

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2013-0098

AMENDMENT TO THE WATER QUALITY CONTROL PLAN
FOR
THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS

TO
ESTABLISH A DRINKING WATER POLICY FOR SURFACE WATERS OF THE
DELTA AND ITS UPSTREAM TRIBUTARIES

WHEREAS, the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) finds that:

1. The Sacramento-San Joaquin Delta (Delta) provides drinking water to more than 25 million people or about 60 percent of the population of California.
2. The Central Valley Water Board recognizes that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters, including the Delta.
3. In August 2000, CALFED issued the Record of Decision (ROD) for the Programmatic Environmental Impact Statement/Environmental Impact Report requiring the California Bay-Delta Authority (CBDA), with the assistance of the DPH to coordinate a comprehensive source water protection program. One element of this source water protection program is to “establish a comprehensive State drinking water policy for the Delta and upstream tributaries by the end of 2004.”
4. The water boards have the authority to formulate and adopt water quality control plans, establish water quality objectives, and develop implementation plans under Water Code sections 13240, 13241, and 13242. Water quality objectives are defined under State law as “the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” (Wat. Code, §13050, subd. (h).)
5. The Central Valley Water Board adopted the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins in 1975 and has amended it as necessary. The Basin Plan has designated the drinking water municipal and domestic supply beneficial use (MUN) for most waters in the Central Valley, including the Delta.

6. The State Water Resources Control Board (State Water Board) adopted the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) which includes MUN as a beneficial use of the Delta.
7. The Basin Plan includes narrative objectives for chemical constituents, taste and odor, sediment, suspended material, and toxicity, and numeric objectives for chemical constituents and salinity. The Basin Plan incorporates by reference the primary and secondary maximum contaminant levels specified in Title 22 of the California Code of Regulations for waters designated MUN. The Bay-Delta Plan also includes numeric water quality objectives to protect MUN that apply within the Bay-Delta.
8. Although the Basin Plan addresses many constituents that threaten drinking water source waters, the 1998, 2002 and 2006 Triennial Reviews of the Basin Plan identified development of a policy for maintaining water quality for drinking water as high priority.
9. The following drinking water constituents of concern have been identified by stakeholders as high priority for study and evaluation: salt (including bromide), nutrients, organic carbon and pathogens such as *Cryptosporidium* and *Giardia*.
10. In Central Valley Water Board Resolution R5-2010-0079, the Board directed staff to develop a comprehensive drinking water strategy focused on organic carbon, *Cryptosporidium* and *Giardia*. The Board recognized other efforts that were underway were the appropriate venue for working on salinity and nutrients.
11. The Clean Water Act section 303 requires the Central Valley Water Board to review the Basin Plan at least every three years and where appropriate modify water quality objectives or beneficial uses in the Basin Plan.
12. The proposed Amendment modifies Basin Plan Chapter III (Water Quality Objectives) to clarify the existing Water Quality Objective for Chemical Constituents. The clarification will appear as a footnote stating that the existing objective applies to drinking water chemical constituents, such as organic carbon.
13. The proposed Amendment modifies Basin Plan Chapter III (Water Quality Objectives) to establish a new narrative water quality objective for *Cryptosporidium* and *Giardia* to protect the public water system component of the MUN beneficial use. This narrative water quality objective for *Cryptosporidium* and *Giardia* shall be applied within the Sacramento-San Joaquin Delta and its tributaries below the first major

dams (Figure A44-1). Compliance with this objective will be assessed at existing and new public water system intakes.

14. The State Water Board's Policy with Respect to Maintaining High Quality of Water in California (Resolution No. 68-16) incorporates the federal antidegradation policy and restricts reductions in water quality even if beneficial uses are protected. Changes in water quality are allowed only if they are consistent with maximum benefit to the people of the State, do not unreasonably affect beneficial uses, and do not result in water quality less than that prescribed in water quality control plans or policies. Administrative Procedures Update No 90-004 provides guidance for implementation of the State and federal antidegradation policies. This guidance requires an antidegradation analysis to be conducted for any new or expanded discharge with the potential to degrade water quality.
15. The proposed Amendment modifies Basin Plan Chapter IV (Implementation) to include a Drinking Water Policy and an Implementation Program for the proposed narrative water quality objective for *Cryptosporidium* and *Giardia*. Consistent with Resolution No. 68-16, the Implementation Program describes the actions that the Central Valley Water Board will take to maintain existing water quality if trigger values for *Cryptosporidium* are exceeded.
16. The proposed Amendment modifies Basin Plan Chapter V (Surveillance and Monitoring) to include support of a one-time special study to characterize ambient levels of *Cryptosporidium*, to better understand the relationship between source loading and ambient *Cryptosporidium* concentrations, and to better understand the movement of *Cryptosporidium* through the system.
17. The Central Valley Water Board has considered the factors set forth in Water Code section 13241, including economic considerations, in developing this proposed Amendment. The costs of implementing the proposed Amendment are expected to be minimal as there will be no action required unless a trend of increasing pathogen concentrations at public water system intakes would require actions according to the Implementation Plan.
18. The proposed Amendment includes an estimate of the cost of the proposed implementation program to agriculture and identifies potential sources of financing, as required by Water Code section 13141.
19. The proposed Amendment contains policy decisions and relies upon the records of USEPA, the California Department of Public Health, and individual public water systems. The proposed amendment contains no new science and therefore is not subject to the peer review requirement of Health and Safety Code section 57004.

20. The Central Valley Water Board finds that the proposed Amendment is consistent with the State Water Resources Control Board (State Water Board) Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies. Additionally, the proposed Amendment is consistent with the federal Antidegradation Policy (40 CFR § 131.12). The proposed Amendment protects existing water quality at public water system intakes by requiring investigation of potential degradation of water quality and requiring actions be taken by controllable factors to ensure compliance with water quality objectives. Such actions are of maximum benefit to the people of the state. The proposed Amendment will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies because the Amendment is intended to result in compliance with water quality objectives. The actions to be taken are not expected to cause other impacts on water quality.
21. The regulatory action proposed meets the “Necessity” standard of the Administrative Procedures Act, Government Code, section 11353, subdivision (b).
22. The basin planning process has been certified by the Natural Resources Agency as an exempt regulatory program because its process adequately fulfills the purposes of the California Environmental Quality Act (CEQA). The Central Valley Water Board is therefore exempt from CEQA’s requirement to prepare an environmental impact report, negative declaration, or initial study (Pub. Res. Code, §21000 et seq.) for the proposed Amendment. Central Valley Water Board staff has prepared the required documentation for adoption of a Basin Plan Amendment, including a completed environmental checklist and written report (Staff Report) prepared for the Board (Cal. Code Regs., tit. 23, § 3777).
23. The Central Valley Water Board staff held CEQA scoping meetings on 25, 26, and 27 August 2008 to receive comments on the draft Amendment and to identify any significant issues that must be considered.
24. Central Valley Water Board staff has prepared a draft Amendment and a staff report dated March 2013. The Staff Report includes a description of the proposed Amendment and analysis of reasonable alternatives to the proposed Amendment. The Staff Report includes an analysis of the reasonably foreseeable environmental impacts of the methods of compliance and an analysis of the reasonably foreseeable alternative methods of compliance with the proposed Amendment. Some potential impacts that were not significant were identified based on the analysis of the reasonably foreseeable methods of compliance.

25. Central Valley Water Board staff completed an environmental checklist that concluded that the proposed Amendment does not have the potential to significantly impact the environment. Because the proposed Amendment does not have the potential to significantly impact the environment, no mitigation measures are proposed.
26. Central Valley Water Board staff has circulated a Notice of Public Hearing, Notice of Filing, a written Staff Report, response to public comments documents, and environmental checklist, and a draft Amendment to interested individuals and public agencies, including persons having special expertise with regard to the environmental effects involved with the proposed Amendment, for review and comment in accordance with state and federal environmental regulations (Cal. Code Regs., tit. 23, §3775 et seq., 40 CFR §§ 25 and 131).
27. The Central Valley Water Board held a public hearing on 12 April 2013 and 26 July 2013, for the purpose of receiving testimony on the draft Basin Plan Amendment. Notice of the public hearing was sent to all interested persons and published in accordance with Water Code section 13244.
28. Based on the record as a whole, including a draft Basin Plan Amendment, the environmental document, accompanying written documentation, and public comments received, the Central Valley Water Board concurs with staff's conclusion that no actions to comply with the Amendment are expected to cause a potentially significant impact to the environment. The Central Valley Water Board finds that the record as a whole and the procedures followed by staff comply with applicable CEQA requirements (Cal. Code Regs., tit. 23, §3775 et seq., Pub. Res. Code §§21080.5, 21083.9, and 21159, Cal. Code Regs., tit. 14, §15250).
29. A Basin Plan Amendment must be approved by the State Water Board, Office of Administrative Law (OAL), and the United States Environmental Protection Agency (USEPA). The proposed Amendment becomes effective under state law after OAL approval and becomes effective under the federal Clean Water Act after USEPA approval.
30. The Central Valley Water Board finds that the Amendment to the Basin Plan was developed in accordance with Water Code section 13240, et seq.

THEREFORE BE IT RESOLVED:

1. Pursuant to section Water Code section 13240, et seq., the Central Valley Water Board, after considering the entire record, including oral testimony at the hearing, hereby approves the Staff Report and adopts the Amendment to the Basin Plan as set forth in Attachment 1.

2. The Executive Officer is directed to forward copies of the Basin Plan Amendment to the State Water Board in accordance with the requirements of section 13245 of the Water Code.
3. The Central Valley Water Board requests that the State Water Board approve the Basin Plan Amendment in accordance with the requirements of Water Code sections 13245 and 13246 and forward it to OAL and the USEPA for approval. The Central Valley Water Board specifically requests USEPA approval of all Basin Plan Amendment provisions that require USEPA approval.
4. If during its approval process the Central Valley Water Board staff, State Water Board or OAL determines that minor, non-substantive corrections to the language of the Amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Central Valley Water Board of any such changes.
5. The Central Valley Water Board hereby approves and adopts the CEQA substitute environmental documentation, which was prepared in accordance with Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and directs the Executive Officer to sign the environmental checklist.
6. Following approval of the Basin Plan Amendment by the OAL, the Executive Officer shall file a Notice of Decision with the Secretary for Resources in accordance with Public Resources Code section 21080.5, subsection (d)(2)(E), and California Code of Regulations, title 23, section 3781.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on 26 July 2013.

Original signed by

PAMELA C. CREEDON, Executive Officer

Attachment 1: Amendment to Basin Plan to Establish a Drinking Water Policy for Surface Waters of the Delta and Its Upstream Tributaries

Resolution No. R5-2013-0098

Attachment 1

Amendment to Basin Plan to Establish a Drinking Water Policy for Surface Waters of the Delta and Its Upstream Tributaries

The proposed changes to the Basin Plan are as follows. The project area map in Appendix A will be included as an appendix to the Basin Plan. Text additions to the existing Basin Plan language are underlined and *italicized*. Modify the Basin Plan under the heading, “Water Quality Objectives for Inland Surface Waters” (page III-3.00), as follows:

Cryptosporidium and Giardia

Waters shall not contain Cryptosporidium and Giardia in concentrations that adversely affect the public water system component¹ of the MUN beneficial use. This narrative water quality objective for Cryptosporidium and Giardia shall be applied within the Sacramento-San Joaquin Delta and its tributaries below the first major dams (shown in Figure A44-1) and should be implemented as specified in Section IV of the Basin Plan. Compliance with this objective will be assessed at existing and new public water system intakes.

Footnote for existing Chemical Constituents narrative objective:

Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.*

**This includes drinking water chemical constituents of concern, such as organic carbon.*

Modify the Basin Plan under the heading, “Water Quality Concerns” (page IV-1.00), as follows:

8. Drinking Water Policy

The Regional Water Board supports protection of the MUN beneficial use in surface waters of the Sacramento-San Joaquin Delta and its tributaries. The Delta provides drinking water to over 25 million people in the Southern California, Central Valley, Central Coast, and San Francisco Bay regions, and several million people obtain their water supply from the tributaries of the Delta. The tributaries of the Sacramento and San Joaquin Rivers that originate in the Cascades and Sierra Nevada Mountains generally have high water quality. However, as the tributaries flow into lower elevations, they are affected by natural processes, urban, industrial, and agricultural land uses, and a highly managed water supply system. This Policy pertains to the following drinking

¹ Public water system as defined in Health and Safety Code, section 116275, subdivision (h)

water constituents of concern: organic carbon, Cryptosporidium, Giardia, salt and nutrients. Work on the Policy was initiated in 2000 in response to concerns that these constituents might pose significant drinking water risks and result in significant additional treatment costs for water agencies due to the potential increased loading as a result of population growth in the watershed. Source control evaluations conducted in 2011 show that the load of organic carbon and nutrients will not likely increase in the future as a result of current regulatory actions. Monitoring of Cryptosporidium at public water system intakes from 2006 to 2011, as required by USEPA regulations, has not resulted in additional treatment requirements for public water systems treating water from the Delta and its tributaries. The Cryptosporidium and Giardia narrative objective and associated implementation program are to maintain existing conditions for public water systems, to comply with the Policy with Respect to Maintaining High Quality of Water in California and the Antidegradation Implementation Policy.

Other elements of the Drinking Water Policy include the following:

- The Basin Plan contains the following elements that address the protection of the MUN beneficial use:
 - All water quality objectives are developed to protect the MUN beneficial use unless otherwise stated. The Basin Plan also includes specific narrative and numeric objectives to protect the MUN beneficial use.
 - The existing narrative water quality objective for chemical constituents includes drinking water chemical constituents of concern, such as organic carbon.
 - The Implementation Chapter of the Basin Plan contains the following Policies relevant to the protection of the MUN beneficial use:
 - Resolution No. 68-16, Policy with Respect to Maintaining High Quality of Water in California (IV – 8.00).
 - Resolution No. 88-63, Sources of Drinking Water Policy (IV – 9.00).
 - Antidegradation Implementation Policy (IV – 15.01).
 - Policy for Application of Water Quality Objectives (IV – 16.00).
 - Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California; a.k.a. State Implementation Plan or SIP (IV-26.02)
 - Continued coordinated monitoring and modeling of the identified drinking water constituents of concern is necessary to confirm that concentrations will not likely increase to levels that adversely affect beneficial uses. Monitoring completed to support the implementation of the Drinking Water Policy shall be coordinated with other monitoring programs already in place as well as the Delta Regional Monitoring Program. The Delta Regional Monitoring Program is a Regional Water Board initiated stakeholder effort to address the need for a comprehensive monitoring, assessment and reporting program.

- To further protect the public health, drinking water utilities employ a multi-barrier approach to control contaminants that includes source water protection, water treatment, and protection of distribution system water quality.
- Source evaluations based on 2011 permit conditions for publically owned treatment works, urban runoff, and irrigated agriculture, indicate that concentrations of organic carbon at public water system intakes are not expected to increase over time.
- Drinking water constituents of concern shall continue to be considered when NPDES facilities conduct their Antidegradation analysis.
- If there are significant changes to the characteristics of the project area, drinking water treatment standards based on source water quality, or knowledge regarding drinking water constituents of concern, the Central Valley Water Board may consider the need to reevaluate the Drinking Water Policy. The Drinking Water Policy will be reviewed by the Regional Water Board in 2023 to determine if the provisions should be revised.
- The Regional Water Board supports and recognizes the importance of USEPA's efforts to refine analytical methods to measure Cryptosporidium and Giardia in water.
- The Regional Water Board supports refinement of analytical modeling efforts to improve understanding of the fate and transport of drinking water constituents of concern.
- It is appropriate to use Cryptosporidium concentrations as an indicator of compliance with the Cryptosporidium and Giardia objective since Cryptosporidium is not as readily treated as Giardia when conventional drinking water treatment processes are employed, and USEPA promulgated new drinking water requirements specifically to address Cryptosporidium

Modify the Basin Plan under the heading, “Control Action Considerations of the Central Valley Regional Water Board” (page IV-16.00), as follows:

8. Drinking Water Policy Implementation

As a part of the Drinking Water Policy, a narrative objective has been established for Cryptosporidium and Giardia to protect the public water system component of the MUN beneficial use. Although it is unclear what levels of Cryptosporidium and Giardia will impair this use, the goal of implementation is to maintain existing levels of pathogens at public water system intakes. This will be achieved by addressing controllable sources that are shown to cause or substantially contribute to Cryptosporidium levels increasing to the trigger level of the next highest bin classification. In accordance with the USEPA Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), public water systems are required to monitor for Cryptosporidium at their intakes; the monitoring results are used to establish the bin classification for the water system. To assure that Cryptosporidium levels at public water systems stay within the range of their existing bin classifications, triggers at public water system intakes are included below based on USEPA LT2ESWTR bin classifications. The triggers and the changes to LT2ESWTR bin levels do not indicate a violation of the narrative water quality objective for Cryptosporidium and Giardia nor are the triggers and the LT2ESWTR bin levels to be used for numeric effluent limits. Instead, the proposed numeric triggers may prompt action by the Regional Water Board.

Cryptosporidium Ambient Trigger Exceedance

If Cryptosporidium monitoring data from an existing public water system intake indicate that the maximum running annual average² has reached 80 percent of the next highest bin, as existed in 2013, the affected public water system may request that the Regional Water Board initiate the investigation described below and shown in Figure IV-1. Table IV-x shows the 2013 LT2ESWTR bin classifications and the 80 percent trigger levels.

Table IV-x. Bin Levels and 80 Percent Triggers

Bin Classification	Maximum Running Annual Average (oocysts/L)	80 Percent Trigger (oocysts/L)
1	< 0.075	0.06
2	0.075 to < 1.0	0.80
3	1.0 to < 3.0	2.40

If the affected public water system requests assistance, the Regional Water Board should coordinate with CDPH, the affected public water system and potential sources (e.g., storm water management entities, wastewater treatment or wetland managers, etc.) to assess the data and evaluate the need to conduct source evaluations and

² Maximum Running Annual Average as defined in USEPA Long Term 2 Enhanced Surface Water Treatment Rule

implement control options. The affected public water system may decline assistance from the Regional Water Board in addressing their compliance with the LT2ESWTR. The coordination and investigation effort should include the steps represented by the schematic overview in Figure IV-1.

Antidegradation Analysis

In addressing Cryptosporidium and Giardia in an antidegradation analysis for evaluating the public water system component of the MUN beneficial use, the monitoring results of the nearest impacted public water system intake shall be considered. In cases where a trigger (Section IV) at the nearest public water system intake has not been exceeded, the analysis should be simplified and may be curtailed, depending on the magnitude of the discharge in question and the likelihood of potential impact at public water system intakes. If a trigger has been exceeded, information from the resulting investigation should be considered in the antidegradation analysis.

Reasonable Potential

The Regional Water Board evaluated data representing 2013 conditions. An evaluation of this data indicates that the narrative water quality objective for Cryptosporidium and Giardia is being attained in surface waters at all public water system intakes in the Delta and its tributaries. The triggers and the changes between LT2ESWTR bin levels do not indicate a violation of the narrative water quality objective for Cryptosporidium and Giardia nor are the triggers and the LT2ESWTR bin levels to be used for numeric effluent limits.

The Regional Water Board will determine reasonable potential in accordance with the applicable state and federal regulatory requirements. For NPDES permittees, the numeric triggers as applied at the public water system intakes are part of the Regional Water Board's procedures under 40 CFR § 122.44(d)(1)(ii) for determining whether a discharge has reasonable potential. At the request of an affected public water system, implementation of the trigger provisions described in (Figure IV-1, flowchart) will help to ensure that management measures prevent violations of the narrative objective. As a result, NPDES dischargers are not expected to have a reasonable potential to cause or contribute to an excursion above the narrative objective, and NPDES permits are not expected to include effluent limitations to implement the narrative objective.

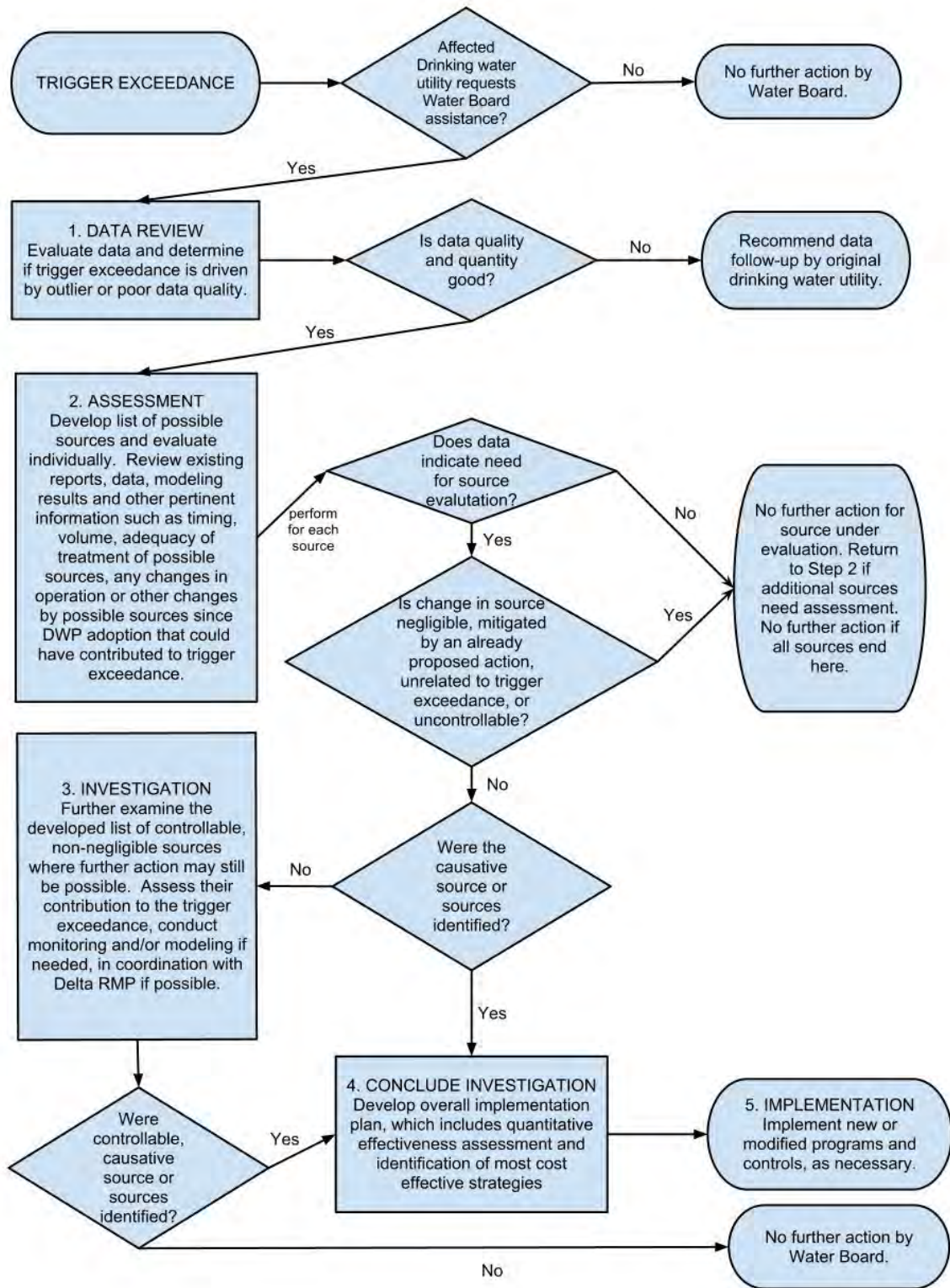


Figure IV-1: Schematic Overview of Actions prompted by *Cryptosporidium* Trigger Exceedance

Modify the Basin Plan under the heading, “Estimated Costs of Agricultural Water Quality Control Programs and Potential Sources of Funding” (page IV-39.00), as follows:

Drinking Water Policy

The total estimated costs to implement management practices, if necessary, range from zero to approximately \$6.8 million (2013 dollars).

Potential funding sources include:

1. *Those identified in the San Joaquin River Subsurface Agricultural Drainage Control Program and Pesticide Control Program.*

Modify the Basin Plan under the heading, "Surveillance and Monitoring" (page V-5.00), as follows:

Drinking Water Policy

Monitoring and surveillance for the Drinking Water Policy consists of two elements.

Cryptosporidium and Giardia Monitoring

It is not the intent of the Drinking Water Policy to require routine effluent monitoring for Cryptosporidium and Giardia. Rather, the Regional Water Board should work with interested stakeholders to gather data that could be used to help identify potential sources if Cryptosporidium levels increase to the trigger level (in Section IV) at an existing public water system intake in the future. This one-time Cryptosporidium special study could be conducted through the Delta Regional Monitoring Program or through another coordinated effort between dischargers, drinking water suppliers, and state agencies. The study will characterize ambient background conditions and potential sources to be used when and if exceedance of a trigger occurs. The study is envisioned to last two years targeting the period of Long Term 2 Enhanced Surface Water Treatment Rule second round monitoring. The study may consist of the following elements:

- Literature review to identify available source information
- Continued monitoring at existing public water systems intakes
- Monitoring at several ambient locations that will be identified as sites that integrate the pathogen sources where historic pathogen data are unavailable
- Monitoring at several representative discharge locations, if representative pathogen concentrations are not available or if coordinated data are necessary
- Hydrodynamic and particle tracking models to simulate the transport of pathogens from potential sources to public water system intakes
- If needed, focused studies to identify the viability and fate and transport of Cryptosporidium.

A report documenting the results of the special study should be prepared.

Organic carbon, salinity, and nutrients

As waste discharge requirements are renewed, the Regional Water Board should consider the necessity for inclusion of monitoring of organic carbon, salinity, and nutrients. This consideration should include a combination of the following:

1. The location with respect to drinking water intakes.
2. The importance of the load based on available information.
3. Whether the information exists that the load has significantly increased.
4. Importance of data to management decisions to protect drinking water.

For general permits, agriculture and small dischargers (smaller than 5 mgd), careful consideration should be made as to whether monitoring for these constituents is necessary.

Where water quality monitoring is performed to evaluate management practices to control other constituents, the Regional Water Board recommends monitoring of organic carbon, salinity, and nutrients be considered to evaluate the influence on drinking water quality.