



A COOPERATIVE STRATEGY FOR  
RESOURCE MANAGEMENT & PROTECTION

March 30, 2017

Electronic Submission: [losangeles@waterboards.ca.gov](mailto:losangeles@waterboards.ca.gov)

California Regional Water Quality Control Board  
Los Angeles Region  
ATTN: Jun Zhu  
320 W 4<sup>th</sup> Street, Suite 200  
Los Angeles, CA 90013

**Subject: Comment Letter – Revisions to the Los Angeles Region 303(d) List**

Dear Dr. Zhu,

The Stakeholders Implementing Total Maximum Daily Loads (TMDLs) in the Calleguas Creek Watershed (Stakeholders) appreciate the opportunity to provide comments on the proposed revisions to the Clean Water Act Section 303(d) List of impaired waterbodies in the Los Angeles Region [hereinafter referred to as 303(d) List] which was distributed for public review on February 8, 2017.

The development and implementation of TMDLs is a significant investment of resources and it is critical that the 303(d) List be based on sound science and methodologies. The Stakeholders understand that the Los Angeles Regional Water Board (Water Board) is proposing over 200 new waterbody-pollutant segment combination 303(d) listings, of which 95 changes fall within the Calleguas Creek Watershed (CCW). The Stakeholders have developed and implemented six effective TMDLs in the CCW and thus have extensive experience in the area. The Stakeholders have serious concerns with the Region's Proposed 303(d) List and feel that it requires significant review and modification before adoption. The Stakeholders request that the issues identified in this letter be addressed and the proposed 303(d) List be released for another 60-day comment period prior to adoption. Several of the issues identified herein have resulted

in the inability of the proposed 303(d) List to be fully vetted and reviewed by the Stakeholders.

The requested modifications fall into four general categories:

1. New Category 5 listings that should not be listed due to incorrect thresholds being applied for the beneficial use and incorrect interpretation of the data (e.g., mismatched units, incorrectly assigned sample locations)
2. Potential delistings that may exist if all watershed data were evaluated (e.g., TMDL monitoring program and all wastewater treatment plant NPDES monitoring).
3. New Category 5A listings that should be categorized as Category 5B because TMDLs already exist to address the pollutants.
4. Errors in the listing information that make it difficult to fully evaluate the listings. Examples include inconsistencies between the Category 5 list (Appendix B) and the Proposed updates to the 303(d) List (Appendix A), incorrect HUC/Calwater designations, incorrect beneficial uses listed for the applicable water quality objectives, and inconsistent use of thresholds for interpreting narrative objectives.

The remaining sections of this letter provide the detailed list of requested changes to the 303(d) List and the rationale for the requests. In summary, the Stakeholders request that all waterbody-pollutant combinations in **Table 1** not be listed on the 303(d) List, the waterbody-pollutant combinations in **Table 3** be considered for delisting through analysis of all available watershed data, waterbody-pollutant combinations in **Table 4** and **Table 5** be designated as being addressed by a TMDL if they remain on the 303(d) List after the reassessment, and the errors and inconsistencies identified in Comment IV be addressed for all waterbodies.

## I. REQUESTED MODIFICATIONS TO THE LISTING STATUS

Based on a review of the proposed Category 5 waterbody-pollutant combinations, the Stakeholders have identified a number of waterbodies that we feel should either be delisted based on available data or proposed listings that should not be listed based on errors in the evaluation. The requested modifications are shown in **Table 1**, below, with a summary of the justifications for the requested change. A detailed discussion of each of the justifications follows the table.

| Table 1. Waterbody-pollutant combinations that should not be listed |           |   |
|---|-----------|---|
| Waterbody segment   | Pollutant | Justification   |
| Calleguas Creek Reach 2<br>(estuary to Potrero Rd)                  | DDD       | <ul style="list-style-type: none"><li>• Data from agricultural drain rather than waterbody used as basis for listing decision.</li><li>• Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li></ul> |

**Table 1. Waterbody-pollutant combinations that should not be listed**

| <b>Waterbody segment</b>  | <b>Pollutant</b>       | <b>Justification</b>   |
|---|------------------------|--|
| Calleguas Creek Reach 2<br>(estuary to Potrero Rd)                            | DDE                    | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 2<br>(estuary to Potrero Rd)                            | Dimethoate             | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 2<br>(estuary to Potrero Rd)                            | Nitrogen, Nitrate      | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 2<br>(estuary to Potrero Rd)                            | Specific Conductivity  | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 2<br>(estuary to Potrero Rd)                            | Total Dissolved Solids | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 3<br>(Potrero Road upstream to Conejo Creek confluence) | Mercury                | <ul style="list-style-type: none"> <li>Data and objectives have different units (ng/L vs. µg/L); data do not exceed objectives.</li> </ul>   |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)                      | Ammonia                | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>TMDL data demonstrates delisting possible.</li> </ul>   |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)                      | Bifenthrin             | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)                      | Chloride               | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)                      | Cyfluthrin             | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)                      | Cypermethrin           | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)                      | Malathion              | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)                      | Mercury                | <ul style="list-style-type: none"> <li>Data and objectives have different units (ng/L vs. µg/L); data do not exceed objectives.</li> </ul>   |

**Table 1. Waterbody-pollutant combinations that should not be listed**

| <b>Waterbody segment</b>   | <b>Pollutant</b>       | <b>Justification</b>   |
|--|------------------------|--|
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)             | Nitrogen, Nitrate      | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)             | Permethrin             | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>This pollutant is already covered by the Calleguas Toxicity TMDL.</li> </ul>                              |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)             | Specific Conductivity  | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)             | Sulfates               | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)             | Total Dissolved Solids | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo North Fork) | Chlorpyrifos           | <ul style="list-style-type: none"> <li>Data does not appear to be from a station in Reach 12.</li> </ul>   |
| Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo North Fork) | Diazinon               | <ul style="list-style-type: none"> <li>Data does not appear to be from a station in Reach 12.</li> </ul>   |
| Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo North Fork) | Malathion              | <ul style="list-style-type: none"> <li>Data does not appear to be from a station in Reach 12.</li> </ul>   |
| Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo North Fork) | Temperature, water     | <ul style="list-style-type: none"> <li>Inappropriately applied beneficial use criteria (see temperature comment below).</li> </ul>   |
| Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2           | Sulfate                | <ul style="list-style-type: none"> <li>Maintained as a brackish waterbody therefore criteria do not apply.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody. *</li> </ul>                  |
| Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2           | Specific Conductivity  | <ul style="list-style-type: none"> <li>Maintained as a brackish waterbody therefore criteria do not apply.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.*</li> </ul>                   |



**Table 1. Waterbody-pollutant combinations that should not be listed**

| <b>Waterbody segment</b>                                    | <b>Pollutant</b>       | <b>Justification</b>   |
|---|------------------------|--|
| Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2  | Total Dissolved Solids | <ul style="list-style-type: none"> <li>Maintained as a brackish waterbody therefore criteria do not apply.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.*</li> </ul>                   |
| Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2 | Toxaphene              | <ul style="list-style-type: none"> <li>J-flagged data incorrectly used in assessment.</li> </ul>   |
| Rio De Santa Clara/Oxnard Drain No. 3                       | Nitrogen, Nitrate      | <ul style="list-style-type: none"> <li>Maintained as a brackish waterbody therefore criteria do not apply.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.*</li> </ul>                   |
| Rio De Santa Clara/Oxnard Drain No. 3                       | Sulfate                | <ul style="list-style-type: none"> <li>Maintained as a brackish waterbody therefore criteria do not apply.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.*</li> </ul>                   |
| Rio De Santa Clara/Oxnard Drain No. 3                       | Specific Conductivity  | <ul style="list-style-type: none"> <li>Maintained as a brackish waterbody therefore criteria do not apply.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.*</li> </ul>                   |
| Rio De Santa Clara/Oxnard Drain No. 3                       | Total Dissolved Solids | <ul style="list-style-type: none"> <li>Maintained as a brackish waterbody therefore criteria do not apply.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.*</li> </ul>                   |
| Rio De Santa Clara/Oxnard Drain No. 3                       | Toxicity               | <ul style="list-style-type: none"> <li>Insufficient exceedances to warrant listing.</li> </ul>   |
| La Vista Drain (Ventura County)                             | Chlordane              | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>J-flagged data incorrectly used in assessment.</li> </ul>   |
| La Vista Drain (Ventura County)                             | Chlorpyrifos           | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| La Vista Drain (Ventura County)                             | Copper                 | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| La Vista Drain (Ventura County)                             | DDD                    | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |

**Table 1. Waterbody-pollutant combinations that should not be listed**

| <b>Waterbody segment</b>        | <b>Pollutant</b>      | <b>Justification</b>  |
|---------------------------------|-----------------------|---|
| La Vista Drain (Ventura County) | DDE                   | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul>                |
| La Vista Drain (Ventura County) | DDT                   | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>  |
| La Vista Drain (Ventura County) | Indicator Bacteria    | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>  |
| La Vista Drain (Ventura County) | Mercury               | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Data and objectives have different units (ng/L vs. µg/L); data do not exceed objectives.</li> </ul>                      |
| Santa Clara Drain               | Chlordane             | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>  |
| Santa Clara Drain               | Chlorpyrifos          | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>  |
| Santa Clara Drain               | Cypermethrin          | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>  |
| Santa Clara Drain               | DDD                   | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using COMM criteria; public access is prohibited by chain link fencing and locked gates.</li> </ul>   |
| Santa Clara Drain               | DDE                   | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using COMM criteria; public access is prohibited by chain link fencing and locked gates.</li> </ul>   |
| Santa Clara Drain               | DDT                   | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using COMM criteria; public access is prohibited with chain link fencing and locked gates.</li> </ul> |
| Santa Clara Drain               | Nitrogen, Nitrate     | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul>                |
| Santa Clara Drain               | Specific Conductivity | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul>                |

**Table 1. Waterbody-pollutant combinations that should not be listed**

| Waterbody segment | Pollutant              | Justification  |
|-------------------|------------------------|--|
| Santa Clara Drain | Sulfates               | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |
| Santa Clara Drain | Total Dissolved Solids | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> <li>Incorrectly listed using guideline for MUN beneficial use that is not applicable to waterbody.</li> </ul> |
| Santa Clara Drain | Toxaphene              | <ul style="list-style-type: none"> <li>Data from agricultural drain rather than waterbody used as basis for listing decision.</li> </ul>   |

\*Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2 and Rio De Santa Clara/Oxnard Drain No. 3 are not listed in the Basin Plan and therefore do not have assigned beneficial uses but they are tributaries to Mugu Lagoon which does not have a MUN beneficial use and are brackish waterbodies that would not support the MUN beneficial use.

**1. *Agricultural Drain monitoring data incorrectly used as basis for listing decisions.*** There are multiple instances where listing decisions are based on data from the Ventura County Agricultural Irrigated Lands Group (VCAILG) which include monitoring data from agricultural drains. In several cases, data from agricultural drains that discharge to waterbody reaches were used to list the waterbody reach. The drains are not listed tributaries or waterbodies in the Basin Plan and are not located within the waterbody that is being listed. As a result, the data should not be used for the listing decisions for these waterbodies. Calleguas Creek Reach 2 and Reach 4 were listed using data from the VCAILG monitoring sites 02D\_BROOM (Reach 2) and 04D\_ETTG (Reach 4), which are the locations of agricultural drains which drain to Reach 2 and 4. These agricultural monitoring sites were selected to be representative of agricultural discharges to Calleguas Creek Reaches 2 and 4 and are not representative of receiving water conditions. Therefore, any data collected from these sites cannot be used to list the downstream Calleguas Creek Reaches. All listings should be evaluated to ensure that the monitoring locations were in receiving waters rather than agricultural drains.

In addition, La Vista Drain and Santa Clara Drain were listed as new waterbodies never before included in the previous 303(d) List even though data have been collected on both agricultural drains by the MS4 program since the early 1990s. These waterbodies are not designated in the Basin Plan or listed as a tributary in the Basin Plan appendices. The La Vista Drain is an agricultural drain designed to convey excess irrigation water from agricultural lands, and as such, it is predominantly an open ditch that flows alongside W. Los Angeles Avenue and then along Santa Clara Avenue where it becomes the Santa Clara Drain. Additionally, inclusion of the COMM beneficial use for the Santa Clara Drain is inappropriate, as public access is prohibited because of fencing and locked gates maintained by the Ventura County Watershed Protection District. Inclusion of the MAR and EST beneficial uses are also inappropriately applied to the Santa Clara Drain because the drain is located upstream of Highway 101 and is not tidally influenced. The monitoring location on each drain was selected to represent agricultural discharges for the Agricultural Waiver and was not designed to characterize

receiving waters. Because these are agricultural drains and not tributaries, they should be removed from the Draft Category 5 list.

**Requested Action:**

- **Remove all listings shown in Table 1 that were based on Ag monitoring data from agricultural drains not representative of the listed waterbody and evaluate remaining listings to ensure no other listings are based on agricultural drain monitoring rather than receiving water monitoring.**
- **Remove the La Vista Drain and the Santa Clara Drain from the List as they are agricultural drains and not waterbodies that fall under the jurisdiction of the 303(d) List.**

**2. Remove any pollutant listing based on municipal drinking water objectives where the MUN beneficial use does not apply.**

Numerous listings were made using water quality objectives for the protection of the municipal drinking for waterbodies that do not have applicable municipal drinking water beneficial uses. Many of the waterbodies listed are brackish waterbodies for which no beneficial uses are designated or waterbodies designated for the municipal beneficial use with an asterisk (i.e., P\*) in the Basin Plan. The asterisked MUN beneficial use should not be used to propose new 303(d) listings. Fact Sheets for previous 303(d) listing cycles have clearly noted that the asterisked MUN beneficial uses should not be used for 303(d) listing purposes.

State Board Resolution No. 88-63 (Sources of Drinking Water) and Regional Board Resolution 89-03 (Incorporation of Sources of Drinking Water Policy into the Water Quality Control Plans (Basin Plans)), state that "All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic waters supply and should be so designated by Regional Boards... [with certain exceptions which must be adopted by the Regional Board]." The Regional Board adopted a Water Quality Control Plan for the Los Angeles Region (Basin Plan) on June 4, 1994, that included provisions to implement State Water Board Resolution 88-63. On May 26, 2000, the USEPA approved the revised Basin Plan except for the implementation plan for potential MUN-designated water bodies. On August 22, 2000, the City of Los Angeles, City of Burbank, City of Simi Valley, and the County Sanitation Districts of Los Angeles County challenged USEPA's water quality standards action in the U.S. District Court. On December 18, 2001, the court issued an order remanding the matter to USEPA to take further action on the 1994 Basin Plan consistent with the court's decision. On February 15, 2002, USEPA revised its decision and approved the 1994 Basin Plan in whole. In its February 15, 2002 letter, USEPA stated:

*"EPA bases its approval on the court's finding that the Regional Board's identification of waters with an asterisk ("\*") in conjunction with the implementation language at page 2-4 of the 1994 Basin Plan, was intended "to only conditionally designate and not finally designate as MUN those water bodies identified by an (\*) for the MUN use in Table 2-1 of the Basin Plan, without further action." Court Order*



*at p. 4. Thus, the waters identified with an (“\*”) in Table 2-1 do not have MUN as a designated use until such time as the State undertakes additional study and modifies its Basin Plan. Because this conditional use designation has no legal effect, it does not constitute a new water quality standard subject to EPA review under section 303(c)(3) of the Clean Water Act (“CWA”). 33 U.S.C. § 1313(c)(3).”<sup>1</sup>*

In addition to the above decision, the Basin Plan states that until the additional study is undertaken and the Basin Plan is modified “no new effluent limitations will be placed in Waste Discharge Requirements as a result of these designations”. The Regional Board has also determined that water quality objectives applicable to the MUN beneficial use will not be used to assess impairments under the 303(d) listing programs. For constituents that only have objectives that are applicable to the MUN beneficial use, the decision Fact Sheets for the 303(d) listing process state that there are no applicable water quality objectives in waterbodies designated with an asterisk (“\*”). In the 2010 listing cycle, a number of 303(d) listings were actually removed based on this determination. Below is an example of the language from a listing decision for Los Angeles River Reach 1:

*“The listing for aluminum in this water body was originally based on data assessed using the MCL for aluminum. Since MUN is a “potential” beneficial use, it is not appropriate to use the MCL to evaluate aluminum data from this reach. Thus, there is no aluminum objective for this reach and the original listing is faulty.”*

Based on this evidence, it is clear that for waterbodies with a MUN designation that includes an asterisk (“\*”), water quality objectives specific to the MUN beneficial use are not applicable. As such, water quality data collected in these receiving waters should not be compared to water quality objectives applicable to the MUN beneficial use.

The listings of total dissolved solids, sulfates, and conductivity are all based on secondary maximum contaminant levels applied to protect the MUN beneficial use. In addition, Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2 and Rio De Santa Clara/Oxnard Drain No. 3 are maintained as fresh/brackish water via tide gates on both drains and do not have designated MUN beneficial uses. Therefore, the listing of TDS, sulfate, and specific conductivity is inappropriate as naturally occurring levels of these three constituents in groundwater entering both drains within the footprint of Naval Base Ventura County far exceed the secondary MCLs upon which these listings are based. USEPA validated this reasoning in its “TMDLs for Pesticides, PCBs and Sediment Toxicity for Oxnard Drain 3”,<sup>2</sup> where the MUN beneficial use was not considered to be “relevant to the impairments” addressed by the TMDL and so was not included in the TMDL. Additionally, Calleguas Creek Reach 2 and Reach 4 are considered brackish waterbodies according to the California Toxics Rule thresholds and

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<sup>1</sup> Language adapted from the 2014 National Pollutant Discharge Elimination System permit findings for wastewater treatment plants in the Calleguas Creek Watershed.

<sup>2</sup> Total Maximum Daily Loads for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3. Approved by USEPA on October 6, 2011.

are designated with an asterisked MUN beneficial use. Due to the brackish nature of these waterbodies, other Basin Plan objectives for TDS and sulfate are not considered to be applicable to Reach 2 or Reach 4 below Laguna Road. For all of these reasons, these proposed listings summarized in **Table 1** should not be listed.

The proposed Calleguas Creek Reach 2 dimethoate listing was based on three lines of evidence which the Fact Sheet states all show no exceedances (this appears to be a typo). However, it appears that the only line of evidence that shows an exceedance is based on the potential (P\*) MUN, which as described above, cannot be used to justify a listing. Furthermore, the Fact Sheet cites a guideline from the California Department of Health Services Notification Levels (1 µg/L) which has not yet gone through the formal MCL regulatory process and it is not clear that this threshold would meet the Listing Policy requirements.

**Requested Action:**

- **Revise all of the new listings in the Fact Sheets to ensure that none are based on municipal drinking water objectives when the MUN beneficial use does not apply.**
- **Remove the segment-pollutant combinations for total dissolved solids, specific conductivity, sulfates, nitrogen, nitrate, dimethoate, and other MUN-based pollutants listed in Table 1 above from the 303(d) List.**

**3. *Reassess mercury listings using correct objective and correct units***

The data used to assess mercury for Calleguas Creek Reach 3, Reach 4, and La Vista Drain are in ng/L and the objective is µg/L. The data have to be converted to the same units as the objective before an exceedance can be determined. The Stakeholders expect that after this calculation has been performed the waterbodies will no longer meet the listing guidelines for mercury. Additionally, although a California Toxics Rule objective exists for mercury, an EPA nationally recommended criterion was used for the assessment. An explanation for the use of a recommended criterion when an established water quality objective exists should be provided.

**Requested Action:**

- **Repeat the mercury analysis after correcting the units error.**

**4. *Incorrect location and data were used for listings in Reach 12***

The name of the monitoring site presented in the Fact Sheet for the chlorpyrifos, diazinon and malathion listings in Calleguas Creek Reach 12 is unclear. The University site is in Reach 3, not 12 and TO1 is an MS4 discharge characterization site, not a receiving water monitoring location. Therefore, TO1 should not be used for a 303(d) listing decision and University data is not from Reach 12. A review of the datasets provided in the link on the Fact Sheet only show data from University (ME-CC) and the number of samples appears to match up with the sample numbers shown in the Fact Sheet. As a result, it appears that the chlorpyrifos, diazinon and malathion listings do not apply to Reach 12.

In addition, the Stakeholders request that only data collected *after* the implementation of applicable pesticide use restrictions were in place for these pesticides be considered in the listing decisions. Data from the Calleguas Creek TMDL watershed monitoring program that were not used in the assessment (see Comment II) demonstrates a marked reduction in these pesticides in receiving water since the use restrictions were implemented (approximately 2009 to present), particularly for receiving waters downstream of urban areas (e.g., Reach 12). Given the changed condition resulting from the pesticide use restrictions, monitoring data collected prior to 2009 is not representative of waterbody conditions for these constituents. Therefore, these constituents should not be listed unless data collected after the use restrictions were implemented demonstrates a continued impairment.

**Requested Action:**

- **Remove listings for Reach 12 that are not based on receiving water data from that reach.**
- **Remove listings for chlorpyrifos, diazinon, and malathion based on historic data that are not representative of conditions after implementation of pesticide use restrictions.**

**5. *Correct the proposed temperature listing for Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo North Fork on 1998 303d list) which is based on incorrect criteria.***

The temperature listing for Reach 12 uses an evaluation guideline of 13-21°C as the optimum growth range for rainbow trout. However, the beneficial use listed for Reach 12 is WARM. The rainbow trout growth range threshold used for the listing is only applicable to the COLD beneficial use. This guideline should be removed and the number of exceedances recalculated based on the Basin Plan criteria for WARM.<sup>3</sup>

The basin plan criteria for WARM beneficial uses states the following: *“For waters designated as WARM, water temperature shall not be altered more than 5 degrees F above the natural temperature. At no time shall these WARM designated waters be raised above 80 degrees F as a result of waste discharges.”* The Fact Sheet states that of 567 samples there were 3 instances of the downstream sample exceeding 80°F and in some cases a 30°F difference between upstream and downstream reaches. The Fact Sheet statement is unclear because Reach 12 is the upstream location and is not downstream of a waste discharge. Reach 12 drains a portion of the City of Thousand

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<sup>3</sup> Notwithstanding that the evaluation guideline of 13-21°C is inappropriate for Calleguas Creek Reach 12 given the water body's beneficial uses, the manner in which the evaluation guideline is applied is also inappropriate. Line of Evidence (LOE) 85933 references Moyle 1976 as the source of the evaluation guideline. Moyle 1976 was revised and expanded by Moyle 2002[1]. Moyle 2002 states: “Rainbows are found where daytime temperatures range from nearly 0°C in winter to 26-27°C in summer, although extremely low (<4°C) or extremely high (>23°C) temperatures can be lethal if the fish have not previously been gradually acclimated. Even when acclimation temperatures are high, temperatures of 24-27°C are invariably lethal to trout, except for very short exposures (25, 26).” As such, while temperatures above 21°C may not be optimal according to Moyle 1976, Moyle 2002 clearly states that lethal temperatures are those greater than 23°C which indicates that the evaluation guideline of 21°C is more appropriately applied as a chronic guideline (necessitating the establishment of an averaging period) and 23°C is the more appropriate “not-to-exceed” guideline if used for listing.

Oaks and open space areas and is located upstream of the Thousand Oaks Wastewater Treatment Plant. Therefore, it is unclear if the exceedances discussed in the Fact Sheet actually occur in Reach 12 and if exceedances do occur, whether they are a result of waste discharge or are a natural condition. The data provided for review was not compiled in a way that made it possible to easily review the assessment to determine if the exceedances were observed in Reach 12 (upstream) or Reach 10 (downstream).

Regardless of the location of the samples, if there were 3 instances of temperature above 80°F and if they can be confirmed to be a result of waste discharge and not natural temperature conditions, according to the SWRCB 2015 303(d) Listing Policy<sup>4</sup> three samples out of 567 would not meet the minimum number of measured exceedances needed to place a water segment on the 303(d) List (see Listing Policy table 3.2). According to the binomial test, with a sample size of 500+ there would need to be well over 20 exceedances in order to be added to the 303(d) List, however, the Fact Sheet mentions only three exceedances of the Basin Plan criteria. According to the SWRCB's own guidance, this proposed listing should be removed.

**Requested Action:**

- **Do not use the 13-21°C rainbow trout evaluation guideline which only applies to COLD beneficial use segments.**
- **Remove the temperature listing for Reach 12 as it does not meet the minimum listing requirements based on the binomial test described above and ensure that the analysis is applied to the correct reach.**

**6. Ensure no J-flagged data were used in the assessment.**

The Listing Policy specifically prohibits the use of J-flagged ("estimated") data that fall below the quantitation limit but above the water quality standard. Section 6.1.5.5 of the Listing Policy specifically states:

*"When the sample value is less than the quantitation limit and the quantitation limit is greater than the water quality standard, objective, criterion, or evaluation guideline, the result shall not be used in the analysis. The quantitation limit includes the minimum level, practical quantitation level, or reporting limit."*

All listings based on the use of J-flagged data should, therefore, be removed from the draft 303(d) List. Specific instances are included in **Table 1** and further explained in **Table 2** below, but this list is by no means inclusive; this significant error will have to be addressed by a thorough review of all listing data to confirm that no J-flagged data were used to justify listings.

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<sup>4</sup> State of California State Water Resources Control Board (SWRCB) Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. Amended February 3, 2015.



**Table 2. Incorrect use of J-flagged data**

| Segment   | Pollutant | Comment  |
|---|-----------|--|
| Duck Pond<br>Agricultural<br>Drains/Mugu<br>Drain/Oxnard<br>Drain No. 2 | Toxaphene | The Lines of Evidence (LOE) for Toxaphene lists the number of exceedances incorrectly at two. However, only one of six samples exceeded the indicated criterion. The other sample was reported by the laboratory as “estimated” (J-flagged). Because only one of six samples showed an exceedance this listing should be removed as it does not meet the binomial test limits set forth in the Listing Policy. |
| Rio de Santa<br>Clara/Oxnard<br>Drain No. 3                             | Chlordane | The LOE for Chlordane erroneously states that four out of five samples exceed the objectives. A review of the data shows that only 3 out of 5 samples exceed indicated criteria. The remaining 2 results were (1) not detected and (2) “estimated” (J-flagged) by the laboratory because results were below the reporting limit.   |
| La Vista Drain  | Chlordane | The LOE for chlordane shows that one of the samples used to justify the listing is based solely on estimated (J-flagged) data because results were below the reporting limit. Because Chlordane has only one detected value for two sampling events, more monitoring data are needed to justify the listing and the proposed listing should be removed.  |

**Requested Action:**

- Review all Fact Sheets and LOEs for the use of J-flagged data and remove any instances where J-flagged data were used.
- Delist toxaphene for Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2, chlordane for La Vista Drain, and any other pollutants listed in Tables 1 and 2 that lack the minimum number of exceedances required to justify a listing.

**7. Remove listings where a waterbody assessment does not meet listing thresholds based on data provided.**

Finally, the toxicity listing for Rio De Santa Clara/Oxnard Drain No. 3 does not meet the minimum requirements to be listed according to the Listing Policy (pg. 9). According to the Listing Policy, a waterbody can be listed only when the number of exceedances meets the binomial test; in the case of this waterbody, four samples were collected and only one sample showed an exceedance. However, two exceedances would be required for the waterbody to be added to the 303(d) List. Therefore, toxicity was incorrectly listed for this waterbody and should be removed entirely from the 303(d) List.

**Requested Action:**

- Remove the toxicity listing for Rio De Santa Clara/Oxnard Drain No. 3 based on meeting listing threshold requirements in the Listing Policy.

## II. REQUESTED REASSESSMENTS USING COMPLETE DATA SET

The assessments for the Calleguas Creek watershed do not appear to include any of the submitted Calleguas Creek Watershed TMDL monitoring data, monitoring data from the Camarillo Sanitary District, or monitoring data from the Simi Valley Wastewater Treatment Plant. All of this monitoring data has been provided to the Regional Board in annual monitoring reports and all data were collected using approved QAPPs. As a result, there is no reason why this data should not be included in the 303(d) listing process.

In 2013, the Stakeholders did an assessment of the watershed using all watershed data through 2012 and found that multiple waterbody-pollutant combinations could potentially be delisted as shown in **Table 3**. A summary of the assessment is included as an attachment to this letter and the datasets used in the analysis as well as all of the TMDL annual monitoring reports are available upon request.

**Table 3. Waterbody-Pollutant Combinations to Consider for Delisting**

| Waterbody segment        | Pollutant   |
|--------------------------|---|
| Calleguas Creek Reach 1  | Copper<br>Dieldrin<br>Endosulfan<br>Mercury<br>Nickel<br>Zinc   |
| Calleguas Creek Reach 2  | Ammonia<br>Copper   |
| Calleguas Creek Reach 3  | Ammonia<br>Chlordane<br>PCBs  |
| Calleguas Creek Reach 4  | Diazinon<br>Dieldrin<br>Endosulfan<br>PCBs  |
| Calleguas Creek Reach 6  | Ammonia<br>Chlordane<br>Diazinon<br>Dieldrin  |
| Calleguas Creek Reach 7  | Ammonia<br>Diazinon   |
| Calleguas Creek Reach 9A | Chlordane<br>DDT<br>Dieldrin<br>Endosulfan<br>Gamma HCH<br>Nitrate as Nitrate<br>Nitrogen, Nitrate<br>PCBs<br>Toxaphene |
| Calleguas Creek Reach 9B | Ammonia<br>Chlordane<br>Chlorpyrifos  |

| Waterbody segment        | Pollutant                         |
|--------------------------|-----------------------------------|
| Calleguas Creek Reach 10 | Diazinon                          |
|                          | Dieldrin                          |
|                          | Endosulfan                        |
|                          | PCBs                              |
|                          | Sulfates                          |
|                          | Ammonia                           |
|                          | Chlordane                         |
|                          | Chlorpyrifos                      |
|                          | DDT                               |
|                          | Diazinon                          |
|                          | Dieldrin                          |
|                          | Endosulfan                        |
|                          | Fecal Coliform/Indicator Bacteria |
|                          | Nitrogen, Nitrite                 |
|                          | PCBs                              |
|                          | Sulfates                          |
|                          | Total Dissolved Solids            |
| Calleguas Creek Reach 12 | Toxaphene                         |
|                          | Ammonia                           |
|                          | DDT                               |
|                          | Dieldrin                          |
|                          | PCBs                              |
| Calleguas Creek Reach 13 | Toxaphene                         |
|                          | Ammonia                           |
|                          | Chlordane                         |
|                          | DDT                               |
|                          | Dieldrin                          |
|                          | Endosulfan                        |
|                          | PCBs                              |
|                          | Toxaphene                         |

While we recognize that this assessment uses two additional years of data than the current 303(d) listing analysis, a number of these waterbodies had many more samples than were necessary for delisting. As a result, we feel if all the watershed data were used in the assessment, a number of these waterbodies (particularly for metals) would be delisted. We also feel this assessment would demonstrate that several of the proposed listings, particularly for diazinon and chlorpyrifos and a number of organochlorine pesticides, are not warranted. A large number of new proposed listings are being added that are already covered by a TMDL. While the list acknowledges that a TMDL does not need to be developed by categorizing these new listings in Category 5B, in several cases, the watershed now has sufficient data to delist, whereas the listing is an artifact of old data being used to make the listing decision. These listings should not be added to the current list only to be removed during the next listing cycle as an artifact of the timing of the listing assessments.

**Requested Action:**

- **Reassess all Calleguas Creek waterbodies using all available data.**

### III. REQUESTED CATEGORY ASSIGNMENT CHANGES

#### **8. *Correct pollutants listed as Category 5A which should be 5B based on coverage by an existing TMDL.***

There are a number of proposed new listings for pollutants that are already covered by an existing TMDL and are incorrectly categorized as 5A. While the Stakeholders maintain that all of these listings should be removed entirely because of the issues detailed in Comment I, if they are not removed they should, at a minimum, be changed from 5A to 5B, as applicable.

A nutrient TMDL addressing nitrogen has been in effect since 2003, including for Reach 9A where a new 5A listing for nitrite is proposed. In 2006, the Toxicity and OC Pesticide and PCBs TMDLs for the Calleguas Creek watershed were established to address chlordane, chlorpyrifos, DDT, DDE, DDD, dieldrin, PCBs, sediment toxicity, and toxaphene. The La Vista Drain and Santa Clara Drain ultimately flow into Calleguas Creek Reach 4 (was Revolon Slough Main Branch), which is already addressed by an OC Pesticides and PCBs TMDL, the Toxicity TMDL, the Salts TMDL, and the Metals TMDL and therefore all of these proposed listings should be Category 5B. Furthermore, two other segments were listed for Chlorpyrifos – Honda Barranca and Duck Pond Agricultural Drains – but were correctly listed as Category 5B, citing the 2006 Toxicity TMDL. The Stakeholders request that any listings in **Table 4** and **Table 5** that are maintained after addressing the issues in Comment I should also be corrected to be designated as Category 5B.



**Table 4. 303(d) Category 5A listings which should be changed to 5B listings**

| <b>Segment</b>   | <b>Pollutant</b>       | <b>Proposed<br/>303(d)<br/>Category</b> | <b>Requested<br/>303(d)<br/>Category</b> | <b>Existing CCW<br/>TMDL<sup>5,6,7,8,9,10</sup></b>            |
|--|------------------------|---|--|--|
| Calleguas Creek Reach 2<br>(estuary to Potrero Rd)                 | Specific Conductivity  | 5A                                      | 5B                                       | Salts TMDL   |
|  | Total Dissolved Solids | 5A                                      | 5B                                       | Salts TMDL   |
| Calleguas Creek Reach 3<br>(Potrero Road upstream to Conejo Creek) | Mercury                | 5A                                      | 5B                                       | Metals TMDL  |
| Calleguas Creek Reach 4  | Mercury                | 5A                                      | 5B                                       | Metals TMDL  |
|  | Specific Conductivity  | 5A                                      | 5B                                       | Salts TMDL   |
|  | Total Dissolved solids | 5A                                      | 5B                                       | Salts TMDL   |
|  | Sulfates               | 5A                                      | 5B                                       | Salts TMDL   |
| Calleguas Creek Reach 9A   | Nitrogen, Nitrite      | 5A                                      | 5B                                       | Nitrogen TMDL  |
| Calleguas Creek Reach 12   | Chlorpyrifos           | 5A                                      | 5B                                       | Toxicity TMDL  |
|  | Diazinon               | 5A                                      | 5B                                       | Toxicity TMDL  |
| Honda Barranca   | DDT                    | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
| Rio De Santa Clara/Oxnard Drain No. 3                              | Toxicity               | 5A                                      | 5B                                       | Oxnard Drain #3<br>Pesticides, PCBs,<br>Sediment Toxicity TMDL |
| La Vista Drain (Ventura County)                                    | Chlorpyrifos           | 5A                                      | 5B                                       | Toxicity TMDL  |
|  | Chlordane              | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
|  | DDT                    | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
|  | DDE                    | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
|  | DDD                    | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
|  | Copper                 | 5A                                      | 5B                                       | Metals TMDL  |
|  | Mercury                | 5A                                      | 5B                                       | Metals TMDL  |
|  | Chlordane              | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
| Santa Clara Drain  | Chlorpyrifos           | 5A                                      | 5B                                       | Toxicity TMDL  |
|  | DDD                    | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
|  | DDE                    | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
|  | DDT                    | 5A                                      | 5B                                       | OC Pesticides and PCBs TMDL                                    |
|  | Nitrogen, Nitrate      | 5A                                      | 5B                                       | Nutrients TMDL   |
|  | Specific Conductivity  | 5A                                      | 5B                                       | Salts TMDL   |

<sup>5</sup> The Calleguas Creek Watershed Metals TMDL. RS 2006-012. Approved by USEPA on March 26, 2007.

In addition, we feel that the Toxicity TMDL should cover all new listings in the watershed for pyrethroids and organophosphate pesticides (e.g., malathion) if they are not removed as requested in the first comment. The Toxicity TMDL includes a trigger for additional investigation if ongoing toxicity is identified in the watershed. The toxicity trigger has resulted in the identification of pyrethroids as a potential cause of toxicity and the Stakeholders have already begun actions to address these pesticides in addition to the organophosphate pesticides included in the TMDL. The structure of the TMDL is designed to proactively prevent toxicity and therefore it is not necessary to develop another TMDL for these constituents. There are already sufficient controls in place through the agricultural waiver and MS4 permit. As a result, if the waterbodies are placed on the 303(d) List as new listings, we request that the waterbodies in **Table 5** be changed from 5A to 5B.

**Table 5. Pyrethroid and Organophosphate listings which covered by the existing Toxicity TMDL<sup>11</sup>**

| Segment  | Pollutant    | Proposed 303(d)<br>Listing Category | Requested 303(d)<br>Listing Category |
|--|--------------|-------------------------------------|--------------------------------------|
| Calleguas Creek Reach 4 (was Revolon Slough Main Branch)             | Bifenthrin   | 5A                                  | 5B                                   |
|  | Cyfluthrin   | 5A                                  | 5B                                   |
|  | Cypermethrin | 5A                                  | 5B                                   |
|  | Malathion    | 5A                                  | 5B                                   |
|  | Permethrin   | 5A                                  | 5B                                   |
| Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo North Fork) | Malathion    | 5A                                  | 5B                                   |
| Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2           | Bifenthrin   | 5A                                  | 5B                                   |
| Honda Barranca   | Bifenthrin   | 5A                                  | 5B                                   |
| Santa Clara Drain  | Cypermethrin | 5A                                  | 5B                                   |

**Requested Action:**

- **Change all pollutant-waterbody segment combinations in Table 4 and Table 5 from 5A to 5B or 4A based on coverage by an existing USEPA approved TMDL.**

<sup>6</sup> The Calleguas Creek, Its Tributaries, and Mugu Lagoon Toxicity, Chlorpyrifos and Diazinon TMDL. RS 2005-009. Approved by USEPA on March 24, 2006.

<sup>7</sup> The Calleguas Creek Nitrogen TMDL. RS 2002-017. Approved by USEPA on June 20, 2003.

<sup>8</sup> Total Maximum Daily Load for Organochlorine Pesticides, Polychlorinated Biphenyls, and Siltation in Calleguas Creek, its Tributaries and Mugu Lagoon. RS 2005-010. Approved by USEPA on March 24, 2006.

<sup>9</sup> The Calleguas Creek Watershed Salts TMDL. RS 2007-016. Approved by USEPA on December 2, 2008.

<sup>10</sup> Total Maximum Daily Loads for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3. Approved by USEPA on October 6, 2011.

<sup>11</sup> The Calleguas Creek, Its Tributaries, and Mugu Lagoon Toxicity, Chlorpyrifos and Diazinon TMDL. RS 2005-009. Approved by USEPA on March 24, 2006.

#### **IV. ADDRESS ALL OTHER INCONSISTENCIES AND ERRORS IN LIST**

In reviewing the list the Stakeholders identified a large number of inconsistencies and issues in the list that should all be addressed prior to adoption. The summary below provides examples of issues identified and is not a comprehensive list as in many cases the information provided made it challenging to provide comprehensive comments.

**9. Correct Appendix G Fact Sheets.** The Appendix G Fact Sheets often include incorrect information and discussion. While most of the identified issues do not appear to impact the listing decisions, they make the review of information difficult. Examples of errors found include:

- Incorrect beneficial uses assigned to a waterbody. For example, MUN beneficial uses assigned to a tidally-influenced waterbody (e.g., Duck Ponds Agricultural Drain).
- Incorrect beneficial uses assigned to objectives. For example, MUN beneficial uses listed when aquatic life objectives are presented in the Fact Sheet.
- Incorrect TMDLs assigned to a pollutant. For example, for chlordane in Calleguas Creek Reach 2, the applicable TMDL is listed as the Calleguas Creek Metals TMDL. It should be the Organochlorine Pesticides, PCBs, and Siltation TMDL.
- Incorrect QAPPs identified. For example, the VCAILG QAPP is often referenced for the Ventura County MS4 monitoring data set.
- Incorrect number of samples evaluated and incorrect number of criteria exceedances. For example, the number of samples evaluated for toxaphene on the Rio de Santa Clara/Oxnard Drain No. 3 is identified as 2 samples, whereas data files obtained from the Regional Board website contain 5 samples for the date range indicated in Fact Sheets, including 3 samples with results of “ND”. Stating that a pollutant actually exceeds criteria in only 40% of samples, versus 100% exceedances as presented in Fact Sheets, provides a more accurate picture of the degree of impairment for that pollutant in a waterbody. The inclusion of J-flagged data when enumerating exceedances (e.g., for chlordane in the same waterbodies) further exacerbates these numbering inaccuracies.

#### **Requested Action:**

**Correct the Appendix G Fact Sheets for errors such as incorrectly assigned beneficial uses, existing TMDLs, QAPPs, and number of samples/number of exceedances.**

**10. Correct the Appendices and Fact Sheet Categories.** Appendix A, Appendix B, Appendix C, and Appendix G are inconsistent which makes the analysis of new additions very difficult since it is unclear which segment-pollutant combinations actually are new listings. Following are examples of a number of identified issues that need to be corrected to allow the Stakeholders to fully vet and understand the proposed listings.

A number of proposed “name changes” in Appendix A are not shown in Appendix B and there are not associated Fact Sheets describing the name change (e.g., Reach 4 listings for chlorpyrifos and total DDT). This makes it very challenging to assess the

validity or basis for the name change. In other instances, listed name changes are found in Appendix B or C but not supported by an explanation for the name change in Appendix G. The Fact Sheets for the following name changes should provide justification or explanation for the name change as many appear to be switching tissue or sediment listings to water listings. If this is, in fact, the change being made, the justification for the water listing needs to be provided in the Fact Sheet. It is not appropriate to modify the medium that is the basis for the listing as a name change.

| <b>Table 6. Listed as Name Changes in Appendix A</b> |  |
|--|--|
| <b>CCW Segment</b>                                   | <b>Pollutants</b>                                |
| Reach 1  | Toxicity   |
| Reach 2  | Chlordane, Endosulfan, Toxaphene                 |
| Reach 4  | Chlorpyrifos (tissue), Fecal Coliform, Total DDT |
| Reach 12   | DDT (tissue), Ammonia                            |
| Rio De Santa Clara/Oxnard Drain<br>No. 3             | Toxicity   |
| Duck Pond  | ChemA  |

There are a number of inconsistencies where Appendix A does not include all of the new 2014 listings found in Appendix B. Below are a few examples of such inconsistencies.

| <b>Table 7. Incorrectly listed waterbody segment-pollutant combinations</b> |                        |  |
|---|------------------------|--|
| <b>Segment</b>  | <b>Pollutant</b>       | <b>Issue</b>   |
| La Vista Drain  | DDT                    | Not included as a new change in Appendix A but listed as a new 2014 5A listing in Appendix B.  |
| Honda Barranca  | Bifenthrin             | Not included as a new change in Appendix A but listed as a new 2014 5A listing in Appendix B.  |
| Rio De Santa Clara/Oxnard Drain No. 3                                       | Total Dissolved Solids | Not included as a new change in Appendix A but listed as a new 2014 5A listing in Appendix B.  |
|   | Toxicity               | Listed only as a “name change” in Appendix A but listed as a new 2014 5A listing in Appendix B.  |
| Calleguas Creek Reach 2 (estuary to Potrero Rd)                             | Indicator Bacteria     | Not included as a change in Appendix A but listed as a new 5A listing in Appendix B. Clarify if this is a new listing or a “coliform bacteria” name change as described for Calleguas Reaches 6, 9A, 10, and 11. |
|   | PCBs                   | Not included as a new change in Appendix A but listed as a new 2014 5B listing in Appendix B.  |
|   | Toxicity               | Not included as a new change in Appendix A but listed as a new 2014 5B listing in Appendix B.  |
|   | ChemA                  | Not included as a new change in Appendix A but listed as a new 2014 5B listing in Appendix B despite cited as a historical use of pesticides and lubricants.   |
| Calleguas Creek Reach 4   | Cyfluthrin             | Not included as a new change in Appendix A but listed as a new 2014 5A listing in Appendix B.  |

There are also a number of instances where existing waterbody-pollutant listings from the 2010 303(d) List were not stated as delisted in Appendix A and do not appear in Appendix B, C, or G under the waterbodies to delist. The Stakeholders would like clarification if these listings are in fact being delisted as some align with the assessment shown in **Table 3**.

| <b>Table 8. Not described as delisted in Appendix A but not found Appendix B or C</b> |  |
|---|--|
| <b>CCW Segment</b>  | <b>Pollutants</b>  |
| Reach 2   | Ammonia  |
| Reach 3   | Ammonia  |
| Reach 4   | Chlordane (tissue & sediment), DDT (tissue & sediment), PCBs (tissue), Toxaphene (tissue & sediment)   |
| Reach 5   | Chlordane (tissue & sediment), Chlorpyrifos (tissue), DDT (tissue & sediment), Dieldrin (tissue), Endosulfan (tissue & sediment), Nitrogen, PCBs (tissue), Toxaphene (tissue & sediment) |
| Reach 6   | DDT (sediment)   |
| Reach 9A  | Chlorpyrifos, DDT (tissue), Dieldrin (tissue), Endosulfan (tissue), PCBs (tissue), Toxaphene (tissue & sediment)   |
| Reach 9B  | Endosulfan (tissue), Toxaphene (tissue & sediment)   |
| Reach 10  | DDT (tissue)   |
| Reach 11  | DDT (tissue), Endosulfan (tissue), Toxaphene (tissue & sediment)   |

**Requested Action:**

**Correct the numerous inconsistencies described above in Table 6, Table 7, and Table 8 and ensure that all of the proposed 303(d) List appendices are internally consistent.**

**11. Correct the waterbody assigned Hydrologic Unit (HUCs) and Calwater numbers to reflect those listed in the Basin Plan.** There are multiple instances of what appear to be incorrectly Hydrologic Unit numbers (HUCs) and Calwater numbers assigned to the various waterways. For instance, a comparison of the 8 digit HUCs listed in Appendix B of the 303(d) List to the 12 digit HUCs listed in Appendix I of the Basin Plan indicate a number of inconsistencies such that waterbodies present in the Santa Clara River Watershed (e.g., Santa Clara River Reach 1, 2, and 3) are listed with a Calleguas watershed HUC (18070103) while the same reaches are listed as 18070102 in the Basin Plan. This makes identifying the location of unknown waterbodies not previously listed or described in the Basin Plan to assess if they are receiving waters that should be assessed especially difficult. A full review of the 303(d) List HUCs should be completed to correct all errors.

**Requested Action:**

**Perform a full review of HUCs and Calwater numbers listed in Appendix B through F and correct any inconsistencies with the Basin Plan.**



**12. Correct or clarify inconsistencies in the staff report.** There is inconsistent discussion in the staff report about some proposed listings that should be clarified to avoid confusion about the listings. For instance, on page 10 of the Staff Report there is a discussion about existing TMDLs covering newly proposed pollutants *“For example, the proposed new listings for DDE and DDD in Calleguas Creek Reach 3 ... are being addressed by the Calleguas Creek Organochlorine Pesticides, PCBs and Siltation TMDL ... and would then be in Category 4A.”* However, we could find no listings of DDE and DDD for Reach 3 in any Appendix of the report including Appendix C – Category 4A Waterbody Segments. Furthermore, the Fact Sheets in Appendix G state that DDE and DDD should *not* be listed for Reach 3. We ask the RWQCB to either clarify or remove the above referenced statement and clarify any other inconsistencies between the staff report and the list.

**Requested Action:**

**Correct or remove language cited on page 10 of the staff report regarding DDE and DDD listing of Calleguas Creek Reach 3 and clarify any other identified inconsistencies within the staff report.**

**13. Ensure that all thresholds being used for assessment are consistent and valid under the Listing Policy.** In many cases, the same pollutant is assessed using different thresholds without any explanation for the basis of the threshold. Additionally, in several cases, an LC50 or threshold for individual species were used for the assessment, which is inconsistent with the Listing Policy which states that it must be demonstrated that an evaluation guideline is *“applicable to the beneficial use, protective of the beneficial use, scientifically-based and peer reviewed, and well described”*. Because it has not been demonstrated that the individual species response to these pollutants is applicable and protective of the beneficial use these guidelines should not be used to make a listing. The Stakeholders ask that the Board review all assessments for consistency, especially for the pesticides (bifenthrin, cyfluthrin, cypermethrin, malathion, permethrin) as well as applicability to the beneficial use as described in the Listing Policy.

**Table 9. 303(d) Pollutants Using Thresholds for Interpreting Narrative Objectives**

| <b>Pollutant</b> | <b>Segment</b>   | <b>Objective Used</b>   |
|------------------|--|---|
| Bifenthrin       | CCW Reach 4  | 0.0006µg/L (4-day average) from UC Davis <sup>1</sup>                             |
|                  | Honda Barranca   | 0.0006µg/L (4-day average) from UC Davis <sup>1</sup>                             |
|                  | Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2 | 0.00397µg/L mean acute value for mysid from Cal Dep of Fish and Game <sup>2</sup> |
| Cyfluthrin       | CCW Reach 4  | LC50: 29000µg/L from the USEPA OPP Pesticide Ecotox database                      |
| Cypermethrin     | CCW Reach 4  | 0.002µg/L from the Cal Dep of Fish and Game <sup>2</sup>                          |

|            |              |   |
|------------|--------------|---|
| Malathion  | CCW Reach 4  | 0.28µg/L (4-day average) from UC Davis <sup>1</sup> |
|            | CCW Reach 12 | 0.1µg/L USEPA <sup>3</sup>                          |
| Permethrin | CCW Reach 4  | 0.0002µg/L from UC Davis <sup>1</sup>               |

<sup>1</sup> Aquatic life water quality criteria derived via the UC Davis method: II. Pyrethroid insecticides. Reviews of Environmental Contamination and Toxicology 216:51-103.

<sup>2</sup> Hazard Assessment of the Synthetic Pyrethroid Insecticides Bifenthrin, Cypermethrin, Esfenvalerate, and Permethrin to Aquatic Organisms in the Sacramento-San Joaquin River System; 2000. Cal Dept. of Fish and Game. Report 00-6.

<sup>3</sup> USEPA National Recommended Water Quality Criteria (Red Book). 1976. United States Environmental Protection Agency. Office of Water. Office of Science and Technology.

The 303(d) List includes new listings for bifenthrin, cyfluthrin, cypermethrin, malathion, and permethrin in CCW. Currently, no water quality objectives have been promulgated by USEPA or the State of California for these pollutants and so the criteria listed are from a variety of studies. Some issues with these criteria include the following (this list is by no means inclusive; a thorough review of all listings for these pollutants should be undertaken):

- The criterion used for listing bifenthrin on Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2 is 0.00397 µg/L based on the CDFG criteria. The selective use of a saltwater genus mean acute value is inappropriate when the CDFG study clearly states in the “Conclusions and Recommendations” section that “insufficient freshwater and saltwater acute toxicity data were available to calculate CMC values for bifenthrin.” The same use of a criterion unsupported by the study author(s) applies to cypermethrin on the Santa Clara Drain.
- Use of LC50 for listing of cyfluthrin for CCW Reach 4 is inappropriate. LC50s do not meet the standard set forth in the Listing Policy as stated on page 20 “*the evaluation guideline... identifies a range above which impacts occur and below which no or few impacts are predicted.*” By definition, an LC50 is simply the concentration at which half of the population of the tested species has died. The LC50 should not be used as the evaluation guideline.
- The criterion used for listing permethrin for Calleguas Creek Reach 4 is 0.0002µg/L based on the UC Davis<sup>12</sup> criteria. However, upon reviewing the UC Davis source the listed chronic standard for permethrin is 2 ng/L (page 92) which is 0.002µg/L, not 0.0002µg/L as listed in the 303(d) List.
- In many instances the incorrect evaluation guideline and guideline reference are used. For example, the evaluation guideline (i.e., criterion) provided for cyfluthrin (a pyrethroid) in LOEs 84065, 83200, and 88712 is for the chlorinated herbicide 2,4,5-TP. The stated criterion (29 mg/L) was not found in the cited guideline reference. Many additional instances were noted in LOEs for phorate, dimethoate, disulfoton, endosulfan sulfate, and many other LOEs. Because the numeric guidelines (and reference documents from which these are obtained)

<sup>12</sup> Aquatic life water quality criteria derived via the UC Davis method: II. Pyrethroid insecticides. Reviews of Environmental Contamination and Toxicology 216:51-103.

form the basis for any listing, it is critical that these be carefully reviewed and verified prior to issuing the final Fact Sheets and 303(d) List.

**Requested Action:**

- **Review the guidelines used for interpreting narrative objectives and ensure that they are consistently applied and use correct unit conversions.**
- **Remove all guidelines that do not comply with the stated Listing Policy as described above.**

The Stakeholders appreciate the opportunity to comment on the 303(d) List and look forward to continuing to work with the Water Board to address these concerns. Thank you for your time and consideration of these comments. If you have questions, please contact Ashli Desai at (310) 394-1036 / [AshliD@lwa.com](mailto:AshliD@lwa.com) or me at (805) 388-5334.

Sincerely,



Lucia McGovern

Chair of Stakeholders Implementing TMDLs in Calleguas Creek Watershed

Attachment A: Data Tables from CCW Water Quality Priorities Memorandum

# Calleguas Creek Watershed Assessment

## 1. Data Sources

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In order to fully evaluate the progress of TMDL implementation, as well as the general state of the watershed, data was collected from a variety of CCW stakeholders. Data sources include NPDES monitoring data from three Publicly Owned Treatment Works (POTWs) in the watershed along with long-term MS4 monitoring data from the County of Ventura. Ventura County Agricultural Irrigated Lands Group (VCAILG) monitoring data and available Navy data was also provided. Water, sediment, fish tissue, and toxicity data from ongoing TMDL and data was also retrieved from the State Water Quality Control Board's California Environmental Data Exchange Network (CEDEN).

Overall, a data set of over 375,000 data points gathered between 2003 and 2014 was compiled. The data set was then refined by focusing the analysis on receiving water samples and removing POTW effluent, MS4 outfalls, and agricultural discharge data.

The aggregation of data spanning the ten year study period revealed varying levels of completeness in the monitoring data; therefore several conservative assumptions were necessary to carry out the analysis. Where appropriate, constituents sampled under unknown wet/dry conditions were assumed to be sampled during dry weather conditions and were thus subject to dry weather criteria. POTW metals data reported without indication whether they were in the dissolved or total fraction were assumed to be reported in their dissolved fraction for constituents with dissolved targets (copper, nickel, and zinc). Mercury and selenium targets are for the total fraction; undesignated data for these constituents was assumed to be total. These assumptions were intended to provide the most conservative analysis of the data in light of the uncertainty related to the incomplete data.

**Table 1. Summary of Receiving Water Data Used in Analysis**

| Monitoring Program/ Data Source             | Date Range |            | Number of Samples by Reach |            |             |             |            |            |             |            |             |             |             |          |             |            | Total        |
|---|------------|------------|----------------------------|------------|-------------|-------------|------------|------------|-------------|------------|-------------|-------------|-------------|----------|-------------|------------|--------------|
|   |            |            | 1                          | 2          | 3           | 4           | 5          | 6          | 7           | 8          | 9A          | 9B          | 10          | 11       | 12          | 13         |              |
| Camarillo POTW Monitoring                   | 1/22/2003  | 11/5/2013  |                            |            |             |             |            |            |             |            | 7221        | 237         |             |          |             |            | 7458         |
| CCW Characterization Study DBF              | 1/1/2003   | 5/3/2005   |                            |            | 125         |             |            |            | 799         |            |             | 238         |             |          |             |            | 1162         |
| CCW Salts TMDL                              | 1/31/2011  | 12/5/2013  |                            |            | 296         |             |            |            | 154         |            | 151         | 135         |             |          |             |            | 736          |
| CCW TMDL DBF                                | 2/6/2002   | 2/3/2014   | 2593                       | 120        | 1221        | 1237        | 119        | 596        | 726         |            | 66          | 525         | 494         |          | 110         | 414        | 8221         |
| CCW TMDL Work Plan Monitoring               | 8/26/2003  | 10/27/2004 | 291                        | 292        | 371         | 465         | 208        | 209        | 261         | 158        | 231         | 209         | 231         | 6        | 155         | 207        | 3294         |
| Navy Monitoring                             | 5/3/2003   | 1/7/2005   | 91                         | 59         |             | 59          |            |            |             |            |             |             |             |          |             |            | 209          |
| RWB4 So. CA Stormwater Monitoring Coalition | 5/5/2008   | 5/13/2008  |                            |            |             |             |            | 15         |             | 5          | 15          | 15          |             |          | 28          |            | 78           |
| Simi Valley POTW Monitoring                 | 1/8/2008   | 6/3/2014   |                            |            |             |             |            |            | 4808        |            |             |             |             |          |             |            | 4808         |
| SWAMP Perennial Stream Surveys              | 5/21/2008  | 5/21/2008  |                            |            | 5           |             |            |            |             |            |             |             |             |          |             |            | 5            |
| Thousand Oaks POTW Monitoring               | 1/15/2002  | 10/9/2013  |                            |            |             |             |            |            |             |            |             |             | 4200        |          | 4250        |            | 8450         |
| Ventura County MS4 Monitoring               | 2/12/2003  | 4/25/2014  |                            |            | 4811        | 541         | 541        |            |             |            |             |             |             | 1        |             |            | 5894         |
| <b>Total:</b>                               |            |            | <b>2975</b>                | <b>471</b> | <b>6829</b> | <b>2302</b> | <b>868</b> | <b>820</b> | <b>6748</b> | <b>163</b> | <b>7684</b> | <b>1359</b> | <b>4925</b> | <b>7</b> | <b>4543</b> | <b>621</b> | <b>40315</b> |



## 1.1 METALS AND SELENIUM TMDL

The Los Angeles Regional Water Quality Control Board (RWQCB) adopted Resolution No. R4-2006-012 to address water quality issues related to metals and selenium in Calleguas Creek, its tributaries and Mugu Lagoon.

**Table 2** summarizes the analysis of available receiving water data for constituents included in the Metals TMDL, as well as the number of exceedances of the final numeric targets. The table illustrates that in most cases a sufficient number of samples is available and the data supports a delisting of the metals. It is important to note that compliance with metals and selenium targets in reach 2 was assessed using data from CCW TMDL monitoring site 01\_RR\_BR, which is located at the break between reach 1 and 2. Much of the POTW data did not distinguish between the dissolved and total fraction for metals constituents. For metals with dissolved targets (copper, nickel, and zinc) a conservative approach was used by comparing undistinguished metals samples to the dissolved targets. Mercury and selenium have established targets for total metals, in these instances all total and undistinguished samples were compared to these targets. For conservative analysis, available fish tissue mercury data was compared to the lowest fish tissue target for all samples.

Table 2. Analysis of Metals TMDL Constituents in Receiving Water by Reach

| Copper (Dry)         |          | 303(d) Listed Reaches |            |           | Un-listed Reaches with TMDL Targets and Available Data |     |           |          |           |           |           |           |           |
|----------------------|----------|-----------------------|------------|-----------|--|-----|-----------|----------|-----------|-----------|-----------|-----------|-----------|
| Reach                |          | 1                     | 2          | 4         | 3  | 5   | 6         | 7        | 9A        | 9B        | 10        | 11        | 12        |
| Date Range Available |          | 5/3/2003              | 6/10/2003  | 6/10/2003 | 6/5/2003   | NS  | 5/13/2008 | 2/5/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 8/13/2013 | 2/6/2002  |
|                      |          | 11/5/2013             | 11/11/2008 | 11/5/2013 | 4/25/2014  | NS  | 5/13/2008 | 5/6/2014 | 8/7/2013  | 5/7/2008  | 10/9/2013 | 8/13/2013 | 10/9/2013 |
| TMDL Targets (ug/L): |          | 4.7                   | 11.4       | 3.1       | 25.9   | 3.1 | 29.3      | 29.3     | 27.9      | 27.9      | 27.9      | 27.9      | 27.9      |
| Previous 10 Years    | N        | 172                   | 102        | 43        | 88   | NS  | 1         | 71       | 41        | 2         | 127       | 1         | 129       |
|                      | N Detect | 166                   | 94         | 41        | 88   | NS  | 1         | 61       | 28        | 1         | 126       | 1         | 126       |
|                      | N Exceed | 26                    | 30         | 13        | 19   | NS  | 0         | 5        | 0         | 0         | 0         | 1         | 1         |
| Previous 5 Years     | N        | 100                   | 29         | 28        | 36   | NS  | NS        | 44       | 18        | NS        | 58        | 1         | 58        |
|                      | N Detect | 96                    | 29         | 28        | 36   | NS  | NS        | 44       | 18        | NS        | 58        | 1         | 58        |
|                      | N Exceed | 0                     | 0          | 5         | 0  | NS  | NS        | 5        | 0         | NS        | 0         | 1         | 1         |

| Copper (Wet)         |          | 303(d) Listed Reaches |            |           | Un-listed Reaches with TMDL Targets and Available Data |            |      |      |      |      |      |      |      |
|----------------------|----------|-----------------------|------------|-----------|--|------------|------|------|------|------|------|------|------|
| Reach                |          | 1                     | 2          | 4         | 3  | 5          | 6    | 7    | 9A   | 9B   | 10   | 11   | 12   |
| Date Range Available |          | 10/27/2004            | 2/26/2004  | 2/13/2003 | 2/12/2003  | 2/13/2003  | NS   | NS   | NS   | NS   | NS   | NS   | NS   |
|                      |          | 1/25/2013             | 10/27/2004 | 1/25/2013 | 2/28/2014  | 11/26/2008 | NS   | NS   | NS   | NS   | NS   | NS   | NS   |
| TMDL Targets (ug/L): |          | 7.2                   | 17.2       | 4.8       | 26.3   | 4.8        | 29.8 | 29.8 | 41.6 | 41.6 | 41.6 | 41.6 | 41.6 |
| Previous 10 Years    | N        | NS                    | 12         | 18        | 46   | 7          | NS   | NS   | NS   | NS   | NS   | NS   | NS   |
|                      | N Detect | NS                    | 12         | 18        | 46   | 7          | NS   | NS   | NS   | NS   | NS   | NS   | NS   |
|                      | N Exceed | NS                    | 0          | 3         | 0  | 7          | NS   | NS   | NS   | NS   | NS   | NS   | NS   |
| Previous 5 Years     | N        | NS                    | 8          | 8         | 25   | NS         | NS   | NS   | NS   | NS   | NS   | NS   | NS   |
|                      | N Detect | NS                    | 8          | 8         | 25   | NS         | NS   | NS   | NS   | NS   | NS   | NS   | NS   |
|                      | N Exceed | NS                    | 0          | 0         | 0  | NS         | NS   | NS   | NS   | NS   | NS   | NS   | NS   |

| Copper (Wet and Dry Data) |  | 303(d) Listed Reaches    |     |    | Un-listed Reaches with TMDL Targets and Available Data |                 |                 |    |                 |                 |     |                 |     |
|---------------------------|--|--------------------------|-----|----|--|-----------------|-----------------|----|-----------------|-----------------|-----|-----------------|-----|
| Reach                     |  | 1                        | 2   | 4  | 3  | 5               | 6               | 7  | 9A              | 9B              | 10  | 11              | 12  |
| N (previous 5 years)      |  | 100                      | 37  | 36 | 61   | NS              | NS              | 44 | 41 <sup>1</sup> | NS              | 58  | 1               | 58  |
| N Exceed                  |  | 0                        | 0   | 5  | 0  | NS              | NS              | 5  | 0               | NS              | 0   | 1               | 1   |
|                           |  | Potential for Delisting? |     |    | Achieving Targets per Listing Policy?                  |                 |                 |    |                 |                 |     |                 |     |
|                           |  | Yes                      | Yes | No | Yes  | No <sup>1</sup> | NE <sup>1</sup> | No | Yes             | NE <sup>1</sup> | Yes | ID <sup>1</sup> | Yes |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist.

| Nickel (Dry) |  | 303(d) Listed Reaches |  |  | Un-listed Reaches with TMDL Targets and Available Data |  |  |  |  |  |  |  |
|--------------|--|-----------------------|--|--|--|--|--|--|--|--|--|--|
|--------------|--|-----------------------|--|--|--|--|--|--|--|--|--|--|

| Reach                |          | 1         | 2          | 4         | 3         | 5   | 6         | 7        | 8   | 9A        | 9B        | 10       | 12       |
|----------------------|----------|-----------|------------|-----------|-----------|-----|-----------|----------|-----|-----------|-----------|----------|----------|
| Date Range Available |          | 5/3/2003  | 6/10/2003  | 6/10/2003 | 6/5/2003  | NS  | 5/13/2008 | 2/5/2003 | NS  | 2/19/2003 | 2/19/2003 | 2/6/2002 | 2/6/2002 |
|                      |          | 11/5/2013 | 11/11/2008 | 11/5/2013 | 4/25/2014 | NS  | 5/13/2008 | 5/6/2014 | NS  | 8/7/2013  | 5/7/2008  | 8/7/2013 | 8/7/2013 |
| TMDL Target (ug/L):  |          | 8.2       | 8.2        | 8.2       | 149       | 8.2 | 168       | 168      | 168 | 160       | 160       | 160      | 160      |
| Previous 10 Years    | N        | 138       | 61         | 43        | 63        | NS  | 1         | 71       | 1   | 41        | 2         | 44       | 46       |
|                      | N Detect | 138       | 59         | 43        | 63        | NS  | 1         | 62       | 1   | 25        | 1         | 43       | 43       |
|                      | N Exceed | 0         | 11         | 9         | 0         | NS  | 0         | 0        | 1   | 0         | 0         | 0        | 0        |
| Previous 5 Years     | N        | 100       | 29         | 28        | 36        | NS  | NS        | 44       | NS  | 18        | NS        | 19       | 19       |
|                      | N Detect | 100       | 29         | 28        | 36        | NS  | NS        | 44       | NS  | 18        | NS        | 19       | 19       |
|                      | N Exceed | 0         | 1          | 3         | 0         | NS  | NS        | 0        | NS  | 0         | NS        | 0        | 0        |

| Nickel (Wet)         |          | 303(d) Listed Reaches |           |           |           | Un-listed Reaches with TMDL Targets and Available Data |     |     |     |      |      |      |      |
|----------------------|----------|-----------------------|-----------|-----------|-----------|--|-----|-----|-----|------|------|------|------|
| Reach                |          | 1                     | 2         | 4         | 3         | 5  | 6   | 7   | 8   | 9A   | 9B   | 10   | 12   |
| Date Range Available |          | 10/27/2004            | 2/26/2004 | 2/13/2003 | 2/12/2003 | 2/13/2003  | NS  | NS  | NS  | NS   | NS   | NS   | NS   |
|                      |          | 1/25/2013             | 1/25/2013 | 1/25/2013 | 2/28/2014 | 11/26/2008   | NS  | NS  | NS  | NS   | NS   | NS   | NS   |
| TMDL Targets (ug/L): |          | 74                    | 74        | 74        | 856       | 74   | 958 | 958 | 958 | 1292 | 1292 | 1292 | 1292 |
| Previous 10 Years    | N        | NS                    | 12        | 18        | 46        | 7  | NS  | NS  | NS  | NS   | NS   | NS   | NS   |
|                      | N Detect | NS                    | 12        | 18        | 46        | 7  | NS  | NS  | NS  | NS   | NS   | NS   | NS   |
|                      | N Exceed | NS                    | 0         | 0         | 0         | 0  | NS  | NS  | NS  | NS   | NS   | NS   | NS   |
| Previous 5 Years     | N        | NS                    | 8         | 8         | 25        | NS   | NS  | NS  | NS  | NS   | NS   | NS   | NS   |
|                      | N Detect | NS                    | 8         | 8         | 25        | NS   | NS  | NS  | NS  | NS   | NS   | NS   | NS   |
|                      | N Exceed | NS                    | 0         | 0         | 0         | NS   | NS  | NS  | NS  | NS   | NS   | NS   | NS   |

| Nickel (Wet and Dry Data) |  | 303(d) Listed Reaches    |     |                 |     | Un-listed Reaches with TMDL Targets and Available Data |    |     |    |                 |    |                 |                 |
|---------------------------|--|--------------------------|-----|-----------------|-----|--|----|-----|----|-----------------|----|-----------------|-----------------|
| Reach                     |  | 1                        | 2   | 4               | 3   | 5  | 6  | 7   | 8  | 9A              | 9B | 10              | 12              |
| N (previous 5 years)      |  | 100                      | 37  | 36              | 61  | NS   | NS | 44  | NS | 41 <sup>1</sup> | NS | 44 <sup>1</sup> | 46 <sup>1</sup> |
| N Exceed                  |  | 0                        | 1   | 3               | 0   | NS   | NS | 0   | NS | 0               | NS | 0               | 0               |
|                           |  | Potential for Delisting? |     |                 |     | Achieving Targets per Listing Policy?                  |    |     |    |                 |    |                 |                 |
|                           |  | Yes                      | Yes | No <sup>2</sup> | Yes | NE   | NE | Yes | ID | Yes             | NE | Yes             | Yes             |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

2. Single exceedance over the number of allowable exceedances for the given sample size. Constituent is likely to have potential for delisting.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist.

| Selenium (Dry)       |          | 303(d) Listed Reaches  |                         |                        | Un-listed Reaches with TMDL Targets and Available Data |                       |                        |                      |                      |                      |                       |                       |
|----------------------|----------|------------------------|-------------------------|------------------------|--|-----------------------|------------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|
| Reach                |          | 1                      | 2 <sup>3</sup>          | 4                      | 3  | 5                     | 6                      | 7                    | 9A                   | 9B                   | 10                    | 12                    |
| Date Range Available |          | 8/26/2003<br>11/5/2013 | 8/27/2003<br>11/11/2008 | 8/28/2003<br>11/5/2013 | 6/5/2003<br>4/25/2014                                  | 3/29/2004<br>9/7/2004 | 5/13/2008<br>5/13/2008 | 8/5/2003<br>6/3/2014 | 5/8/2008<br>5/8/2008 | 5/7/2008<br>5/7/2008 | 8/12/2003<br>8/7/2013 | 5/5/2008<br>5/13/2008 |
| TMDL Targets (ug/L): |          | 71                     | 5                       | 5                      | 5  | 5                     | 5                      | 5                    | 5                    | 5                    | 5                     | 5                     |
| Previous 10 Years    | N        | 138                    | 64                      | 55                     | 66   | 7                     | 1                      | 199                  | 1                    | 1                    | 41                    | 43                    |
|                      | N Detect | 113                    | 51                      | 51                     | 63   | 7                     | 1                      | 190                  | 1                    | 1                    | 32                    | 41                    |
|                      | N Exceed | 0                      | 14                      | 49                     | 2  | 6                     | 1                      | 156                  | 0                    | 0                    | 0                     | 2                     |
| Previous 5 Years     | N        | 100                    | 29                      | 29                     | 36   | NS                    | NS                     | 132                  | NS                   | NS                   | 19                    | 19                    |
|                      | N Detect | 75                     | 25                      | 29                     | 36   | NS                    | NS                     | 132                  | NS                   | NS                   | 18                    | 19                    |
|                      | N Exceed | 0                      | 5                       | 29                     | 0  | NS                    | NS                     | 111                  | NS                   | NS                   | 0                     | 0                     |

| Selenium (Wet)       |          | 303(d) Listed Reaches |                        |                        | Un-listed Reaches with TMDL Targets and Available Data |                         |          |          |          |          |          |          |
|----------------------|----------|-----------------------|------------------------|------------------------|--|-------------------------|----------|----------|----------|----------|----------|----------|
| Reach                |          | 1                     | 2 <sup>3</sup>         | 4                      | 3  | 5                       | 6        | 7        | 9A       | 9B       | 10       | 12       |
| Date Range Available |          | NS<br>NS              | 2/26/2004<br>1/25/2013 | 2/13/2003<br>1/25/2013 | 2/12/2003<br>2/28/2014                                 | 2/13/2003<br>11/26/2008 | NS<br>NS | NS<br>NS | NS<br>NS | NS<br>NS | NS<br>NS | NS<br>NS |
| TMDL Targets(ug/L):  |          | 290                   | 290                    | 290                    | --   | 290                     | --       | --       | --       | --       | --       | --       |
| Previous 10 Years    | N        | NS                    | 12                     | 18                     | 46   | 7                       | NS       | NS       | NS       | NS       | NS       | NS       |
|                      | N Detect | NS                    | 12                     | 18                     | 46   | 7                       | NS       | NS       | NS       | NS       | NS       | NS       |
|                      | N Exceed | NS                    | 0                      | 3                      | --   | 0                       | NS       | NS       | NS       | NS       | NS       | NS       |
| Previous 5 Years     | N        | NS                    | 8                      | 8                      | 25   | NS                      | NS       | NS       | NS       | NS       | NS       | NS       |
|                      | N Detect | NS                    | 8                      | 8                      | 25   | NS                      | NS       | NS       | NS       | NS       | NS       | NS       |
|                      | N Exceed | NS                    | 0                      | 3                      | --   | NS                      | NS       | NS       | NS       | NS       | NS       | NS       |

| Selenium (Wet and Dry Data) |  | 303(d) Listed Reaches    |                |    | Un-listed Reaches with TMDL Targets and Available Data |                 |                 |     |                 |                 |                  |                 |
|-----------------------------|--|--------------------------|----------------|----|--|-----------------|-----------------|-----|-----------------|-----------------|------------------|-----------------|
| Reach                       |  | 1                        | 2 <sup>3</sup> | 4  | 3  | 5               | 6               | 7   | 9A              | 9B              | 10               | 12              |
| N (previous 5 years)        |  | 100                      | 37             | 37 | 36   | NS <sup>1</sup> | NS <sup>1</sup> | 132 | NS <sup>1</sup> | NS <sup>1</sup> | 41               | 43 <sup>1</sup> |
| N Exceed                    |  | 0                        | 5              | 32 | 0  | NS              | NS              | 111 | NS              | NS              | 0                | 2               |
|                             |  | Potential for Delisting? |                |    | Achieving Targets per Listing Policy?                  |                 |                 |     |                 |                 |                  |                 |
|                             |  | Yes                      | No             | No | Yes <sup>2</sup>                                       | NE              | ID              | No  | NE              | NE              | Yes <sup>2</sup> | Yes             |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

2. In reaches where wet weather targets were not established, only dry weather data were compared to dry weather targets

3. Data may not be representative of conditions in reach 2 due to the consideration of data that includes the influence of reach 4.

NE – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist.

| Zinc (Dry)           |          | 303(d) Listed Reaches |           |           | Un-listed Reaches with TMDL Targets and Available Data |    |           |          |           |           |          |           |          |
|----------------------|----------|-----------------------|-----------|-----------|--|----|-----------|----------|-----------|-----------|----------|-----------|----------|
| Reach                |          | 1                     | 2         | 4         | 3  | 5  | 6         | 7        | 9A        | 9B        | 10       | 11        | 12       |
| Date Range Available |          | 5/3/2003              | 6/10/2003 | 6/10/2003 | 6/5/2003   | NS | 5/13/2008 | 2/5/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002 | 8/13/2013 | 2/6/2002 |
|                      |          | 11/5/2013             | 11/5/2013 | 11/5/2013 | 4/25/2014  | NS | 5/13/2008 | 5/6/2014 | 8/7/2013  | 5/7/2008  | 8/7/2013 | 8/13/2013 | 8/7/2013 |
| TMDL Targets (ug/L): |          | 81                    | 81        | 81        | 338  | 81 | 382       | 382      | 365       | 365       | 365      | 365       | 365      |
| Previous 10 Years    | N        | 138                   | 61        | 43        | 63   | NS | 1         | 77       | 41        | 2         | 44       | 1         | 46       |
|                      | N Detect | 124                   | 57        | 35        | 63   | NS | 1         | 70       | 41        | 2         | 44       | 1         | 15       |
|                      | N Exceed | 1                     | 0         | 1         | 0  | NS | 0         | 0        | 0         | 0         | 0        | 1         | 0        |
| Previous 5 Years     | N        | 100                   | 29        | 28        | 36   | NS | NS        | 48       | 18        | NS        | 19       | 1         | 19       |
|                      | N Detect | 89                    | 26        | 20        | 36   | NS | NS        | 48       | 18        | NS        | 19       | 1         | 1        |
|                      | N Exceed | 0                     | 0         | 1         | 0  | NS | NS        | 0        | 0         | NS        | 0        | 1         | 0        |

| Zinc (Wet)           |          | 303(d) Listed Reaches |           |           | Un-listed Reaches with TMDL Targets and Available Data |            |     |     |     |     |     |     |     |
|----------------------|----------|-----------------------|-----------|-----------|--|------------|-----|-----|-----|-----|-----|-----|-----|
| Reach                |          | 1                     | 2         | 4         | 3  | 5          | 6   | 7   | 9A  | 9B  | 10  | 11  | 12  |
| Date Range Available |          | NS                    | 2/26/2004 | 2/13/2003 | 2/12/2003  | 2/13/2003  | NS  | NS  | NS  | NS  | NS  | NS  | NS  |
|                      |          | NS                    | 1/25/2013 | 1/25/2013 | 2/28/2014  | 11/26/2008 | NS  | NS  | NS  | NS  | NS  | NS  | NS  |
| TMDL Targets (ug/L): |          | 90                    | 90        | 90        | 214  | 90         | 240 | 240 | 324 | 324 | 324 | 324 | 324 |
| Previous 10 Years    | N        | NS                    | 12        | 18        | 46   | 7          | NS  | NS  | NS  | NS  | NS  | NS  | NS  |
|                      | N Detect | NS                    | 12        | 18        | 45   | 6          | NS  | NS  | NS  | NS  | NS  | NS  | NS  |
|                      | N Exceed | NS                    | 0         | 0         | 0  | 0          | NS  | NS  | NS  | NS  | NS  | NS  | NS  |
| Previous 5 Years     | N        | NS                    | 8         | 8         | 25   | NS         | NS  | NS  | NS  | NS  | NS  | NS  | NS  |
|                      | N Detect | NS                    | 8         | 8         | 25   | NS         | NS  | NS  | NS  | NS  | NS  | NS  | NS  |
|                      | N Exceed | NS                    | 0         | 0         | 0  | NS         | NS  | NS  | NS  | NS  | NS  | NS  | NS  |

| Zinc (Wet and Dry Data) |  | 303(d) Listed Reaches    |     |     | Un-listed Reaches with TMDL Targets and Available Data |    |    |     |                 |    |                 |    |                 |
|-------------------------|--|--------------------------|-----|-----|--|----|----|-----|-----------------|----|-----------------|----|-----------------|
| Reach                   |  | 1                        | 2   | 4   | 3  | 5  | 6  | 7   | 9A              | 9B | 10              | 11 | 12              |
| N (previous 5 years)    |  | 100                      | 37  | 36  | 61   | NS | NS | 48  | 41 <sup>2</sup> | NS | 44 <sup>2</sup> | NS | 46 <sup>2</sup> |
| N Exceed                |  | 0                        | 0   | 1   | 0  | NS | NS | 0   | 0               | NS | 0               | NS | 0               |
|                         |  | Potential for Delisting? |     |     | Achieving Targets per Listing Policy?                  |    |    |     |                 |    |                 |    |                 |
|                         |  | Yes                      | Yes | Yes | Yes  | NE | NE | Yes | Yes             | NE | Yes             | ID | Yes             |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

NE – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist.



| Mercury              |          | 303(d) Listed Reaches    |           |           | Un-listed Reaches with TMDL Targets and Available Data |            |          |          |           |           |
|----------------------|----------|--------------------------|-----------|-----------|--|------------|----------|----------|-----------|-----------|
| Reach                |          | 1                        | 2         | 4         | 3  | 5          | 7        | 9A       | 10        | 12        |
| Date Range Available |          | 8/26/2003                | 8/27/2003 | 2/12/2003 | 2/12/2003  | 2/12/2003  | 8/5/2003 | 8/5/2003 | 8/15/2003 | 8/15/2003 |
|                      |          | 11/5/2013                | 11/5/2013 | 11/5/2013 | 4/25/2014  | 11/26/2008 | 5/6/2014 | 8/7/2013 | 10/9/2013 | 10/9/2013 |
| TMDL Targets (ug/L): |          | 0.051                    | 0.051     | 0.051     | 0.051  | 0.051      | 0.051    | 0.051    | 0.051     | 0.051     |
| Previous 10 Years    | N        | 136                      | 75        | 61        | 114  | 7          | 66       | 39       | 123       | 123       |
|                      | N Detect | 102                      | 60        | 55        | 103  | 7          | 59       | 5        | 24        | 23        |
|                      | N Exceed | 0                        | 6         | 7         | 18   | 6          | 26       | 5        | 3         | 2         |
| Previous 5 Years     | N        | 100                      | 37        | 37        | 65   | NS         | 44       | 18       | 58        | 58        |
|                      | N Detect | 68                       | 31        | 35        | 55   | NS         | 44       | 2        | 12        | 12        |
|                      | N Exceed | 0                        | 2         | 3         | 10   | NS         | 24       | 2        | 0         | 0         |
|                      |          | Potential for Delisting? |           |           | Achieving Targets per Listing Policy?                  |            |          |          |           |           |
|                      |          | Yes                      | Yes       | Yes       | No   | No         | No       | No       | Yes       | Yes       |

**Table 3. Analysis of Metals TMDL Constituents in Sediment by Reach**

| Reach | Constituent | Date Range Available |           | TMDL target (ppb) <sup>1</sup> | Previous 10 Years |          |          | Previous 5 Years |          |          | Potential for Delisting |
|-------|-------------|----------------------|-----------|--------------------------------|-------------------|----------|----------|------------------|----------|----------|-------------------------|
|       |             |                      |           |                                | N                 | N Detect | N Exceed | N                | N Detect | N Exceed |                         |
| 1     | Copper      | 5/3/2003             | 8/18/2011 | 34,000                         | 18                | 18       | 1        | 5                | 5        | 0        | PD <sup>2</sup>         |
|       | Nickel      | 5/3/2003             | 8/18/2011 | 20,900                         | 18                | 18       | 6        | 5                | 5        | 0        | PD <sup>2</sup>         |
|       | Zinc        | 5/3/2003             | 8/18/2011 | 150,000                        | 18                | 18       | 3        | 5                | 5        | 0        | PD <sup>2</sup>         |
| 2     | Copper      | 2/3/2004             | 8/22/2013 | 34,000                         | 11                | 11       | 4        | 3                | 3        | 0        | PD <sup>2</sup>         |

1. TMDL target only applies if sediment toxicity occurs.

2. No exceedances in most recent five years with a significant number of samples. Considering the exceedances that occurred more than five years ago would inappropriately categorize this as a higher priority.

PD (Potential Delisting) - Insufficient data to information listing decision, however a significant number of the most recent 5 years of monitoring are non-detect. The potential for delisting the reach may exist.

**Table 4. Analysis of Metals TMDL Constituents in Fish Tissue by Reach**

| Mercury                                 | 1         | 2         | 3          | 4          | 5    | 6          | 7          | 9A         | 9B         | 10         | 12         | 13         |    |
|---|-----------|-----------|------------|------------|------|------------|------------|------------|------------|------------|------------|------------|----|
| Date Range Available                    | 8/19/2008 | 5/6/2004  | 12/19/2003 | 12/18/2003 | NS   | 12/16/2003 | 12/16/2003 | 12/19/2003 | 12/19/2003 | 12/18/2003 | 12/17/2003 | 12/17/2003 |    |
|   | 8/21/2008 | 8/24/2004 | 8/24/2004  | 8/27/2013  | NS   | 8/23/2004  | 8/23/2004  | 8/26/2004  | 8/26/2004  | 8/25/2004  | 8/25/2004  | 8/25/2004  |    |
| TMDL Target (mg/kg MeHg) <sup>1</sup> : | 0.03      | 0.03      | 0.03       | 0.03       | 0.03 | 0.03       | 0.03       | 0.03       | 0.03       | 0.03       | 0.03       | 0.03       |    |
| Previous 10 Years                       | N         | 9         | 2          | 10         | 23   | NS         | 2          | 7          | 5          | 8          | 6          | 3          | 6  |
|   | N Detect  | 9         | 1          | 8          | 21   | NS         | 1          | 7          | 5          | 8          | 6          | 3          | 6  |
|   | N Exceed  | 0         | 0          | 2          | 13   | NS         | 0          | 6          | 4          | 5          | 6          | 0          | 6  |
| Previous 5 Years                        | N         | NS        | NS         | NS         | 13   | NS         | NS         | NS         | NS         | NS         | NS         | NS         | NS |
|   | N Detect  | NS        | NS         | NS         | 13   | NS         | NS         | NS         | NS         | NS         | NS         | NS         | NS |
|   | N Exceed  | NS        | NS         | NS         | 13   | NS         | NS         | NS         | NS         | NS         | NS         | NS         | NS |
| Potential for Delisting:                | NE        | NE        | No         | No         | --   | NE         | No         | No         | No         | No         | NE         | NE         |    |

1. Mercury was compared against Methyl-Mercury final numeric targets.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data

## **1.2 NUTRIENT TMDL**

The Calleguas Creek Nitrogen Compounds and Related Effects (Nitrogen TMDL) was incorporated into the Water Quality Control Plan for the Los Angeles Region (Basin Plan) through the RWQCB adoption of Resolution No. R4-2002-017. An update to the Nitrogen TMDL has since been adopted (Resolution No. 2008-009) and went into effect on October 15, 2009. **Table 5** summarizes the comparison of available receiving water data to numeric objectives identified in the Nitrogen TMDL. The data supports the delisting of Ammonia-N and Nitrite-N in many of the river reaches where sufficient data is available.

Table 5. Analysis of Nitrogen TMDL Constituents in Receiving Water by Reach

| Ammonia-N                |          | 303(d) Listed Reaches |                  |           |           |           |                  |           |           |           |           |                  | Un-listed Reaches with TMDL Targets and Available Data |
|--------------------------|----------|-----------------------|------------------|-----------|-----------|-----------|------------------|-----------|-----------|-----------|-----------|------------------|--|
| Reach                    |          | 1                     | 2                | 3         | 4         | 5         | 6                | 9A        | 9B        | 10        | 12        | 13               | 7  |
| Date Range Available     |          | 8/26/2003             | 8/28/2003        | 2/12/2003 | 2/12/2003 | 2/12/2003 | 8/28/2003        | 1/22/2003 | 1/22/2003 | 1/15/2002 | 1/15/2002 | 8/28/2003        | 1/8/2003   |
|                          |          | 11/5/2013             | 11/5/2013        | 4/25/2014 | 11/5/2013 | 11/6/2013 | 11/5/2013        | 11/6/2013 | 11/5/2013 | 11/6/2013 | 11/6/2013 | 11/5/2013        | 6/3/2014   |
| TMDL Targets (mg/L)      |          | 8.1                   | 5.5              | 8.4       | 5.7       | 5.7       | 8.7              | 9.5       | 9.5       | 8.4       | 3.2       | 5.1              | 4.7  |
| Previous 10 Years        | N        | 53                    | 27               | 108       | 49        | 48        | 40               | 252       | 54        | 178       | 171       | 31               | 289  |
|                          | N Detect | 43                    | 25               | 105       | 47        | 41        | 39               | 214       | 49        | 175       | 53        | 24               | 254  |
|                          | N Exceed | 0                     | 0                | 0         | 0         | 0         | 0                | 0         | 0         | 1         | 10        | 0                | 32   |
| Previous 5 Years         | N        | 28                    | 20               | 52        | 28        | 28        | 27               | 114       | 34        | 86        | 78        | 20               | 188  |
|                          | N Detect | 28                    | 20               | 47        | 27        | 26        | 27               | 72        | 32        | 80        | 74        | 19               | 185  |
|                          | N Exceed | 0                     | 0                | 0         | 0         | 0         | 0                | 0         | 0         | 0         | 0         | 0                | 0  |
| Potential for Delisting? |          |                       |                  |           |           |           |                  |           |           |           |           |                  | Achieving Targets per Listing Policy?                  |
|                          |          | Yes                   | Yes <sup>1</sup> | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes       | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes  |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

| Nitrate-N                |          | 303(d) Listed Reaches |           |           |           |           |                 |           |           |           |           |                  | Un-listed Reaches with TMDL Targets and Available Data |
|--------------------------|----------|-----------------------|-----------|-----------|-----------|-----------|-----------------|-----------|-----------|-----------|-----------|------------------|--|
| Reach                    |          | 1                     | 2         | 3         | 4         | 5         | 6               | 9A        | 9B        | 10        | 12        | 13               | 7  |
| Date Range Available     |          | 8/21/2008             | 8/7/2008  | 1/1/2003  | 2/13/2003 | 2/13/2003 | 5/13/2008       | 1/22/2003 | 1/1/2003  | 1/15/2002 | 1/15/2002 | 8/7/2008         | 1/8/2003   |
|                          |          | 11/5/2013             | 11/5/2013 | 4/25/2014 | 11/5/2013 | 11/6/2013 | 11/5/2013       | 11/6/2013 | 11/5/2013 | 11/6/2013 | 11/6/2013 | 11/5/2013        | 6/3/2014   |
| TMDL Targets (mg/L):     |          | 10                    | 10        | 10        | 10        | 10        | 10              | 10        | 10        | 10        | 10        | 10               | 10   |
| Previous 10 Years        | N        | 31                    | 22        | 115       | 38        | 38        | 31              | 242       | 93        | 168       | 171       | 22               | 284  |
|                          | N Detect | 31                    | 22        | 113       | 37        | 38        | 31              | 242       | 93        | 167       | 169       | 22               | 284  |
|                          | N Exceed | 14                    | 20        | 36        | 30        | 31        | 14              | 29        | 48        | 1         | 0         | 0                | 13   |
| Previous 5 Years         | N        | 28                    | 20        | 52        | 28        | 28        | 27              | 114       | 34        | 86        | 78        | 20               | 188  |
|                          | N Detect | 27                    | 19        | 51        | 27        | 27        | 26              | 72        | 31        | 77        | 62        | 20               | 188  |
|                          | N Exceed | 13                    | 18        | 5         | 23        | 26        | 12              | 3         | 0         | 1         | 0         | 0                | 10   |
| Potential for Delisting? |          |                       |           |           |           |           |                 |           |           |           |           |                  | Achieving Targets per Listing Policy?                  |
|                          |          | No                    | No        | No        | No        | No        | No <sup>1</sup> | Yes       | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes  |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

| Nitrite-N            |          | 303(d) Listed Reaches    |           |           |           |           |                  |           |           |           |    |           |           | Un-listed Reaches with TMDL Targets and Available Data |    |
|----------------------|----------|--------------------------|-----------|-----------|-----------|-----------|------------------|-----------|-----------|-----------|----|-----------|-----------|--|----|
|                      |          | 1                        | 2         | 3         | 4         | 5         | 6                | 9A        | 9B        | 10        | 11 | 12        | 13        | 7  | 8  |
| Date Range Available |          | 8/21/2008                | 8/7/2008  | 1/1/2003  | 2/13/2003 | 2/13/2003 | 5/13/2008        | 1/22/2003 | 1/1/2003  | 1/15/2002 | NS | 1/15/2002 | 8/7/2008  | 1/8/2003   | NS |
|                      |          | 11/5/2013                | 11/5/2013 | 11/5/2013 | 11/5/2013 | 11/6/2013 | 11/5/2013        | 11/6/2013 | 11/5/2013 | 11/6/2013 | NS | 11/6/2013 | 11/5/2013 | 6/3/2014   | NS |
| TMDL Targets (mg/L): |          | 1                        | 1         | 1         | 1         | 1         | 1                | 1         | 1         | 1         | 1  | 1         | 1         | 1  | 1  |
| Previous 10 Years    | N        | 32                       | 22        | 96        | 38        | 38        | 31               | 242       | 93        | 168       | NS | 171       | 22        | 284  | NS |
|                      | N Detect | 21                       | 22        | 79        | 37        | 36        | 31               | 217       | 70        | 65        | NS | 50        | 22        | 276  | NS |
|                      | N Exceed | 0                        | 0         | 11        | 1         | 2         | 0                | 4         | 19        | 2         | NS | 2         | 0         | 12   | NS |
| Previous 5 Years     | N        | 29                       | 20        | 32        | 28        | 28        | 27               | 114       | 34        | 86        | NS | 78        | 20        | 188  | NS |
|                      | N Detect | 28                       | 18        | 30        | 28        | 27        | 26               | 55        | 31        | 69        | NS | 69        | 18        | 186  | NS |
|                      | N Exceed | 0                        | 0         | 0         | 0         | 1         | 0                | 0         | 0         | 0         | NS | 0         | 0         | 0  | NS |
|                      |          | Potential for Delisting? |           |           |           |           |                  |           |           |           |    |           |           | Achieving Targets per Listing Policy?                  |    |
|                      |          | Yes                      | NE        | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes       | Yes       | Yes       | -- | Yes       | NE        | Yes  | -- |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Nitrite-N + Nitrate-N |          | 303(d) Listed Reaches    |           |           |           |           |           |           |           |           |    |           |           | Un-listed Reaches with TMDL Targets and Available Data |                 |
|-----------------------|----------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----|-----------|-----------|--|-----------------|
|                       |          | 1                        | 2         | 3         | 4         | 5         | 6         | 9A        | 9B        | 10        | 11 | 12        | 13        | 7  | 8               |
| Date Range Available  |          | 8/12/2008                | 8/7/2008  | 2/13/2003 | 2/13/2003 | 2/13/2003 | 5/13/2008 | 1/22/2003 | 1/1/2003  | 1/15/2002 | NS | 1/15/2002 | 8/7/2008  | 1/8/2003   | 5/7/2008        |
|                       |          | 11/5/2013                | 11/5/2013 | 11/5/2013 | 11/6/2013 | 11/6/2013 | 11/5/2013 | 11/6/2013 | 11/5/2013 | 11/6/2013 | NS | 11/6/2013 | 11/5/2013 | 6/3/2014   | 5/7/2008        |
| TMDL Targets (mg/L)   |          | 10                       | 10        | 10        | 10        | 10        | 10        | 10        | 10        | 10        | 10 | 10        | 10        | 10   | 10              |
| Previous 10 Years     | N        | 31                       | 22        | 116       | 38        | 38        | 31        | 242       | 93        | 168       | NS | 166       | 22        | 284  | 1               |
|                       | N Detect | 31                       | 22        | 115       | 37        | 38        | 31        | 242       | 93        | 167       | NS | 164       | 22        | 284  | 1               |
|                       | N Exceed | 14                       | 21        | 37        | 31        | 31        | 14        | 30        | 48        | 0         | NS | 1         | 0         | 18   | 1               |
| Previous 5 Years      | N        | 28                       | 20        | 52        | 28        | 28        | 27        | 114       | 34        | 86        | NS | 78        | 20        | 188  | NS              |
|                       | N Detect | 28                       | 20        | 52        | 28        | 28        | 27        | 114       | 34        | 85        | NS | 76        | 20        | 188  | NS              |
|                       | N Exceed | 13                       | 19        | 5         | 23        | 26        | 12        | 3         | 0         | 0         | NS | 0         | 0         | 12   | NS              |
|                       |          | Potential for Delisting? |           |           |           |           |           |           |           |           |    |           |           | Achieving Targets per Listing Policy?                  |                 |
|                       |          | No                       | No        | No        | No        | No        | No        | Yes       | Yes       | Yes       | -- | Yes       | NE        | Yes  | ID <sup>1</sup> |

1. Historical monitoring data available; however, no samples in previous 5 years. Insufficient number of samples to inform a listing decision.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist.



### 1.3 OC PESTICIDES AND PCBS TMDL

The RWQCB adopted Resolution No. R4-2005-010 to incorporate the OC Pesticides and PCBs TMDL in Calleguas Creek, its Tributaries, and Mugu Lagoon into the Basin Plan. The TMDL became effective on March 24, 2006. Final numeric targets are specified for water, fish tissue, and/or sediment depending on the constituent. The TMDL also specifies load reductions for sediment and habitat preservation in Mugu Lagoon. **Table 6** summarizes the evaluation of receiving water concentrations in the watershed to TMDL targets. However, when TMDL numeric targets were found to be greater than the Human Health Consumption Criteria for Organisms Only, as outlined in Table (b)(1) § 131.38 of 40 CFR Part 131, the Human Health Criteria were used in the analysis. Overall, constituents covered by the OC Pesticides and PCBs TMDL have not been detected in the previous ten years in water samples. DDT compounds, chlordane, and toxaphene are the exception, with exceedances within the past 5 years.

**Table 6. Analysis of OC Pesticides and PCBs TMDL Constituents in Receiving Water by Reach.**

| <b>4,4'-DDD</b>      |          | <b>Un-listed Reaches with TMDL Targets and Available Data</b> |           |           |           |            |           |           |           |           |           |           |           |                  |
|----------------------|----------|---|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|
| <b>Reach</b>         |          | <b>1</b>  | <b>2</b>  | <b>3</b>  | <b>4</b>  | <b>5</b>   | <b>6</b>  | <b>7</b>  | <b>8</b>  | <b>9A</b> | <b>9B</b> | <b>10</b> | <b>12</b> | <b>13</b>        |
| Date Range Available |          | 6/10/2003   | 6/10/2003 | 2/12/2003 | 2/13/2003 | 2/13/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002  | 8/28/2003        |
|                      |          | 5/13/2014   | 1/7/2005  | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 10/9/2013 | 5/29/2014        |
| WQO (ng/L):          |          | 0.84  | 0.84      | 0.84      | 0.84      | 0.84       | 0.84      | 0.84      | 0.84      | 0.84      | 0.84      | 0.84      | 0.84      | 0.84             |
| Previous 10 Years    | N        | 41  | 18        | 108       | 68        | 20         | 45        | 80        | 10        | 164       | 48        | 167       | 137       | 35               |
|                      | N Detect | 19  | 2         | 22        | 35        | 10         | 9         | 10        | 0         | 10        | 2         | 1         | 0         | 1                |
|                      | N Exceed | 17  | 1         | 22        | 35        | 10         | 9         | 10        | 0         | 10        | 2         | 1         | 0         | 1                |
| Previous 5 Years     | N        | 29  | NS        | 54        | 31        | NS         | 28        | 53        | NS        | 68        | 30        | 80        | 58        | 19               |
|                      | N Detect | 11  | NS        | 7         | 19        | NS         | 8         | 8         | NS        | 2         | 2         | 1         | 0         | 1                |
|                      | N Exceed | 11  | NS        | 7         | 19        | NS         | 8         | 8         | NS        | 2         | 2         | 1         | 0         | 1                |
|                      |          | <b>Achieving Targets per Listing Policy</b>                   |           |           |           |            |           |           |           |           |           |           |           |                  |
|                      |          | No  | ID        | No        | No        | No         | No        | No        | NE        | Yes       | Yes       | Yes       | Yes       | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data  
 ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detect and the potential for listing may exist

| <b>4,4'-DDE</b>      |          | <b>Un-listed Reaches with TMDL Targets and Available Data</b> |           |           |           |            |           |           |           |           |           |           |           |           |
|----------------------|----------|---|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Reach</b>         |          | <b>1</b>  | <b>2</b>  | <b>3</b>  | <b>4</b>  | <b>5</b>   | <b>6</b>  | <b>7</b>  | <b>8</b>  | <b>9A</b> | <b>9B</b> | <b>10</b> | <b>12</b> | <b>13</b> |
| Date Range Available |          | 6/10/2003   | 6/10/2003 | 2/12/2003 | 2/13/2003 | 2/13/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002  | 8/28/2003 |
|                      |          | 5/13/2014   | 1/7/2005  | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 6/3/2014  | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 10/9/2013 | 5/29/2014 |
| WQO (ng/L):          |          | 0.59  | 0.59      | 0.59      | 0.59      | 0.59       | 0.59      | 0.59      | 0.59      | 0.59      | 0.59      | 0.59      | 0.59      | 0.59      |
| Previous 10 Years    | N        | 41  | 18        | 108       | 68        | 20         | 45        | 247       | 10        | 164       | 48        | 167       | 137       | 35        |
|                      | N Detect | 30  | 8         | 65        | 57        | 15         | 9         | 178       | 0         | 24        | 11        | 1         | 0         | 4         |
|                      | N Exceed | 30  | 8         | 65        | 57        | 15         | 9         | 178       | 0         | 24        | 11        | 1         | 0         | 4         |
| Previous 5 Years     | N        | 29  | NS        | 54        | 31        | NS         | 28        | 162       | NS        | 68        | 30        | 80        | 58        | 19        |
|                      | N Detect | 18  | NS        | 31        | 30        | NS         | 8         | 150       | NS        | 6         | 7         | 1         | 0         | 4         |
|                      | N Exceed | 18  | NS        | 31        | 30        | NS         | 8         | 150       | NS        | 6         | 7         | 1         | 0         | 4         |
|                      |          | <b>Achieving Targets per Listing Policy</b>                   |           |           |           |            |           |           |           |           |           |           |           |           |
|                      |          | No  | No        | No        | No        | No         | No        | No        | NE        | Yes       | No        | Yes       | Yes       | No        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data

| 4,4'-DDT                |             | 303(d)<br>Listed<br>Reach     | Un-listed Reaches with TMDL Targets and Available Data |           |           |            |           |           |           |           |           |           |                  |                  |
|-------------------------|-------------|-------------------------------|--|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------------------|
| Reach                   |             | 2 <sup>2</sup>                | 1  | 3         | 4         | 5          | 6         | 7         | 8         | 9A        | 9B        | 10        | 12               | 13               |
| Date Range<br>Available |             | 6/10/2003                     | NS   | 2/12/2003 | 2/13/2003 | 2/13/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002         | 8/28/2003        |
|                         |             | 5/13/2014                     | NS   | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 8/5/2013         | 5/29/2014        |
| WQO (ng/L):             |             | 0.59                          | 0.59   | 0.59      | 0.59      | 0.59       | 0.59      | 0.59      | 0.59      | 0.59      | 0.59      | 0.59      | 0.59             | 0.59             |
| Previous<br>10<br>Years | N           | 59                            | NS   | 108       | 68        | 20         | 45        | 80        | 10        | 92        | 48        | 62        | 33               | 35               |
|                         | N<br>Detect | 19                            | NS   | 24        | 29        | 8          | 10        | 7         | 0         | 10        | 1         | 2         | 0                | 1                |
|                         | N<br>Exceed | 15                            | NS   | 24        | 29        | 8          | 10        | 7         | 0         | 10        | 1         | 2         | 0                | 1                |
| Previous<br>5 Years     | N           | 29                            | NS   | 54        | 31        | NS         | 28        | 53        | NS        | 34        | 30        | 31        | 9                | 19               |
|                         | N<br>Detect | 6                             | NS   | 10        | 13        | NS         | 8         | 6         | NS        | 2         | 1         | 2         | 0                | 1                |
|                         | N<br>Exceed | 6                             | NS   | 10        | 13        | NS         | 8         | 6         | NS        | 2         | 1         | 2         | 0                | 1                |
|                         |             | Potential<br>for<br>Delisting | Achieving Targets per Listing Policy                   |           |           |            |           |           |           |           |           |           |                  |                  |
|                         |             | No                            | --   | No        | No        | No         | No        | No        | NE        | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis
2. Station 01\_RR\_BR is located immediately downstream of the boundary between Reach 1 and Reach 2. The monitoring station was included in analysis of Reach 2 for this constituent due to its 303(d) listing.  
NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| <b>Aldrin</b>                               |          | <b>Un-listed Reaches with TMDL Targets and Available Data</b> |           |            |            |            |            |            |           |            |            |            |                        |                        |
|---|----------|---|-----------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|------------------------|------------------------|
| <b>Reach</b>                                |          | <b>1</b>  | <b>2</b>  | <b>3</b>   | <b>4</b>   | <b>5</b>   | <b>6</b>   | <b>7</b>   | <b>8</b>  | <b>9A</b>  | <b>9B</b>  | <b>10</b>  | <b>12</b>              | <b>13</b>              |
| Date Range Available                        |          | 8/21/2008   | 12/4/2003 | 2/12/2003  | 2/13/2003  | 2/13/2003  | 8/28/2003  | 8/28/2003  | 12/9/2003 | 2/19/2003  | 2/19/2003  | 2/6/2002   | 2/6/2002               | 8/28/2003              |
|   |          | 5/13/2014   | 8/24/2004 | 5/29/2014  | 5/29/2014  | 11/26/2008 | 2/19/2014  | 5/29/2014  | 8/23/2004 | 8/7/2013   | 5/29/2014  | 5/29/2014  | 8/7/2013               | 5/29/2014              |
| WQO (ng/L):                                 |          | 0.14  | 0.14      | 0.14       | 0.14       | 0.14       | 0.14       | 0.14       | 0.14      | 0.14       | 0.14       | 0.14       | 0.14                   | 300                    |
| Previous 10 Years                           | N        | 32  | 11        | 108        | 61         | 20         | 45         | 80         | 10        | 92         | 48         | 84         | 55                     | 35                     |
|   | N Detect | 0   | 0         | 1          | 0          | 0          | 0          | 1          | 0         | 6          | 0          | 0          | 0                      | 0                      |
|   | N Exceed | 0   | 0         | 1          | 0          | 0          | 0          | 1          | 0         | 6          | 0          | 0          | 0                      | 0                      |
| Previous 5 Years                            | N        | 29  | NS        | 54         | 31         | NS         | 28         | 53         | NS        | 34         | 30         | 41         | 19                     | 19                     |
|   | N Detect | 0   | NS        | 0          | 0          | NS         | 0          | 1          | NS        | 3          | 0          | 0          | 0                      | 0                      |
|   | N Exceed | 0   | NS        | 0          | 0          | NS         | 0          | 1          | NS        | 3          | 0          | 0          | 0                      | 0                      |
| <b>Achieving Targets per Listing Policy</b> |          |   |           |            |            |            |            |            |           |            |            |            |                        |                        |
|   |          | <b>Yes</b>  | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>NE</b>  | <b>Yes</b> | <b>Yes</b> | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes<sup>1</sup></b> | <b>Yes<sup>1</sup></b> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| <b>Endosulfan I</b>                         |          | <b>Un-listed Reaches with TMDL Targets and Available Data</b> |           |            |            |            |            |            |           |            |            |            |                        |                        |
|---|----------|---|-----------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|------------------------|------------------------|
| <b>Reach</b>                                |          | <b>1</b>  | <b>2</b>  | <b>3</b>   | <b>4</b>   | <b>5</b>   | <b>6</b>   | <b>7</b>   | <b>8</b>  | <b>9A</b>  | <b>9B</b>  | <b>10</b>  | <b>12</b>              | <b>13</b>              |
| Date Range Available                        |          | 8/21/2008   | 12/4/2003 | 2/12/2003  | 2/13/2003  | 2/13/2003  | 8/28/2003  | 8/28/2003  | 12/9/2003 | 2/19/2003  | 2/19/2003  | 2/6/2002   | 2/6/2002               | 8/28/2003              |
|   |          | 5/13/2014   | 8/24/2004 | 5/29/2014  | 5/29/2014  | 11/26/2008 | 2/19/2014  | 5/29/2014  | 8/23/2004 | 8/7/2013   | 5/29/2014  | 5/29/2014  | 8/5/2013               | 5/29/2014              |
| TMDL Targets (ng/L):                        |          | 8.7   | 56        | 56         | 56         | 56         | 56         | 56         | 56        | 56         | 56         | 56         | 56                     | 56                     |
| Previous 10 Years                           | N        | 32  | 11        | 108        | 61         | 20         | 45         | 80         | 10        | 92         | 48         | 62         | 33                     | 35                     |
|   | N Detect | 0   | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 6          | 0          | 1          | 0                      | 0                      |
|   | N Exceed | 0   | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0          | 1          | 0                      | 0                      |
| Previous 5 Years                            | N        | 29  | NS        | 54         | 31         | NS         | 28         | 53         | NS        | 34         | 30         | 31         | 9                      | 19                     |
|   | N Detect | 0   | NS        | 0          | 0          | NS         | 0          | 0          | NS        | 0          | 0          | 1          | 0                      | 0                      |
|   | N Exceed | 0   | NS        | 0          | 0          | NS         | 0          | 0          | NS        | 0          | 0          | 1          | 0                      | 0                      |
| <b>Achieving Targets per Listing Policy</b> |          |   |           |            |            |            |            |            |           |            |            |            |                        |                        |
|   |          | <b>Yes</b>  | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>NE</b>  | <b>Yes</b> | <b>Yes</b> | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes<sup>1</sup></b> | <b>Yes<sup>1</sup></b> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Endosulfan II                        |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |            |           |           |           |           |           |           |                  |                  |
|--------------------------------------|----------|--|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------------------|
| Reach                                |          | 1  | 2         | 3         | 4         | 5          | 6         | 7         | 8         | 9A        | 9B        | 10        | 12               | 13               |
| Date Range Available                 |          | 8/21/2008  | 12/4/2003 | 2/12/2003 | 2/13/2003 | 2/13/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002         | 8/28/2003        |
|                                      |          | 5/13/2014  | 8/24/2004 | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 8/5/2013         | 5/29/2014        |
| TMDL Targets (ng/L):                 |          | 8.7  | 56        | 56        | 56        | 56         | 56        | 56        | 56        | 56        | 56        | 56        | 56               | 56               |
| Previous 10 Years                    | N        | 32   | 11        | 108       | 61        | 20         | 45        | 80        | 10        | 92        | 48        | 62        | 33               | 35               |
|                                      | N Detect | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                |
|                                      | N Exceed | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                |
| Previous 5 Years                     | N        | 29   | NS        | 54        | 31        | NS         | 28        | 53        | NS        | 34        | 30        | 31        | 9                | 19               |
|                                      | N Detect | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                                      | N Exceed | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
| Achieving Targets per Listing Policy |          |  |           |           |           |            |           |           |           |           |           |           |                  |                  |
|                                      |          | Yes  | NE        | Yes       | Yes       | NE         | Yes       | Yes       | NE        | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Chlordane (Total)                    |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |                 |           |           |           |           |           |                  |           |                  |
|--------------------------------------|----------|--|-----------|-----------|-----------|-----------------|-----------|-----------|-----------|-----------|-----------|------------------|-----------|------------------|
| Reach                                |          | 1  | 2         | 3         | 4         | 5               | 6         | 7         | 8         | 9A        | 9B        | 10               | 12        | 13               |
| Date Range Available                 |          | 8/21/2008  | 12/4/2003 | 2/12/2003 | 2/13/2003 | 2/13/2003       | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002         | 2/6/2002  | 8/28/2003        |
|                                      |          | 5/13/2014  | 8/24/2004 | 5/29/2014 | 5/29/2014 | 11/26/2008      | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014        | 8/23/2004 | 5/29/2014        |
| WQO (ng/L):                          |          | 0.59   | 0.59      | 0.59      | 0.59      | 0.59            | 0.59      | 0.59      | 0.59      | 0.59      | 0.59      | 0.59             | 0.59      | 0.59             |
| Previous 10 Years                    | N        | 32   | 11        | 108       | 58        | 20              | 45        | 50        | 10        | 92        | 48        | 43               | 14        | 35               |
|                                      | N Detect | 9  | 0         | 10        | 11        | 5               | 1         | 3         | 0         | 0         | 3         | 3                | 0         | 1                |
|                                      | N Exceed | 9  | 0         | 10        | 11        | 5               | 1         | 3         | 0         | 0         | 3         | 3                | 0         | 1                |
| Previous 5 Years                     | N        | 29   | NS        | 54        | 31        | NS              | 28        | 30        | NS        | 34        | 30        | 22               | NS        | 19               |
|                                      | N Detect | 8  | NS        | 3         | 6         | NS              | 1         | 3         | NS        | 0         | 3         | 3                | NS        | 1                |
|                                      | N Exceed | 5  | NS        | 3         | 6         | NS              | 1         | 3         | NS        | 0         | 3         | 3                | NS        | 1                |
| Achieving Targets per Listing Policy |          |  |           |           |           |                 |           |           |           |           |           |                  |           |                  |
|                                      |          | No   | NE        | Yes       | No        | No <sup>1</sup> | Yes       | Yes       | NE        | Yes       | Yes       | Yes <sup>1</sup> | NE        | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Dacthal              |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |                  |            |           |                  |           |           |            |           |           |           |
|----------------------|----------|--|-----------|-----------|------------------|------------|-----------|------------------|-----------|-----------|------------|-----------|-----------|-----------|
| Reach                |          | 1  | 2         | 3         | 4                | 5          | 6         | 7                | 8         | 9A        | 9B         | 10        | 12        | 13        |
| Date Range Available |          | 8/21/2008  | 12/4/2003 | 12/3/2003 | 12/3/2003        | 12/4/2003  | 12/5/2003 | 12/5/2003        | 12/9/2003 | 12/4/2003 | 12/19/2003 | 12/4/2003 | 12/9/2003 | 12/5/2003 |
|                      |          | 8/26/2010  | 8/24/2004 | 4/25/2014 | 8/17/2010        | 11/26/2008 | 8/17/2010 | 8/17/2010        | 8/23/2004 | 8/23/2004 | 8/17/2010  | 8/17/2010 | 8/23/2004 | 8/17/2010 |
| TMDL Targets (ng/L): |          | -- <sup>1</sup>  | 3500000   | 3500000   | 3500000          | 3500000    | 3500000   | 3500000          | 3500000   | 3500000   | 3500000    | 3500000   | 3500000   | 3500000   |
| Previous 10 Years    | N        | 12   | 11        | 54        | 31               | 12         | 25        | 28               | 10        | 13        | 25         | 24        | 11        | 21        |
|                      | N Detect | 8  | 10        | 45        | 18               | 9          | 19        | 21               | 0         | 7         | 9          | 3         | 0         | 5         |
|                      | N Exceed | --   | 0         | 0         | 0                | 0          | 0         | 0                | 0         | 0         | 0          | 0         | 0         | 0         |
| Previous 5 Years     | N        | 9  | NS        | 34        | 10               | NS         | 10        | 10               | NS        | NS        | 10         | 8         | NS        | 7         |
|                      | N Detect | 6  | NS        | 34        | 6                | NS         | 8         | 9                | NS        | NS        | 4          | 3         | NS        | 3         |
|                      | N Exceed | --   | NS        | 0         | 0                | NS         | 0         | 0                | NS        | NS        | 0          | 0         | NS        | 0         |
|                      |          | Achieving Targets per Listing Policy                   |           |           |                  |            |           |                  |           |           |            |           |           |           |
|                      |          | --   | NE        | Yes       | Yes <sup>2</sup> | NE         | NE        | Yes <sup>2</sup> | NE        | NE        | NE         | NE        | NE        | NE        |

1. TMDL does not establish salt water numeric targets that would apply to this reach.

2. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Dieldrin             |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |            |           |           |           |           |           |           |                  |                  |
|----------------------|----------|--|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------------------|
| Reach                |          | 1  | 2         | 3         | 4         | 5          | 6         | 7         | 8         | 9A        | 9B        | 10        | 12               | 13               |
| Date Range Available |          | 8/21/2008  | 12/4/2003 | 2/12/2003 | 2/13/2003 | 2/13/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002         | 8/28/2003        |
|                      |          | 5/13/2014  | 8/24/2004 | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 8/7/2013         | 5/29/2014        |
| WQO (ng/L):          |          | 0.14   | 0.14      | 0.14      | 0.14      | 0.14       | 0.14      | 0.14      | 0.14      | 0.14      | 0.14      | 0.14      | 0.14             | 0.14             |
| Previous 10 Years    | N        | 32   | 11        | 108       | 61        | 20         | 45        | 80        | 10        | 92        | 48        | 84        | 55               | 35               |
|                      | N Detect | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 1         | 0         | 0         | 0                | 0                |
|                      | N Exceed | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 1         | 0         | 0         | 0                | 0                |
| Previous 5 Years     | N        | 29   | NS        | 54        | 31        | NS         | 28        | 53        | NS        | 34        | 30        | 41        | 19               | 19               |
|                      | N Detect | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                      | N Exceed | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                      |          | Achieving Targets per Listing Policy                   |           |           |           |            |           |           |           |           |           |           |                  |                  |
|                      |          | Yes  | NE        | Yes       | Yes       | NE         | Yes       | Yes       | NE        | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.



| <b>Endrin</b>        |          | <b>Un-listed Reaches with TMDL Targets and Available Data</b> |           |            |            |            |            |            |           |            |            |            |                        |                        |
|----------------------|----------|---|-----------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|------------------------|------------------------|
| <b>Reach</b>         |          | <b>1</b>  | <b>2</b>  | <b>3</b>   | <b>4</b>   | <b>5</b>   | <b>6</b>   | <b>7</b>   | <b>8</b>  | <b>9A</b>  | <b>9B</b>  | <b>10</b>  | <b>12</b>              | <b>13</b>              |
| Date Range Available |          | 8/21/2008   | 12/4/2003 | 2/12/2003  | 2/13/2003  | 2/13/2003  | 8/28/2003  | 8/5/2003   | 12/9/2003 | 2/19/2003  | 2/19/2003  | 2/6/2002   | 2/6/2002               | 8/28/2003              |
|                      |          | 5/13/2014   | 8/24/2004 | 5/29/2014  | 5/29/2014  | 11/26/2008 | 2/19/2014  | 5/29/2014  | 8/23/2004 | 8/7/2013   | 5/29/2014  | 5/29/2014  | 8/7/2013               | 5/29/2014              |
| TMDL Targets (ng/L): |          | 2.3   | 36        | 36         | 36         | 36         | 36         | 36         | 36        | 36         | 36         | 36         | 36                     | 36s                    |
| Previous 10 Years    | N        | 32  | 11        | 108        | 61         | 20         | 45         | 116        | 10        | 92         | 48         | 84         | 55                     | 35                     |
|                      | N Detect | 0   | 0         | 0          | 0          | 0          | 0          | 52         | 0         | 4          | 0          | 0          | 0                      | 0                      |
|                      | N Exceed | 0   | 0         | 0          | 0          | 0          | 0          | 1          | 0         | 0          | 0          | 0          | 0                      | 0                      |
| Previous 5 Years     | N        | 29  | NS        | 54         | 31         | NS         | 28         | 74         | NS        | 34         | 30         | 41         | 19                     | 19                     |
|                      | N Detect | 0   | NS        | 0          | 0          | NS         | 0          | 44         | NS        | 1          | 0          | 0          | 0                      | 0                      |
|                      | N Exceed | 0   | NS        | 0          | 0          | NS         | 0          | 1          | NS        | 0          | 0          | 0          | 0                      | 0                      |
|                      |          | <b>Achieving Targets per Listing Policy</b>                   |           |            |            |            |            |            |           |            |            |            |                        |                        |
|                      |          | <b>Yes</b>  | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>NE</b>  | <b>Yes</b> | <b>Yes</b> | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes<sup>1</sup></b> | <b>Yes<sup>1</sup></b> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| <b>gamma-BHC (Lindane)</b> |          | <b>Un-listed Reaches with TMDL Targets and Available Data</b> |           |            |            |            |            |            |           |            |            |            |                        |                        |
|----------------------------|----------|---|-----------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|------------------------|------------------------|
| <b>Reach</b>               |          | <b>1</b>  | <b>2</b>  | <b>3</b>   | <b>4</b>   | <b>5</b>   | <b>6</b>   | <b>7</b>   | <b>8</b>  | <b>9A</b>  | <b>9B</b>  | <b>10</b>  | <b>12</b>              | <b>13</b>              |
| Date Range Available       |          | 8/21/2008   | 12/4/2003 | 2/12/2003  | 2/13/2003  | 2/13/2003  | 8/28/2003  | 8/5/2003   | 12/9/2003 | 2/19/2003  | 2/19/2003  | 2/6/2002   | 2/6/2002               | 8/28/2003              |
|                            |          | 5/13/2014   | 8/24/2004 | 5/29/2014  | 5/29/2014  | 11/26/2008 | 2/19/2014  | 6/3/2014   | 8/23/2004 | 8/7/2013   | 5/29/2014  | 5/29/2014  | 8/7/2013               | 5/29/2014              |
| WQO (ng/L):                |          | 63  | 63        | 63         | 63         | 63         | 63         | 63         | 63        | 63         | 63         | 63         | 63                     | 63                     |
| Previous 10 Years          | N        | 32  | 11        | 108        | 61         | 20         | 45         | 247        | 10        | 92         | 48         | 84         | 55                     | 35                     |
|                            | N Detect | 0   | 0         | 1          | 0          | 1          | 0          | 156        | 0         | 4          | 0          | 2          | 1                      | 0                      |
|                            | N Exceed | 0   | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0          | 1          | 1                      | 0                      |
| Previous 5 Years           | N        | 29  | NS        | 54         | 31         | NS         | 28         | 162        | NS        | 34         | 30         | 41         | 19                     | 19                     |
|                            | N Detect | 0   | NS        | 0          | 0          | NS         | 0          | 132        | NS        | 1          | 0          | 1          | 0                      | 0                      |
|                            | N Exceed | 0   | NS        | 0          | 0          | NS         | 0          | 0          | NS        | 0          | 0          | 0          | 0                      | 0                      |
|                            |          | <b>Achieving Targets per Listing Policy</b>                   |           |            |            |            |            |            |           |            |            |            |                        |                        |
|                            |          | <b>Yes</b>  | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>NE</b>  | <b>Yes</b> | <b>Yes</b> | <b>NE</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes</b> | <b>Yes<sup>1</sup></b> | <b>Yes<sup>1</sup></b> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Heptachlor           |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |            |           |           |           |           |           |           |                  |                  |
|----------------------|----------|--|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------------------|
| Reach                |          | 1  | 2         | 3         | 4         | 5          | 6         | 7         | 8         | 9A        | 9B        | 10        | 12               | 13               |
| Date Range Available |          | 8/21/2008  | 12/4/2003 | 2/12/2003 | 2/13/2003 | 2/13/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002         | 8/28/2003        |
|                      |          | 5/13/2014  | 8/24/2004 | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 8/7/2013         | 5/29/2014        |
| WQO (ng/L):          |          | 0.21   | 0.21      | 0.21      | 0.21      | 0.21       | 0.21      | 0.21      | 0.21      | 0.21      | 0.21      | 0.21      | 0.21             | 0.21             |
| Previous 10 Years    | N        | 32   | 11        | 108       | 61        | 20         | 45        | 80        | 10        | 92        | 48        | 84        | 55               | 35               |
|                      | N Detect | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 1         | 0         | 0         | 0                | 0                |
|                      | N Exceed | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                |
| Previous 5 Years     | N        | 29   | NS        | 54        | 31        | NS         | 28        | 53        | NS        | 34        | 30        | 41        | 19               | 19               |
|                      | N Detect | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                      | N Exceed | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                      |          | Achieving Targets per Listing Policy                   |           |           |           |            |           |           |           |           |           |           |                  |                  |
|                      |          | Yes  | NE        | Yes       | Yes       | NE         | Yes       | Yes       | NE        | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Heptachlor Epoxide   |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |            |           |           |           |           |           |           |                  |                  |
|----------------------|----------|--|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------------------|
| Reach                |          | 1  | 2         | 3         | 4         | 5          | 6         | 7         | 8         | 9A        | 9B        | 10        | 12               | 13               |
| Date Range Available |          | 8/21/2008  | 12/4/2003 | 2/12/2003 | 2/13/2003 | 2/13/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002         | 8/28/2003        |
|                      |          | 5/13/2014  | 8/24/2004 | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 8/7/2013         | 5/29/2014        |
| WQO (ng/L):          |          | 0.11   | 0.11      | 0.11      | 0.11      | 0.11       | 0.11      | 0.11      | 0.11      | 0.11      | 0.11      | 0.11      | 0.11             | 0.11             |
| Previous 10 Years    | N        | 32   | 11        | 108       | 61        | 20         | 45        | 80        | 10        | 92        | 48        | 84        | 55               | 35               |
|                      | N Detect | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 2         | 0         | 0         | 0                | 0                |
|                      | N Exceed | 0  | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 1         | 0         | 0         | 0                | 0                |
| Previous 5 Years     | N        | 29   | NS        | 54        | 31        | NS         | 28        | 53        | NS        | 34        | 30        | 41        | 19               | 19               |
|                      | N Detect | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                      | N Exceed | 0  | NS        | 0         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                      |          | Achieving Targets per Listing Policy                   |           |           |           |            |           |           |           |           |           |           |                  |                  |
|                      |          | Yes  | NE        | Yes       | Yes       | NE         | Yes       | Yes       | NE        | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Total PCBs                           |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |            |           |           |           |           |           |           |                  |                  |
|--------------------------------------|----------|--|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------------------|
| Reach                                |          | 1  | 2         | 3         | 4         | 5          | 6         | 7         | 8         | 9A        | 9B        | 10        | 12               | 13               |
| Date Range Available                 |          | 8/21/2008  | 12/4/2003 | 8/28/2003 | 8/28/2003 | 8/28/2003  | 8/28/2003 | 8/28/2003 | 12/9/2003 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002         | 8/28/2003        |
|                                      |          | 5/13/2014  | 8/24/2004 | 5/29/2014 | 5/29/2014 | 11/26/2008 | 2/19/2014 | 5/29/2014 | 8/23/2004 | 8/7/2013  | 5/29/2014 | 5/29/2014 | 8/5/2013         | 5/29/2014        |
| WQO (ng/L):                          |          | 0.17   | 0.17      | 0.17      | 0.17      | 0.17       | 0.17      | 0.17      | 0.17      | 0.17      | 0.17      | 0.17      | 0.17             | 0.17             |
| Previous 10 Years                    | N        | 32   | 11        | 104       | 58        | 19         | 45        | 80        | 10        | 96        | 49        | 62        | 33               | 35               |
|                                      | N Detect | 5  | 0         | 2         | 0         | 1          | 0         | 0         | 0         | 1         | 0         | 1         | 0                | 0                |
|                                      | N Exceed | 5  | 0         | 2         | 0         | 1          | 0         | 0         | 0         | 0         | 0         | 0         | 0                | 0                |
| Previous 5 Years                     | N        | 29   | NS        | 54        | 32        | NS         | 28        | 53        | NS        | 37        | 31        | 31        | 9                | 19               |
|                                      | N Detect | 5  | NS        | 1         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
|                                      | N Exceed | 5  | NS        | 1         | 0         | NS         | 0         | 0         | NS        | 0         | 0         | 0         | 0                | 0                |
| Achieving Targets per Listing Policy |          |  |           |           |           |            |           |           |           |           |           |           |                  |                  |
|                                      |          | No   | NE        | Yes       | Yes       | ID         | Yes       | Yes       | NE        | Yes       | Yes       | Yes       | Yes <sup>1</sup> | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.  
 ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detect and the potential for listing may exist

| Toxaphene                            |          | Un-listed Reaches with TMDL Targets and Available Data |                 |           |           |                 |           |           |                 |           |           |           |                  |                  |
|--------------------------------------|----------|--|-----------------|-----------|-----------|-----------------|-----------|-----------|-----------------|-----------|-----------|-----------|------------------|------------------|
| Reach                                |          | 1  | 2               | 3         | 4         | 5               | 6         | 7         | 8               | 9A        | 9B        | 10        | 12               | 13               |
| Date Range Available                 |          | 8/21/2008  | 12/4/2003       | 2/12/2003 | 2/13/2003 | 2/13/2003       | 8/28/2003 | 8/5/2003  | 12/9/2003       | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002         | 8/28/2003        |
|                                      |          | 5/13/2014  | 8/24/2004       | 5/29/2014 | 5/29/2014 | 11/26/2008      | 2/19/2014 | 5/29/2014 | 8/23/2004       | 8/7/2013  | 5/29/2014 | 5/29/2014 | 8/7/2013         | 5/29/2014        |
| WQO (ng/L):                          |          | 0.75   | 0.75            | 0.75      | 0.75      | 0.75            | 0.75      | 0.75      | 0.75            | 0.75      | 0.75      | 0.75      | 0.75             | 0.75             |
| Previous 10 Years                    | N        | 31   | 11              | 108       | 61        | 20              | 45        | 116       | 10              | 92        | 48        | 84        | 55               | 35               |
|                                      | N Detect | 15   | 0               | 16        | 23        | 1               | 10        | 59        | 0               | 0         | 4         | 1         | 0                | 1                |
|                                      | N Exceed | 15   | 0               | 16        | 23        | 1               | 10        | 59        | 0               | 0         | 4         | 1         | 0                | 1                |
| Previous 5 Years                     | N        | 28   | NS              | 54        | 31        | NS              | 28        | 74        | NS              | 34        | 30        | 41        | 19               | 19               |
|                                      | N Detect | 13   | NS              | 11        | 19        | NS              | 9         | 51        | NS              | 0         | 3         | 1         | 0                | 1                |
|                                      | N Exceed | 13   | NS              | 11        | 19        | NS              | 9         | 51        | NS              | 0         | 3         | 1         | 0                | 1                |
| Achieving Targets per Listing Policy |          |  |                 |           |           |                 |           |           |                 |           |           |           |                  |                  |
|                                      |          | No   | NE <sup>1</sup> | No        | No        | ID <sup>1</sup> | No        | No        | NE <sup>1</sup> | Yes       | No        | Yes       | Yes <sup>1</sup> | Yes <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.  
 ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detect and the potential for listing may exist

**Table 7. Analysis of OC Pesticides and PCBs TMDL Constituents in Sediment by Reach**

| 4,4'-DDD                  |           | 303(d) listed Reaches   |           |      |           |           | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |
|---------------------------|-----------|-------------------------|-----------|------|-----------|-----------|--|-----------|-----------|-----------|-----------|
| Reach                     |           | 1                       | 2         | 4    | 5         | 6         | 3  | 7         | 9A        | 9B        | 10        |
| Date Range Available      | 8/19/2008 | 8/27/2003               | 8/25/2003 | NS   | 8/28/2003 | 8/25/2003 | 8/28/2003  | 8/27/2003 | 8/5/2008  | 8/27/2003 |           |
|                           | 8/18/2011 | 8/22/2013               | 8/21/2013 | NS   | 8/21/2013 | 8/21/2013 | 8/21/2013  | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg): |           | 2000                    | 3500      | 3500 | 3500      | 3500      | 3500   | 3500      | 3500      | 3500      | 3500      |
| Previous 10 Years         | N         | 10                      | 7         | 7    | NS        | 7         | 7  | 7         | 7         | 6         | 1         |
|                           | N Detect  | 5                       | 2         | 5    | NS        | 1         | 0  | 1         | 0         | 0         | 0         |
|                           | N Exceed  | 4                       | 1         | 4    | NS        | 0         | 0  | 0         | 0         | 0         | 0         |
| Previous 5 Years          | N         | 5                       | 5         | 5    | NS        | 5         | 5  | 5         | 5         | 5         | NS        |
|                           | N Detect  | 0                       | 1         | 4    | NS        | 1         | 0  | 0         | 0         | 0         | NS        |
|                           | N Exceed  | 0                       | 0         | 3    | NS        | 0         | 0  | 0         | 0         | 0         | NS        |
|                           |           | Potential for Delisting |           |      |           |           | Achieving Targets per Listing Policy                   |           |           |           |           |
|                           |           | No                      | ID        | No   | --        | NE        | NE   | NE        | NE        | NE        | NE        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist

| 4,4'-DDE                  |           | 303(d) listed Reaches   |           |      |           |           | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |
|---------------------------|-----------|-------------------------|-----------|------|-----------|-----------|--|-----------|-----------|-----------|-----------|
| Reach                     |           | 1                       | 2         | 4    | 5         | 6         | 3  | 7         | 9A        | 9B        | 10        |
| Date Range Available      | 8/19/2008 | 8/27/2003               | 8/25/2003 | NS   | 8/28/2003 | 8/25/2003 | 8/28/2003  | 8/27/2003 | 8/5/2008  | 8/27/2003 |           |
|                           | 8/18/2011 | 8/22/2013               | 8/21/2013 | NS   | 8/21/2013 | 8/21/2013 | 8/21/2013  | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg): |           | 2200                    | 1400      | 1400 | 1400      | 1400      | 1400   | 1400      | 1400      | 1400      | 1400      |
| Previous 10 Years         | N         | 10                      | 7         | 7    | NS        | 7         | 7  | 7         | 7         | 6         | 1         |
|                           | N Detect  | 10                      | 6         | 7    | NS        | 4         | 5  | 3         | 7         | 6         | 0         |
|                           | N Exceed  | 9                       | 6         | 7    | NS        | 4         | 4  | 3         | 7         | 6         | 0         |
| Previous 5 Years          | N         | 5                       | 5         | 5    | NS        | 5         | 5  | 5         | 5         | 5         | NS        |
|                           | N Detect  | 5                       | 5         | 5    | NS        | 4         | 4  | 2         | 5         | 5         | NS        |
|                           | N Exceed  | 4                       | 5         | 5    | NS        | 4         | 4  | 2         | 5         | 5         | NS        |
|                           |           | Potential for Delisting |           |      |           |           | Achieving Targets per Listing Policy                   |           |           |           |           |
|                           |           | No                      | No        | No   | --        | No        | No   | No        | No        | No        | NE        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data

| 4,4'-DDT                  |          | 303(d) listed Reaches   |                 |                 |                 |                 | Un-listed Reaches with TMDL Targets and Available Data |                 |                 |                 |                 |
|---------------------------|----------|-------------------------|-----------------|-----------------|-----------------|-----------------|--|-----------------|-----------------|-----------------|-----------------|
| Reach                     |          | 1                       | 2               | 4               | 5               | 6               | 3  | 7               | 9A              | 9B              | 10              |
| Date Range Available      |          | 8/19/2008               | 8/27/2003       | 8/25/2003       | NS              | 8/28/2003       | 8/25/2003  | 8/28/2003       | 8/27/2003       | 8/5/2008        | 8/27/2003       |
|                           |          | 8/18/2011               | 8/22/2013       | 8/21/2013       | NS              | 8/21/2013       | 8/21/2013  | 8/21/2013       | 8/21/2013       | 8/21/2013       | 8/27/2003       |
| TMDL Targets (ng/dry kg): |          | 1000                    | -- <sup>1</sup> | -- <sup>1</sup> | -- <sup>1</sup> | -- <sup>1</sup> | -- <sup>1</sup>  | -- <sup>1</sup> | -- <sup>1</sup> | -- <sup>1</sup> | -- <sup>1</sup> |
| Previous 10 Years         | N        | 10                      | 7               | 7               | NS              | 7               | 7  | 7               | 7               | 6               | 1               |
|                           | N Detect | 4                       | 0               | 2               | NS              | 0               | 0  | 1               | 0               | 0               | 0               |
|                           | N Exceed | 4                       | --              | --              | --              | --              | --   | --              | --              | --              | --              |
| Previous 5 Years          | N        | 5                       | 5               | 5               | NS              | 5               | 5  | 5               | 5               | 5               | NS              |
|                           | N Detect | 0                       | 0               | 1               | NS              | 0               | 0  | 0               | 0               | 0               | NS              |
|                           | N Exceed | 0                       | --              | --              | --              | --              | --   | --              | --              | --              | --              |
|                           |          | Potential for Delisting |                 |                 |                 |                 | Achieving Targets per Listing Policy                   |                 |                 |                 |                 |
|                           |          | No                      | --              | --              | --              | --              | --   | --              | --              | --              | --              |

1. The TMDL does not establish numeric targets for freshwater reaches.

| BHC-gamma                 |          | 303(d) listed Reaches   |     | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |           |           |           |
|---------------------------|----------|-------------------------|-----|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reach                     |          | 4                       | 5   | 1  | 2         | 3         | 6         | 7         | 9A        | 9B        | 10        |
| Date Range Available      |          | 8/25/2003               | NS  | 8/19/2008  | 8/27/2003 | 8/25/2003 | 8/28/2003 | 8/28/2003 | 8/27/2003 | 8/5/2008  | 8/27/2003 |
|                           |          | 8/21/2013               | NS  | 8/18/2011  | 8/22/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg): |          | 940                     | 940 | -- <sup>1</sup>  | 940       | 940       | 940       | 940       | 940       | 940       | 940       |
| Previous 10 Years         | N        | 7                       | NS  | 10   | 7         | 7         | 7         | 7         | 7         | 6         | 1         |
|                           | N Detect | 0                       | NS  | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
|                           | N Exceed | 0                       | NS  | --   | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Previous 5 Years          | N        | 5                       | NS  | 5  | 5         | 5         | 5         | 5         | 5         | 5         | NS        |
|                           | N Detect | 0                       | NS  | 0  | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                           | N Exceed | 0                       | NS  | --   | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                           |          | Potential for Delisting |     | Achieving Targets per Listing Policy                   |           |           |           |           |           |           |           |
|                           |          | NE                      | --  |  | NE        | NE        | NE        | NE        | NE        | NE        | NE        |

1. The TMDL does not establish numeric targets for saltwater reaches.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data

| Chlordane (Total)         |          | 303(d) listed Reaches   |      | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |           |           |           |
|---------------------------|----------|-------------------------|------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reach                     |          | 4                       | 5    | 1  | 2         | 3         | 6         | 7         | 9A        | 9B        | 10        |
| Date Range Available      |          | 8/25/2003               | NS   | 8/19/2008  | 8/27/2003 | 8/25/2003 | 8/28/2003 | 8/27/2003 | 8/27/2003 | 8/5/2008  | 8/27/2003 |
|                           |          | 8/21/2013               | NS   | 8/18/2011  | 8/22/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg): |          | 4500                    | 4500 | 500  | 4500      | 4500      | 4500      | 4500      | 4500      | 4500      | 4500      |
| Previous 10 Years         | N        | 7                       | NS   | 10   | 7         | 7         | 7         | 7         | 7         | 6         | 1         |
|                           | N Detect | 2                       | NS   | 3  | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
|                           | N Exceed | 0                       | NS   | 3  | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Previous 5 Years          | N        | 5                       | NS   | 5  | 5         | 5         | 5         | 5         | 5         | 5         | NS        |
|                           | N Detect | 2                       | NS   | 0  | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                           | N Exceed | 0                       | NS   | 0  | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                           |          | Potential for Delisting |      | Achieving Targets per Listing Policy                   |           |           |           |           |           |           |           |
|                           |          | NE                      | --   | No   | NE        | NE        | NE        | NE        | NE        | NE        | NE        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Dieldrin                  |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |           |           |           |           |
|---------------------------|----------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reach                     |          | 1  | 2         | 3         | 4         | 6         | 7         | 9A        | 9B        | 10        |
| Date Range Available      |          | 8/19/2008  | 8/27/2003 | 8/25/2003 | 8/25/2003 | 8/28/2003 | 8/28/2003 | 8/27/2003 | 8/5/2008  | 8/27/2003 |
|                           |          | 8/18/2011  | 8/22/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg): |          | 20   | 2900      | 2900      | 2900      | 2900      | 2900      | 2900      | 2900      | 2900      |
| Previous 10 Years         | N        | 10   | 7         | 7         | 7         | 7         | 7         | 7         | 6         | 1         |
|                           | N Detect | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
|                           | N Exceed | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Previous 5 Years          | N        | 5  | 5         | 5         | 5         | 5         | 5         | 5         | 5         | NS        |
|                           | N Detect | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                           | N Exceed | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                           |          | Achieving Targets per Listing Policy                   |           |           |           |           |           |           |           |           |
|                           |          | NE   | NE        | NE        | NE        | NE        | NE        | NE        | NE        | NE        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Endrin                               |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |           |           |           |           |
|--------------------------------------|----------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reach                                |          | 1  | 2         | 3         | 4         | 6         | 7         | 9A        | 9B        | 10        |
| Date Range Available                 |          | 8/19/2008  | 8/27/2003 | 8/25/2003 | 8/25/2003 | 8/28/2003 | 8/28/2003 | 8/27/2003 | 8/5/2008  | 8/27/2003 |
|                                      |          | 8/18/2011  | 8/22/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg):            |          | -- <sup>1</sup>  | 2700      | 2700      | 2700      | 2700      | 2700      | 2700      | 2700      | 2700      |
| Previous 10 Years                    | N        | 10   | 7         | 7         | 7         | 7         | 7         | 7         | 6         | 1         |
|                                      | N Detect | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
|                                      | N Exceed | --   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Previous 5 Years                     | N        | 5  | 5         | 5         | 5         | 5         | 5         | 5         | 5         | NS        |
|                                      | N Detect | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                                      | N Exceed | --   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
| Achieving Targets per Listing Policy |          |  |           |           |           |           |           |           |           |           |
|                                      |          | --   | NE        | NE        | NE        | NE        | NE        | NE        | NE        | NE        |

1. The TMDL does not establish numeric targets for saltwater reaches.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Heptachlor Epoxide                   |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |           |           |           |           |
|--------------------------------------|----------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reach                                |          | 1  | 2         | 3         | 4         | 6         | 7         | 9A        | 9B        | 10        |
| Date Range Available                 |          | 8/19/2008  | 8/27/2003 | 8/25/2003 | 8/25/2003 | 8/28/2003 | 8/28/2003 | 8/27/2003 | 8/5/2008  | 8/27/2003 |
|                                      |          | 8/18/2011  | 8/22/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg):            |          | -- <sup>1</sup>  | 600       | 600       | 600       | 600       | 600       | 600       | 600       | 600       |
| Previous 10 Years                    | N        | 10   | 7         | 7         | 7         | 7         | 7         | 7         | 6         | 1         |
|                                      | N Detect | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
|                                      | N Exceed | --   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Previous 5 Years                     | N        | 5  | 5         | 5         | 5         | 5         | 5         | 5         | 5         | NS        |
|                                      | N Detect | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                                      | N Exceed | --   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
| Achieving Targets per Listing Policy |          |  |           |           |           |           |           |           |           |           |
|                                      |          | --   | NE        | NE        | NE        | NE        | NE        | NE        | NE        | NE        |

1. The TMDL does not establish numeric targets for saltwater reaches.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.



| PCBs (Total)              |          | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |           |           |           |           |
|---------------------------|----------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reach                     |          | 1  | 2         | 3         | 4         | 6         | 7         | 9A        | 9B        | 10        |
| Date Range Available      |          | 8/19/2008  | 8/27/2003 | 8/25/2003 | 8/25/2003 | 8/28/2003 | 8/28/2003 | 8/27/2003 | 8/5/2008  | 8/27/2003 |
|                           |          | 8/18/2011  | 8/22/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/21/2013 | 8/27/2003 |
| TMDL Targets (ng/dry kg): |          | 23000  | 34000     | 34000     | 34000     | 34000     | 34000     | 34000     | 34000     | 34000     |
| Previous 10 Years         | N        | 10   | 7         | 7         | 7         | 7         | 7         | 7         | 6         | 1         |
|                           | N Detect | 3  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
|                           | N Exceed | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Previous 5 Years          | N        | 5  | 5         | 5         | 5         | 5         | 5         | 5         | 5         | NS        |
|                           | N Detect | 0  | 1         | 0         | 1         | 0         | 0         | 0         | 0         | NS        |
|                           | N Exceed | 0  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | NS        |
|                           |          | Achieving Targets per Listing Policy                   |           |           |           |           |           |           |           |           |
|                           |          | NE   | NE        | NE        | NE        | NE        | NE        | NE        | NE        | NE        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

Table 8. Analysis of OC Pesticides and PCBs TMDL Constituents in Fish Tissue by Reach.

| 4,4'-DDD                |          | 303(d) listed Reaches |           |            |       |            |            |            |       |            |            | Un-listed Reaches with TMDL Targets and Available Data |            |            |
|-------------------------|----------|-----------------------|-----------|------------|-------|------------|------------|------------|-------|------------|------------|--|------------|------------|
| Reach                   |          | 1                     | 2         | 4          | 5     | 9A         | 9B         | 10         | 11    | 12         | 13         | 3  | 6          | 7          |
| Date Range Available    |          | 8/19/2008             | 5/6/2004  | 12/18/2003 | NS    | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS    | 12/17/2003 | 12/17/2003 | 12/19/2003   | 12/16/2003 | 12/16/2003 |
|                         |          | 8/27/2008             | 8/24/2004 | 8/27/2013  | NS    | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS    | 8/25/2004  | 8/25/2004  | 8/27/2013  | 9/3/2009   | 8/28/2013  |
| TMDL Targets (ng/kg):   |          | 45000                 | 45000     | 45000      | 45000 | 45000      | 45000      | 45000      | 45000 | 45000      | 45000      | 45000  | 45000      | 45000      |
| Previous 10 Years       | N        | 9                     | 2         | 23         | NS    | 5          | 22         | 6          | NS    | 3          | 6          | 28   | 9          | 16         |
|                         | N Detect | 7                     | 2         | 20         | NS    | 4          | 17         | 0          | NS    | 1          | 0          | 23   | 8          | 10         |
|                         | N Exceed | 1                     | 1         | 15         | NS    | 0          | 4          | 0          | NS    | 0          | 0          | 9  | 6          | 5          |
| Previous 5 Years        | N        | NS                    | NS        | 13         | NS    | NS         | 13         | NS         | NS    | NS         | NS         | 17   | 6          | 8          |
|                         | N Detect | NS                    | NS        | 10         | NS    | NS         | 11         | NS         | NS    | NS         | NS         | 14   | 6          | 7          |
|                         | N Exceed | NS                    | NS        | 10         | NS    | NS         | 4          | NS         | NS    | NS         | NS         | 8  | 6          | 5          |
| Potential for Delisting |          |                       |           |            |       |            |            |            |       |            |            | Achieving Targets per Listing Policy                   |            |            |
|                         |          | ID                    | ID        | No         | --    | NE         | No         | NE         | --    | NE         | NE         | No   | No         | No         |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist

| 4,4'-DDE                |          | 303(d) listed Reaches |           |            |       |            |            |            |       |            |            | Un-listed Reaches with TMDL Targets and Available Data |            |            |
|-------------------------|----------|-----------------------|-----------|------------|-------|------------|------------|------------|-------|------------|------------|--|------------|------------|
| Reach                   |          | 1                     | 2         | 4          | 5     | 9A         | 9B         | 10         | 11    | 12         | 13         | 3  | 6          | 7          |
| Date Range Available    |          | 8/19/2008             | 5/6/2004  | 12/18/2003 | NS    | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS    | 12/17/2003 | 12/17/2003 | 12/19/2003   | 12/16/2003 | 12/16/2003 |
|                         |          | 8/21/2008             | 8/24/2004 | 8/27/2013  | NS    | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS    | 8/25/2004  | 8/25/2004  | 8/27/2013  | 9/3/2009   | 8/28/2013  |
| TMDL Targets (ng/kg):   |          | 32000                 | 32000     | 32000      | 32000 | 32000      | 32000      | 32000      | 32000 | 32000      | 32000      | 32000  | 32000      | 32000      |
| Previous 10 Years       | N        | 9                     | 2         | 23         | NS    | 5          | 22         | 6          | NS    | 3          | 6          | 28   | 9          | 16         |
|                         | N Detect | 9                     | 2         | 23         | NS    | 5          | 22         | 4          | NS    | 3          | 3          | 28   | 9          | 15         |
|                         | N Exceed | 9                     | 2         | 23         | NS    | 5          | 20         | 0          | NS    | 3          | 0          | 28   | 9          | 11         |
| Previous 5 Years        | N        | NS                    | NS        | 13         | NS    | NS         | 13         | NS         | NS    | NS         | NS         | 17   | 6          | 8          |
|                         | N Detect | NS                    | NS        | 13         | NS    | NS         | 13         | NS         | NS    | NS         | NS         | 17   | 6          | 7          |
|                         | N Exceed | NS                    | NS        | 13         | NS    | NS         | 13         | NS         | NS    | NS         | NS         | 17   | 6          | 7          |
| Potential for Delisting |          |                       |           |            |       |            |            |            |       |            |            | Achieving Targets per Listing Policy                   |            |            |
|                         |          | No                    | No        | No         | --    | No         | No         | NE         | --    | No         | NE         | No   | No         | No         |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| 4,4'-DDT              |          | 303(d) listed Reaches   |           |            |       |            |            |            |       |            |            | Un-listed Reaches with TMDL Targets and Available Data |            |                 |
|-----------------------|----------|-------------------------|-----------|------------|-------|------------|------------|------------|-------|------------|------------|--|------------|-----------------|
| Reach                 |          | 1                       | 2         | 4          | 5     | 9A         | 9B         | 10         | 11    | 12         | 13         | 3  | 6          | 7               |
| Date Range Available  |          | 8/19/2008               | 5/6/2004  | 12/18/2003 | NS    | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS    | 12/17/2003 | 12/17/2003 | 12/19/2003   | 12/16/2003 | 12/16/2003      |
|                       |          | 8/21/2008               | 8/24/2004 | 8/27/2013  | NS    | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS    | 8/25/2004  | 8/25/2004  | 8/27/2013  | 9/3/2009   | 8/28/2013       |
| TMDL Targets (ng/kg): |          | 32000                   | 32000     | 32000      | 32000 | 32000      | 32000      | 32000      | 32000 | 32000      | 32000      | 32000  | 32000      | 32000           |
| Previous 10 Years     | N        | 9                       | 2         | 23         | NS    | 5          | 22         | 6          | NS    | 3          | 6          | 28   | 9          | 16              |
|                       | N Detect | 4                       | 0         | 19         | NS    | 2          | 9          | 0          | NS    | 0          | 0          | 17   | 0          | 3               |
|                       | N Exceed | 2                       | 0         | 10         | NS    | 0          | 4          | 0          | NS    | 0          | 0          | 11   | 0          | 1               |
| Previous 5 Years      | N        | NS                      | NS        | 13         | NS    | NS         | 13         | NS         | NS    | NS         | NS         | 17   | 6          | 8               |
|                       | N Detect | NS                      | NS        | 11         | NS    | NS         | 8          | NS         | NS    | NS         | NS         | 14   | 0          | 3               |
|                       | N Exceed | NS                      | NS        | 9          | NS    | NS         | 3          | NS         | NS    | NS         | NS         | 9  | 0          | 1               |
|                       |          | Potential for Delisting |           |            |       |            |            |            |       |            |            | Achieving Targets per Listing Policy                   |            |                 |
|                       |          | No                      | NE        | No         | --    | NE         | No         | NE         | --    | NE         | NE         | No   | NE         | No <sup>1</sup> |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.  
 ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detect and the potential for listing may exist

| Aldrin               |          | 303(d) listed Reaches   |            |    |            |            |            |    |            | Un-listed Reaches with TMDL Targets and Available Data |                  |            |            |            |
|----------------------|----------|-------------------------|------------|----|------------|------------|------------|----|------------|--|------------------|------------|------------|------------|
| Reach                |          | 2                       | 4          | 5  | 9A         | 9B         | 10         | 11 | 13         | 1  | 3                | 6          | 7          | 12         |
| Date Range Available |          | 5/6/2004                | 12/18/2003 | NS | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS | 12/17/2003 | 8/19/2008  | 12/19/2003       | 12/16/2003 | 12/16/2003 | 12/17/2003 |
|                      |          | 8/24/2004               | 8/27/2013  | NS | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS | 8/25/2004  | 8/18/2011  | 8/27/2013        | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg) |          | 50                      | 50         | 50 | 50         | 50         | 50         | 50 | 50         | 50   | 50               | 50         | 50         | 50         |
| Previous 10 Years    | N        | 2                       | 23         | NS | 5          | 22         | 6          | NS | 6          | 9  | 28               | 9          | 16         | 3          |
|                      | N Detect | 0                       | 0          | NS | 0          | 0          | 0          | NS | 0          | 0  | 0                | 0          | 0          | 0          |
|                      | N Exceed | 0                       | 0          | NS | 0          | 0          | 0          | NS | 0          | 0  | 0                | 0          | 0          | 0          |
| Previous 5 Years     | N        | NS                      | 13         | NS | NS         | 13         | NS         | NS | NS         | NS   | 17               | 6          | 8          | NS         |
|                      | N Detect | NS                      | 0          | NS | NS         | 0          | NS         | NS | NS         | NS   | 0                | 0          | 0          | NS         |
|                      | N Exceed | NS                      | 0          | NS | NS         | 0          | NS         | NS | NS         | NS   | 0                | 0          | 0          | NS         |
|                      |          | Potential for Delisting |            |    |            |            |            |    |            | Achieving Targets per Listing Policy                   |                  |            |            |            |
|                      |          | NE                      | NE         | -- | NE         | NE         | NE         | -- | NE         | NE   | Yes <sup>1</sup> | NE         | NE         | NE         |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| BHC-alpha             |          | 303(d) listed Reaches   |           |            |      |            |            |            |      |            | Un-listed Reaches with TMDL Targets and Available Data |            |            |            |
|-----------------------|----------|-------------------------|-----------|------------|------|------------|------------|------------|------|------------|--|------------|------------|------------|
| Reach                 |          | 1                       | 2         | 4          | 5    | 9A         | 9B         | 10         | 11   | 13         | 3  | 6          | 7          | 12         |
| Date Range Available  |          | NS                      | 5/6/2004  | 12/18/2003 | NS   | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS   | 12/17/2003 | 12/19/2003   | 12/16/2003 | 12/16/2003 | 12/17/2003 |
|                       |          | NS                      | 8/24/2004 | 8/27/2013  | NS   | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS   | 8/25/2004  | 8/27/2013  | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg): |          | 1700                    | 1700      | 1700       | 1700 | 1700       | 1700       | 1700       | 1700 | 1700       | 1700   | 1700       | 1700       | 1700       |
| Previous 10 Years     | N        | NS                      | 2         | 23         | NS   | 5          | 22         | 6          | NS   | 6          | 28   | 9          | 16         | 3          |
|                       | N Detect | NS                      | 0         | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0          | 0          | 0          |
|                       | N Exceed | NS                      | 0         | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0          | 0          | 0          |
| Previous 5 Years      | N        | NS                      | NS        | 13         | NS   | NS         | 13         | NS         | NS   | NS         | 17   | 0          | 8          | NS         |
|                       | N Detect | NS                      | NS        | 0          | NS   | NS         | 0          | NS         | NS   | NS         | 0  | 0          | 0          | NS         |
|                       | N Exceed | NS                      | NS        | 0          | NS   | NS         | 0          | NS         | NS   | NS         | 0  | 0          | 0          | NS         |
|                       |          | Potential for Delisting |           |            |      |            |            |            |      |            | Achieving Targets per Listing Policy                   |            |            |            |
|                       |          | --                      | NE        | NE         | --   | NE         | NE         | NE         | --   | NE         | NE   | NE         | NE         | NE         |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| BHC-beta              |          | 303(d) listed Reaches   |           |            |      |            |            |            |      | Un-listed Reaches with TMDL Targets and Available Data |            |            |            |            |
|-----------------------|----------|-------------------------|-----------|------------|------|------------|------------|------------|------|--|------------|------------|------------|------------|
| Reach                 |          | 1                       | 2         | 4          | 5    | 9A         | 9B         | 10         | 11   | 13   | 3          | 6          | 7          | 12         |
| Date Range Available  |          | NS                      | 5/6/2004  | 12/18/2003 | NS   | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS   | 12/17/2003   | 12/19/2003 | 12/16/2003 | 12/16/2003 | 12/17/2003 |
|                       |          | NS                      | 8/24/2004 | 8/27/2013  | NS   | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS   | 8/25/2004  | 8/27/2013  | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg): |          | 6000                    | 6000      | 6000       | 6000 | 6000       | 6000       | 6000       | 6000 | 6000   | 6000       | 6000       | 6000       | 6000       |
| Previous 10 Years     | N        | NS                      | 2         | 23         | NS   | 5          | 22         | 6          | NS   | 6  | 28         | 9          | 16         | 3          |
|                       | N Detect | NS                      | 0         | 0          | NS   | 0          | 0          | 0          | NS   | 0  | 0          | 0          | 0          | 0          |
|                       | N Exceed | NS                      | 0         | 0          | NS   | 0          | 0          | 0          | NS   | 0  | 0          | 0          | 0          | 0          |
| Previous 5 Years      | N        | NS                      | NS        | 13         | NS   | NS         | 13         | NS         | NS   | NS   | 17         | 6          | 8          | NS         |
|                       | N Detect | NS                      | NS        | 0          | NS   | NS         | 0          | NS         | NS   | NS   | 0          | 0          | 0          | NS         |
|                       | N Exceed | NS                      | NS        | 0          | NS   | NS         | 0          | NS         | NS   | NS   | 0          | 0          | 0          | NS         |
|                       |          | Potential for Delisting |           |            |      |            |            |            |      | Achieving Targets per Listing Policy                   |            |            |            |            |
|                       |          | --                      | NE        | NE         | --   | NE         | NE         | NE         | --   | NE   | NE         | NE         | NE         | NE         |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| BHC-gamma               |          | 303(d) listed Reaches |           |            |      |            |            |            |      |            | Un-listed Reaches with TMDL Targets and Available Data |            |            |            |
|-------------------------|----------|-----------------------|-----------|------------|------|------------|------------|------------|------|------------|--|------------|------------|------------|
| Reach                   |          | 1                     | 2         | 4          | 5    | 9A         | 9B         | 10         | 11   | 13         | 3  | 6          | 7          | 12         |
| Date Range Available    |          | NS                    | 5/6/2004  | 12/18/2003 | NS   | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS   | 12/17/2003 | 12/19/2003   | 12/16/2003 | 12/16/2003 | 12/17/2003 |
|                         |          | NS                    | 8/24/2004 | 8/27/2013  | NS   | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS   | 8/25/2004  | 8/27/2013  | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg):   |          | 8200                  | 8200      | 8200       | 8200 | 8200       | 8200       | 8200       | 8200 | 8200       | 8200   | 8200       | 8200       | 8200       |
| Previous 10 Years       | N        | NS                    | 2         | 23         | NS   | 5          | 22         | 6          | NS   | 6          | 28   | 9          | 16         | 3          |
|                         | N Detect | NS                    | 0         | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0          | 0          | 0          |
|                         | N Exceed | NS                    | 0         | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0          | 0          | 0          |
| Previous 5 Years        | N        | NS                    | NS        | 13         | NS   | NS         | 13         | NS         | NS   | NS         | 17   | 6          | 8          | NS         |
|                         | N Detect | NS                    | NS        | 0          | NS   | NS         | 0          | NS         | NS   | NS         | 0  | 0          | 0          | NS         |
|                         | N Exceed | NS                    | NS        | 0          | NS   | NS         | 0          | NS         | NS   | NS         | 0  | 0          | 0          | NS         |
| Potential for Delisting |          |                       |           |            |      |            |            |            |      |            | Achieving Targets per Listing Policy                   |            |            |            |
|                         |          | --                    | NE        | NE         | --   | NE         | NE         | NE         | --   | NE         | Yes <sup>1</sup>                                       | NE         | NE         | NE         |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Chlordane (Total)        |          | 303(d) listed Reaches |           |            |     |            |            | Un-listed Reaches with TMDL Targets and Available Data |            |            |            |                                      |            |
|--------------------------|----------|-----------------------|-----------|------------|-----|------------|------------|--|------------|------------|------------|--------------------------------------|------------|
| Reach                    |          | 1                     | 2         | 4          | 5   | 9A         | 12         | 3  | 6          | 7          | 9B         | 10                                   | 13         |
| Date Range Available     |          | 8/19/2008             | 5/6/2004  | 12/18/2003 | NS  | 12/19/2003 | 12/17/2003 | 12/19/2003   | 12/16/2003 | 12/16/2003 | 12/19/2003 | 12/18/2003                           | 12/17/2003 |
|                          |          | 8/21/2008             | 8/24/2004 | 8/27/2013  | NS  | 8/26/2004  | 8/25/2004  | 8/27/2013  | 9/3/2009   | 8/28/2013  | 8/28/2013  | 8/25/2004                            | 8/25/2004  |
| TMDL Targets (ng/kg):    |          | 830                   | 830       | 830        | 830 | 830        | 830        | 830  | 830        | 830        | 830        | 830                                  | 830        |
| Previous 10 Years        | N        | 9                     | 2         | 22         | NS  | 5          | 3          | 27   | 9          | 16         | 22         | 6                                    | 6          |
|                          | N Detect | 7                     | 1         | 15         | NS  | 1          | 0          | 17   | 6          | 5          | 13         | 0                                    | 0          |
|                          | N Exceed | 7                     | 1         | 15         | NS  | 1          | 0          | 17   | 6          | 5          | 13         | 0                                    | 0          |
| Previous 5 Years         | N        | NS                    | NS        | 12         | NS  | NS         | NS         | 17   | 6          | 8          | 13         | NS                                   | NS         |
|                          | N Detect | NS                    | NS        | 10         | NS  | NS         | NS         | 15   | 6          | 5          | 11         | NS                                   | NS         |
|                          | N Exceed | NS                    | NS        | 10         | NS  | NS         | NS         | 15   | 6          | 5          | 11         | NS                                   | NS         |
| Potential for Delisting  |          |                       |           |            |     |            |            |  |            |            |            | Achieving Targets per Listing Policy |            |
| Potential for Delisting: |          | No                    | ID        | No         | --  | ID         | NE         | No   | No         | No         | No         | NE                                   | NE         |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist

| Dieldrin                |          | 303(d) listed Reaches |            |     |            |            |            |     |            | Un-listed Reaches with TMDL Targets and Available Data |                  |            |            |            |
|-------------------------|----------|-----------------------|------------|-----|------------|------------|------------|-----|------------|--|------------------|------------|------------|------------|
| Reach                   |          | 2                     | 4          | 5   | 9A         | 9B         | 10         | 11  | 13         | 1  | 3                | 6          | 7          | 12         |
| Date Range              |          | 5/6/2004              | 12/18/2003 | NS  | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS  | 12/17/2003 | 8/19/2008  | 12/19/2003       | 12/16/2003 | 12/16/2003 | 12/17/2003 |
| Available               |          | 8/24/2004             | 8/27/2013  | NS  | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS  | 8/25/2004  | 8/21/2008  | 8/27/2013        | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg):   |          | 650                   | 650        | 650 | 650        | 650        | 650        | 650 | 650        | 650  | 650              | 650        | 650        | 650        |
| Previous 10 Years       | N        | 2                     | 23         | NS  | 5          | 22         | 6          | NS  | 6          | 9  | 28               | 9          | 16         | 3          |
|                         | N Detect | 0                     | 0          | NS  | 0          | 0          | 0          | NS  | 0          | 0  | 0                | 0          | 0          | 0          |
|                         | N Exceed | 0                     | 0          | NS  | 0          | 0          | 0          | NS  | 0          | 0  | 0                | 0          | 0          | 0          |
| Previous 5 Years        | N        | NS                    | 13         | NS  | NS         | 13         | NS         | NS  | NS         | 3  | 17               | 6          | 8          | NS         |
|                         | N Detect | NS                    | 0          | NS  | NS         | 0          | NS         | NS  | NS         | 0  | 0                | 0          | 0          | NS         |
|                         | N Exceed | NS                    | 0          | NS  | NS         | 0          | NS         | NS  | NS         | 0  | 0                | 0          | 0          | NS         |
| Potential for Delisting |          |                       |            |     |            |            |            |     |            | Achieving Targets per Listing Policy                   |                  |            |            |            |
|                         |          | NE                    | NE         | --  | NE         | NE         | NE         | --  | NE         | NE   | Yes <sup>1</sup> | NE         | NE         | NE         |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Endosulfan I            |          | 303(d) listed Reaches |            |          |            |            |            |          |            | Un-listed Reaches with TMDL Targets and Available Data |                  |            |            |            |
|-------------------------|----------|-----------------------|------------|----------|------------|------------|------------|----------|------------|--|------------------|------------|------------|------------|
| Reach                   |          | 2                     | 4          | 5        | 9A         | 9B         | 10         | 11       | 13         | 1  | 3                | 6          | 7          | 12         |
| Date Range              |          | 5/6/2004              | 12/18/2003 | NS       | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS       | 12/17/2003 | 8/19/2008  | 12/19/2003       | 12/16/2003 | 12/16/2003 | 12/17/2003 |
| Available               |          | 8/24/2004             | 8/27/2013  | NS       | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS       | 8/25/2004  | 8/21/2008  | 8/27/2013        | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| Targets (ng/kg):        |          | 65000000              | 65000000   | 65000000 | 65000000   | 65000000   | 65000000   | 65000000 | 65000000   | 65000000   | 65000000         | 65000000   | 65000000   | 65000000   |
| Previous 10 Years       | N        | 2                     | 23         | NS       | 5          | 22         | 6          | NS       | 6          | 9  | 28               | 9          | 16         | 3          |
|                         | N Detect | 0                     | 0          | NS       | 1          | 0          | 0          | NS       | 0          | 0  | 0                | 0          | 0          | 0          |
|                         | N Exceed | 0                     | 0          | NS       | 0          | 0          | 0          | NS       | 0          | 0  | 0                | 0          | 0          | 0          |
| Previous 5 Years        | N        | NS                    | 13         | NS       | NS         | 13         | NS         | NS       | NS         | 3  | 17               | 6          | 8          | NS         |
|                         | N Detect | NS                    | 0          | NS       | NS         | 0          | NS         | NS       | NS         | 0  | 0                | 0          | 0          | NS         |
|                         | N Exceed | NS                    | 0          | NS       | NS         | 0          | NS         | NS       | NS         | 0  | 0                | 0          | 0          | NS         |
| Potential for Delisting |          |                       |            |          |            |            |            |          |            | Achieving Targets per Listing Policy                   |                  |            |            |            |
|                         |          | NE                    | NE         | --       | NE         | NE         | NE         |          | NE         | NE   | Yes <sup>1</sup> | NE         | NE         | NE         |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Endosulfan II         |          | 303(d) listed Reaches   |                         |          |                         |                         |                         |          |                         | Un-listed Reaches with TMDL Targets and Available Data |                         |                        |                         |                         |
|-----------------------|----------|-------------------------|-------------------------|----------|-------------------------|-------------------------|-------------------------|----------|-------------------------|--|-------------------------|------------------------|-------------------------|-------------------------|
| Reach                 |          | 2                       | 4                       | 5        | 9A                      | 9B                      | 10                      | 11       | 13                      | 1  | 3                       | 6                      | 7                       | 12                      |
| Date Range Available  |          | 5/6/2004<br>8/24/2004   | 12/18/2003<br>8/27/2013 | NS<br>NS | 12/19/2003<br>8/26/2004 | 12/19/2003<br>8/28/2013 | 12/18/2003<br>8/25/2004 | NS<br>NS | 12/17/2003<br>8/25/2004 | 8/19/2008<br>8/21/2008                                 | 12/19/2003<br>8/27/2013 | 12/16/2003<br>9/3/2009 | 12/16/2003<br>8/28/2013 | 12/17/2003<br>8/25/2004 |
| TMDL Targets (ng/kg): |          | 65000000                | 65000000                | 65000000 | 65000000                | 65000000                | 65000000                | 65000000 | 65000000                | 65000000   | 65000000                | 65000000               | 65000000                | 65000000                |
| Previous 10 Years     | N        | 2                       | 23                      | NS       | 5                       | 22                      | 6                       | NS       | 6                       | 9  | 28                      | 9                      | 16                      | 3                       |
|                       | N Detect | 0                       | 0                       | NS       | 1                       | 0                       | 0                       | NS       | 0                       | 0  | 0                       | 0                      | 0                       | 0                       |
|                       | N Exceed | 0                       | 0                       | NS       | 0                       | 0                       | 0                       | NS       | 0                       | 0  | 0                       | 0                      | 0                       | 0                       |
| Previous 5 Years      | N        | NS                      | 13                      | NS       | NS                      | 13                      | NS                      | NS       | NS                      | NS   | 17                      | 6                      | 8                       | NS                      |
|                       | N Detect | NS                      | 0                       | NS       | NS                      | 0                       | NS                      | NS       | NS                      | NS   | 0                       | 0                      | 0                       | NS                      |
|                       | N Exceed | NS                      | 0                       | NS       | NS                      | 0                       | NS                      | NS       | NS                      | NS   | 0                       | 0                      | 0                       | NS                      |
|                       |          | Potential for Delisting |                         |          |                         |                         |                         |          |                         | Achieving Targets per Listing Policy                   |                         |                        |                         |                         |
|                       |          | NE                      | NE                      | --       | NE                      | NE                      | NE                      | --       | NE                      | NE   | Yes <sup>1</sup>        | NE                     | NE                      | NE                      |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Endrin                |          | 303(d) listed Reaches   |                         |          |                         |                         |                         |          |                         | Un-listed Reaches with TMDL Targets and Available Data |                         |                        |                         |                         |
|-----------------------|----------|-------------------------|-------------------------|----------|-------------------------|-------------------------|-------------------------|----------|-------------------------|--|-------------------------|------------------------|-------------------------|-------------------------|
| Reach                 |          | 2                       | 4                       | 5        | 9A                      | 9B                      | 10                      | 11       | 13                      | 1  | 3                       | 6                      | 7                       | 12                      |
| Date Range Available  |          | 5/6/2004<br>8/24/2004   | 12/18/2003<br>8/27/2013 | NS<br>NS | 12/19/2003<br>8/26/2004 | 12/19/2003<br>8/28/2013 | 12/18/2003<br>8/25/2004 | NS<br>NS | 12/17/2003<br>8/25/2004 | 8/19/2008<br>8/21/2008                                 | 12/19/2003<br>8/27/2013 | 12/16/2003<br>9/3/2009 | 12/16/2003<br>8/28/2013 | 12/17/2003<br>8/25/2004 |
| TMDL Targets (ng/kg): |          | 3200000                 | 3200000                 | 3200000  | 3200000                 | 3200000                 | 3200000                 | 3200000  | 3200000                 | 3200000  | 3200000                 | 3200000                | 3200000                 | 3200000                 |
| Previous 10 Years     | N        | 2                       | 23                      | NS       | 5                       | 22                      | 6                       | NS       | 6                       | 9  | 28                      | 9                      | 16                      | 3                       |
|                       | N Detect | 0                       | 0                       | NS       | 1                       | 0                       | 0                       | NS       | 0                       | 0  | 0                       | 0                      | 0                       | 0                       |
|                       | N Exceed | 0                       | 0                       | NS       | 0                       | 0                       | 0                       | NS       | 0                       | 0  | 0                       | 0                      | 0                       | 0                       |
| Previous 5 Years      | N        | NS                      | 13                      | NS       | NS                      | 13                      | NS                      | NS       | NS                      | NS   | 17                      | 6                      | 8                       | NS                      |
|                       | N Detect | NS                      | 0                       | NS       | NS                      | 0                       | NS                      | NS       | NS                      | NS   | 0                       | 0                      | 0                       | NS                      |
|                       | N Exceed | NS                      | 0                       | NS       | NS                      | 0                       | NS                      | NS       | NS                      | NS   | 0                       | 0                      | 0                       | NS                      |
|                       |          | Potential for Delisting |                         |          |                         |                         |                         |          |                         | Achieving Targets per Listing Policy                   |                         |                        |                         |                         |
|                       |          | NE                      | NE                      | NS       | NE                      | NE                      | NE                      | --       | NE                      | NE   | Yes <sup>1</sup>        | NE                     | NE                      | NE                      |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.



| Heptachlor              |          | 303(d) listed Reaches |            |      |            |            |            |      |            | Un-listed Reaches with TMDL Targets and Available Data |                  |            |            |            |
|-------------------------|----------|-----------------------|------------|------|------------|------------|------------|------|------------|--|------------------|------------|------------|------------|
| Reach                   |          | 2                     | 4          | 5    | 9A         | 9B         | 10         | 11   | 13         | 1  | 3                | 6          | 7          | 12         |
| Date Range Available    |          | 5/6/2004              | 12/18/2003 | NS   | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS   | 12/17/2003 | 8/19/2008  | 12/19/2003       | 12/16/2003 | 12/16/2003 | 12/17/2003 |
|                         |          | 8/24/2004             | 8/27/2013  | NS   | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS   | 8/25/2004  | 8/21/2008  | 8/27/2013        | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg):   |          | 2400                  | 2400       | 2400 | 2400       | 2400       | 2400       | 2400 | 2400       | 2400   | 2400             | 2400       | 2400       | 2400       |
| Previous 10 Years       | N        | 2                     | 23         | NS   | 5          | 22         | 6          | NS   | 6          | 9  | 28               | 9          | 16         | 3          |
|                         | N Detect | 0                     | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0                | 0          | 0          | 0          |
|                         | N Exceed | 0                     | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0                | 0          | 0          | 0          |
| Previous 5 Years        | N        | NS                    | 13         | NS   | NS         | 13         | NS         | NS   | NS         | NS   | 17               | 6          | 8          | NS         |
|                         | N Detect | NS                    | 0          | NS   | NS         | 0          | NS         | NS   | NS         | NS   | 0                | 0          | 0          | NS         |
|                         | N Exceed | NS                    | 0          | NS   | NS         | 0          | NS         | NS   | NS         | NS   | 0                | 0          | 0          | NS         |
| Potential for Delisting |          |                       |            |      |            |            |            |      |            | Achieving Targets per Listing Policy                   |                  |            |            |            |
|                         |          | NE                    | NE         | --   | NE         | NE         | NE         | --   | NE         | NE   | Yes <sup>1</sup> | NE         | NE         | NE         |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Heptachlor Epoxide      |          | 303(d) listed Reaches |            |      |            |            |            |      |            | Un-listed Reaches with TMDL Targets and Available Data |                  |            |            |            |
|-------------------------|----------|-----------------------|------------|------|------------|------------|------------|------|------------|--|------------------|------------|------------|------------|
| Reach                   |          | 2                     | 4          | 5    | 9A         | 9B         | 10         | 11   | 13         | 1  | 3                | 6          | 7          | 12         |
| Date Range Available    |          | 5/6/2004              | 12/18/2003 | NS   | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS   | 12/17/2003 | 8/19/2008  | 12/19/2003       | 12/16/2003 | 12/16/2003 | 12/17/2003 |
|                         |          | 8/24/2004             | 8/27/2013  | NS   | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS   | 8/25/2004  | 8/21/2008  | 8/27/2013        | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg):   |          | 1200                  | 1200       | 1200 | 1200       | 1200       | 1200       | 1200 | 1200       | 1200   | 1200             | 1200       | 1200       | 1200       |
| Previous 10 Years       | N        | 2                     | 23         | NS   | 5          | 22         | 6          | NS   | 6          | 9  | 28               | 9          | 16         | 3          |
|                         | N Detect | 0                     | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0                | 0          | 0          | NS         |
|                         | N Exceed | 0                     | 0          | NS   | 0          | 0          | 0          | NS   | 0          | 0  | 0                | 0          | 0          | 0          |
| Previous 5 Years        | N        | NS                    | 13         | NS   | NS         | 13         | NS         | NS   | NS         | NS   | 17               | 6          | 8          | NS         |
|                         | N Detect | NS                    | 0          | NS   | NS         | 0          | NS         | NS   | NS         | NS   | 0                | 0          | 0          | NS         |
|                         | N Exceed | NS                    | 0          | NS   | NS         | 0          | NS         | NS   | NS         | NS   | 0                | 0          | 0          | NS         |
| Potential for Delisting |          |                       |            |      |            |            |            |      |            | Achieving Targets per Listing Policy                   |                  |            |            |            |
|                         |          | NE                    | NE         | --   | NE         | NE         | NE         | --   | NE         | NE   | Yes <sup>1</sup> | NE         | NE         | NE         |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| PCBs                    |          | 303(d) listed Reaches |           |                 |      |            |                 |            |      |            | Un-listed Reaches with TMDL Targets and Available Data |                 |            |            |
|-------------------------|----------|-----------------------|-----------|-----------------|------|------------|-----------------|------------|------|------------|--|-----------------|------------|------------|
| Reach                   |          | 1                     | 2         | 4               | 5    | 9A         | 9B              | 10         | 11   | 13         | 3  | 6               | 7          | 12         |
| Date Range Available    |          | 8/19/2008             | 5/6/2004  | 12/18/2003      | NS   | 12/19/2003 | 12/19/2003      | 12/18/2003 | NS   | 12/17/2003 | 12/19/2003   | 12/16/2003      | 12/16/2003 | 12/17/2003 |
|                         |          | 8/21/2008             | 8/24/2004 | 8/27/2013       | NS   | 8/26/2004  | 8/28/2013       | 8/25/2004  | NS   | 8/25/2004  | 8/27/2013  | 9/3/2009        | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg):   |          | 5300                  | 5300      | 5300            | 5300 | 5300       | 5300            | 5300       | 5300 | 5300       | 5300   | 5300            | 5300       | 5300       |
| Previous 10 Years       | N        | 9                     | 2         | 22              | NS   | 5          | 22              | 6          | NS   | 6          | 27   | 9               | 16         | 3          |
|                         | N Detect | 9                     | 2         | 10              | NS   | 2          | 9               | 0          | NS   | 0          | 15   | 6               | 2          | 0          |
|                         | N Exceed | 9                     | 2         | 9               | NS   | 2          | 7               | 0          | NS   | 0          | 12   | 6               | 1          | 0          |
| Previous 5 Years        | N        | NS                    | NS        | 12              | NS   | NS         | 13              | NS         | NS   | NS         | 17   | 6               | 8          | NS         |
|                         | N Detect | NS                    | NS        | 9               | NS   | NS         | 9               | NS         | NS   | NS         | 11   | 6               | 2          | NS         |
|                         | N Exceed | NS                    | NS        | 0               | NS   | NS         | 0               | NS         | NS   | NS         | 0  | 0               | 0          | NS         |
| Potential for Delisting |          |                       |           |                 |      |            |                 |            |      |            | Achieving Targets per Listing Policy                   |                 |            |            |
|                         |          | No                    | No        | PD <sup>1</sup> | --   | No         | PD <sup>1</sup> | NE         | --   | NE         | PD <sup>1</sup>  | PD <sup>1</sup> | PD         | NE         |

1. No exceedances in most recent five years with a significant number of samples. Considering the exceedances that occurred more than five years ago would inappropriately categorize this as a higher priority.

PD (Potential Delisting) – Insufficient data to information listing decision, however a significant number of the most recent 5 years of monitoring are non-detect. The potential for delisting the reach may exist.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detect and the potential for listing may exist.

| Toxaphene               |          | 303(d) listed Reaches |            |      |            |            |            |      |            |           | Un-listed Reaches with TMDL Targets and Available Data |            |            |            |
|-------------------------|----------|-----------------------|------------|------|------------|------------|------------|------|------------|-----------|--|------------|------------|------------|
| Reach                   |          | 2                     | 4          | 5    | 9A         | 9B         | 10         | 11   | 13         | 1         | 3  | 6          | 7          | 12         |
| Date Range Available    |          | 5/6/2004              | 12/18/2003 | NS   | 12/19/2003 | 12/19/2003 | 12/18/2003 | NS   | 12/17/2003 | 8/19/2008 | 12/19/2003   | 12/16/2003 | 12/16/2003 | 12/17/2003 |
|                         |          | 8/24/2004             | 8/27/2013  | NS   | 8/26/2004  | 8/28/2013  | 8/25/2004  | NS   | 8/25/2004  | 8/21/2008 | 8/27/2013  | 9/3/2009   | 8/28/2013  | 8/25/2004  |
| TMDL Targets (ng/kg):   |          | 9800                  | 9800       | 9800 | 9800       | 9800       | 9800       | 9800 | 9800       | 9800      | 9800   | 9800       | 9800       | 9800       |
| Previous 10 Years       | N        | 2                     | 22         | NS   | 5          | 22         | 6          | NS   | 6          | 9         | 27   | 9          | 16         | 3          |
|                         | N Detect | 0                     | 18         | NS   | 0          | 7          | 0          | NS   | 0          | 4         | 10   | 3          | 0          | 0          |
|                         | N Exceed | 0                     | 18         | NS   | 0          | 7          | 0          | NS   | 0          | 4         | 10   | 3          | 0          | 0          |
| Previous 5 Years        | N        | NS                    | 12         | NS   | NS         | 13         | NS         | NS   | NS         | NS        | 16   | 6          | 8          | NS         |
|                         | N Detect | NS                    | 12         | NS   | NS         | 7          | NS         | NS   | NS         | NS        | 10   | 3          | 0          | NS         |
|                         | N Exceed | NS                    | 12         | NS   | NS         | 7          | NS         | NS   | NS         | NS        | 10   | 3          | 0          | NS         |
| Potential for Delisting |          |                       |            |      |            |            |            |      |            |           | Achieving Targets per Listing Policy                   |            |            |            |
|                         |          | NE                    | No         | --   | NE         | No         | NE         | --   | NE         | No        | No   | No         | NE         | NE         |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

#### **1.4 TOXICITY TMDL**

The RWQCB adopted Resolution No. R4-2005-009 to incorporate the Toxicity, Chlorpyrifos and Diazinon (Toxicity) TMDL in Calleguas Creek, its Tributaries, and Mugu Lagoon into the Basin Plan. The TMDL was effective as of March 25, 2006. Chlorpyrifos and diazinon have been phased out from non-agricultural uses and it was recently announced that additional restrictions on the use of chlorpyrifos on farms may be enacted.

**Table 9. Analysis of Toxicity TMDL Constituents in Receiving Water by Reach.**

| Chlorpyrifos (Dry)   |          | 303(d) listed Reaches  |                        |                        | Un-listed Reaches with TMDL Targets and Available Data |                        |                       |                        |                        |                        |                        |                       |                       |                        |
|----------------------|----------|------------------------|------------------------|------------------------|--|------------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|------------------------|
| Reach                |          | 4                      | 5                      | 7                      | 1  | 2                      | 3                     | 6                      | 8                      | 9A                     | 9B                     | 10                    | 12                    | 13                     |
| Date Range Available |          | 8/28/2003<br>11/5/2013 | 8/28/2003<br>8/23/2004 | 8/28/2003<br>11/5/2013 | 8/21/2008<br>11/5/2013                                 | 3/24/2004<br>8/24/2004 | 6/5/2003<br>4/25/2014 | 8/28/2003<br>11/5/2013 | 3/24/2004<br>8/23/2004 | 8/28/2003<br>8/23/2004 | 8/28/2003<br>11/5/2013 | 2/6/2002<br>8/21/2013 | 2/6/2002<br>8/23/2004 | 8/28/2003<br>11/5/2013 |
| TMDL Targets (ug/L): |          | 0.014                  | 0.014                  | 0.014                  | 0.009  | 0.014                  | 0.014                 | 0.014                  | 0.014                  | 0.014                  | 0.014                  | 0.014                 | 0.014                 | 0.014                  |
| Previous 10 Years    | N        | 34                     | 9                      | 30                     | 21   | 7                      | 54                    | 29                     | 6                      | 9                      | 30                     | 26                    | 9                     | 21                     |
|                      | N Detect | 19                     | 6                      | 12                     | 7  | 0                      | 13                    | 12                     | 0                      | 0                      | 4                      | 0                     | 0                     | 0                      |
|                      | N Exceed | 14                     | 6                      | 7                      | 4  | 0                      | 5                     | 6                      | 0                      | 0                      | 0                      | 0                     | 0                     | 0                      |
|                      | N        | 20                     | NS                     | 19                     | 19   | NS                     | 26                    | 18                     | NS                     | NS                     | 19                     | 12                    | NS                    | 11                     |
| Previous 5 Years     | N Detect | 13                     | NS                     | 7                      | 6  | NS                     | 6                     | 7                      | NS                     | NS                     | 2                      | 0                     | NS                    | 0                      |
|                      | N Exceed | 9                      | NS                     | 4                      | 3  | NS                     | 1                     | 3                      | NS                     | NS                     | 0                      | 0                     | NS                    | 0                      |

| Chlorpyrifos (Wet)   |          | 303(d) listed Reaches  |                         |                       | Un-listed Reaches with TMDL Targets and Available Data |                       |                        |                       |                       |                       |                       |                       |          |                         |
|----------------------|----------|------------------------|-------------------------|-----------------------|--|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|-------------------------|
| Reach                |          | 4                      | 5                       | 7                     | 1  | 2                     | 3                      | 6                     | 8                     | 9A                    | 9B                    | 10                    | 12       | 13                      |
| Date Range Available |          | 2/13/2003<br>1/25/2013 | 2/13/2003<br>11/26/2008 | 2/3/2004<br>1/25/2013 | 12/15/2008<br>1/25/2013                                | 2/3/2004<br>2/26/2004 | 2/12/2003<br>2/28/2014 | 2/3/2004<br>1/25/2013 | 2/3/2004<br>2/25/2004 | 2/3/2004<br>2/25/2004 | 2/3/2004<br>1/25/2013 | 2/3/2004<br>3/17/2012 | NS<br>NS | 12/15/2008<br>3/17/2012 |
| TMDL Targets (ug/L): |          | 0.025                  | 0.025                   | 0.025                 | 0.02   | 0.025                 | 0.025                  | 0.025                 | 0.025                 | 0.025                 | 0.025                 | 0.025                 | 0.025    | 0.025                   |
| Previous 10 Years    | N        | 22                     | 9                       | 12                    | 9  | 3                     | 49                     | 10                    | 3                     | 3                     | 10                    | 11                    | NS       | 8                       |
|                      | N Detect | 19                     | 7                       | 9                     | 9  | 2                     | 32                     | 8                     | 0                     | 0                     | 4                     | 0                     | NS       | 1                       |
|                      | N Exceed | 18                     | 7                       | 9                     | 9  | 2                     | 24                     | 7                     | 0                     | 0                     | 3                     | 0                     | NS       | 0                       |
|                      | N        | 8                      | NS                      | 8                     | 8  | NS                    | 25                     | 8                     | NS                    | NS                    | 8                     | 7                     | NS       | 7                       |
| Previous 5 Years     | N Detect | 8                      | NS                      | 7                     | 8  | NS                    | 19                     | 7                     | NS                    | NS                    | 3                     | 0                     | NS       | 1                       |
|                      | N Exceed | 7                      | NS                      | 7                     | 8  | NS                    | 13                     | 6                     | NS                    | NS                    | 2                     | 0                     | NS       | 0                       |

| Chlorpyrifos (Wet and Dry Data) |  | 303(d) Listed Reaches    |                 |                 | Un-listed Reaches with TMDL Targets and Available Data |                 |    |                 |    |    |                 |                 |    |                 |
|---------------------------------|--|--------------------------|-----------------|-----------------|--|-----------------|----|-----------------|----|----|-----------------|-----------------|----|-----------------|
| Reach                           |  | 4                        | 5               | 7               | 1  | 2               | 3  | 6               | 8  | 9A | 9B              | 10              | 12 | 13              |
| N (previous 5 years)            |  | 28                       | 18 <sup>1</sup> | 42 <sup>1</sup> | 30 <sup>2</sup>  | 10 <sup>1</sup> | 51 | 39 <sup>1</sup> | NS | NS | 40 <sup>1</sup> | 37 <sup>1</sup> | NS | 29 <sup>2</sup> |
| N Exceed                        |  | 16                       | 13              | 14              | 13   | 3               | 14 | 13              | NS | NS | 3               | 0               | NS | 0               |
|                                 |  | Potential for Delisting? |                 |                 | Achieving Targets per Listing Policy?                  |                 |    |                 |    |    |                 |                 |    |                 |
|                                 |  | No                       | No              | No              | No   | No              | No | No              | NE | NE | Yes             | Yes             | NE | Yes             |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis.

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

| Diazinon (Dry)       |          | 303(d) listed Reaches | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |           |           |           |           |           |           |           |           |
|----------------------|----------|-----------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reach                |          | 7                     | 1  | 2         | 3         | 4         | 5         | 6         | 8         | 9A        | 9B        | 10        | 12        | 13        |
| Date Range Available |          | 8/28/2003             | 8/21/2008  | 3/24/2004 | 6/5/2003  | 8/28/2003 | 8/28/2003 | 8/28/2003 | 3/24/2004 | 2/19/2003 | 2/19/2003 | 2/6/2002  | 2/6/2002  | 8/28/2003 |
|                      |          | 11/5/2013             | 11/5/2013  | 8/24/2004 | 4/25/2014 | 11/5/2013 | 8/23/2004 | 11/5/2013 | 8/23/2004 | 8/23/2004 | 11/5/2013 | 8/21/2013 | 8/23/2004 | 11/5/2013 |
| TMDL Targets (ug/L): |          | 0.1                   | 0.4  | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       |
| Previous 10 Years    | N        | 30                    | 21   | 7         | 55        | 34        | 9         | 29        | 6         | 10        | 31        | 26        | 9         | 21        |
|                      | N Detect | 9                     | 3  | 6         | 17        | 10        | 2         | 9         | 0         | 5         | 8         | 5         | 2         | 4         |
|                      | N Exceed | 1                     | 0  | 3         | 4         | 0         | 1         | 1         | 0         | 2         | 2         | 3         | 0         | 0         |
| Previous 5 Years     | N        | 19                    | 19   | NS        | 27        | 20        | NS        | 18        | NS        | NS        | 19        | 12        | NS        | 11        |
|                      | N Detect | 2                     | 3  | NS        | 5         | 5         | NS        | 2         | NS        | NS        | 2         | 0         | NS        | 0         |
|                      | N Exceed | 0                     | 0  | NS        | 1         | 0         | NS        | 0         | NS        | NS        | 1         | 0         | NS        | 0         |

  

| Diazinon (Wet)       |          | 303(d) listed Reaches | Un-listed Reaches with TMDL Targets and Available Data |           |           |           |            |           |           |           |           |           |     |            |
|----------------------|----------|-----------------------|--|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----|------------|
| Reach                |          | 7                     | 1  | 2         | 3         | 4         | 5          | 6         | 8         | 9A        | 9B        | 10        | 12  | 13         |
| Date Range Available |          | 2/3/2004              | 12/15/2008   | 2/3/2004  | 2/12/2003 | 2/13/2003 | 2/13/2003  | 2/3/2004  | 2/3/2004  | 2/3/2004  | 2/3/2004  | 2/3/2004  | NS  | 12/15/2008 |
|                      |          | 1/25/2013             | 1/25/2013  | 2/26/2004 | 2/28/2014 | 1/25/2013 | 11/26/2008 | 1/25/2013 | 2/25/2004 | 2/25/2004 | 1/25/2013 | 3/17/2012 | NS  | 3/17/2012  |
| TMDL Targets (ug/L): |          | 0.1                   | 0.82   | 0.1       | 0.1       | 0.1       | 0.1        | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       | 0.1 | 0.1        |
| Previous 10 Years    | N        | 12                    | 9  | 3         | 51        | 22        | 9          | 10        | 3         | 3         | 10        | 11        | NS  | 8          |
|                      | N Detect | 5                     | 4  | 1         | 25        | 9         | 1          | 3         | 0         | 1         | 1         | 0         | NS  | 0          |
|                      | N Exceed | 2                     | 0  | 0         | 6         | 3         | 0          | 1         | 0         | 1         | 0         | 0         | NS  | 0          |
| Previous 5 Years     | N        | 8                     | 8  | NS        | 27        | 8         | NS         | 8         | NS        | NS        | 8         | 7         | NS  | 7          |
|                      | N Detect | 4                     | 4  | NS        | 10        | 5         | NS         | 3         | NS        | NS        | 1         | 0         | NS  | 0          |
|                      | N Exceed | 1                     | 0  | NS        | 3         | 2         | NS         | 1         | NS        | NS        | 0         | 0         | NS  | 0          |

  

| Diazinon (Wet and Dry Data) |  | 303(d) Listed Reaches   | Un-listed Reaches with TMDL Targets and Available Data |                 |     |     |                 |                 |    |                 |     |     |    |     |
|-----------------------------|--|-------------------------|--|-----------------|-----|-----|-----------------|-----------------|----|-----------------|-----|-----|----|-----|
| Reach                       |  | 7                       | 1  | 2               | 3   | 4   | 5               | 6               | 8  | 9A              | 9B  | 10  | 12 | 13  |
| N (previous 5 years)        |  | 42 <sup>1</sup>         | 30 <sup>1</sup>  | 10 <sup>1</sup> | 54  | 28  | 18 <sup>1</sup> | 39 <sup>1</sup> | NS | 13 <sup>1</sup> | 41  | 37  | NS | 28  |
| N Exceed                    |  | 3                       | 0  | 3               | 4   | 2   | 1               | 2               | NS | 3               | 2   | 3   | NS | 0   |
|                             |  | Potential for Delisting | Achieving Targets per Listing Policy                   |                 |     |     |                 |                 |    |                 |     |     |    |     |
|                             |  | Yes                     | Yes  | No              | Yes | Yes | ID              | Yes             | NE | No              | Yes | Yes | NE | Yes |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis  
 NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.  
 ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist.

## 1.5 SALTS TMDL

The Boron, Chloride, Sulfate, TDS (Salts) TMDL was incorporated into the Basin Plan through the RWQCB's adoption of Resolution No. R4-2007-016. **Table 10** summarizes the comparison of available receiving water grab sample data to the final numeric targets established in the Salts TMDL. This evaluation does not include consideration of continuous monitoring for salts at the receiving water compliance points, however, grab samples collected at these locations to calibrate and verify the sensors are a part of the dataset. Additionally, reaches 1 and 2 are tidally influenced and salts targets do not apply, therefore, those reaches are not considered.

Table 10. Analysis of Salts TMDL Constituents in Receiving Water by Reach

| Boron                |          | 303(d) Listed Reaches   |          |     | Un-listed Reaches with TMDL Targets and Available Data |           |     |           |           |           |     |           |     |
|----------------------|----------|-------------------------|----------|-----|--|-----------|-----|-----------|-----------|-----------|-----|-----------|-----|
| Reach                |          | 4                       | 7        | 8   | 3  | 5         | 6   | 9A        | 9B        | 10        | 11  | 12        | 13  |
| Date Range Available |          | 2/25/2004               | 2/5/2003 | NS  | 2/26/2004  | 2/25/2004 | NS  | 2/19/2003 | 2/19/2003 | 2/15/2002 | NS  | 2/15/2002 | NS  |
|                      |          | 11/5/2013               | 6/3/2014 | NS  | 11/5/2013  | 2/25/2004 | NS  | 11/6/2013 | 11/5/2013 | 10/9/2013 | NS  | 10/9/2013 | NS  |
| TMDL Targets (mg/L): |          | 1.0                     | 1.0      | 1.0 | 1.0  | 1.0       | 1.0 | 1.0       | 1.0       | 1.0       | 1.0 | 1.0       | 1.0 |
| Previous 10 Years    | N        | 65                      | 235      | NS  | 27   | 1         | NS  | 237       | 25        | 124       | NS  | 133       | NS  |
|                      | N Detect | 65                      | 235      | NS  | 27   | 1         | NS  | 237       | 25        | 124       | NS  | 133       | NS  |
|                      | N Exceed | 65                      | 85       | NS  | 0  | 1         | NS  | 1         | 0         | 0         | NS  | 0         | NS  |
| Previous 5 Years     | N        | 64                      | 162      | NS  | 26   | NS        | NS  | 116       | 23        | 58        | NS  | 58        | NS  |
|                      | N Detect | 64                      | 162      | NS  | 26   | NS        | NS  | 116       | 23        | 58        | NS  | 58        | NS  |
|                      | N Exceed | 64                      | 55       | NS  | 0  | NS        | NS  | 1         | 0         | 0         | NS  | 0         | NS  |
|                      |          | Potential for Delisting |          |     | Achieving Targets per Listing Policy                   |           |     |           |           |           |     |           |     |
|                      |          | No                      | No       | --  | NE   | ID        | --  | Yes       | NE        | Yes       | --  | Yes       | --  |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detected and the potential for listing may exist.

| Chloride             |          | 303(d) Listed Reaches   |          |     |           |           | Un-listed Reaches with TMDL Targets and Available Data |           |           |                 |           |     |           |
|----------------------|----------|-------------------------|----------|-----|-----------|-----------|--|-----------|-----------|-----------------|-----------|-----|-----------|
| Reach                |          | 6                       | 7        | 8   | 9B        | 10        | 13   | 3         | 4         | 5               | 9A        | 11  | 12        |
| Date Range Available |          | NS                      | 1/8/2003 | NS  | 1/1/2003  | 1/15/2002 | NS   | 1/1/2003  | 2/13/2003 | 2/13/2003       | 1/22/2003 | NS  | 1/15/2002 |
|                      |          | NS                      | 6/3/2014 | NS  | 12/5/2013 | 10/9/2013 | NS   | 4/25/2014 | 12/5/2013 | 11/26/2008      | 12/5/2013 | NS  | 10/9/2013 |
| WQOs (mg/L):         |          | 150                     | 150      | 150 | 150       | 150       | 150  | 150       | 150       | 150             | 150       | 150 | 150       |
| Previous 10 Years    | N        | NS                      | 281      | NS  | 116       | 126       | NS   | 206       | 99        | 7               | 282       | NS  | 135       |
|                      | N Detect | NS                      | 278      | NS  | 116       | 126       | NS   | 206       | 99        | 7               | 282       | NS  | 135       |
|                      | N Exceed | NS                      | 205      | NS  | 31        | 40        | NS   | 144       | 75        | 0               | 247       | NS  | 125       |
| Previous 5 Years     | N        | NS                      | 194      | NS  | 63        | 58        | NS   | 144       | 92        | NS              | 156       | NS  | 58        |
|                      | N Detect | NS                      | 193      | NS  | 63        | 58        | NS   | 144       | 92        | NS              | 156       | NS  | 58        |
|                      | N Exceed | NS                      | 142      | NS  | 16        | 11        | NS   | 108       | 73        | NS              | 138       | NS  | 56        |
|                      |          | Potential for Delisting |          |     |           |           | Achieving Targets per Listing Policy                   |           |           |                 |           |     |           |
|                      |          | --                      | No       | --  | No        | No        | --   | No        | No        | NE <sup>1</sup> | No        | --  | No        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.



| Sulfate                 |          | 303(d) Listed Reaches |           |          |     |           |           |           |     |           |     | Un-listed Reaches with TMDL Targets and Available Data |           |
|-------------------------|----------|-----------------------|-----------|----------|-----|-----------|-----------|-----------|-----|-----------|-----|--|-----------|
| Reach                   |          | 4                     | 6         | 7        | 8   | 9A        | 9B        | 10        | 11  | 12        | 13  | 3  | 5         |
| Date Range Available    |          | 2/25/2004             | 5/13/2008 | 2/5/2003 | NS  | 2/19/2003 | 1/1/2003  | 2/15/2002 | NS  | 2/15/2002 | NS  | 1/1/2003   | 2/25/2004 |
|                         |          | 11/5/2013             | 5/13/2008 | 6/3/2014 | NS  | 11/6/2013 | 11/5/2013 | 10/9/2013 | NS  | 10/9/2013 | NS  | 11/5/2013  | 2/25/2004 |
| WQOs (mg/L):            |          | 250                   | 250       | 250      | 250 | 250       | 250       | 250       | 250 | 250       | 250 | 250  | 250       |
| Previous 10 Years       | N        | 44                    | 1         | 237      | NS  | 250       | 86        | 125       | NS  | 136       | NS  | 103  | 1         |
|                         | N Detect | 44                    | 1         | 237      | NS  | 250       | 86        | 125       | NS  | 136       | NS  | 103  | 1         |
|                         | N Exceed | 42                    | 1         | 233      | NS  | 51        | 5         | 0         | NS  | 116       | NS  | 31   | 0         |
| Previous 5 Years        | N        | 43                    | NS        | 164      | NS  | 128       | 36        | 58        | NS  | 58        | NS  | 74   | NS        |
|                         | N Detect | 43                    | NS        | 164      | NS  | 128       | 36        | 58        | NS  | 58        | NS  | 74   | NS        |
|                         | N Exceed | 42                    | NS        | 161      | NS  | 22        | 1         | 0         | NS  | 54        | NS  | 27   | NS        |
| Potential for Delisting |          |                       |           |          |     |           |           |           |     |           |     | Achieving Targets per Listing Policy                   |           |
|                         |          | No                    | ID        | No       | --  | No        | Yes       | Yes       | --  | No        | --  | No   | NE        |

NE (No Exceedances) – Insufficient data to inform listing decision, however no exceedances were reported in the available monitoring data.

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detect and the potential for listing may exist.

| TDS                     |          | 303(d) Listed Reaches |           |           |           |     |           |           |           |     |           | Un-listed Reaches with TMDL Targets and Available Data |            |
|-------------------------|----------|-----------------------|-----------|-----------|-----------|-----|-----------|-----------|-----------|-----|-----------|--|------------|
| Reach                   |          | 3                     | 4         | 6         | 7         | 8   | 9A        | 9B        | 10        | 11  | 12        | 13   | 5          |
| Date Range Available    |          | 1/1/2003              | 2/13/2003 | 5/13/2008 | 2/5/2003  | NS  | 2/19/2003 | 1/1/2003  | 2/15/2002 | NS  | 2/15/2002 | NS   | 2/13/2003  |
|                         |          | 4/25/2014             | 11/5/2013 | 5/13/2008 | 11/5/2013 | NS  | 11/6/2013 | 11/5/2013 | 10/9/2013 | NS  | 10/9/2013 | NS   | 11/26/2008 |
| WQOs (mg/L):            |          | 850                   | 850       | 850       | 850       | 850 | 850       | 850       | 850       | 850 | 850       | 850  | 850        |
| Previous 10 Years       | N        | 172                   | 70        | 1         | 80        | NS  | 244       | 89        | 113       | NS  | 124       | NS   | 8          |
|                         | N Detect | 172                   | 70        | 1         | 80        | NS  | 244       | 89        | 113       | NS  | 112       | NS   | 8          |
|                         | N Exceed | 101                   | 61        | 1         | 74        | NS  | 133       | 26        | 1         | NS  | 97        | NS   | 2          |
| Previous 5 Years        | N        | 100                   | 44        | NS        | 31        | NS  | 127       | 37        | 46        | NS  | 46        | NS   | NS         |
|                         | N Detect | 100                   | 44        | NS        | 31        | NS  | 127       | 37        | 46        | NS  | 34        | NS   | NS         |
|                         | N Exceed | 61                    | 43        | NS        | 27        | NS  | 77        | 5         | 0         | NS  | 33        | NS   | NS         |
| Potential for Delisting |          |                       |           |           |           |     |           |           |           |     |           | Achieving Targets per Listing Policy                   |            |
|                         |          | No                    | No        | ID        | No        | --  | No        | No        | Yes       | --  | No        | --   | No         |

ID (Insufficient Data) – Insufficient data to inform listing decision, however a single exceedance was detect and the potential for listing may exist.

## 1.6 INDICATOR BACTERIA/ FECAL COLIFORM

Reaches in the CCW are listed for Indicator Bacteria and Fecal Coliform. The recent revision to bacteria objectives in the Basin Plan replaced limits on Fecal and Total Coliforms in REC1 designated waters with geometric means and instantaneous limits on *E. coli*. This analysis compared available *E. coli* monitoring data to the updated instantaneous objectives of 235 MPN/100mL. Table 11 summarizes the findings of the analysis.

**Table 11. Analysis of 303(d) listed Reaches for Bacteria**

| <b>E. coli</b>           |          | <b>1</b>        | <b>2</b>        | <b>3</b>  | <b>4</b>        | <b>5</b>        | <b>6</b>        | <b>7</b>        | <b>8</b>  | <b>9A</b>       | <b>9B</b>       | <b>10</b>  | <b>11</b>       | <b>12</b>  |
|--------------------------|----------|-----------------|-----------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------|-----------------|-----------------|------------|-----------------|------------|
| Currently 303(d) Listed: |          |                 | X               |           | X               |                 | X               | X               |           | X               | X               | X          | X               |            |
| Date Range Available     |          | 5/27/2004       | 8/28/2003       | 2/12/2003 | 2/12/2003       | 2/12/2003       | 8/28/2003       | 8/28/2003       | 12/2/2003 | 8/28/2003       | 8/28/2003       | 8/15/2003  | 2/26/2004       | 8/15/2003  |
|                          |          | 1/7/2005        | 5/5/2005        | 4/25/2014 | 11/26/2008      | 11/26/2008      | 3/29/2006       | 5/5/2005        | 5/5/2005  | 5/5/2005        | 1/7/2005        | 2/22/2014  | 8/13/2013       | 10/27/2013 |
| WQOs (MPN/100mL):        |          | 235             | 235             | 235       | 235             | 235             | 235             | 235             | 235       | 235             | 235             | 235        | 235             | 235        |
| Previous 10 Years        | N        | 7               | 24              | 88        | 38              | 21              | 32              | 23              | 22        | 23              | 15              | 180        | 4               | 161        |
|                          | N Detect | 7               | 24              | 87        | 38              | 21              | 30              | 23              | 22        | 23              | 15              | 150        | 4               | 158        |
|                          | N Exceed | 3               | 15              | 62        | 24              | 12              | 20              | 9               | 12        | 7               | 6               | 6          | 4               | 62         |
| Previous 5 Years         | N        | NS              | NS              | 24        | NS              | NS              | NS              | NS              | NS        | NS              | NS              | 92         | 1               | 96         |
|                          | N Detect | NS              | NS              | 24        | NS              | NS              | NS              | NS              | NS        | NS              | NS              | 69         | 1               | 94         |
|                          | N Exceed | NS              | NS              | 16        | NS              | NS              | NS              | NS              | NS        | NS              | NS              | 0          | 1               | 38         |
| Potential for Delisting: |          | LP <sup>1</sup> | No <sup>1</sup> | LP        | No <sup>1</sup> | LP <sup>1</sup> | No <sup>1</sup> | No <sup>1</sup> | LP        | No <sup>1</sup> | No <sup>1</sup> | <b>Yes</b> | No <sup>1</sup> | No         |

1. Previous 5 years of data was insufficient to inform a listing decision, however historical monitoring data was available and used in analysis

LP (Listing Possible) – Considering current and/or earlier data there is potential for this reach to be listed based on the number of observed exceedance