Board office. The electronic submission file may be used for reporting toxicity test results of effluent samples or reference toxicant tests.

Data must be submitted on IBM-compatible floppy disks. Dischargers should check with the appropriate Regional Water Board to determine whether it wants 5.25 or 3.5 inch disk. Dischargers must also submit hard copies of their raw data (laboratory bench sheets).

Note: Most personal computers can easily generate an ASCII text file; thus, dischargers may use any desired computer software to create the data file. The submitted data file must, however, adhere to the standardized reporting format established in this document.

General Description of the Submission File

The submission file contains a complete description of one or more toxicity tests. Each line of the submission file is called a *record*. A record contains one or more *fields*. Each field in a record is exactly ten characters long (except for the Comments record which contains a 70 character field). Each toxicity test in the file is uniquely identified by a "test number", and all records associated with a test must contain that test number in the Test Number field.

See Appendix 1 for a summary of the standardized format in a tabular form. Appendix 2 shows an example of a submission file in the standardized format. Appendix 3 contains the standardized codes to be used in the submission file. Some of the terms used in this document are defined in the Glossary, Appendix 4

Record Types.

Each record is reported on a separate line and is identified by a code in the first field of the line. In all, there are eight different record types that can be reported for a particular test. Record types are briefly described in Table 1 below and defined in detail in the next section.

Table 1. Record Types

Record Type	Code	Description
Version Identification	V	Identifies the version of the reporting format used to enter the data. Required <u>once</u> at the top of each submission file.
Test Identification	T	Contains the key fields that identify and describe either an effluent or reference toxicant test. Required for each test in the file.
Summary Statistics (NOEC/LOEC)	H	Contains all the hypothesis testing (NOEC/LOEC) results. Required for each test in the file.
Summary Statistics (EC/IC)	P	Contains all the point estimate (EC/IC) results. Required for each test in the file.
Raw Data	D	Contains raw data for each endpoint measured. Required for each test in the file. One line for each replicate measurement. The D format depends on the species group tested.
Echinoderm Fertilization Quality Assurance	E	Required any time a D record for an echinoderm fertilization test type is present. Contains information related to the quality assurance for echinoderm tests (e.g. egg to sperm ratio)
Water Quality Data	W	Contains minimum and maximum water quality parameter measurements for the entire test. Required for each test in the file. One line for each dilution concentration.
Comments	C	Contains any text comments relevant to the test. Optional.

Species Groups and Toxicological Endpoints.

For purposes of the submission format, toxicity test data are divided into eleven species groups based on the test organism classification and the toxicological endpoints (Table 2). Percentage endpoints are endpoints that are measured on a proportional basis. Percentage endpoints range from 0 to 100%. Growth and reproduction endpoints are measured in the given units. The data (D) records

have different structures for each of these species groups. Test organisms and their associated species groups are listed in Appendix 3, List 2.

Table 2: Species Groups / Toxicological Endpoints

Species Group	Percentage Endpoint	Growth or Reproduction Endpoint
1. Abalone	normal larvae development	(none)
2. Bivalve	normal larvae development	(none)
3. Water Flea	survival	total young count
4. <i>Champia</i>	(none)	mean cystocarps
5. Echinoderm	normal larvae development -or- egg fertilization	(none)
6. Fish	survival	weight per fish
7. <i>Holmesimysis</i>	survival	mean length
8. <i>Macrocystis</i>	germination	mean length
9. <i>Mysidopsis</i>	survival	weight per larvae
10. Phytoplankton	(none)	cells/mL; mg/L; mg/m ³ ; nm/cm

As Table 2 indicates, all results fall into one of two endpoints: percentage or growth / reproduction. Note that some test types require both endpoints, others require only one. The actual species used in the test is located in the T record. The group to which that species belongs determines the format of the D records. The format of D records are defined in the *Record Type Descriptions* section of this document.

Preparing the Submission File

Below is a detailed description of the format to be used for submitting toxicity test data. It is important that testing laboratories follow the file format requirements exactly as they are outlined in this document. Failure to do so will make it impossible for your Regional Water Board staff to load the data into their database. Data submitters (NPDES permittees) are responsible for properly compiling their data into this format and ensuring that proper quality control procedures are applied to the data entry, data manipulation, and submission file compilation processes. **Final responsibility for data quality rests with the data submitter.**

Each field in the data records **MUST be exactly 10 characters in length**. Some of the values will be less than 10 characters (e.g., laboratory codes are only six characters); these values should be left justified within the 10 character field. Do not include commas, quotation marks, or other delimiters. The order and position of the fields are mandatory. The Comment Record is the only exception to this rule. In the Comment Record the first three fields are the usual 10 characters in length, but the

following field (field 4) is 70 characters in length to allow room for special comments regarding the test.

Although all fields do not require data, the positions of **ALL** fields are mandatory. If there are no data for a particular field, leave the position **BLANK**. **This is very important!** The input program assumes a fixed number of fields in a particular order. Skipping fields will throw the order off and cause the program to read the file incorrectly (See Appendices 1 and 2). **Be sure to include all required fields in the submission file.** If they are absent, the data will need to be re-entered.

The first record in the submission file must be the version identification record. The first field in this record is a constant (i.e., V). The second field contains a code for the version of the Standardized Electronic Reporting Format used (see Appendix 3, List 9).

In the remaining records, the first two fields are the same for each record type. The first field contains the Record Type code (T,H,P,D,E,W,C). The second field contains a Test Number unique to each test. The Test Number field is used to relate multiple records to the same test. The remaining fields are different for each test type.

A submission file that contains a single test, therefore, consists of one V record, one T record, one H record, several P records, several D records, several W records, and optionally, several C records.

Record Type Descriptions

Each record type is listed in a separate table. The following definitions refer to information that can be entered into the data fields of the seven record types:

<i>List #</i>	-refers to the appropriate list of standardized codes in Appendix 3.
<i>Character</i>	- any combination of letters, numbers, or other characters.
<i>Integer</i>	- any number with no decimal point.
<i>Decimal</i>	- any number with a decimal point.
<i>Required?</i>	- if yes, a value must be entered for this field.
<i>Max Length</i>	- maximum length of values allowed within the 10 character cell.

Version Identification Record (V record)

This record contains fields that identify the standardized reporting format version (see Appendix 3, List 9) used when entering test data and the surname of the person entering the data. There is only one record per test. **The V record must be the first record in the submission file.**

Field	List #	Data Type	Format/ Max Length	Required?
1. V (constant)		character	1	yes
2. Format Version	9	character	8	yes
3. Name		character	10	yes

Test Identification Record (T record)

This record contains the key fields that identify a test. Each of the fields in this record are mandatory fields. There is only one record per test. Indicate an effluent test by putting its test number in field 2 and the concurrent reference toxicant test number in field 12. For reference toxicant tests, fields 8 (Sample Date) and 12 (Reference Toxicant Test Number) should be left blank. There are a total of 16 required fields for all tests. If one of the fields does not pertain to the test you are reporting, use NA (Not Applicable) to designate this field. For example, a fathead minnow test does not use brine. In this case you would enter NA in the field 13 of the T record.

Field	List #	Data Type	Format / Max Length	Required?
1. T (constant)		character	1	yes
2. Test Number <i>This field should be your internal lab test number</i>		character	10	yes
3. Lab	1	character	6	yes
4. Chronic/Acute	10	character	3	yes
5. Test Type	11	numeric	1	yes
6. Species	2	character	3	yes
7. Test Date		character	mm/dd/yyyy	yes
8. Sample Date *		character	mm/dd/yyyy	yes
9. NPDES Permit No. **		character	9	yes
10. Protocol	3	character	7	yes
11. Test Material	4	character	4	yes
12. Reference Toxicant Test Number*		character	10	yes
13. Brine Source***	6	character	2	yes
14. Organism Source	7	character	4	yes
15. Dilution Source	12	character	4	yes
16. Dechlorination	13	character	2	yes

* For effluent tests only, leave the entire field blank for reference toxicant tests.

** Enter a valid NPDES permit number (e.g. CA0022713) or "REF" for reference toxicant tests.

*** If no brine used, enter NA.

Summary Statistics Record for Hypothesis Testing (NOEC/LOEC) (H record)

This record contains the No-Observed-Effect Concentration (NOEC) and a Lowest-Observed-Effect Concentration (LOEC) and Pass/Fail statistical results. There is only one record per test. The statistical software used to calculate these results should be listed in the cover letter accompanying the file or, preferably, in the Comments Record. Refer to Table 2 for definition of proportion and growth endpoints for each species tested.

Field	Data Type	Format / Max Length	Required?
1. H (constant)	character	1	yes
2. Test number <i>This field must match the value in the T record</i>	character	10	yes
3. Day	numeric	2	*
4. Pass/Fail	character	1	*
5. Proportion NOEC qualifier	character	1 (<,>,null)	no
6. Proportion NOEC	numeric	decimal	no
7. Proportion LOEC qualifier	character	1 (<,>,null)	no
8. Proportion LOEC	numeric	decimal	no
9. Proportion MSD**	numeric	decimal	no
10. Proportion MSD as % reduction from control mean	numeric	decimal (percent, e.g. 4.32)	no
11. Growth NOEC qualifier	character	1 (<,>,null)	no
12. Growth NOEC	numeric	decimal	no
13. Growth LOEC qualifier	character	1 (<,>,null)	no
14. Growth LOEC	numeric	decimal	no
15. Growth MSD**	numeric	decimal	no
16. Growth MSD as % reduction	numeric	decimal (percent)	no

* Only necessary for tests results that are Pass/Fail, leave field blank otherwise.

** Minimum Significant Difference from a Dunnett's multiple comparison procedure (For a discussion of this procedure refer to the USEPA protocols, EPAF 91 or EPAM 91, listed in Appendix 3, List 4). Use non-transformed data. If data transformations were made then re-transform MSD to the original units.

Summary Statistics Record for Point Estimates (EC/LC/IC) (P record)

This record contains all the statistical results associated with point estimates. Use as many P records as needed for each point estimate. Test types with a proportion endpoint must report summary statistics of an Effect Concentration (EC_p) or Lethal Concentration (LC_p). Test types with growth or reproduction endpoints must report summary statistics of an Inhibition Concentration (IC_p). The percentile level (p-level) will be the percent-observed effect level (e.g., for a 25 percent reduction in growth, the p-level is 25). The choice of p-levels depends on your permit requirements. The statistical software used to calculate these results should be listed in the cover letter accompanying the file or, preferably, in the Comments Record.

Field	Data Type	Format / Max Length	Required?
1. P (constant)	character	1	yes
2. Test number	character	10	yes

<i>This field must match the value in the T record.</i>			
3. Day	numeric	1	yes
4. Point Estimate method *	character	2	yes
5. P-Level	numeric	integer	yes
6. Concentration	numeric	decimal	yes

* Use EC, LC or IC depending on test method used. Use as many P records as necessary to include all p-levels for EC or IC calculations.

Data Record (D record)

D records contain the original raw data for each test. There will be many records per test; each record is prefixed with a "D" followed by the test number. The *concentration*, *control code*, and *replicate number* fields uniquely identify individual replicates within a test. D records are required for each replicate in the test (do not enter the total number of replicates). Place a "B" in all *control code* fields (Field 4) where brine is used so that the treatment can be associated with the appropriate control.

Each of the 10 species groups listed in Table 2 has a unique D record structure:

Abalone

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Normal larvae count		numeric	integer	yes
7. Abnormal larvae count		numeric	integer	yes

Bivalve

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Initial embryo count or density*		numeric	integer	maybe**

7. Final embryo count or density*		numeric	integer	maybe**
8. # Larvae w/ normal shells*		numeric	integer	maybe**
9. # Larvae w/ abnormal shells*		numeric	integer	maybe**

* Endpoint can be reported as count or density.

** If fields 6 and 7 are completed then fields 8 and 9 are not required. Alternately, if fields 8 and 9 are completed then fields 6 and 7 are not required.

Champia

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Mean count cystocarps		numeric	decimal	yes

Echinoderm (Fertilization Tests)

Echinoderm egg fertilization data are reported using both D records and E records. D records are used for the raw data:

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Number eggs fertilized		numeric	integer	yes
7. Number eggs unfertilized		numeric	integer	yes

In addition to the above D record, Echinoderm fertilization tests must include an E record. E records are used to report quality assurance information for Echinoderm fertilization tests:

Field	Data Type	Format / Max Length	Required?
1. E (constant)	character	1	yes
2. Test number	character	10	yes

3. Sperm/egg Ratio	numeric	integer	yes
4. Sperm Exposure Time	numeric	integer (minutes)	yes

Echinoderm (Larvae Development Tests)

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Normal larvae count		numeric	integer	yes
7. Abnormal larvae count		numeric	integer	yes

Fish

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Start Count		numeric	integer	yes
7. Survival end of day 1		numeric	integer	*
8. Survival end of day 2		numeric	integer	*
9. Survival end of day 4		numeric	integer	*
10. Survival end of day 7		numeric	integer	*
11. Total weight		numeric	decimal (mg)	yes
12. Number of fish weighed		numeric	integer	yes

* Chronic tests must include Field 10 (day 7 survival). Fields 7-9 (day 1, 2, and 4) are recommended. Acute tests must include survival data for the day when the test is complete (e.g. use Field 9 for 96-hour LC₅₀ determinations).

Holmesimysis

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes

2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Start Count		numeric	integer	yes
7. Survival at end of day 1		numeric	integer	*
8. Survival at end of day 2		numeric	integer	*
9. Survival at end of day 4		numeric	integer	*
10. Survival at end of day 7		numeric	integer	*
11. Mean length		numeric	decimal (μm)	yes

* Chronic tests must include Field 10 (day 7 survival). Fields 7-9 (day 1, 2, and 4) are recommend. Acute tests must include survival data for the day when the test is complete (e.g. use Field 9 for 96-hour LC₅₀ determinations).

Macrocyctis

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Number germinated		numeric	integer	yes
7. Number non-germinated		numeric	integer	yes
8. Mean length		numeric	decimal (μm)	yes

Mysidopsis

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Start Count		numeric	integer	yes
7. Survival at end of day 1		numeric	integer	*
8. Survival at end of day 2		numeric	integer	*
9. Survival at end of day 4		numeric	integer	*
10. Survival at end of day 7		numeric	integer	*

11. Total weight		numeric	decimal (mg)	yes
12. Number of animals weighed		numeric	integer	yes
13. Number of females		numeric	integer	yes
14. Number of females with eggs		numeric	integer	yes

- * Chronic tests must include Field 10 (day 7 survival). Fields 7-9 (day 1, 2, and 4) are recommend. Acute tests must include survival data for the day when the test is complete (e.g. use Field 9 for 96-hour LC₅₀ determinations).

Phytoplankton

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Cell density		numeric	integer (cells/mL)	*
7. Biomass		numeric	decimal (mg/L)	*
8. Chlorophyll a		numeric	decimal (mg/m ³)	*
9. Absorbance		numeric	decimal (nm/cm)	*

- * Endpoint can be reported as cell density, biomass, chlorophyll a, or absorbance. Data are required in Field 6,7,8, or 9. When data are entered into one of these fields, the others should be blank (do not enter zeros into the other fields).

Water Flea

Field	List #	Data Type	Format / Max Length	Required?
1. D (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Replicate number		numeric	integer	yes
6. Sex		character	1 (F,M)	yes
7. Start Count		numeric	2	yes
8. Survival at end of day 1		numeric	integer	*
9. Survival at end of day 2		numeric	integer	*
10. Survival at end of day 4		numeric	integer	*
11. Survival at end of day 7		numeric	integer	*
12. Number young per female		numeric	integer (mg)	yes

<i>Males are considered for survival endpoint only. Leave this field blank for males</i>				
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- * Chronic tests must include Field 10 (day 7 survival). Fields 7-9 (day 1, 2, and 4) are recommended. Acute tests must include survival data for the day when the test is complete (e.g. use Field 9 for 96-hour LC50 determinations).

Water Quality Record (W record)

These records contain the minimum and maximum water quality values for each test treatment. The water quality parameters actually measured will vary depending on your permit. Each test in the submission file should include pH, temperature, dissolved oxygen, salinity (for marine tests), and hardness (for freshwater tests).

Field	List #	Data Type	Format / Max Length	Required?
1. W (constant)		character	1	yes
2. Test number		character	10	yes
3. Concentration		numeric	decimal	yes
4. Control Code	5	character	1	yes
5. Parameter	8	character	4	yes
6. Minimum value		numeric	decimal	yes
7. Maximum value		numeric	decimal	yes

Comment Record (C record)

These records are used to report any comments associated with a test. There can be several comment records per test, each one sequentially identified by the line number in field 3. Individual comment fields cannot exceed 70 characters.

Field	Data Type	Format / Max Length	Required?
1. C (constant)	character	1	yes
2. Test number	character	10	yes
3. Line number	numeric	integer	yes
4. Comments	character	70	yes

Appendix 1: Standardized Format Summary Table

Standardized record and field designations for the submission file. Top row indicates the field number followed by the character positions. Each cell contains a maximum of ten characters.

Record Type	Field 1 1→10	Field 2 11→20	Field 3 21→30	Field 4 31→40	Field 5 41→50	Field 6 51→60	Field 7 61→70	Field 8 71→80	Field 9 81→90	Field 10 91→100	Field 11 101→110	Field 12 111→120	Field 13 121→130	Field 14 131→140	Field 15 141→150	Field 16 151→160	
Version	V	Format	Name														
Test ID	T	Test Number	Lab	Chronic/Acute	Test Type	Species	Test Date	Sample Date	NPDES # / REF	Protocol	Test Material	REF Test #	Brine Source	Organism Source	Dilution Source		
NOEC Statistics	H	Test Number	Day	Pass / Fail	Proportion NOEC Qualifier	Proportion NOEC	Proportion LOEC Qualifier	Proportion LOEC	Proportion MSD	Proportion MSD % Reduction	Growth NOEC Qualifier	Growth NOEC	Growth LOEC	Growth LOEC	Growth MSD	Growth MSD % Reduction	
EC/IC Statistics	P	Test Number	Day	EC / IC	P-level	Conc.											
Abalone	D	Test Number	Conc.	Control	Rep.	Normal Count	Abnormal Count										
Bivalve	D	Test Number	Conc.	Control	Rep.	Initial Density	Final Density	Normal Count	Abnormal Count								
Champia	D	Test Number	Conc.	Control	Rep.	Mean # Cystocarps											
Echinoderm (Fertilization)	D	Test Number	Conc.	Control	Rep.	# Fertilized	# Unfertilized										
Echinoderm QA	E	Test Number	Sperm / Egg Ratio	Sperm Exp. Time													
Echinoderm (Larvae Devel.)	D	Test Number	Conc.	Control	Rep.	Normal Count	Abnormal Count										
Fish	D	Test Number	Conc.	Control	Rep.	Start Count	Survival Day 1	Survival Day 2	Survival Day 4	Survival Day 7	Total Weight	# Weighed					
Holmesimysis	D	Test Number	Conc.	Control	Rep.	Start Count	Survival Day 1	Survival Day 2	Survival Day 4	Survival Day 7	Mean Length						
Macrocystis	D	Test Number	Conc.	Control	Rep.	# Germ-inated	# Non-germinated	Mean Length									
Mytilopsis	D	Test Number	Conc.	Control	Rep.	Start Count	Survival Day 1	Survival Day 2	Survival Day 4	Survival Day 7	Total Weight	# Weighed	# Females w/ eggs				
Phytoplankton	D	Test Number	Conc.	Control	Rep.	Cell Density	Biomass	Chlorophyll a	Absorbance								
Water Flea	D	Test Number	Conc.	Control	Rep.	Sex	Start Count	Survival Day 1	Survival Day 2	Survival Day 4	Survival Day 7	# Young/Female					
Water Quality	W	Test Number	Conc.	Control	Rep.	Minimum	Maximum										
Comments	C	Test Number	Line Number	Control	WQ Parameter			C o m m e n t s									

Appendix 2: Example of a Submission File

This is an ASCII text file for submitting the results of an Abalone toxicity test. The test had four treatment concentrations and five replications per treatment.

V	SRD10/94	S.Saiz	C	2	HR	12/19/1994	REF	MBP 90	ZNSO	NA	XX1H	LW	N
T	Z28	CATML			18	32	0.036435	3.914979					
H	Z28				27.729								
P	Z28	EC	10		28.911								
P	Z28	EC	15		30.748								
P	Z28	EC	25		34.488								
P	Z28	EC	50										
D	Z28	0	1		93	7							
D	Z28	0	2		94	6							
D	Z28	0	3		92	8							
D	Z28	0	4		91	9							
D	Z28	0	5		95	5							
D	Z28	18	10		90	10							
D	Z28	18	1		87	13							
D	Z28	18	2		91	9							
D	Z28	18	3		93	7							
D	Z28	18	4		91	9							
D	Z28	18	5		91	9							
D	Z28	32	1		65	35							
D	Z28	32	2		65	35							
D	Z28	32	3		52	48							
D	Z28	32	4		67	33							
D	Z28	32	5		57	43							
D	Z28	56	1		0	100							
D	Z28	56	2		0	100							
D	Z28	56	3		1	99							
D	Z28	56	4		0	100							
D	Z28	56	5		0	100							
W	Z28	0	PH		8.1	8.1							
W	Z28	0	DO		7.5	7.7							
W	Z28	0	SAL		34	35							
W	Z28	0	TEMP		14	15							
W	Z28	18	PH		8.1	8.1							
W	Z28	18	DO		7.6	7.7							
W	Z28	18	SAL		34	35							
W	Z28	18	TEMP		14	15							
W	Z28	32	PH		8.1	8.1							
W	Z28	32	DO		7.5	7.7							
W	Z28	32	SAL		34	35							
W	Z28	32	TEMP		15	15							
W	Z28	56	PH		8.1	8.1							
W	Z28	56	DO		7.5	7.7							
W	Z28	56	SAL		34	35							
W	Z28	56	TEMP		14	15							
C	Z28	1	This is the first line of comments										
C	Z28	2	This is the second line of comments										

Appendix 3: Standardized Code Lists

Cross-reference tables list the standardized codes that the data submitter is required to use. The codes are pre-set and should **NOT** be changed or edited. If you need to establish a new code, contact Steven Saiz at (916) 654-3177.

List 1 - Laboratories

The first two characters represent the abbreviation of the state where the laboratory is located.

<u>Code</u>	<u>Laboratory</u>
BCEVS	EVS Environ. Consultant
CAAAL	Alpha Analytical Laboratories, Inc.
CAABC	Aquatic Bioassay and Consulting Labs
CAAML	American Analytical Laboratories
CAANL	Anlab Analytical Lab
CAAPC	Applied P & Ch Laboratory
CAAQS	Aqua-Science
CAASL	Associated Laboratories
CAATL	Aquatic Testing Laboratories
CAATT	Aqua Terra Technologies, Inc.
CABCA	BC Analytical-Emeryville
CABGW	Burlingame Wastewater Treatment Plant
CABRL	Brelje and Race Laboratories, Inc.
CABTC	BTC Environmental, Inc.
CABWT	Benicia Wastewater Treat. Plant Lab
CACBW	Chino Basin Municipal Water Works
CACCA	Coast-to-Coast Analytical Services, Inc.
CACCC	Central Contra Costa Sanitary Dist.
CACEL	Calscience Environmental Labs, Inc.
CACHE	Chevron U.S.A.-Richmond Refinery
CACMS	Central Marin Sanitation Agency
CACOL	Core Laboratories
CACRA	Coastal Resources Associates
CACRL	Crosby Laboratories, Inc.
CACVW	Coachella Valley Water District Lab
CADDS	Delta Diablo Sanitation District Lab
CAEBM	EBMUD Laboratory Services
CAEEL	Environmental Engineering Laboratory
CAEOS	Envirotech Operating Services
CAETA	Earth Technology Analytical Laboratory
CAEUL	Eureka Laboratories, Inc.
CAFSW	Fairfield-Suisun Wastewater Treat. Plant
CAGAL	GeoAnalytical Laboratories, Inc.
CAGCL	Granite Canyon Lab
CAHYP	L.A. Bureau of Sanitation-Hyperion
CALRE	Lee & Ro Environmental Laboratories
CALRW	Lompoc Regional Wastewater Lab
CALVM	Las Virgenes Municipal Water Dist.
CALWS	Lodi White Slough WPCF

CAMBC	MBC Applied Environmental Sciences
CAMCW	Manteca City WW Quality Control Lab
CAMEC	MEC Analytical Systems, Inc.-Tiburon
CAMIL	McIntosh Laboratories
CAMRW	Monterey Reg. Water Pol. Control
CAMWP	Millbrea Water Pollution Control Lab
CAMWQ	Modesto Water Quality Control Facility
CANCL	North Coast Laboratories, LTD
CANSD	Novato Sanitary District Laboratory
CAOCS	Orange County Sanitation District
CAOEE	Ogden Environmental & Energy Services
CAOLS	Oxnard Laboratory Services Program
CAPAL	Palo Alto Regional Water Quality Lab
CAPLA	Placer County Dept. Public Works
CAPCC	Packaging Company of California
CAPWP	Pinole Wastewater Treatment Plant
CARBP	Red Bluff Water Reclamation Plant
CARWL	Roseville Wastewater Control Lab
CARWP	Riverside Water Qual. Control Plant
CASAL	Sequoia Analytical Laboratory, Inc.
CASAM	Sewer Authority Mid-Coastside
CASBE	Santa Barbara/El Estro Laboratory
CASBL	San Buenaventura Sanitation Lab
CASBS	South Bayside System Authority
CASCR	Sacramento Co. Regional Plant Control
CASDM	San Diego Marine Lab
CASFA	San Francisco Intern. Airport-WQCPL
CASFL	San Francisco WPCP Lab - Southeast
CASIE	Sierra Foothill Lab
CASJC	Los Angeles Co. San. Dist. - SJ Creek
CASJP	San Jose Water Pol. Control Plant
CASMC	Sausalito-Marin City Sanitary District
CASML	San Mateo Water Quality Control Plant
CASMU	Stockton Municipal Utilities Dept. Lab
CASRH	S.R. Hansen and Associates Lab
CASSM	Sewerage Agency of Southern Marin
CASWP	Sunnyvale Water Pol. Control Plant
CASWR	Southern CA Coastal Water Research Project
CATML	Telonicher Marine Lab
CATOS	ToxScan, Inc.
CATUD	Tracy Utilities Department Lab
CAUCD	UC Davis Aquatic Toxicology Lab
CAWBL	Western Bioassay Lab
CAZAL	Zalco Laboratories, Inc.
COCHW	Chadwick and Associates, Inc.
COTHE	T.H.E. Laboratories, Inc.
MDEAE	EA Engineering, Science and Technol.
MNEPA	EPA Environmental Research Lab, Duluth
NJEBS	Exxon Biomedical Sciences, Inc.
OHATE	Aqua Tech Environmental Consultants
ORCHM	CH2M Hill Aquatic Toxicology Lab
ORNAS	Northwestern Aquatic Sciences
TXAET	AnalytiKEM Environ. Toxicology Lab
TXAFB	U.S. Air Force-Brooks AFB

Standardized Electronic Reporting Format

October 1994 format

TXNUS	NUS Corp. - Houston Analytical Lab
WACAS	Columbia Analytical Services
WAPTL	Parametrix Toxicology Laboratory

List 2 - Species

<u>Code</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Species Group</u>
AA	<i>Atherinops affinis</i>	Topsmelt	Fish
AP	<i>Arbacia punctulata</i>	Sea Urchin	Echinoderm
CD	<i>Ceriodaphnia dubia</i>	Water Flea	Water Flea
CG	<i>Crassostrea gigas</i>	Pacific Oyster	Bivalve
CP	<i>Champia parvula</i>	Red Alga	Champia
CR	<i>Crassostrea virginica</i>	Eastern Oyster	Bivalve
CS	<i>Citharichthys stigmaeus</i>	Sanddab	Fish
CV	<i>Cyprinodon variegatus</i>	Sheepshead Minnow	Fish
DE	<i>Dendraster excentricus</i>	Sand Dollar	Enchinoderm
DM	<i>Daphnia magna</i>	Water Flea	Water Flea
DP	<i>Daphnia pulex</i>	Water Flea	Water Flea
GA	<i>Gasterosteus aculeatus</i>	Threespine Stickleback	Fish
HC	<i>Holmesimysis costata</i>	Pacific Mysid	Holmesimysis
HR	<i>Haliotis rufescens</i>	Red Abalone	Abalone
LA	<i>Lytechinus anamesus</i>	Sea urchin	Enchinoderm
LC	<i>Laminaria saccharina</i>	Oar Weed Kelp	Macrocystis
MB	<i>Menidia beryllina</i>	Inland Silverside	Fish
ME	<i>Mytilus edulis</i>	Blue Mussel	Bivalve
MI	<i>Menidia menidia</i>	Atlantic Silverside	Fish
MM	<i>Mercenaria mercenaria</i>	Quahog Clam	Bivalve
MN	<i>Menidia peninsulae</i>	Tidewater Silverside	Fish
MP	<i>Macrocystis pyrifera</i>	Giant Kelp	Macrocystis
MY	<i>Mysidopsis bahia</i>	Atlantic Mysid	Mysidopsis
OM	<i>Oncorhynchus mykiss</i>	Rainbow Trout	Fish
PP	<i>Pimephales promelas</i>	Fathead Minnow	Fish
SC	<i>Selenastrum capricornutum</i>	Green Alga	Phytoplankton
SD	<i>Strongylocentrotus droebachiensis</i>	Green Sea Urchin	Enchinoderm
SF	<i>Strongylocentrotus franciscanus</i>	Red Sea Urchin	Enchinoderm
SK	<i>Skeletonema costatum</i>	Diatom	Phytoplankton
SP	<i>Strongylocentrotus purpuratus</i>	Purple Sea Urchin	Enchinoderm
SV	<i>Salvelinus fontinalis</i>	Brook Trout	Fish
TP	<i>Thalassiosira pseudonana</i>	Diatom	Phytoplankton

List 3 - Test Materials

<u>Code</u>	<u>Test Material</u>	<u>Units</u>	<u>Report As</u>
AMB1..9	Ambient water*	%	% Ambient Water
CDCL	Cadmium chloride	µg/L	Cadmium
CL	Chlorine	mg/L	Chlorine

CUCL	Copper chloride	µg/L	Copper
CUSO	Copper sulfate	µg/L	Copper
DCS	Discharge Cleanup Site	%	% Effluent
DMR	Discharge Monitoring Report	-	-
EFF1	Effluent - POTW	%	% Effluent
EFF2	Effluent - Industrial	%	% Effluent
EFF3	Effluent - Power Plant	%	% Effluent
KCL	Potassium chloride	g/L	Potassium chloride
KCR4	Potassium chromate	µg/L	Chromium
KCR7	Potassium dichromate	µg/L	Chromium
NAAZ	Sodium azide	µg/L	Sodium azide
NACL	Sodium chloride	g/L	Sodium chloride
PCP	Sodium pentachlorophenol	µg/L	Sodium pentachlorophenol
SDS	Sodium dodecyl sulfate	mg/L	SDS
SRW1	Stormwater-Municipal	%	% Stormwater
SRW2	Stormwater-Industrial	%	% Stormwater
SSEA	Sea Salts	ppt	parts per thousand
TNH3	Ammonia (total)	mg/L	Ammonia (total)
ZNSO	Zinc sulfate	µg/L	Zinc

*Note: You can have up to nine ambient locations (e.g., AMB1 through AMB9).

List 4 - Protocols

Tier 1 Protocols (These are preferred protocols for use in compliance monitoring)

<u>Code</u>	<u>Protocol Description</u>
EPAA 85	USEPA. 1985. <i>Methods of measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms</i> . (3rd edition). Edited by W. H. Peltier and C. I. Weber. Environmental Monitoring and Support Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, OH. EPA/600/4-85/013.
EPAA 91	USEPA. 1993. <i>Methods of measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms</i> . (4th edition, August 1993). Edited by C. I. Weber. Environmental Monitoring and Support Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, OH. EPA/600/4-90/027F.
EPAF 89	USEPA. 1989. <i>Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms</i> . (2nd edition, March 1989). Edited by C. I. Weber, W. H. Peltier, T. J. Norberg-King, et al. Environmental

Monitoring Systems Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, OH. EPA/600/4-89/001.

- EPAF 91 USEPA. *Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms.* (3rd edition). Environmental Monitoring Systems Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, OH. EPA/600/4-91/002.
- (Note: This document will not be available to the general public until after publication in the *Federal Register*--anticipated publication is August 1995.)
- EPAM 87 USEPA. 1988. *Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms.* (1st Edition, May 1988). Edited by C. I. Weber et al. Environmental Monitoring and Support Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, OH. EPA/600/4-87/028
- EPAM 91 USEPA. *Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms.* (2nd Edition). Environmental Monitoring and Support Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, Ohio. EPA/600/4-91/003
- (Note: This document will not be available to the general public until after publication in the *Federal Register*--anticipated publication is August 1995.)
- EPAW 95 USEPA. *Short-term methods for estimating the chronic toxicity of effluents and receiving waters to west coast marine and estuarine organisms.* (1st Edition). Edited by G. A. Chapman and D. L. Denton. U. S. EPA Environmental Research Laboratory-Pacific Ecosystems Branch, Newport, OR.
- (Note: Release of this document to the general public is anticipated in 1995.)
- MBP 90 Anderson, Brian. S., John W. Hunt, Sheila L. Turpin, Annette R. Coulon, Michael Martin, Debra L. Denton, and Francis H. Palmer. 1990. *Procedures manual for conducting toxicity tests developed by the Marine Bioassay Project.* California State Water Resources Control Board publication 90-10-WQ.

Tier 2 Protocols (Use of these protocols is less desirable than Tier 1 protocols)

<u>Code</u>	<u>Protocol Description</u>
APHA 85	American Public Health Association. 1985. <i>Standard methods for the examination of water and wastewater.</i> Pp. 735-737, <i>Toxicity testing with phytoplankton</i>

(tentative). American Public Health Association, Washington, D.C.

- ASTM 87 American Society for Testing Materials (ASTM) 1988. *Standard practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs*. Procedure E 724-80. ASTM, Philadelphia, PA.
- CHAP 92 Chapman, G. A. 1993. *Sea Urchin (*Strongylocentrotus purpuratus*) fertilization test method*. U. S. EPA Environmental Research Laboratory-Pacific Ecosystems Branch, Newport, OR. June 1993. EPA/600/R-93/097
- DL 87 Dinnel, P. A., J. M. Link, and Q. J. Stober. 1987. *Improved methodology for a sea urchin sperm cell bioassay for marine waters*. Archives of Environ. Contam. Toxicol. 16:23-32.
- DLA 91 Suer, L. 1991. *Modified Guidelines for the Effluent Toxicity Characterization Program, September 1991*. San Francisco Bay Regional Water Quality Control Board. (Susan Anderson's modification of the DL 87 echinoderm fertilization test).
- KOP 76 Kopperdahl, Fredric R. 1976. *Guidelines for performing static acute toxicity fish bioassays in municipal and industrial waste waters*. Report to the California State Water Resources Control Board. Fish and Wildlife Water Pollution Control Laboratory, Environmental Services Branch, California Department of Fish and Game.

List 5 - Control Codes

<u>Code</u>	<u>Control Type</u>
B	Brine
D	Dilution
I	Intake or Influent water
S	Sodium thiosulfate control

List 6 - Brine Sources

<u>Code</u>	<u>Name</u>
EV	Evaporated Seawater
FF	Forty Fathoms
FZ	Frozen Seawater
GP	Modified GP2
HM	Hawaiian Marine mix
IO	Instant Ocean
ME	Marine Environment
NA	Not Applicable

List 7 - Organism Sources

The first two characters represent the abbreviation of state where the laboratory is located.

<u>Code</u>	<u>Name</u>
ARAX	Aquatox
BCSE	Seacology, Canada
CAAA	Ausaymas Aquaculture
CAAD	Allen Deaver
CAAF	Abalone Farm
CAAL	AB Lab
CAAR	Aquatic Resources
CABR	Brezina and Associates
CACA	Canestro and Associates
CADG	David Gutoff
CAGC	Granite Canyon Lab
CAGK	George Kelly & Bill Adams
CAHI	Hog Island Oyster Co.
CAIH	In house culture
CAKS	Kim Siewers
CALT	Lintt Trout Farm

CAMC	McCormick & Associates
CAML	Mt. Lassen Trout Farm
CAPB	Pacific Biomarine
CAPE	Pacific Marine Enterprise
CAPM	Pacific Mariculture
CASU	Sticklebacks Unlimited
CATF	Thomas Fish Co.
COAB	Aquatic Biosystems
FLBS	Florida Bioassay Supply
FLAI	Aquatic Indicators
MASP	SP Engineering
MDCC	American Type Culture Collection
MNAT	American Type Culture Collection
MNEM	EPA Duluth, MN
MTSC	Spring Creek Trout Hatchery
NCBS	Biological Supply
NHAO	Aquatic Research Organisms
OHNF	EPA Aquatic Biology Branch/EMSL, Newtown Facility
OREO	EPA Newport, OR
ORJK	J&K Fish
ORNA	Northwestern Aquatic Science
OROO	Oregon Oyster Co.
RIER	EPA Narragansett, RI
TXPM	Parametrix Houston Laboratory
TXUT	University of Texas, Botany Dept.
WACC	Cascade Rainbow Trout Farm
WACM	Cran Mar Trout Farm
WACO	Coast Oyster Co.
WACS	Coast Seafood Co.
WANT	Nisqually Trout Farm
WATL	Trout Lodge Fish Farm
XXIH	Any In-house cultures
XXFC	Any Field collected

List 8 - Water Quality Parameters

<u>Code</u>	<u>Parameter</u>	<u>Units</u>	<u>Status</u>
DO	Dissolved Oxygen	mg/L	(required)
HARD	Hardness	mg/L	(required for freshwater tests)
PH	pH	pH	(required)
SAL	Salinity	g/l	(required for marine tests)
TEMP	Temperature	C	(required)
ALK	Alkalinity (CaCO ₃)	mg/L	(optional)
CL	Chlorine (residual)	mg/L	(optional)

COND	Conductivity	µmhos	(optional)
NH3	Ammonia(as total N)	mg/L	(optional)
SO3	Sulfite	mg/L	(optional)
TS	Sulfide	µg/L	(optional)

List 9 - Standardized Electronic Format Versions

<u>Code</u>	<u>Description</u>
SRD02/93	Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity, February 1993 version
SRD08/93	Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity, August 1993 version
SRD10/94	Standardized Electronic Reporting Format for Monitoring Effluent Toxicity, October 1994 version

List 10 - Chronic/Acute Designations

<u>Code</u>	<u>Description</u>
C	Chronic test. Use this code if you are calculating both chronic and acute end points for the same test.
A24	Acute test - 24 hour end point.
A48	Acute test - 48 hour end point.
A96	Acute test - 96 hour end point.
P	Acute Pass/Fail test

List 11 - Test Types

<u>Code</u>	<u>Description</u>
1	Flowthrough
2	Static
3	Static-renewal

List 12 - Dilution Water Sources

<u>Code</u>	<u>Description</u>
AW	Ambient Water - Pristine
LW	Laboratory Water - filtered

NA Not Applicable
RW Receiving Water - Outside Zone of Initial Dilution
SH Synthetic Water - Hard
SM Synthetic Water - Moderately Hard
SS Synthetic Water - Soft
TW Tap Water - Dechlorinated
WW Well Water
SW Site Water

List 13- Dechlorination Codes

<u>Code</u>	<u>Description</u>
Y	Sample was dechlorinated
N	Sample was not dechlorinated

Appendix 4: Glossary

ASCII Text File--These files are standard text files containing only visible alphanumeric characters with no embedded format (or control) characters. These hidden characters are part of most word processing, spreadsheet, and database file formats. You must explicitly save word processing files as text files, print spreadsheets to text files, or produce text output from a database. ASCII is an abbreviation for American Standard Code for Information Interchange.

Character--Any combination of letters, numbers, or other characters.

Decimal--Any array of numbers with a decimal point (e.g. "3.1415").

Effective Concentration (EC)--A point estimate of the toxicant concentration that would cause an observable adverse effect (such as death or immobilization) in a given percent of the test organisms, calculated from a continuous model (such as Probit Analysis). For example, the EC₅₀ from a Probit Analysis is the estimated concentration of toxicant that would cause death, or some other observable quantal, "all or nothing", response, in 50 percent of the test population.

Field--Each vertical column in a file is called a "field". Records are composed of a sequence of distinct "fields", each of which contains one datum.

Inhibition Concentration (IC)--A point estimate of the toxicant concentration that would cause a given percent reduction in a non-quantal biological measurement such as fecundity or growth calculated from a continuous model (such as EPA's Linear Interpolation program). For example, an IC₂₅ would be the estimated concentration of toxicant that would cause a 25 percent reduction in mean young per female or growth.

Integer--Any array of numbers with no decimal point (e.g. "31415").

Lethal Concentration (LC₅₀)--The concentration of a test chemical that is fatal to 50% of a population of test organisms. This is a specific case of the *Effective Concentration* where the endpoint is death.

Lowest-Observed-Effect-Concentration (LOEC)--The lowest concentration of toxicant that causes measurable adverse effects to the test organisms (i.e., where the values for the observed endpoints are statistically significantly different from the controls). LOEC values for survival, growth, and reproduction are obtained using a hypothesis testing approach.

No-Observed-Effect-Concentration (NOEC)--The highest concentration of toxicant that causes no measurable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed endpoints are not statistically significantly different from the controls). NOEC values for survival, growth, and reproduction are obtained using a hypothesis testing approach.

Record--Each horizontal line or row in a submission file is called a "record".

Record Type--Each record in the file has a specific format (that is, it is composed of certain fields). There are eight different formats defined in this document (V, T, H, P, D, E, W, and C records). Each is called a "record type".

Reference Toxicant Test--Reference toxicant tests indicate the sensitivity of the organisms being used and the suitability of the test methodology. Reference toxicant tests should be conducted concurrently with each effluent test (e.g., the reference toxicant required for the abalone protocol is zinc sulfate).

Required--A value must be entered for this field.

Submission file--An electronic computer file containing the results of one or more toxicity tests and adhering to the standardized format established in this document.

Test Type--Toxicity tests are grouped by the species group and toxicological endpoints used in the test. Test types are synonymous with *species groups* as used in this document.

Test Number--An array of characters assigned by the laboratory or discharger used to uniquely identify a toxicity test. The test number is used to link record types with a particular toxicity test.