

**Regional Water Quality Control Board
Central Valley Region
Board Meeting – 9/10 June 2011**

**Response to Written Comments for
the El Dorado Irrigation District Deer Creek Wastewater Treatment Plant
Tentative Order Amending Waste Discharge Requirements
16 May 2011**

At a public hearing scheduled for 9/10 June 2011, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of an Order Amending the National Pollutant Discharge Elimination System (NPDES) permit for the El Dorado Irrigation District Deer Creek Wastewater Treatment Plant. The tentative Order was issued on 1 April 2011 for public review and comments. This document contains Central Valley Water Board staff responses to written comments received from interested persons. Written comments from interested persons were required to be received by the Central Valley Water Board by 2 May 2011 in order to be included in the public record. Comments were received by the due date from the following parties:

1. El Dorado Irrigation District (City or Discharger) and
2. California Sportfishing Protection Alliance (CSPA).

Written comments are summarized below, followed by Central Valley Water Board staff responses. Minor changes were made to the tentative NPDES Permit based on public comments received.

DISCHARGER COMMENTS

DISCHARGER COMMENT #1: The maximum daily effluent limitation for bromodichloromethane in Table 6b should be changed from 0.79 µg/L to 0.80 µg/L, consistent with the value in Table 6a and in Table F-16 of the Fact Sheet.

Response: Central Valley Water Board staff concurs. Table 6b has been updated to 0.80 µg/L from 0.79 µg/L.

DISCHARGER COMMENT #2: The Discharger disagrees that an effluent limitation for bromodichloromethane (BDCM) is required to comply with the El Dorado Irrigation District (EID) Court Order because Board staff have since learned that the sample in question was not an effluent sample, but rather a drain sample not representative of the effluent discharge (as stated in the Fact Sheet, p. F-42). The Discharger contends that the EID Court Order¹ required the Board to include a BDCM limitation based on the Board's previous conclusion that a limitation was warranted, which has since been

¹ *California Sportfishing Protection Alliance v. Central Valley Water Board* (Sacramento County Superior Court, Case No. 34-2009-80000309), judgment dated 28 March 2011 ("EID Court Order").

found to be erroneous. The Discharger further contends that the inclusion of the BDCM limitation in the NPDES permit results in an overly stringent regulation of the discharge and requires the already fiscally-constrained District to expend additional funds on monthly compliance monitoring for BDCM (which at the estimated cost of \$205/sample x 60 samples over a 5-year permit term = \$12,300).

Response: The Central Valley Water Board concurs with the Discharger that the discharge does not demonstrate reasonable potential to cause or contribute to an exceedance of the bromodichloromethane criteria (No Reasonable Potential). Central Valley Water Board staff re-evaluated the laboratory data sheets, and found further correspondence that identified the sample in question was obtained from the Plant Drain and not an effluent sample. Unfortunately, the Discharger did not participate when given the opportunity to comment on the court proceeding, and did not clarify for the court (or bring this issue to the Central Valley Water Board's attention) that the sample in question was not an effluent sample, even though staff brought this to the District's attention before filing its brief and provided the District a copy of the board's brief. Subsequently the court concluded that the analytical data results demonstrated reasonable potential, and ordered "the Board to establish an effluent limitation for bromodichloromethane." Therefore, Central Valley Water Board staff recommends including a limitation for bromodichloromethane in accordance with the court order. Because there is no reasonable potential for this constituent, to address the Discharger's concern regarding monitoring costs, the proposed Order has been modified to reduce the sampling frequency from monthly to quarterly.

The Discharger's Report of Waste Discharge to renew the NPDES Permit is due 4 June 2013, after which a new reasonable potential analysis will be conducted. If new information demonstrates that there is no reasonable potential or other reason to include such limit, then the proposed permit renewal will not contain an effluent limit for bromodichloromethane.

DISCHARGER COMMENT #3: The Discharger disagrees that an effluent limitation for aluminum is required to comply with the EID Court Order, because the EID Court Order does not require a pollutant variability analysis using the specified TSD procedures employed in the Tentative Order or any other specific procedures, but simply states in the conclusion, "...the Board shall...conduct a pollutant variability analysis in determining the MEC for aluminum." The Discharger states that the Code of Federal Regulations (40 CFR § 122.44(d)(ii)) does not specify a procedure for conducting a "pollutant variability analysis." The Discharger contends that supporting documentation for the *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) demonstrates that the SIP reasonable potential analysis methodology accounts for pollutant variability, albeit in a different manner than the TSD does. The Discharger further states that the aluminum data used

for the reasonable potential analysis are concentrations over various months, reflecting a seasonal variability in the effluent. The Discharger contends that the Regional Water Board should rely on that rationale for characterizing the effluent variability, as it has done for assessing reasonable potential for all other constituents in this Tentative Order, and as Board staff has does in all NPDES permits adopted during the last few years. The Discharger further contends that applying the TSD procedure, as Board staff did in this Tentative Order, does not realistically project aluminum concentrations in the effluent, as demonstrated by the following historical Deer Creek WWTP effluent aluminum (total recoverable) concentrations where the 150 µg/L as the upper level of the expected concentration is valid.

Date	Al (µg/L)
Feb 2002	39
Oct 2003	100
Feb 2004	100
Aug 2004	23
Mar 2005	39
Aug 2005	40
Mar 2006	150
Jul 2006	25
Mar 2007	21
Aug 2007	< 50

Because the upper reasonable projected level aluminum concentration of 150 µg/L is well below the most stringent applicable aluminum criterion of 200 µg/L, the Discharger requests that the aluminum limitation and monthly monitoring requirements be removed from the Tentative Order because reasonable potential for the discharge to cause or contribute to exceedance of aluminum criteria on an annual average basis does not exist and cannot be demonstrated using available data.

Response: The Central Valley Water Board staff concurs that the SIP's reasonable potential analysis methodology accounts for pollutant variability; however, the Central Valley Water Board staff does not concur that the aluminum effluent limitation should be removed.

40 CFR § 122.44(d)(ii) states that a reasonable potential analysis must account for the variability of the pollutant or pollutant parameter in the effluent. The reasonable potential analysis is based on data the discharger submits with the renewal application, and the samples themselves must be representative of the seasonal variation in the discharge. (40 CFR § 122.21(j)(4)(vi), (vii), (ix).) Other than requiring representative data, the regulations do not establish any particular methodology for accounting for pollutant variability. The supporting documentation for the SIP demonstrates that the SIP reasonable potential analysis (RPA) methodology accounts for pollutant variability, because pollutant

variability was evaluated during the development of the SIP, including the mean effluent concentration, maximum effluent concentration (MEC), and projected effluent concentration. At that time the State Board determined the use of the MEC to be representative of the wastewater and receiving water and to be used in the RPA (Final Functional Equivalent Document for Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Phase 1 of the Inland Surface Waters Plan and the Enclosed Bays and Estuaries Plan) (approved 2 March 2000), pp. V-5 V-22.) The SIP states in the introduction that “The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.” Therefore, for consistency in the development of NPDES permits, the Central Valley Water Board has implemented the RPA procedures from the SIP to evaluate reasonable potential for both CTR/NTR and non-CTR/NTR constituents (except electrical conductivity). The State Water Board has held that the Central Valley Water Board may use the SIP as guidance for water quality-based toxics control for non-CTR/NTR constituents such as aluminum. (See, e.g., Order WQ 2006-0013 (*Yuba City*) at p. 4.) USEPA has reviewed the SIP on numerous occasions and has the opportunity to review all NPDES permits issued in California, including the subject permit. (NPDES Memorandum of Agreement Between USEPA and State Water Board (1989).) Thus, the Discharger is correct in stating that the SIP RPA method accounts for pollutant variability in compliance with 40 CFR § 122.44(d)(ii).

However, in this case, in developing an effluent limitation for aluminum, the EID Court Order required the Board to “(b) conduct a pollutant variability analysis in determining the MEC for aluminum.” The record before the court did not include evidence showing how the SIP method considered pollutant variability. The addition of this evidence makes the court’s order somewhat ambiguous, but the writ appears to require a method other than the SIP. Consequently, in addition to the SIP method of considering pollutant variability, Central Valley Water Board staff conducted two pollutant variability tests using the Discharger’s historical data (see table in Discharger’s comment above): 1) statistical analysis and 2) TSD methods.

1. **Statistical Analysis.** Given a population of data, the Central Valley Water Board staff uses a higher confidence level (99.9%) to achieve a lower margin of error in projecting a MEC for development of interim performance-based limitations in compliance schedules. Increasing the population of data also lowers the margin of error, and at least ten data points are needed for a more accurate statistical analysis (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Using the statistical tables for “t distribution critical values,” the pollutant variability will lie within 3.3 standard deviations of the mean at a 99.9% confidence level. Following this methodology and using the

Discharger's historical effluent data shown in the previous table, the projected MEC at 99.9% confidence level is 201 µg/L, which exceeds the 200 µg/L based upon the secondary maximum contaminant level for the protection of MUN.

- 2. TSD Method.** The TSD also recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 3-1 of the TSD are used to determine a reasonable potential with a 99% confidence level, which results in a higher margin of error in the projected MEC than a 99.9% confidence level. Using the multipliers in Table 3-1 for a 99% confidence level, the projected MEC is 450 µg/L, which is also greater than the 200 µg/L based upon the secondary maximum contaminant level for the protection of MUN.

As demonstrated through these statistical analyses and the historical aluminum concentrations in the effluent, the Discharger is correct in stating that the TSD method does not realistically project aluminum concentrations in the effluent. Nevertheless, using a statistical method that has a lower margin of error, the 99.9% confidence level, also predicts that the effluent discharge could exceed the 200 µg/L, albeit by a small margin. Therefore, even though the discharge does not demonstrate reasonable potential in accordance with the SIP procedure, Central Valley Water Board staff recommends establishing a limitation of 200 µg/L as an annual average because both the statistical analyses project the MEC above the 200 µg/L. However, because of the low probability (0.0005) of an exceedance of the aluminum effluent limitation at 200 µg/L as an annual average, the proposed Order was changed from requiring monthly to quarterly monitoring. In addition, staff modified the proposed Order to correct statements that the secondary MCL is intended to protect human health. The secondary MCL protects the MUN beneficial use, but it regulates taste, odor or appearance. Primary MCLs protect human health. (Health & Safety Code, § 116275, subd. (c).) The primary MCL for aluminum is 1.0 mg/L (1,000 µg/L). (Cal. Code of Regs., tit. 22, § 64431, subd. (a).) The discharge does not exhibit reasonable potential to exceed the primary MCL.

DISCHARGER COMMENT #4: The Discharger concurs that the additional monitoring expense associated with either: (i) having its on-site laboratory re-certified or (ii) having certified laboratory personnel travel to the Discharger's facility and conducting pH and temperature sampling on site is economically impossible for the Discharger without further increase in local sewer fees. However, the Discharger requests a factual correction to Item 6 on page 2 of the Tentative Order, which states that "the Discharger's sewer rates have been raised up to 15 percent" because it does not tell the entire story as follows:

“[T]he Discharger issued a 218 notification and approved a 5-year water and sewer rate increase that, taken cumulatively, is a 57 percent rate increase over that timeframe. In addition, to reduce the operating budget and to reduce rate increases beyond the approved 57 percent rate increase, the Discharger laid off 45 people since mid 2008. The Discharger has also eliminated several positions through attrition since 2008. The lay-offs combined with the position eliminations has resulted in a 30 percent staff reduction since mid 2008.”

Response: These factual corrections are included in the proposed Order.

The Discharger contends that it does not have budgeted operating funds to pay for the cost associated with certifying the Deer Creek Wastewater Treatment Plant laboratory, and that certifying the Deer Creek laboratory for sampling of pH and temperature would be a waste and misuse of public funds.

Response: The proposed permit revision does not include requirements for the Discharger to analyze pH and temperature samples by a certified laboratory. **See Response to CSPA Comment #3 for further discussion.**

DISCHARGER COMMENT #5: The Discharger submitted the following editorial comments:

- A.** Page F-16, 1st and 2nd paragraphs. The first and second paragraphs on p. F-16 contain duplicate language. It appears that the sentence in the text in the first paragraph beginning with “The *California Toxics Rule*...” and ending with “nickel, silver, and zinc” should be deleted.

Response: Central Valley Water Board staff concurs, and the proposed NPDES permit has been changed accordingly.

- B.** Page F-16, 3rd paragraph. The citation of Table 4, note 4 of 40 CFR § 131.38(c)(4) appears to be incorrect; there is no Table 4 in this section of the CFR.

Response: Central Valley Water Board staff concurs, and the proposed NPDES permit has been changed accordingly.

- C.** Page F-21, Table F-4. The “Highest Assumed Upstream Receiving Water Copper Concentration” in Table F-4 should be calculated with a WER equal to 1, not 9.7, because the WER applies at and downstream of the discharge. The ECA and downstream criteria are correctly calculated using the WER equal to 9.7. Also, to avoid confusion, the Highest Assumed Upstream

Receiving Water Copper Concentration, which is supposed to reflect the CTR criterion, should be rounded to two significant figures, which is how CTR criteria for metals are expressed, and how the criterion is shown in the table.

Response: Central Valley Water Board staff concurs, and the proposed NPDES permit has been changed accordingly.

- D. Page F-24, 1st paragraph. At a minimum, in the last sentence of this paragraph, the ECA should be changed from “1.3 µg/L” to “0.99 µg/L” and the “42 mg/L” should be changed to “40 mg/L.”

Response: Central Valley Water Board staff concurs, and the proposed NPDES permit has been changed accordingly.

- E. Also suggested deleting the “reasonable worst-case ambient hardness” row in Table F-6 (page F-25) and the “Ambient Hardness” column in Table F-7 (page F-26).

Response: Central Valley Water Board staff concurs, and the proposed NPDES permit has been changed accordingly.

- F. However, it is unclear why it is necessary to solve for and present a reasonable worst-case ambient hardness (discussion beginning below Equation 4 on p. F-23 and ending on p. F-24). That value represents an artificial hardness, not an actual or even potential downstream hardness, and does not appear to be used for subsequent calculations in the Tentative Order. Thus, its presentation is confusing. The discussion on p. F-23 above Equation 4 and later on p. F-24 does make clear that waters that are separately compliant with so-called Concave Up criteria may not be when mixed. As such, the ECA must be reduced relative to a criterion calculated from the actual worst-case potential downstream hardness of 42 mg/L. Equation 4 determines that reduced ECA.

Response: Central Valley Water Board staff concurs and has included the following language.

~~By rearranging the CTR Equation (Equation 1) to solve for the hardness, the reasonable worst-case ambient hardness associated with the ECA from Equation 4 can be determined, as shown in Equation 5, below.~~

~~Reasonable Worst-Case Ambient Hardness = $e^{(\ln(ECA) - b)/m}$. (Equation 5)~~

~~Where:~~

~~m, b = criterion specific constants (from CTR)
ECA = effluent concentration allowance (from Equation 4)~~

~~An example is shown below for a Concave Up Metal. As previously mentioned, the lowest effluent hardness is 42 mg/L, while the upstream receiving water hardness ranged from 71 mg/L to 290 mg/L and the downstream receiving water hardness ranged from 61 mg/L to 230 mg/L. In this example for lead, using Equation 4, the ECA is 1.3 µg/L, which corresponds to a reasonable worst case ambient hardness of 42 mg/L.~~

~~A reasonable worst case ambient hardness of 40 mg/L has been used in this Order for lead. In this case for lead, the lowest possible fully-mixed downstream hardness is 42 mg/L (see last row of Table F-6), which corresponds to a total recoverable lead criterion of 1.1 µg/L, using Equations 1 and 2. However, a lower chronic hardness is required to establish the criteria to calculate the ECA is required to establish the criteria to calculate the ECA to ensure the discharge does not cause toxicity at any location in the receiving water, at or downstream of the discharge location, which would be a violation of the Basin Plan's narrative toxicity objective. This is because for concave up criteria metals, mixing two waters with different hardness with metals concentrations at their respective CTR criteria will always result in toxicity CTR criterion exceedances when the waters mix. Therefore, the effluent must contain some assimilative capacity for the metal to not cause toxicity as the discharge mixes with the receiving water. As shown in Table F-6, using a hardness of 40 mg/L results in an ECA that of 0.99 µg/L that is necessary to be protective under all discharge conditions. In this example for lead, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient lead concentration is in compliance with the CTR criteria.~~

- G.** Page F-25, Table F-6. The hardness values in Table F-6 should be rounded to two significant figures, consistent with Table F-5; otherwise it appears two different assumptions for mixed conditions were used for copper and lead.

Response: Central Valley Water Board staff concurs, and the proposed NPDES permit has been changed accordingly.

- H.** Page F-37, paragraph 1, line 5. The following edit is suggested to make this statement more technically accurate/appropriate.

Therefore, Auburn Ravine and Deer Creek are expected to support ~~the same~~ similar assemblages of aquatic life.

Response: Central Valley Water Board staff concurs, and the proposed NPDES permit has been changed accordingly.

CSPA COMMENT #1: The proposed Permit establishes effluent limitations for metals based on the hardness of the effluent as opposed to the ambient instream receiving water hardness and fails to use the mandated equations as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)).

Response: The *California Toxics Rule* (CTR) contains water quality criteria for seven metals that vary as a function of hardness, the lower the hardness the lower the water quality criteria. The hardness-dependent metal criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. CSPA contends that the proposed Order establishes effluent limits for CTR metals based on the incorrect hardness. CSPA has five main arguments:

- a) Effluent hardness cannot be used in any way to establish CTR criteria;
- b) The wrong equations were used to calculate the CTR criteria;
- c) The definition of “ambient” is incorrect;
- d) The “Emerick” paper cannot be used; and
- e) The wrong method is used for establishing a protective limitation.

a) Effluent hardness cannot be used in any way to establish CTR criteria;

The proposed Order establishes the CTR hardness-dependent metals criteria based on the reasonable worst-case downstream ambient hardness in accordance with the CTR and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP), and is consistent with the guidance provided by the State Water Resources Control Board (State Water Board) in WQO 2008-0008 (City of Davis) and the Sacramento Superior Court in its decision regarding the El Dorado Irrigation Deer Creek Wastewater Treatment Plant (see *California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region*, Sacramento Superior Court Case No. 34-2009-80000309) (EID Court Order).

The methodology for calculating effluent limits for metals with CTR hardness dependent criteria described in the proposed Order establishes the criteria based on the reasonable worst-case downstream ambient hardness and ensures these metals in the discharge do not cause receiving water toxicity under any downstream receiving water condition. Under the methodology, all hardness conditions that could occur in the ambient downstream receiving water after the effluent has mixed with the water body were considered. The proposed effluent limitations are fully protective of aquatic life in all areas of the receiving water affected by the discharge under all flow conditions, at the fully mixed location,

and throughout the water body including at the point of discharge into the water body.

The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4)) The CTR does not define whether the term “ambient,” as applied in the regulations, necessarily requires the consideration of upstream or downstream hardness conditions. The Sacramento Superior Court defined “ambient” as, “...*the surface water surrounding the aquatic life.*”, and concluded that, “...*it would be unreasonable to interpret the regulation as requiring States to ignore the effect of the effluent on the hardness (and consequent toxicity) of the downstream receiving water. The most reasonable interpretation of the regulation, therefore, is that the metal criteria should be calculated based on the actual ambient hardness of the surface water after the effluent and receiving water mix.*” (EID Court Order, p. 15.)

The court clarified that, “*This means after the effluent and receiving water fully mix.*” (*Ibid*, footnote #7 on p. 15). The procedures described in the proposed Order result in protective effluent limits for the “fully mixed” condition,² and throughout the water body, including at the point of discharge into the water body. This is consistent with the CTR, which states, “*For all waters with mixing zone regulations or implementation procedures, the criteria apply at appropriate locations within or at the boundary of the mixing zones; otherwise the criteria apply throughout the water body **including at the point of discharge into the water body.***” (40 CFR § 131.18(c)(2)(i), emphasis added.) Because the CTR metals criteria are calculated using hardness, the hardness at the point of discharge defines the metals criteria at the point of discharge. It is unlikely that the discharge has fully mixed with the receiving water at this point. However, the methodology used also prevents toxicity at the point where the discharge is fully mixed.

In Order WQ 2008-0008, the State Water Board concluded that regional water boards have considerable discretion in determining ambient hardness as long as the hardness values are protective under all flow conditions. (Order WQ 2008-0008, pp. 10-11.)³ The Court concluded, “*The Court agrees, in part. Nothing in the CTR itself gives the Board discretion to define the term “ambient” on a case-by-case basis. However, under the federal Clean Water Act, each state is free to enforce its own water quality laws so long as its standards are not less stringent than those established by the federal government.*” (EID Court Order at p. 15) Therefore, the court agreed that the Central Valley Water Board has discretion to

² The court did not define “fully mixed.”

³ This includes, for example, using different receiving water hardness values for wet and dry conditions (*Ibid*, p. 10), using upstream receiving water hardness (*Ibid*, p. 10), or using downstream receiving water mixed hardness (*Ibid*, p. 11).

use the upstream receiving water hardness as long as it results in CTR criteria that are not less stringent than if the downstream receiving water hardness were used to calculate the criteria. In the case for the EID Deer Creek Wastewater Treatment Plant, since the effluent lowers the hardness of the upstream receiving water, use of the upstream receiving water hardness to calculate the CTR criteria would not be consistent with the Clean Water Act⁴.

CSPA continues to state that only the effluent hardness was considered in the development of the CTR metals effluent limits. This is incorrect. As discussed in the Fact Sheet, both upstream and downstream hardness monitoring data were considered. The proposed Order clearly demonstrates that the reasonable worst-case downstream hardness has been used to calculate the criteria. This is shown in Tables F-4, F-5, and F-6. These tables demonstrate that the proposed effluent limits for the CTR metals do not cause or contribute to an exceedance of the CTR criteria in the receiving water. The tables show the fully mixed hardness and metals concentrations downstream of the discharge for all possible flow conditions (i.e., high receiving water flow conditions to the effluent-dominated condition). CSPA also contends that the effluent hardness cannot be considered in the evaluation of the appropriate CTR criteria. The EID Court Order clearly states that the effect of the effluent on the receiving water hardness is necessary to establish the criteria. (*Ibid*, p. 15.)

b) The wrong equations were used to calculate the CTR criteria;

CSPA also contends that the incorrect equations were used to calculate the CTR criteria. This contention is directed at the equation for calculating the ECA for Concave Up Metals (i.e., Equation 4 in the proposed Order). Central Valley Water Board staff disagrees. Equation 4 is not used in place of the CTR equation. Rather, Equation 4 is used in place of iteratively determining the reasonable worst-case downstream hardness to use in the CTR equation. Equation 4, which is derived using the CTR equation, is used as a direct approach for calculating the ECA that is always protective considering the reasonable worst-case conditions in the receiving water (i.e., reasonable worst-case downstream hardness). The CTR equation has been used to evaluate the receiving water downstream of the discharge at all discharge and flow conditions to ensure the ECA calculated using Equation 4 is protective. For example, this is shown in Table F 6 of the proposed Order, and included below for convenience.

⁴ The effluent lowers the hardness of the receiving water as it mixes with the receiving water resulting in lower CTR criteria. Thus, using the upstream receiving water hardness would result in less stringent criteria than if the downstream receiving water hardness were used. Based on weekly receiving water data from 1 January 2005 through 31 December 2007, the downstream receiving water hardness was always lower than the upstream hardness.

For this discharge, the use of Equation 4 results in more stringent effluent limits for concave up metals than using the CTR equation. For example, for lead, the lowest possible fully-mixed downstream hardness is 42 mg/L (see last row of Table F-6, below), which corresponds to a total recoverable chronic ECA of 1.1 µg/L, using the CTR equation. However, a lower chronic ECA is required to ensure the discharge does not cause toxicity at any location in the receiving water downstream of the discharge, which would be a violation the Basin Plan’s narrative toxicity objective⁵. This is because for concave up metals, mixing two waters with different hardness with metals concentrations at their respective CTR criteria will always result in CTR criterion exceedances⁶. As shown in Table F-6, a chronic ECA of 0.99 µg/L is necessary to be protective under all discharge conditions. In this example for lead, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient lead concentration is in compliance with the CTR criteria.

Table F-6. Lead ECA Evaluation

Lowest Observed Effluent Hardness		42 mg/L			
Lowest Observed Upstream Receiving Water Hardness		71 mg/L			
Highest Assumed Upstream Receiving Water Lead Concentration		2.1 µg/L¹			
Lead ECA_{chronic}²		0.99 µg/L			
		Fully Mixed Downstream Ambient Conditions			
Effluent Fraction⁶		Hardness³ (mg/L)	CTR Criterion⁴ (µg/L)	Lead⁵ (µg/L)	Complies with CTR
High Flow Low Flow	1%	70.7	2.0	2.0	Yes
	5%	69.6	2.0	2.0	Yes
	15%	66.7	1.9	1.9	Yes
	25%	63.8	1.8	1.8	Yes
	50%	56.5	1.5	1.5	Yes
	75%	49.3	1.3	1.3	Yes
	100%	42.0	1.1	0.99	Yes

¹ Highest assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 71 mg/L.

⁵ “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan, p. III-8.01.)

⁶ Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill. (p. 5702)

- ² ECA calculated using Equation 4 for chronic criteria.
- ³ Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.
- ⁴ Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
- ⁵ Fully mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction using Equation 3.
- ⁶ The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

c) The definition of “ambient” is incorrect;

Although the definition of “ambient” as required in the CTR was clarified in the EID Court Order, CSPA continues to argue about its definition. The court ruled that, “*On balance, the Court is persuaded that the term ‘ambient,’ as applied in the CTR, refers to the surface water surrounding the aquatic life.*” CSPA believes ambient should be defined as the receiving water surrounding the effluent. This is not logical, because the CTR criteria are designed for protection of aquatic life in the receiving water, regardless of whether there is a wastewater effluent discharge or not. The fact that a wastewater discharge is present does not eliminate the Clean Water Act requirement to protect beneficial uses. The Discharger did not request a mixing zone. The court’s definition is appropriate.

CSPA seems to make this argument to make the case that the upstream receiving water hardness should be used. When there is a wastewater effluent discharge, it is absolutely necessary to consider the effluent hardness when evaluating the CTR criteria downstream of the discharge. The effluent discharges both metals and hardness. It is not possible to discharge one without the other. Simply ignoring the effluent hardness could result in toxicity downstream of the discharge. CSPA states, however, that, “The wastewater effluent is not ‘surface water’.”, and cannot be considered, per the CTR. On the contrary, once a wastewater effluent is discharged to a receiving water it becomes the surface water and all beneficial uses must be protected. The CTR states that, “...*the criteria apply throughout the water body including at the point of discharge into the water body.*” CTR criteria are receiving water criteria, that apply upstream and downstream of wastewater discharges, even at the point of wastewater discharges. Therefore, it is clear that once a wastewater effluent is discharged to a receiving water, it becomes part of the surface water. Ignoring the effects of the wastewater effluent hardness could result in toxicity in the receiving water. The EID Court Order concluded this would be unreasonable. (*Id.*, p. 15.)

CSPA further provides a discussion of the biological opinion from the US Fish and Wildlife Service and National Marine Fisheries Service on the promulgation of the CTR. Because the biological opinion was submitted on the proposed CTR rulemaking, US EPA would have considered the specific comment in the development of the final rulemaking of the CTR. Therefore, these comments by CSPA are directed at the CTR, not the tentative Order, which must comply with the final CTR and SIP. Central Valley Water Board staff properly applied the SIP and CTR when establishing WQBELs for the CTR metals with hardness dependent criteria.

d) The “Emerick” paper cannot be used

CSPA contends that use of the 2006 Study is inappropriate because it does not utilize the hardness of the surface water, does not use the CTR equations, and ignores other water quality parameters that affect the toxicity of metals. Central Valley Water Board staff disagrees. As discussed above, the effluent limits in the proposed Order are not based solely on the effluent hardness. They are based on the reasonable worst-case downstream ambient hardness, and consider the effect of the effluent hardness on the receiving water. This is consistent with the SIP, CTR, Davis Order, and EID Court Order, and is entirely appropriate. Also discussed above, the 2006 Study utilizes the CTR equations to establish the CTR hardness-dependent metals criteria.

Finally, CSPA’s contention regarding the use of only hardness, and ignoring other water qualities that affect metal toxicity (e.g., pH, alkalinity, dissolved organic carbon, calcium, sodium, chloride, etc.), to establish the CTR criteria is misplaced. As CSPA commented, US EPA has also released a Clean Water Act section 304 criteria document for copper based on the Biotic Ligand Model (*Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision*) (BLM). The criteria document is a non-regulatory scientific assessment intended as guidance only. (*Id.*, Foreward, p. iii.) Thus, the BLM cannot be used in developing WQBELs in NPDES permits; an EPA-approved Basin Plan or SIP amendment allowing adjustment of the established criteria must be completed, or US EPA must change the CTR. Therefore, these comments by CSPA are directed at the CTR, not the tentative Order, which must comply with the final CTR and SIP. CSPA’s contention is with regard to the CTR, not the proposed Order. The Central Valley Water Board is required to implement the CTR and SIP, which for the hardness-dependent metals, means using hardness to establish the CTR criteria.

e) Establishing a Protective Limitation.

CSPA contends that “For the great majority of wastewater discharges to surface waters the hardness of the effluent is much greater than the hardness or the

upstream surface water. In such cases, use of the higher hardness of the effluent to calculate discharge limitations for hardness dependant metals results in significantly less stringent discharge limitations.” CSPA appears to be stating this as a reason the Emerick method should not be used in this case. Central Valley Water Board staff does not concur. Those water bodies are not at issue in this permit. The Emerick method properly implements the CTR, by using the reasonable worst-case downstream ambient hardness to calculate the CTR criteria. As stated above, this is consistent with the CTR and SIP, as well as the EID Court Order, which is applicable to this discharge.

CSPA also comments that “It has been questioned whether the Regional Board’s default use of the “Emerick” method constitutes an underground regulation. ‘Regulation’ means every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure.” (Government Code section 11342.600).

In June 2009, CSPA requested the Office of Administrative Law to issue an opinion finding the “Emerick” method to be an underground regulation. The Office of Administrative Law rejected CSPA’s claim, and declined to issue an opinion.

CSPA concedes that under the circumstance where the upstream hardness is higher than the effluent hardness, use of the upstream surface water hardness will produce criteria that are not sufficiently protective of water quality. This is the condition observed at Deer Creek. CSPA states that the unique circumstances do not nullify the regulatory requirements to use the upstream ambient surface water hardness or to use the CTR prescribed equations when calculating criteria for hardness dependant metals. CSPA claims that the methodology to protect water quality in these rare events is prescribed in the federal regulations: the CTR method must be followed to show that the developed criteria are not protective of water quality; 40 CFR 122.44 (d)(1) should be cited as requiring the development of limitations more stringent than the promulgated effluent limitations; and use of the CTR prescribed method using the lower hardness used to develop the more protective limitations.

Central Valley Water Board staff does not concur. This is precisely why, when evaluating the ambient hardness for calculation of the CTR criteria the use of downstream ambient hardness is necessary: because it accounts for changes in hardness caused by the effluent. Quoting again from the EID Court Order, “...it would be unreasonable to interpret the regulation as requiring States to ignore the effect of the effluent on the hardness (and consequent toxicity) of the downstream receiving water. The most reasonable interpretation of the regulation, therefore, is that the metal criteria should be calculated based on the

actual ambient hardness of the surface water after the effluent and receiving water [fully] mix." (EID Court Order, p. 15.) Moreover, the Court agreed that the SIP may allow a case-by-case interpretation of "ambient" as long as the interpretation does not result in criteria that are less stringent than federal law requires. (*Id.*, p. 15.)

CSPA COMMENT #2: The proposed permit fails to include an effluent limitation for aluminum that is protective of the aquatic life beneficial use of the receiving stream with regard to chronic toxicity. The proposed permit cites the development of a site-specific water quality standard for aluminum but fails to comply with all regulatory requirements for development of such a standard.

Response: CSPA has six main arguments:

- a) The Regional Board's citation of the criteria development document is incomplete in its review;
- b) The annual average limit for aluminum is contrary to Federal Regulation;
- c) The Central Valley Water Board failed to cite or comply with any legal requirement in their development of the site specific objective for aluminum
- d) The Arid West Report is not applicable to this discharge;
- e) Trout have been documented in Deer Creek;
- f) Arid West calculations are inapplicable; and
- g) Legal Requirements for Site Specific Limitations.

a) *The Regional Board's citation of the criteria development document is incomplete in its review.* CSPA contends that Board staff ignores the chronic toxicity impacts on young brook trout and striped bass from the criteria document, and that staff did not review the criteria development procedures. CSPA further contends that Board staff evaluated very limited "data that agrees with their desired outcome. . ."

Response: Central Valley Water Board staff does not concur. The amended Order contains a thorough discussion in the Fact Sheet on Central Valley Water Board staff's summation and evaluation of USEPA National Recommended Ambient Water Quality Criteria (NRAWQC) and correction, the Arid West Water Quality Research project, and site-specific aluminum studies conducted within the Central Valley Region. As discussed, Central Valley Water Board staff found that the calculated chronic criterion according to USEPA criteria development procedure equated to 750 µg/L, but USEPA instead recommended a more conservative chronic criterion of 87 µg/L based on the results of chronic toxicity tests conducted under low pH and low hardness using the test species young brook trout and striped bass (p. F-30). The Central Valley Water Board

concluded that the chronic toxicity results on young brook trout and striped bass are not applicable to Deer Creek because these species are not found in Deer Creek (See Response to part e) *Trout have been documented in Deer Creek*); thus, the conservative chronic criterion value at 87 µg/L may not be applicable to Deer Creek, and instead, the chronic criterion USEPA calculated according to its criteria development procedure at 750 µg/L may be more appropriate. Therefore, the Central Valley Water Board staff continued its research and reviewed the Arid West Water Quality Research Project (The Project). The Project, in part, screened additional toxicological studies conducted through 2005 to update the USEPA NRAWQC 1988 study database, and then used the updated database to recalculate the criteria according to USEPA criteria development procedures. (pp. F-31 to F-35) The Central Valley Water Board concluded that the conditions, water characteristics (p. F-32), and assemblages of aquatic life (pp. F-33 to F-34) in Deer Creek are similar to the arid West surface waters, and thus, determined that the Technical Report's (a part of The Project) recalculated NRAWQC acute and chronic criteria (Table F-11, p. F-35) is appropriate criteria to determine WQBELS that are protective of aquatic life for compliance with the Basin Plan's narrative toxicity objective. The Central Valley Water Board staff then continued research and review of site-specific aluminum toxicity studies' results conducted within the Central Valley Region (pp F-35 to F-37). All these site-specific aluminum toxicity studies' resultant water effect ratios indicated that the 87 µg/L is not applicable to surface waters within the Central Valley Region, and that it is not applicable by a water-effect ratio of at least 10 fold. Based on the body of evidence evaluated from consideration of USEPA NRAWQC, National Recommended Water Quality Criteria–Correction, the Arid West Water Quality Research Project, and site-specific aluminum studies conducted by other dischargers within the Central Valley Region, all of which are more recent than the 1988 recommended criteria, Central Valley Water Board staff concluded that a site-specific chronic criterion of 287 µg/L for interpreting the Basin Plan narrative toxicity objective is protective of aquatic life in Deer Creek under all water quality conditions (p F-37). Board staff does not concur that this review was incomplete or that the analysis and evaluation of the body of evidence and data was limited.

Staff has modified the Fact Sheet, to state explicitly that the board considered the 1988 EPA recommended criteria document and other relevant evidence.

b) The annual average limit for aluminum is contrary to Federal Regulation.

Response: The annual average effluent limitation for aluminum is based on the Secondary Maximum Contaminant Level (MCL) to protect the MUN beneficial use. Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations to protect the taste, odor, or appearance of public drinking water. (Health & Safety Code § 116275; see also, Cal. Code of Regs., tit. 22, §§ 64449, 64481, subd. (b)(2).) For Secondary MCLs, Title 22 requires

compliance with these standards on an annual average basis, when sampling at least quarterly. The proposed effluent limitation is not established for protection of public health. Since water that meets these requirements on an annual average basis is suitable for drinking, it is impracticable to calculate average weekly and average monthly effluent limitations because such limits would be more stringent than necessary to protect the MUN beneficial use. Central Valley Water Board has determined that an averaging period similar to what is used by California Department of Public Health for those parameters regulated by Secondary MCLs is appropriate, and that using shorter averaging periods is impracticable because it sets more stringent limits than necessary and does not protect public health.

c) The proposed permit states that a specific objective for aluminum was developed and is the basis for the limitation in the permit. CSPA contends that the Central Valley Water Board failed to cite or comply with any legal requirement in their development of the site specific objective for aluminum.

Response: Central Valley Water Board staff does not concur. The water quality based effluent limit (WQBEL) for aluminum in the proposed Order was developed in compliance with Federal Regulations 40 CFR 122.44(d)(vi)(A). The Central Valley Water Board Basin Plan (Basin Plan) includes a narrative toxicity objective; the Basin Plan does not contain numeric aquatic life criteria for aluminum. Thus, absent numeric aquatic life criteria for aluminum, WQBELs are based on interpretation of the narrative toxicity objective. The Basin Plan's Policy for Application of Water Quality Objectives requires the Central Valley Water Board to consider, "on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., State Water Board, California Department of [Public] Health, California Office of Environmental Health Hazard Assessment, California Department of Toxic Substances Control, University of California Cooperative Extension, California Department of Fish and Game, USEPA, U.S. Food and Drug Administration, National Academy of Sciences, U.S. Fish and Wildlife Service, Food and Agricultural Organization of the United Nations). In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective. For example, compliance with the narrative objective for taste and odor may be evaluated by comparing concentrations of pollutants in water with numerical taste and odor thresholds that have been published by other agencies. This technique provides relevant numerical limits for constituents and parameters which lack numerical water quality objectives." The Basin Plan is an "explicit State policy interpreting its

narrative water quality criterion” (122.44(d)(1)(vi)(A)), which may be supplemented by other relevant information *including* current EPA criteria documents. Even where a criteria document provides the basis of the effluent limitations, the criteria is to be “supplemented where necessary by other relevant information.” (122.44(d)(a)(vi)(B).) The regulation does not require exclusive reliance on the criteria guidance or even purport to establish an exclusive list of the type of information that may be considered.

The analysis performed by Central Valley Water Board staff indicates that the weight of evidence demonstrates that the 87 µg/L chronic criterion is not applicable to Deer Creek. The analysis does not develop or attempt to develop a site-specific water quality standard for aluminum. A site-specific aluminum water quality standard for Deer Creek would require at minimum a Basin Plan amendment. Instead, the site-specific objective for chronic criterion of 287 µg/L applicable to Deer Creek, derived from the body of evidence documented in the Fact Sheet, was used to supplement interpretation of the Basin Plan’s narrative toxicity objective for calculating WQBELs that are protective of aquatic life and human health.

d) *The Arid West Report is not applicable to this discharge.* CSPA contends that the Arid West Report clearly states this is the case by presenting the map on page 3-1, which excludes the central valley. CSPA also contends that page 3-2 of the Arid West Report characterizes the applicable water bodies for which the report is developed. CSPA continues that “The Arid West report states on page 3-4 that: *“Effluent-dependent streams support valuable riparian communities with high biodiversity of terrestrial plants and animals. In arid west waters, the differences between terrestrial vegetation upstream and downstream of a discharge can be striking, especially where the water is effluent-dependent.”* The permit contains no information, and there is no information in the record showing that there is any difference between the upstream and downstream vegetation.”

Response: Board staff does not concur. The map presented on page 3-1 of the Final Arid West Report is a map of annual average precipitation in the West. The map does not attempt to exclude any particular area but defines arid and semi-arid areas as “characterized generally by annual precipitation of less than 10 and 20 inches, respectively (Figure 3-1)”. Furthermore, the language cited by CSPA on pages 3-2 and 3-4 of the Final Arid West Report are only examples of what an ephemeral stream “for example” behaves like or “can” look like but does not define an ephemeral stream as “must” adhere to these strict definitions. Central Valley Water Board staff along with other agencies conducted a thorough surveillance of Deer Creek (The Final Staff Report for *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for*

Temperature at Deer Creek, El Dorado and Sacramento Counties dated January 2003) (Final Staff Report) and found that Deer Creek is a “seasonally effluent-dominated water body.” The Final Staff Report documents that Deer Creek is an effluent-dominated ephemeral stream that on an average rainfall year has 20 to 25 miles of no surface water flow during the summer months. Additionally, the Final Staff Report documents that, similarly to statement on page 3-4 that CSPA quoted in its comment, “Biological surveys have shown that the creek supports equivalent or more diverse communities of aquatic organisms downstream of the Deer Creek WWTP compared to upstream areas.” Based on these findings, and other studies (e.g. Robertson – Bryan, Inc., *Deer Creek Temperature, Flow, and Biological Monitoring and Implementation of Site-Specific Temperature Objectives: Final Report, May 2010*), the Board determined (December 2008) Deer Creek as an ephemeral stream (p. F-7), and as an effluent-dependent stream in the amended Order (F-21). (see also the following response to part e) Trout have been documented in Deer Creek).

e) *Trout have been documented in Deer Creek.* CSPA contends that “*the permit spends a lot of space discussing fish populations in Arid West waters and compares them to Deer Creek fish. Since the proposed permit fails to show that any other non-Arid West stream has different fish, the point is lost.*” CSPA further contends that “*documentation confirms the presence of trout in Deer Creek.*”

Response: Central Valley Water Board staff does not concur. In response to the Court Order, Central Valley Water Board staff completed a detailed evaluation of the body of evidence that included a comparison of the Arid West surface waters to Deer Creek, as thoroughly documented in the Fact Sheet of the proposed amended Order. The comparison indicates that Deer Creek is not a 100% match to that of the five Arid West surface waters but neither are the five Arid West surface waters to themselves. The pH and hardness are similar, and they are all able to support similar assemblages of aquatic life. Deer Creek is not located in a desert area as are some of the Arid West surface waters, but Deer Creek is an effluent-dominated ephemeral stream that on an average rainfall year has 20 to 25 miles of no surface water flow during the summer months.

Further, as documented in the Final Staff Report for Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for *Temperature at Deer Creek, El Dorado and Sacramento Counties* dated January 2003 (Final Staff Report), during an average rainfall year the creek [Deer Creek] temperatures become too elevated to sustain a year round rainbow trout population. Without the presence of sustained populations of brook trout, stripped bass, or rainbow trout, the NRAWQC 87 µg/L chronic criterion is not applicable to Deer Creek, and the recalculated Arid West acute and chronic criterion are appropriate for protection of aquatic life. CSPA’s comment letter quotes the Final Staff Report, “Three rainbow trout were observed in the 1994

survey conducted by CDFG [California Dept of Fish and Game], but rainbow trout were not observed in any of the other four fish surveys that were conducted between 1993 and 1999.” However, the Final Staff Report further states that with the exception of rainbow trout similar fish species were documented in all five studies. The origins of the rainbow trout are unknown and according to the Final Staff Report “It can be concluded that the creek provides suitable rearing temperatures the majority of the time for all species found in the creek except rainbow trout.” Therefore, “Deer Creek does not support a viable, self-sustaining population of rainbow trout, either upstream or downstream of the Deer Creek WWTP” (Final Staff Report, Volume II, section 7.4.2 and Appendices G and H). As documented, Deer Creek can not support a viable, self-sustaining population of rainbow trout either up or downstream of the Deer Creek Wastewater Treatment Plant; therefore USEPA’s chronic criteria is not applicable even if rainbow trout exhibits similar sensitivities as brook trout (one of the two species that the chronic criterion of 87 µg/L is based upon). (See also the previous response to part a).

f) *Arid West calculations.* CSPA contends that “Finally, in evaluating the Arid West Studies and developing their “site-specific” objective, permit page F-37, the Regional Board uses the mean hardness rather than the most protective lowest hardness in their calculations. The mean hardness would not represent the worst case, most protective, limitation for chronic toxicity. It would be comical if it were not so potentially lethal, that the Regional Board has gone to such extreme measures to use the effluent hardness in developing limitations for toxic metals, yet uses the even more relaxed mean downstream hardness when developing their “objective” for aluminum.”

Response: Central Valley Water Board used a very conservative hardness value (25 mg/L as CaCO₃) to determine the site-specific objective for interpreting the Basin Plan’s narrative toxicity objective. It is unclear what CSPA is referring to on page F-37 of the Fact Sheet. However, the Arid West Water Quality Research Project Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report (Technical Report) updated/revised national standards table (Tables ES-1 or 3-8) is duplicated and referenced in the Fact Sheet of the Order (Table F-11). The Technical Report’s table contains a column heading “Mean Hardness (mg/L as CaCO₃)” implying that a mean hardness value should be used in determining the appropriate criterion; however, Central Valley Water Board staff did not use the mean value. Based on historical monitoring data, the effluent hardness ranged from 42 mg/L to 100 mg/L, based on 157 samples; the upstream receiving water hardness varied from 71 mg/L to 290 mg/L, based on 156 samples; and the downstream receiving water hardness ranged from 61 mg/L to 230 mg/L, based on 156 samples (pp. F-15 to F-17). Under the most critical condition, which in this case is the effluent dominated condition, the

hardness is 42 mg/L as CaCO₃. Central Valley Water Board used the most critical condition in Table F-11, which is a hardness value of 25 mg/L as CaCO₃ equating to a chronic criterion of 287 µg/L. Using the hardness value of 42 µg/L as CaCO₃ in the Chronic Aluminum Criterion equation ($e^{(0.8327 \ln(\text{hardness}))+2.9800}$), Table ES-1 or 3-8 of the Technical Report) equates to a chronic criterion of 442 µg/L. Thus, Central Valley Water Board staff's evaluation erred conservatively.

g) Legal Requirements for Site Specific Limitations.

CSPA contends the Central Valley Water Board must promulgate site-specific regulatory criteria for aluminum. In making this contention, CSPA confuses several different legal standards. The term "water quality criteria" is used in two sections of the Clean Water Act, section 304(a)(1) and section 303(c)(2). The term has a different program impact in each section. In section 304, the term represents a non-regulatory, scientific assessment of health or ecological effects. EPA develops criteria guidance documents, including the 1988 recommended criteria for aluminum, pursuant to section 304(a). (NRAWQC – Aluminum (1988), Foreward, p. iii.) If EPA or a State chooses to promulgate regulatory water quality criteria, the state promulgates the criteria as standards pursuant to section 303. (See also, 40 CFR Part 131.) In California, such promulgated criteria are called "water quality objectives." (Wat. Code § 13050, subd. (h). There are no applicable regulatory criteria (water quality objectives) for aluminum. The board must therefore establish effluent limitations based on the narrative toxicity water quality objective.

Second, CSPA confuses the requirements for establishing water quality objectives or standards, with the requirement to implement narrative objectives by, among other things, calculating a numeric criteria as part of permit development as a way to quantify a narrative objective. As discussed above, EPA's NPDES regulations require numeric water quality based effluent limits to implement narrative standards where feasible. The proposed Order complies with this regulation; it does not purport to establish a site specific objective or promulgate water quality criteria. Nothing in the EID Court Order requires the board to adopt new water quality objectives. EPA's regulations similarly do not require this; in fact, the requirements in section 122.44(d)(1)(vi)(A) only apply when the state has *not* established a regulatory, numeric water quality standard for the specific pollutant in question.

The SIP requirements for developing site specific objectives are inapplicable for two reasons. First, the SIP does not apply to aluminum. Second, where a water quality criterion (objective) has been promulgated for a particular receiving water (for example, where a criterion applies to all waters designated MUN), effluent limitations must implement the criterion even if it is not appropriate for a specific

water body due to site-specific conditions. A site-specific objective is necessary in that case because otherwise the inappropriate numeric criteria would apply. In this case, there are no promulgated numeric criteria that apply. Carrying CSPA's argument to its logical conclusion would require the board to establish numeric water quality objectives before establishing numeric effluent limitations to implement any narrative standard – including effluent limitations based on EPA's recommended criteria guidance.

CSPA also contends that the board is required to comply with section 13241 because it established water quality objectives. This is incorrect for the same reasons discussed above: the board has not established a water quality objective.

CSPA COMMENT #3: The proposed Permit fails to require that analysis of water quality be performed by a certified laboratory, contrary to the California Water Code Section 13176. As part of their comment CSPA states *“The Regional Board’s explanation for failing to requiring analyses at certified labs only comes down to the cost to the district, no other defense, technical or legal, is presented. In any of the cases, whether the District can certify their operations laboratory for pH and temperature or certify only their handheld pH and temperature devices or utilize reserve funds to cover the costs from outside laboratory analysis. There are options other than raising sewer rates to achieve certification for pH and temperature analyses. While no one is in favor of higher sewer rates; the Regional Board has not presented any technical or legal reason why an increased sewer rate excuses a wastewater Discharger from the requirement to conduct environmental analyses at a certified laboratory. The Regional Board has also not cited, if they believe this case is based on an economical hardship, why are other new permits being written with the same exemption (see above Sacramento Regional and City of Auburn citations).”*

Response: The General Monitoring Provisions Sections I.B and I.C of Attachment E, Monitoring and Reporting Program have been revised with language from more recent adopted permits to clarify permit requirements. Sections I.B and I.C have been updated as follows:

- B. Chemical, bacteriological, and bioassay analyses of any materials required by this Order shall be conducted in accordance with 40 CFR 136 by at a laboratory certified for such analyses by the State Department of Public Health (DPH); formerly the Department of Health Services). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Regional Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, turbidity, temperature, and residual chlorine, such; analyses performed by a noncertified laboratory will be accepted provided that the analysis is in accordance with 40 CFR 136 or a USEPA approved alternative test procedure, and a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this

program for any onsite field measurements such as pH, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Regional Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Regional Water Board.

~~C. All analyses shall be performed in a laboratory certified to perform such analyses by the California DPH, with the exception of pH and temperature. Laboratories that perform sample analyses shall be identified in all monitoring reports. Analyses that cannot be transported to, and measured by, a certified laboratory within the maximum allowable holding time (e.g., measurement of pH within 15 minutes per Standard Methods) can be performed in a noncertified laboratory providing a Quality Assurance-Quality Control Program is instituted by the laboratory.~~

Although staff proposes to update the language in the Order, the Central Valley Water Board staff do not concur that it is factually or legally possible for the District to comply with the requirements of Water Code section 13176 in the manner suggested by CSPA. CSPA suggests that the District has an onsite laboratory that was previously certified by the Department of Public Health. CSPA suggest that the Board can require the District to have its onsite laboratory re-certified under California Water Code section 13383(b). CSPA suggests that the Board could also require certified laboratory personnel to travel to the facility and conduct testing on site.

The onsite laboratory that CSPA refers as being certified is located at the El Dorado Hills WWTP facility, not at the Deer Creek WWTP facility. The Department of Public Health Environmental Laboratory Accreditation Program (ELAP) certification for the lab located at the El Dorado Hills WWTP was transferred to Sierra Foothill Laboratory in 2010, when Sierra Foothill Laboratory entered into a 3-year contract in April 2010 with the El Dorado Irrigation District for sole use of the onsite laboratory. The board cannot specify the manner of compliance with section 13176. (Wat. Code § 13360.) Thus, it is not legally possible for the board to require a Discharger to have a certified lab on its site. Furthermore, even if the laboratory was certified for pH and temperature analysis, it is approximately 10 miles away, which is at minimum a 14 minute drive from Deer Creek WWTP to the laboratory at El Dorado Hills WWTP, which does not account for sample collection time. Therefore it is factually not possible to transport samples from the sample location to the El Dorado Hills WWTP laboratory within the 15 minute hold time for a pH sample and the near-immediate analysis for temperature samples.

Additionally, if the Regional Board does not have authority to require a third-party laboratory to obtain certification for specific constituents, Sierra Foothill Laboratory is not ELAP certified for pH or temperature and therefore is not

available to the Discharger for pH and temperature sample analysis as a certified laboratory.

A certified laboratory would have to send out its personnel and lab equipment to collect an onsite sample for pH and temperature. Due to the holding time requirements, it is not possible for the sample to be returned to a certified lab for proper analysis. In addition, it is not legally or factually possible to require ELAP certification of individual personnel or equipment not affiliated with a certified laboratory, because ELAP only certifies laboratories.

ELAP certification of a laboratory does not improve the data quality because the quality of the data is related to maintaining manufacturer specified calibration procedures, maintenance procedures, proper use of the equipment and proper Quality Assurance/Quality Control (QA/QC) methods. In Section D, Standard Provisions, the proposed permit requires QA/QC requirements for the Discharger to maintain equipment calibration and maintenance procedures on record for the past 5 years, which assures reliable results and maintenance of the equipment to manufacturer's standards. The Discharger presently has a QA/QC program in place where all operators are trained on proper calibration and use of the equipment. Per USEPA 40 CFR 136, methods 4500 H and B can be performed in the field with a handheld pH meter with a combination electrode that is calibrated with at least 2 standards that bracket the pH samples.

Finally, section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that that apply to NPDES permits pursuant to the Clean Water Act. (Wat. Code §§ 13370, subd. (c), 13372, 13377.)

Therefore, based on the above discussion, it is not legally or factually possible for the Regional Board to require pH or temperature analysis in accordance with California Water Code section 13176, which states:

- (a) The analysis of any material required by this division shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code.
- (b) A person or public entity of the state shall not contract with a laboratory for environmental analyses for which the State Department of Public Health requires accreditation or certification pursuant to this chapter, unless the laboratory holds a valid certification or accreditation.