CALIFORNIA Water Boards

EDMUND G. BROWN JR. GOVERNOR

MATTHEW RODRIQUEZ SECRETARY FOR ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

March 17, 2016

Mr. Anthony Arevalo
Storm Water/Environmental Compliance Officer
City of Long Beach
333 W. Ocean Blvd., 9th Floor
Long Beach, CA 90802

REVIEW OF CITY OF LONG BEACH'S DRAFT INTEGRATED MONITORING PROGRAM, PURSUANT TO ATTACHMENT E, PART IV.A OF THE CITY OF LONG BEACH MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT (NPDES PERMIT NO. CAS004003; ORDER NO. R4-2014-0024)

Dear Mr. Arevalo:

The Los Angeles Water Board has reviewed the draft monitoring program submitted on March 30, 2015 by the City of Long Beach (City). This monitoring program was submitted pursuant to the provisions of NPDES Permit No. CAS004003 (Order No. R4-2014-0024), which authorizes discharges from the municipal separate storm sewer system (MS4) operated by the City of Long Beach (hereafter, City of Long Beach MS4 Permit). The City of Long Beach MS4 Permit allows the City the option to develop and implement an integrated monitoring program (IMP) that achieves the five Primary Objectives set forth in Part II.A of Attachment E and includes the elements set forth in Part II.D of Attachment E. This program must be approved by the Executive Officer of the Los Angeles Water Board.

The Los Angeles Water Board has reviewed the City's draft IMP for the Port area (Inner Harbor, Outer Harbor, and Eastern San Pedro Bay) and has determined that, for the most part, the IMP for the Port area includes the elements set forth in Part II.D of Attachment E and will achieve the Primary Objectives set forth in Part II.A of Attachment E of the City of Long Beach MS4 Permit. However, some additions and revisions to the IMP for the Port area are necessary. The Los Angeles Water Board's comments on the draft IMP, including detailed information concerning necessary additions and revisions to the IMP, are found in Enclosure 1 and Enclosure 2. Review of the City's draft IMP for non-Port areas (Lower Long Beach Estuaries and Coastal San Pedro Bay Beaches) will be provided under separate cover.

Please make the necessary additions and revisions to the IMP, as identified in the enclosures to this letter, and submit the revised IMP as soon as possible and no later than **April 18, 2016.** The revised IMP must be submitted to losangeles@waterboards.ca.gov with the subject line "City of Long Beach MS4 Permit – Revised City of Long Beach IMP - Port" with a copy to Ivar.Ridgeway@waterboards.ca.gov and Erum.Razzak@waterboards.ca.gov.

Upon approval of the revised IMP by the Executive Officer, the City must prepare to commence its monitoring program within 30 days. If the necessary revisions are not made, the City must

comply with the Monitoring and Reporting Program and future revisions thereto, in Attachment E of the City of Long Beach MS4 Permit.

Until the City's IMP is approved by the Executive Officer, the monitoring requirements pursuant to Order No. 99-060 and Monitoring and Reporting Program CI 8052, and pursuant to approved TMDL monitoring plans shall remain in effect.

If you have any questions, please contact Ms. Erum Razzak of the Storm Water Permitting Unit by electronic mail at Erum.Razzak@waterboards.ca.gov or by phone at (213) 620-2095. Alternatively, you may also contact Mr. Ivar Ridgeway, Chief of the Storm Water Permitting Unit, by electronic mail at Ivar.Ridgeway@waterboards.ca.gov or by phone at (213) 620-2150.

Sincerely,

Samuel Unger

Samuel Unger, P.E.
Executive Officer

cc: Ara Maloyan, Director of Public Works, City of Long Beach
John L. Hunter, P.E., John L. Hunter and Associates, Inc.
Dylan Porter, Port of Long Beach
James Vernon, Port of Long Beach

Enclosures: Enclosure 1 – Summary of Comments and Required Revisions
Enclosure 2 – Comments on Aquatic Toxicity Testing
Memorandum from Executive Officer to MS4 Permittees Clarifying Aquatic Toxicity Monitoring Requirements

Enclosure 1 – Summary of Comments and Necessary Revisions to Draft IMP

City of Long Beach

Table 1 - Comments on A-8-1

IMP Reference	MRP Element/ Reference (Attachment E)	Comment and Necessary Revision
General		
Table 1		Table 1 is missing benthic community effects and sediment toxicity which are 303(d) listed impairments. Include benthic community effects for Long Beach Inner Harbor. Sediment toxicity should be added to Long Beach Inner Harbor, Long Beach Outer Harbor, and Eastern San Pedro Bay.
Table 1		Revise Table 1 to include priority pollutants for Los Angeles River Estuary.
Section 3.1 & 3.2		Section 3.1 and 3.2 states that "CCMRP monitoring results will be reviewed and incorporated into the IMP annual report by summary and reference only". Revise sentence to indicate that CCMRP monitoring results and evaluation will be submitted in its entirety with the MS4 Annual Report.
Section 3.5		Section 3.5 states that "The City has developed mechanisms for tracking information related to new and redevelopment projects…etc." Specify what these "mechanisms" are.
Table 3		Add a footnote to Table 3 specifying the parameters for "field measurements". These appear to be itemized in sections 8.2.1.1 and 8.3.1.
Table 3		Correct Table 3 footnote 3 reference "Section 3.3" to "Section 3.4".
Section 5		Complete the incomplete sentence in the last sentence of the 3rd paragraph: "As specified in the MS4 Permit, if the parameter was not detected in the first event."
Table 4		Table 4 shows no TMDL sediment monitoring for CL3-PCB-28. Please provide a rationale.
Table 4		In Table 4, fix typographical error "qamma-BHC (lindane)" to "gamma-BHC (lindane)".
Table 4		Add Benzo(g,h,i)perylene to Table 4.
Receiving Water Monitoring		
Table 2	Part VI.B.1.c (page E-11)	Proposed receiving water site #19 in Eastern San Pedro Bay is distant from the POLB area in the Compton Creek-Los Angeles River HUC 12 drainage. Sites #18 and 21 are more appropriate to

IMP Reference	MRP Element/ Reference (Attachment E)	Comment and Necessary Revision
		represent potential water quality impacts from MS4 discharges from POLB in this HUC-12 area. Modify proposed receiving water location for the Compton Creek-Los Angeles River HUC-12 area accordingly. Additionally, provide the rationale for selecting receiving water site #16 instead of receiving water site #14 to represent MS4 discharges from the Long Beach Harbor HUC-12 area. (Table 2 & Figure 1)
Section 4.1	Part VI.C.1.b.i (page E-12)	Section 4.1 defines "wet weather storms identified as greater than 0.25-inch precipitation targeting larger rain events that are likely to impact receiving water." However, the CCMRP states the following: "*Depending on the seasonal forecast (e.g., drought vs. wet years), this wet weather event will consist of a storm that produces at least 0.1 inch (0.25 cm) of precipitation per day and separated by an antecedent dry period (less than 0.1 inch [0.25 cm] of rain per day) of at least 72 hours, but consideration will be given to monitor larger storm events (0.5 inch [1.28 cm] or greater) if forecasted.*" Clarify the difference, if any, between the definition of wet weather to be used in the IMP and that used in the CCMRP.
	Part VII.A (page E-18)	Maps and/or database elements required as per Attachment E Part VII.A of the City of Long Beach MS4 Permit are either unclear or provided as a general map in the WMP. Please include maps and/or database elements specific to this IMP in the revised IMP and provide a table summarizing which elements have been submitted or are pending. For pending elements, provide a schedule for providing the data element.
Table 4		Add benthic community effects and sediment toxicity to Table 4 as required by the Harbor Toxics TMDL. Verify in the revised IMP that receiving water monitoring, stormwater outfall based monitoring, and non-stormwater outfall based monitoring will address all category 1, 2, and 3 parameters.
Table 4, footnote 1	Part VI.C.1.e & VI.D.1.d (page E-13 to E-14)	Table 4 footnote 1 inaccurately states that sampling for constituents in the following year after the 1st year of monitoring depends on meeting the ML. Revise footnote 1 to be consistent with Part VI.C.1.e and VI.D.1.d of Attachment E of the Long Beach MS4 Permit.
Section 8.2.1.2		In Section 8.2.1.2, specify the timing of the samples (i.e. x hours after storm event begins).
Section 8.3.2	Part III.F.2 (page E-6)	Section 8.3.2 states that "Grab samples, if necessary, will be collected for parameters not amenable to flow-weighted composite sampling." Specify at least the categories of parameters

IMP Reference	MRP Element/ Reference (Attachment E)	Comment and Necessary Revision
		non amenable to flow-weighted composite sampling (i.e. pathogen indicator bacteria, oil and grease, cyanide, and volatile organics).
Storm Water Outfall Based Monitoring		
	Part VIII.A.2.b (page E-19)	The draft IMP does not provide sufficient justification on why the chosen stormwater outfall monitoring stations are best representative of land use within the City's/POLB jurisdiction. To provide sufficient justification, the City must provide a land use map that shows the catchment area (also known as the drainage area) for each stormwater outfall proposed and tabular data. Specifically, the table should include: • Land use breakdown (acres and percent) for the entire POLB area • Individual breakdowns for each subwatershed (HUC 12 drainage area) within the POLB area • Individual breakdowns for the catchment area within the POLB that drains to each of the stormwater outfalls
	Part VIII.A.2.b (page E-19)	Section 3.3 of the draft IMP states that, the Port of Long Beach proposes to monitor stormwater discharges from two sampling stations, one each from the two HUC-12 equivalent subwatersheds within the Port and representative of Port land uses. It states that the first station (Outfall No. 85) is in Middle Harbor (HUC 180701050402); however, this Outfall appears to be in HUC 180701060701 according to Figure 1. Please clarify or correct.
	Part VIII.A.2.a (page E-19)	The draft Watershed Management Program (WMP) Table 1-2 indicates that San Pedro Bay HUC-12 (180701060703) falls within the City's jurisdiction. If so, the San Pedro Bay HUC-12 should also be addressed by this IMP. Propose a stormwater outfall monitoring location for the San Pedro Bay HUC-12 and add relevant information to relevant sections of the IMP. Alternatively, provide justification for why the other outfall locations are adequately representative of the City's area in the San Pedro Bay HUC-12.
Section 3.3	Part VI.A.1.b.v (page E-11)	Section 3.3 of the revised IMP should discuss if MS4 discharges are conveyed from the POLB area to any outfalls in eastern San Pedro Bay.
Section 6	Part VI.C.1.e and VI.D.1.d (page E-13 to E-14)	Section 6 states that "*If a Table E-2 parameter exceeds receiving water criteria in two consecutive surveys, the parameter will be added to the monitoring list of the representative and associated upstream stormwater outfall monitoring site[s] for a minimum of 2 years.*" As per Attachment E Part VI.C.1.e and VI.D.1.d of the City of Long Beach MS4 Permit, if a parameter is detected exceeding the lowest

IMP Reference	MRP Element/ Reference (Attachment E)	Comment and Necessary Revision
		applicable water quality objective, then the parameter shall be analyzed for the remainder of the Order during wet weather at the receiving water monitoring station where it was detected. The same is true for dry weather. Therefore, the statement in Section 6 of the draft IMP should be revised from "two consecutive surveys" to "one survey". Section 6 of the IMP also states that "*If monitoring results of a Table E-2 parameter that was added to a stormwater outfall monitoring site indicate the parameter is not detected in excess of the lowest applicable water quality criterion for 2 consecutive years, monitoring of that parameter at the stormwater outfall monitoring site will be discontinued.*" The same is proposed for Category 3 pollutants. The revised IMP shall state that a written request to reduce or eliminate the monitoring of specific parameters shall be submitted to the Los Angeles Water Board for Executive Officer Approval.
Non-Storm Water Outfall Based Monitoring		
Section 3.4		Include discussion about non-stormwater discharges to eastern San Pedro Bay in Section 3.4 of the IMP. Is eastern San Pedro Bay also included in the monthly screening that the Port is conducting? If not, outfalls in eastern San Pedro Bay should be screened for non-stormwater discharges.
Section 3.4 & Table 3 footnote 3, 4, & 5	Part IX (Page E-20 to E-25)	Section 3.4 and Table 3 footnote 3, 4, and 5 of the IMP mentions the screening and monitoring of non-stormwater discharge. Please elaborate on the protocols for screening and monitoring including more details on identifying outfalls with significant non-stormwater discharge and prioritized source identification. In addition, the following should also be provided: • Follow-up procedures based on the findings of the source identification. • Source identification schedule that ensures that 25% of the outfalls will be addressed by March 28, 2017 and 100% by March 28, 2019. Note that an alternative prioritization and schedule may be proposed if the proposal demonstrates an equivalent level of source investigation and abatement.
Section 3.4	Part IX.B.2 (page E-21 to E-22)	Revise the IMP to include one re-assessment of the non-stormwater outfall-based screening and monitoring program during the term of this Order to determine whether changes or updates are needed.

IMP Reference	MRP Element/ Reference (Attachment E)	Comment and Necessary Revision
Section 3.4	Part IX.C.1 (page E-22)	The revised IMP shall provide a definition or a criterion on how a significant non-stormwater discharge will be determined. In particular, it should provide specificity on thresholds for field measurements, including flow and water quality data that will be used to determine whether the non-stormwater discharge is significant.
Section 3.4	Part IX.H.1-2 (page E-25)	Specify sampling methods in the revised IMP as follows: • Non-stormwater discharges shall be monitored during days when precipitation is < 0.1 inch and those days not less than 3 days after a rain day unless an alternative criterion is proposed. A rain day is defined as those with ≥ 0.1 inch of rain. • Flow-weighted composite samples shall be taken for non-stormwater discharge using a continuous sampler, or it shall be taken as a combination of a minimum of 3 sample aliquots, taken in each hour during a 24-hour period, unless an alternative protocol is proposed.
Section 3.4		During the monthly Port visits to all stormwater outfalls, specify if the Port samples these outfalls if flow is present.
Table 3	Part IX.G.1-3 (page E-24 to E-25)	Table 3 of the IMP should indicate what parameters will be monitored for non-stormwater outfall-based monitoring (e.g. flow, TMDLs/category 1 pollutants, 303(d) list pollutants/category 2 pollutants, etc.). Additionally, the IMP must propose a monitoring frequency for non-stormwater outfall-based monitoring.
Aquatic Toxicity		
Section 4.1 & Table 3, footnote 2		Revise the last sentence of Section 4.1 to state that "If all toxicity tests from the three sampling events show no toxicity, the POLB will provide a written request to the Executive Officer of the Los Angeles Water Board to discontinue aquatic toxicity tests the following year." Also revise Table 3 footnote 2 accordingly.
Table 3	Part VI.C.1.d.vi & VI.D.1.c.vi (E-13 to E-14)	Table 3 footnote 2 of the draft IMP specifies that "*If all toxicity tests from the three sampling events of the first year show no toxicity at a monitoring station, aquatic toxicity tests will not be included in the following year at that monitoring station."* The City of Long Beach MS4 Permit requires aquatic toxicity monitoring every year. Therefore, please remove footnote 2 from Table 3 of the revised IMP.
Table 3	Part VIII.B.1.c.vi (page E-20) &	Note that aquatic toxicity testing is required for storm water and non-storm water outfall monitoring where the adjacent receiving water monitoring site exhibits toxicity and the TIE conducted on

IMP Reference	MRP Element/ Reference (Attachment E)	Comment and Necessary Revision
	Part IX.G.1.d (page E-25)	the receiving water is inconclusive. See August 2015 memorandum clarifying aquatic toxicity testing requirements. Clarify in Table 3 that aquatic toxicity testing will be conducted as necessary as a part of stormwater outfall-based monitoring and non-stormwater outfall based monitoring.
Sections 7.3 -7.6		Revise Sections 7.3 – 7.6 of the draft IMP based on the clarification memo issued by the Regional Water Board in August 2015 (attached).
Section 7.6		The draft IMP states that "*The list of constituents monitored at outfalls identified in the IMP will be modified based on the results of the TIEs. Monitoring for those constituents will occur as soon as feasible following the completion of a successful TIE (i.e., the next monitoring event that is at least 45 days following the toxicity laboratory's report transmitting the results of a successful TIE).*" Please revise this statement substituting "*45 days following the toxicity laboratory's report transmitting the results of a successful TIE)*" with "45 days following the initial sampling event" consistent with the August 2015 clarification memo.

Enclosure 2 – Comments on Aquatic Toxicity Testing

City of Long Beach

Section 8.1 - Inner Harbor, Outer Harbor, and Eastern San Pedro Bay

Sensitive Species Selection: While *Ceriodaphnia dubia* is frequently the most sensitive species in freshwater receiving waters toxicity testing, in the marine environment the most sensitive species often varies. The Permittee suggests *Strongylocentrotus purpuratus* is the most sensitive species due to the assumption that metals will be the primary pollutants in both wet and dry weather runoff; however, many pesticides in current use are also known to be present in runoff. Other reasons suggested by the Permittee to justify use of *S. purpuratus* involve issues of practicality or logistics rather than sensitivity. The three-species screening process described in Part XII.G.3. (Page E-29) of the MRP must be followed at each of the receiving water sites to identify the most sensitive species. We suggest consulting the State Water Resources Control Board 2011 publication, "Implementation Guidance: Toxicity Testing for Stormwater" to gain insight on how to run chronic toxicity tests on marine wet weather samples.

Required Actions Following an Inconclusive TIE: The draft IMP does not state that an inconclusive TIE will be followed by toxicity testing in nearby outfalls as required by the MRP and instead proposes preparing a Discharge Assessment Plan (DAP) in response to an inconclusive TIE. While development of the proposed DAP will be useful, it cannot take the place of the required outfall toxicity monitoring following an inconclusive TIE in the receiving water. The issue of inconclusive toxicity appears confused with persistence of toxicity. Inconclusive TIEs often result from a lack of following well-defined procedures rather than from non-persistent toxicity. As mentioned elsewhere in this comment letter, including pyrethroids in the TIE procedure, as proposed in the draft IMP, will reduce the occurrence of inconclusive TIEs as will including chemical testing for fipronil and its degradates for comparison to U.S. EPA benchmarks. See the memorandum issued by the Los Angeles Water Board on August 07, 2015 for more clarification on toxicity testing and TIE requirements.

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EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

TO: Los Angeles County MS4 Permittees and City of Long Beach

FROM: Samuel Unger, P.E.
Executive Officer

DATE: August 7, 2015

SUBJECT: CLARIFICATION REGARDING FOLLOW-UP MONITORING REQUIREMENTS IN RESPONSE TO OBSERVED TOXICITY IN RECEIVING WATERS PURSUANT TO THE MONITORING & REPORTING PROGRAM (ATTACHMENT E) OF THE LOS ANGELES COUNTY MS4 PERMIT (ORDER NO. R4-2012-0175)

The Los Angeles County MS4 Permit, Attachment E requires chronic aquatic toxicity monitoring in receiving waters during both wet and dry weather conditions to determine whether designated beneficial uses are fully supported. Further, Attachment E requires additional monitoring at MS4 outfalls where aquatic toxicity is present above a certain effect level in downstream receiving waters to determine whether MS4 discharges are causing or contributing to the aquatic toxicity. In this situation, outfall monitoring must either entail monitoring for specific pollutants identified in a toxicity identification evaluation (TIE) in the downstream receiving water, or for aquatic toxicity itself, where the specific pollutants could not be identified through the TIE conducted on the downstream receiving water.

In its comments on the draft Integrated Monitoring Programs (IMPs) and Coordinated Integrated Monitoring Programs (CIMPs) submitted per the Los Angeles County MS4 Permit, the Los Angeles Water Board provided clarification and recommendations to Permittees regarding aquatic toxicity monitoring, particularly pertaining to the requirement to conduct chronic toxicity tests in dry and wet weather conditions and requirements for conducting a TIE and outfall monitoring. Subsequently, on December 9, 2014, Board staff met with several Permittees regarding its comments. During this meeting it was apparent that further clarification was necessary regarding requirements for follow-up monitoring when aquatic toxicity is present in downstream receiving waters. This memo provides additional clarification and applies to all IMPs and CIMPs developed pursuant to Part VI.B of the Los Angeles County MS4 Permit and Part VII.B of the City of Long Beach MS4 Permit.

It is acknowledged, however, that this memo may not address every situation that is encountered. We encourage the Permittees to approach toxicity testing and the TIE and TRE procedures thoughtfully and thoroughly in the interest of identifying and eliminating any source(s) of toxicity in MS4 discharges as expeditiously as possible and to consult with Los Angeles Water Board staff if you need assistance or clarification.

If you have any questions regarding these clarifications, please contact Renee Purdy at Renee.Purdy@waterboards.ca.gov or Shirley Birosik at Shirley.Birosik@waterboards.ca.gov.

The memo addresses requirements for follow-up monitoring in four **receiving water** scenarios where toxicity is present:

- Toxicity is present, but not above the TIE trigger as defined in Attachment E, Part XII.I.1[1];
- Toxicity is present above the TIE trigger and the TIE identifies the constituent(s) causing the toxicity;
- Toxicity is present above the TIE trigger during wet weather, but the TIE is inconclusive; and
- Toxicity is present above the TIE trigger during dry weather, but the TIE is inconclusive.

The memo also addresses the several scenarios once **outfall** toxicity testing has been triggered. Attached to the memo are several simplified flowcharts to aid in understanding the process.

An inconclusive TIE is defined as a TIE for which the cause of toxicity cannot be attributed to a constituent or class of constituents (e.g., metals, insecticides, etc.) that can be targeted for monitoring even after conducting appropriate Phase I and Phase II TIE treatments. This outcome may result from either non-persistent toxicity such that the TIE treatments cannot be successfully completed on the toxic sample, or from the inability with available Phase I and Phase II TIE treatments to isolate the constituent or class of constituents causing the toxicity. If the TIE is inconclusive due to non-persistent toxicity, the Los Angeles Water Board expects that Permittees will proactively identify and implement actions during the subsequent upstream and/or outfall toxicity sampling event to improve the likelihood of a conclusive TIE, while also following the steps below. Where a TIE is inconclusive due to the inability to determine the constituent(s) causing the toxicity, Permittees should evaluate further steps to improve the TIE outcome including sensitive species selection, QA/QC, and the need to conduct Phases I through III of a TIE, among others.

An **inconclusive TIE** is one for which the cause of toxicity cannot be identified after the conclusion of TIE Phases I and II.

If a TIE is inconclusive:

- ✓ Check QA/QC
- ✓ Evaluate sensitive species selection
- ✓ Initiate future TIEs earlier (to address non-persistent toxicity)
- ✓ Conduct all phases of TIE

[1] Permit references correspond to the Los Angeles County MS4 Permit (Order No. R4-2012-0175)

TRIGGERS FOR ADDING TOXICITY MONITORING TO *UPSTREAM RECEIVING WATER MONITORING / OUTFALL MONITORING*:

1. If toxicity is present as determined based on a fail of the Test of Significant Toxicity (TST) t-test as specified in the Permit (Attachment E, Part XII.G.4) during wet or dry weather, but not above the TIE trigger (which is defined as when the survival or sublethal endpoint demonstrates a >=50 Percent Effect at the IWC as per Attachment E, Part XII.I.1), then:
    a. Toxicity monitoring will be added to the next existing upstream receiving water site(s) during the same condition (wet or dry weather) for which toxicity was determined to be present. Monitoring for toxicity at the next existing upstream receiving water site(s) will occur during the next monitoring event that is at least 30 days following the original toxicity sample collection. Toxicity monitoring at individual receiving water sites will continue until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the receiving water site or (2) a TIE is triggered and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 below is followed. OR
    b. If there is no upstream receiving water monitoring site already established as part of the monitoring program, continue receiving water toxicity monitoring at the original site until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the original receiving water site or (2) a TIE is triggered at the original site and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 below is followed. Also, conduct an evaluation similar to the TRE outlined in Attachment E, Part XII.J to identify, to the extent practicable, the source(s) of toxicity with the goal of identifying cause(s) of toxicity, paying particular attention to sources of potential constituent(s) causing toxicity (e.g., fipronil).
        i. If there is no upstream receiving water monitoring site already established as part of the monitoring program and toxicity is present during <u>dry weather</u>, actions taken as part of the non-stormwater program (e.g., source identification and elimination or treatment of unauthorized non-stormwater discharges that are a source of pollutants) should be utilized to support the TRE.
        ii. If there is no upstream receiving water monitoring site already established as part of the monitoring program and toxicity is present during <u>wet weather</u>, consider the following actions to support TRE: evaluating land uses and potential associated source(s) in the drainage area, evaluation of other permitted discharges, and evaluation of inspection activities. AND
    c. If there is no upstream receiving monitoring site already established as part of the monitoring program and more than one occurrence of a fail of the TST t-test occurs at the original receiving water site within 3 years, then evaluate opportunities to conduct toxicity monitoring at upstream receiving water sites (either newly established or sites utilized by other monitoring programs), including tributaries.

2. If toxicity is present at a level exceeding the TIE trigger and the TIE identifies the constituent or class of constituents causing toxicity, then:
    a. Do not add toxicity monitoring to upstream sites. AND
    a. During the same condition, add the identified constituent or constituents within the class of constituents[2] to the monitoring site where toxicity was identified, the upstream receiving water site(s), and upstream outfall site(s) starting with the next monitoring event that is at least 45 days following the toxicity sample collection. Monitoring for the identified constituent(s) will continue until the deactivation criterion (i.e., two consecutive samples do not exceed Receiving Water Limitations (RWLs), Water Quality Based Effluent Limitations (WQBELs), or other appropriate threshold or guideline if there is no numeric RWL or WQBEL, for the identified constituents during the same condition) is met at the individual site. Where constituent(s) are identified in the outfall(s) above the RWL(s), WQBEL(s), or other appropriate threshold or guideline commence TRE at each corresponding outfall location per Attachment E, Part XII.J.
3. If toxicity is present at a level exceeding the TIE trigger during wet weather and the TIE is inconclusive, then:
    a. Add toxicity monitoring to the next existing upstream receiving water site(s) during the next monitoring event that is at least 45 days following the original toxicity sample collection. Toxicity monitoring at individual receiving water site(s) will continue until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the receiving water site or (2) a TIE is triggered and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 above is followed. AND
    b. The second inconclusive TIE in 3 years during wet weather would trigger outfall toxicity testing at upstream outfall sites (i.e., (1) outfall sites located between the receiving water site and the nearest upstream receiving water site located on the same waterbody and (2) outfall sites located on tributaries that have a confluence with the waterbody where the confluence is located between the receiving water site and the nearest upstream receiving water site located on the same waterbody) following the process outlined below in "Steps Related Outfall Toxicity Testing" during the next monitoring event that is at least 45 days following the original toxicity sample collection. OR
    c. As an alternative to the outfall monitoring described in Bullet 3.b., Permittees may propose an alternative approach any time after the first inconclusive TIE, which could include utilizing upstream receiving water sites (either newly established or sites utilized by other monitoring programs), including tributaries, additional outfall sites, and/or different outfall sites. However, the outfall monitoring approach described in Bullet 3.b. must be followed until Regional Water Board EO approval of the alternative approach.

[2] Using appropriate detection limits

4. If toxicity is present at a level exceeding the TIE trigger during dry weather and the TIE is inconclusive, then:
    a. Add toxicity monitoring to the next existing upstream receiving water site(s) during the next monitoring event that is at least 45 days following the original toxicity sample collection. Toxicity monitoring at individual receiving water site(s) will continue until (1) the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition) is met at the receiving water site or (2) a TIE is triggered and conclusively identifies the constituent or class of constituents causing toxicity, in which case the process outlined in Bullet 2 above is followed during the next monitoring event that is at least 45 days following the original toxicity sample collection. AND
    b. Add toxicity testing to upstream outfall sites (i.e., (1) outfall sites located between the receiving water site and the nearest upstream receiving water site located on the same waterbody and (2) outfall sites located on tributaries that have a confluence with the waterbody where the confluence is located between the receiving water site and the nearest upstream receiving water site located on the same waterbody) following the process outlined below in "Steps Related Outfall Toxicity Testing" during the next monitoring event that is at least 45 days following the original toxicity sample collection. OR
    c. As an alternative to the outfall monitoring described in Bullet 4.b above, Permittees may propose an alternative approach any time after the first inconclusive TIE, which could include utilizing upstream receiving water sites (either newly established or sites utilized by other monitoring programs), including tributaries, additional outfall sites, and/or different outfall sites. However, the outfall monitoring approach described in Bullet 4.b above must be followed until Regional Water Board EO approval of the alternative approach.

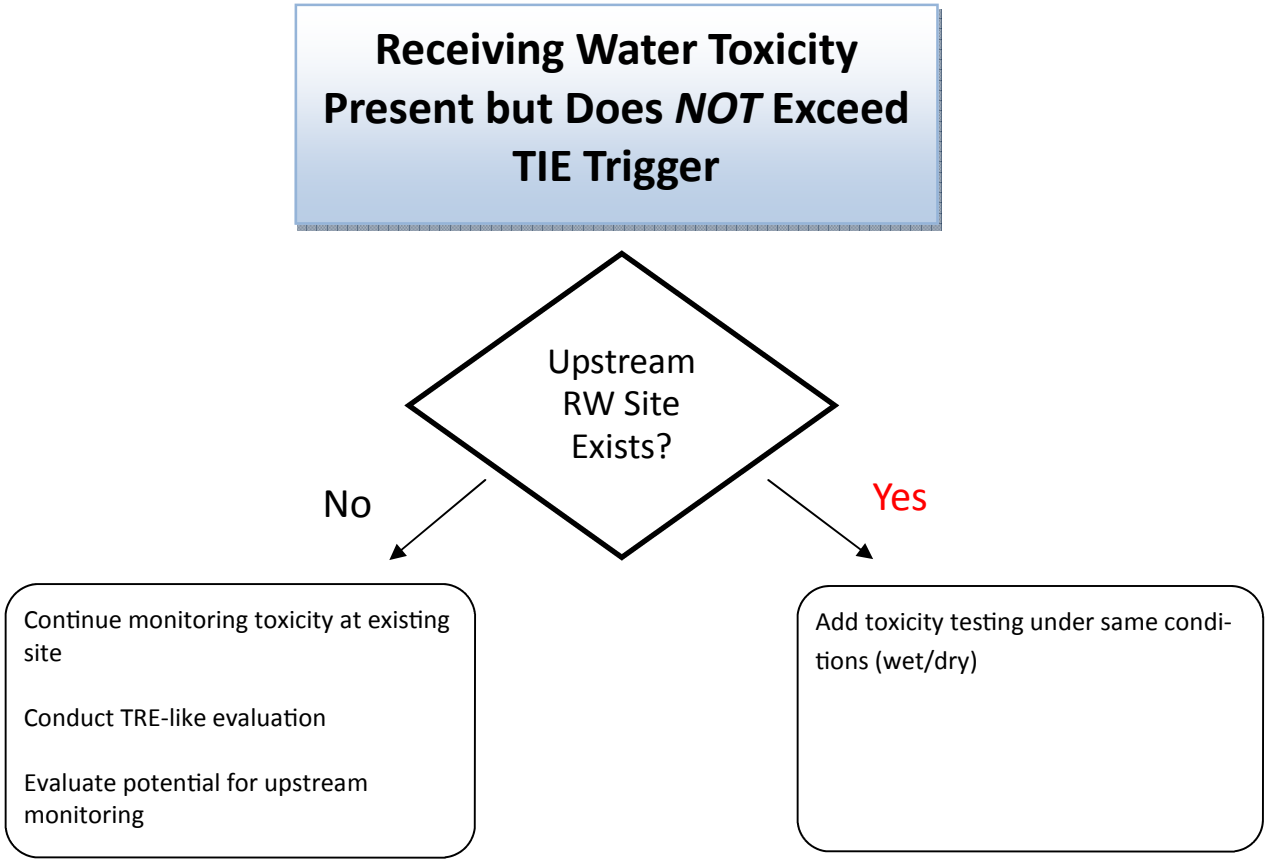
STEPS RELATED TO *OUTFALL TOXICITY TESTING* ONCE TRIGGERED:

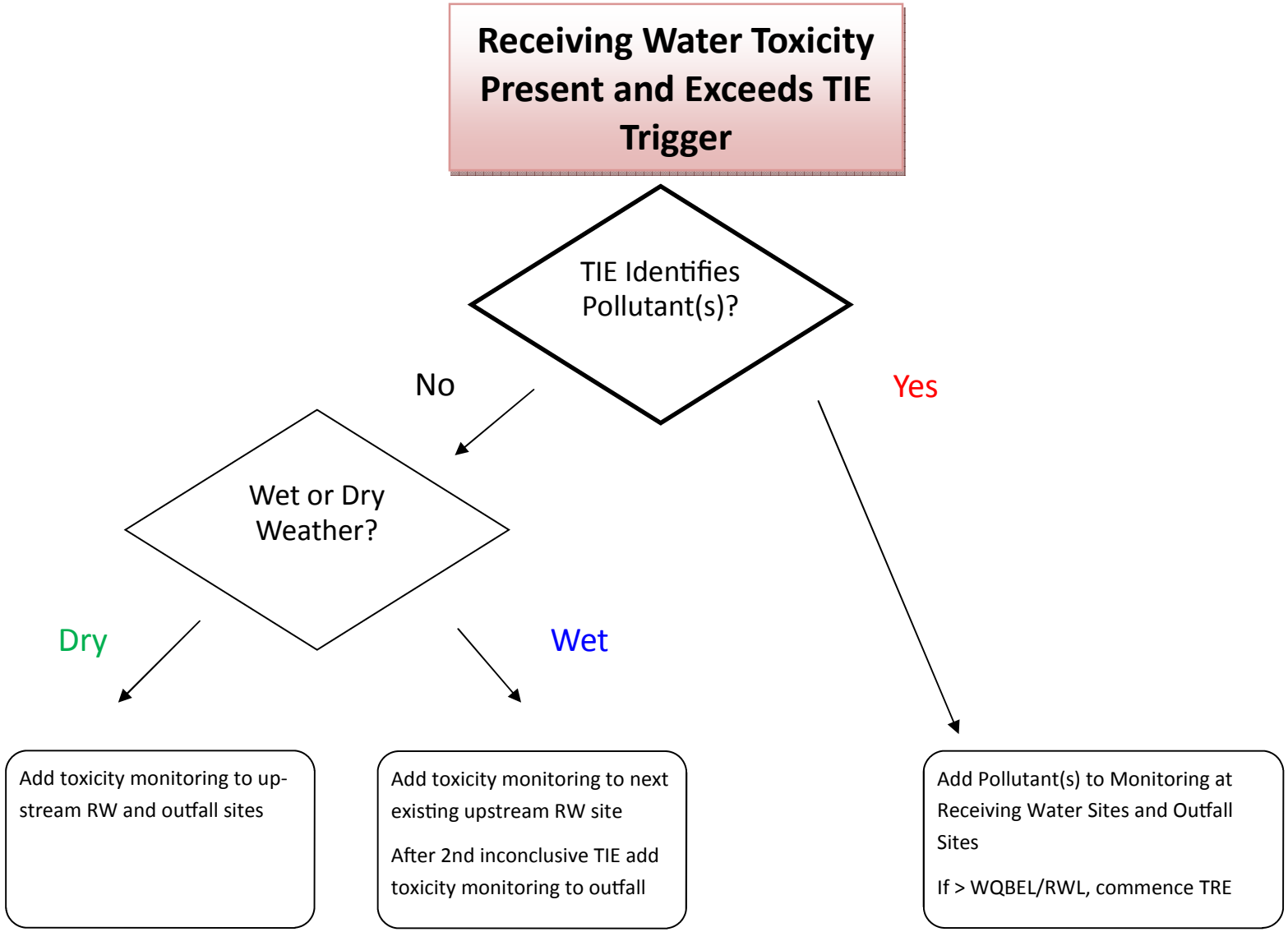
1. If toxicity is not present as determined based on pass of the TST t-test as specified in the Permit, then continue toxicity testing during the same condition
2. (i.e. wet or dry weather) until (1) meeting the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition), or (2) a TIE conducted at the downstream receiving water site conclusively identifies the constituent or class of constituents causing toxicity, or (3) the discharge is eliminated.
3. If toxicity is present as determined based on fail of the TST t-test as specified in the Permit, but not above the TIE trigger, then continue toxicity testing during the same condition until (1) meeting the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition), or (2) a TIE conducted at a downstream receiving water site conclusively identifies the constituent or class of constituents causing toxicity, or (3) the discharge is eliminated. Concurrently conduct an evaluation similar to the TRE in Attachment E, Part XII.J to identify, to the extent practicable, the source(s) of toxicity with the goal of addressing cause(s) of toxicity, paying particular attention to sources of potential constituent(s) causing toxicity (e.g., fipronil).

a. If toxicity is present in the non-stormwater discharge, actions taken as part of the non-stormwater program (e.g., source identification and elimination or treatment of unauthorized non-stormwater discharges that are a source of pollutants) should be utilized to support the TRE.
b. If toxicity is present in the stormwater discharge, consider the following actions to support the TRE: evaluating land uses and potential associated source(s) in the drainage area, evaluation of other permitted discharges, and evaluation of inspection activities.

4. If toxicity is present at a level exceeding the TIE trigger and the TIE identifies the constituent or class of constituents causing toxicity, then:
    a. Discontinue toxicity testing at the outfall. AND
    b. Add the identified constituent or constituents within the identified class of constituents[3] during the same condition starting with the next monitoring event that is at least 45 days following the toxicity sample collection and monitor for those constituents at the outfall until meeting the deactivation criterion for those constituents (i.e., two consecutive samples do not exceed RWLs, WQBELs, or other appropriate threshold or guideline if there is no numeric RWL or WQBEL, for identified constituents), while simultaneously performing a TRE for the constituent(s) causing toxicity per Attachment E, Part XII.J.
5. If toxicity is present at a level exceeding the TIE trigger and the TIE is inconclusive, then continue toxicity testing during the same condition until (1) meeting the deactivation criterion (i.e., two consecutive samples that pass the pass/fail TST t-test during the same condition), or (2) a TIE identifies the constituent or class of constituents causing toxicity (proceed with following the process outlined in Bullet 3, above), or (3) eliminate the discharge. Concurrently conduct an evaluation similar to the TRE in Attachment E, Part XII.J to identify, to the extent practicable, the source(s) of toxicity with the goal of addressing cause(s) of toxicity, paying particular attention to identifying sources of potential constituent(s) causing toxicity that may not have been evaluated in the TIE (e.g., fipronil).
    a. If the TIE is inconclusive in the non-stormwater discharge, actions taken as part of the non-stormwater program (e.g., source identification and elimination or treatment of unauthorized non-stormwater discharges that are a source of pollutants) should be utilized to support the TRE.
    b. If the TIE is inconclusive in the stormwater discharge, consider the following actions to support the TRE: evaluating land uses and potential associated source(s) in the drainage area, evaluation of other permitted discharges, and evaluation of inspection activities.

[3] Using appropriate detection limits


Receiving Water Toxicity Present but Does *NOT* Exceed TIE Trigger
Upstream RW Site Exists?
No
Yes
Continue monitoring toxicity at existing site
Conduct TRE-like evaluation
Evaluate potential for upstream monitoring
Add toxicity testing under same conditions (wet/dry)


Receiving Water Toxicity Present and Exceeds TIE Trigger
TIE Identifies Pollutant(s)?
No
Yes
Wet or Dry Weather?
Dry
Wet
Add toxicity monitoring to up-stream RW and outfall sites
Add toxicity monitoring to next existing upstream RW site
After 2nd inconclusive TIE add toxicity monitoring to outfall
Add Pollutant(s) to Monitoring at Receiving Water Sites and Outfall Sites
If > WQBEL/RWL, commence TRE

Outfall Toxicity Testing Once Triggered