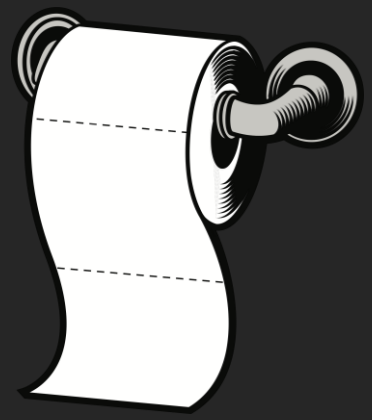


Rollout of Statewide Toxicity Provisions in Region 2

February 2021

BACWA
BAY AREA
CLEAN WATER
AGENCIES

Toxicity Implementation Details

1. Reduced Monitoring Eligibility (32 out of 34 permits)
2. Surveillance Monitoring (20 out of 34 permits)
3. Transitioning to Tier 1 Species (16 out of 34 permits)
4. Screening Requirements for Estuarine and Marine Dischargers (31 of 34)

1. Reduced Monitoring – What is it?

Facility Type	RPA?	Routine*	Reduced
POTW ≥ 5 MGD, Shallow	No	Monthly	Quarterly
POTW ≥ 5 MGD, Deep	No	Monthly	2/Year Compliance & 2/Surveillance
POTW 1 to 5 MGD	Yes	Quarterly	2/Year Automatic if no Reasonable Potential
POTW < 1 MGD	Yes	2/Year	2/Year
Anyone in a TRE			2/Year (if approved by Exec. Officer)

1. Reduced Monitoring – How to Qualify?

- Last 5 years of data
- Analyze all toxicity tests (minimum of 10) with TST
- No “fails” at the IWC or at a higher concentration

1. Use the TST Calculator or ask your Contract Lab to generate TST results for the last 5 years

2. Make an educated guess at IWC

3. Evaluate whether samples at and above IWC were PASS or FAIL

Poll 1

Q. Does your agency know how to figure out if you qualify for reduced monitoring?

- Yes
- No, our agency would like training
- No, we plan to hire a consultant to help

1. Reduced Monitoring - Potential Complications

- Data Availability
  - 3 dischargers (> 1 MGD) have annual monitoring, fewer than 10 results

- Unclear whether to assess **all** concentrations higher than IWC
  - CCCSD Example: IWC = 2% Effluent (D=43)
  - Chronic Toxicity Dilution Series is 100%, 50%, 25%, 10%, 5%; All exceed IWC
  - Do all results need to be "Pass," or just the 5% results?

- Any other complications?

2. Surveillance Monitoring – the Basics

- 10% Effluent
- Replaces 2 Q/Yr of routine monitoring for large, deep water dischargers (>5 MGD, >20:1 dilution)
- Two “fails” trigger a TRE

2. Surveillance Monitoring – Questions

- Does a single "fail" trigger additional monitoring?
- Is the reference to monthly monitoring in Table E-X a typo?
- Does % effect need to be reported?
- Confirm surveillance monitoring will not be used to establish eligibility for reduced monitoring

Table E-X. TRE Triggers

Monitoring Type	Monitoring Frequency	Triggers	TRE Required?
Routine and MMEL Compliance	Less than monthly	1)Violation of MDEL or MMEL in a calendar month, AND 2)No discharge the following calendar month	EO may require a TRE
	Monthly	Any combination of two or more MDEL or MMEL violations in a single calendar month	TRE required
		Any combination of two or more MDEL or MMEL violations in successive calendar months	TRE required
Surveillance	Monthly	"Fail" result in two consecutive calendar months	TRE required
Other	Any	Any combination of two or more MDEL or MMET failures for *C. Dubia* in a single calendar month or within two successive calendar months.	TRE required

D. Surveillance Monitoring

The Discharger shall conduct Surveillance Monitoring and reporting as described in MRP sections V.A and V.B above, but with the following exceptions:

1. **Sampling.** Surveillance Monitoring samples shall be collected at Monitoring Location SUR-001.
2. **Frequency.** Surveillance Monitoring shall be conducted [monthly/another frequency].
3. **Methodology.** The selected test concentrations shall include 10 percent effluent. The TST shall be conducted using the 10 percent effluent sample and a control.

3. Transitioning to Tier 1 Species

- Mysid shrimp (Tier 2), Inland Silverside (Tier 2), and *Thalassisiora* (Not listed) are not Tier 1 Species
- 16 Dischargers use these species
- Option A: Most recent screening → select next-most Sensitive Tier 1 Species
- Option B: Choose same taxa from Tier 1 list
  - Mysid → Sand dollar/purple urchin, abalone, or mussels/oyster
  - Menidia → topsmelt (availability problems) → Menidia
  - *Thalassiosira* → Giant kelp
- Option C: Keep testing with Mysid until next re-screening

Poll 2
Q. Which option makes the most sense?
A
B
C

4. Screening Requirements for Estuarine & Marine Dischargers

Table AE-1. Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Tier	Effect	Test Duration	Reference
Giant kelp	*(Macrocystis pyrifera)*	I	Percent germination; germ tube length	48 hours	1
Red Abalone	*(Haliotis rufescens)*	I	Larval development	48 hours	1
Oyster Mussel	*(Crassostrea gigas)* *(Mytilus sp.)*	I	Larval development	48 hours	1
Purple Urchin Sand dollar	*(Strongylocentrotus purpuratus)* *(Dendraster excentricus)*	I	Percent fertilization or larval development	1 hour or 72 hours	1
Shrimp	*(Americamysis bahia)*	II	Percent survival; growth	7 days	2
Topsmelt	*(Atherinops affinis)*	I	Percent survival; growth		
Silverside	*(Menidia beryllina)*	II	Larval growth rate; percent survival		

Table AE-2. Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Tier	Effect	Test Duration	Reference
Fathead minnow	*(Pimephales promelas)*	I	Survival; growth rate	7 days	1
Water flea	*(Ceriodaphnia dubia)*	I	Survival; number of young	7 days	1
Green Alga	*(Selenastrum capricornutum)*	I	Final cell density	4 days	1

4. Screening Requirements for Estuarine & Marine Dischargers

Current Permits – Freshwater Species are included in Marine/Estuarine Screening

Table AE-3. Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay [1]	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater [2] Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

Footnotes:

[1] (a) Marine refers to receiving water salinities greater than 10 part per thousand (ppt) at least 95 percent of the time during a normal water year.

(b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

(c) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.

[2] The freshwater species may be substituted with marine species if:

(a) The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or

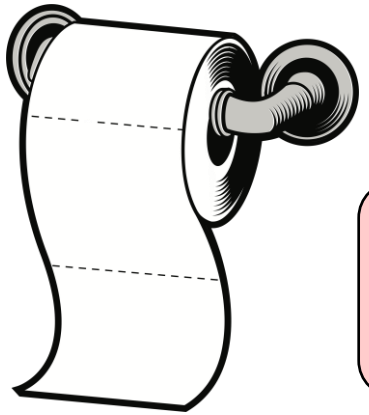
(b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

Proposed Language:
Marine and Estuarine Dischargers use 3 Marine Species

Poll 3

Q: Should marine and estuarine dischargers screen with freshwater species?

- **A. Yes, with maximum flexibility.**
- **B. Yes, with special permission**
- **C. No, stick to marine species**



TST Roll-out Cheat Sheet

Compliance will be based on the Test of Significant Toxicity (TST)
The TST Spreadsheet Tool or your Contract Lab can re-analyze your existing monitoring data using the TST.

Compliance Tests will be performed at the Instream Waste Concentration (IWC)
You'll need to justify use of a specific IWC for your next NPDES permit reissuance. Your NPDES Permit may already contain information that suggests a specific IWC, such as a dilution credit for ammonia based on the chronic water quality objective, or a provision requiring a certain dilution factor.

Screening will be Different
- Quarterly testing over a 1-year period
- Only 'Tier 1' species to choose from.
- Do you need to re-screen? If your last study will be more than 10 years old when your permit is next reissued, you'll need to re-screen.

New Species?
Mysid shrimp is a 'Tier 2' species and its use will be phased out for most dischargers.

No more Acute Toxicity Monitoring!
When new permit language takes effect

You May be Eligible for Reduced Monitoring

The new policy requires more frequent monitoring – but not for everyone. Check if you are eligible for reduced monitoring by using the TST to analyze all test from the last five years performed at or above the IWC.

Surveillance Monitoring
Deep water dischargers > 5 MGD may be eligible to replace some routine monitoring with "surveillance monitoring" that is not used for compliance.