

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**ORDER R5-2015-XXXX**

**AMENDING WASTE DISCHARGE REQUIREMENTS  
ORDER R5-2013-0047 (NPDES NO. CA0081485)  
FOR  
CUTLER-OROSI JOINT POWERS WASTEWATER AUTHORITY  
WASTEWATER TREATMENT FACILITY  
TULARE COUNTY**

The California Regional Water Quality Control Board, Central Valley Region (hereafter referred to as Central Valley Water Board) finds that:

1. On 31 May 2013, the Central Valley Water Board adopted Waste Discharge Requirements (WDRs) Order R5-2013-0047, NPDES Permit CA0081485 (NPDES Permit) that prescribed waste discharge requirements for the Cutler-Orosi Joint Powers Wastewater Authority, Wastewater Treatment Facility. For the purposes of this Order, the Cutler-Orosi Joint Powers Wastewater Authority is hereafter referred to as “Discharger” and the Wastewater Treatment Facility is hereafter referred to as “Facility”.

***Recycled Water Specifications***

2. Order R5-2013-0047 includes recycled water specifications that the Discharger is required to follow when discharging secondary treated domestic wastewater from the Facility to cropland surrounding the Facility (Use Area). Order R5-2013-0047 includes the recycled water specifications to protect the beneficial uses of the underlying groundwater and to meet the requirements of California Code of Regulations, title 22 (“Title 22”).
3. The Discharger’s Title 22 Engineering Report (*Recycled Water Engineering Report*, dated 30 July 2009) indicated the following minimum setbacks from areas irrigated with secondary treated effluent would be maintained:
  - Property lines = 25 feet
  - Public Roads = 30 feet
  - Drainage courses = 50 feet
  - Domestic wells = 150 feet
  - Irrigation wells = 100 feet
4. Order R5-2013-0047 includes setback distances for irrigation wells, watercourses, public roads, and property lines consistent with the Discharger’s 2009 Title 22 Engineering Report. However, Title 22 does not specify buffer requirements for irrigation wells, watercourses, public roads, or property lines. Therefore, Order R5-2013-0047 states that if the California Department of Public Health approved a reduced buffer zone for these setback distances, the WDRs may be reopened.

5. The Discharger submitted a letter dated 16 September 2013 to the California Department of Public Health, Division of Drinking Water (now under the State Water Resources Control Board), hereinafter referred to as the “Division of Drinking Water”, requesting the Division of Drinking Water approve the removal of the irrigation well, watercourse, public road, and property line setback distances included in Order R5-2013-0047. The Discharger contends that compliance with these setback distances will require significant modifications to the current recycled water system and significantly reduce the Facility’s disposal capacity.
6. The Division of Drinking Water submitted a letter, dated 31 January 2014, to the Discharger and the Central Valley Water Board. The letter summarizes its review of the Discharger’s request and concludes that the 25-foot property line and 30-foot roadway setback requirements included in Order R5-2013-0047 may be relaxed if the Central Valley Water Board concurs. On 18 August 2014, a follow up conversation by Central Valley Water Board staff with Division of Drinking Water staff also confirmed that the Division of Drinking Water approves the relaxation of the 50-foot watercourse setback distance. The 31 January 2014 letter also states that the Division of Drinking Water recommends a required setback distance of at least 50 feet from irrigation wells and the recycled water use area.
7. According to the Discharger, a fence is installed around the perimeter of recycled water use area fields (Fields A-D). The distance from the edge of both Fields B and E to Road 120 (edge of pavement) is approximately 40 feet. The distance from the edge of both Fields B and C and Avenue 404 (edge of pavement) is approximately 30 feet. In addition, the adjacent properties to Fields B through D are used for intensive agriculture and, thus, are not high public use properties. Therefore, this Order amends Order R5-2013-0047 by removing the buffer zone requirements between property lines and roadways and the wetted area produced during irrigation with recycled water. This Order also relaxes the 100-foot buffer zone required in Order R5-2013-0047 between irrigation wells and the wetted area produced during irrigation with recycled water to 50 feet per Division of Drinking Water’s recommendation.
8. As described in Finding 5, the Discharger specifically requested in its 16 September 2013 letter that the 50-foot watercourse setback distance requirement in Order R5-2013-0047 be removed. However, a canal (Tout Ditch) runs north-south directly adjacent to Field A which is one of the fields permitted to receive recycled water discharges. The Discharger irrigates the field by flood irrigation. Based on Central Valley Water Board staff’s observations, it appears that there is minimal protection from recycled water entering the canal. However, the Discharger, in a letter dated 2 March 2015, proposes to construct and maintain a double berm between Field A and Tout Ditch when recycled water is applied to Field A in addition to maintaining a buffer zone of 10 feet. Therefore, this Order revises the 50-foot watercourse setback distance requirement to allow the Discharger to maintain a 10-

foot buffer zone, in lieu of a 50-foot buffer zone, between Tout Ditch and Field A as long as a double berm is constructed and maintained between Tout Ditch and Field A.

9. This Order also modifies the recycled water specification in Order R5-2013-0047, section IV.C.13. and removes recycled water specification IV.C.16. Both recycled water specifications, in part, require there to be no standing water 24 hours after recycled water is applied. The Discharger's 2009 Title 22 Engineering Report states that the Discharger will manage the Use Area to ensure complete infiltration of recycled water within 48 hours. The Discharger requested that recycled water specification IV.C.16. be relaxed to 48 hours after recycled water is applied. However, only modifying recycled water specification IV.C.16 and not recycled water specification IV.C.13. would result in contradicting requirements. Therefore, this Order removes recycled water specification IV.C.16. and modifies recycled water specification IV.C.13., which is consistent with the Discharger's 2009 Title 22 Engineering Report and remains stringent enough to prevent nuisance conditions from forming.
10. The Discharger also requested that the recycled water specification in Order R5-2013-0047, section IV.C.17., be revised to state that the Discharger shall not discharge recycled water to the Use Area during "periods of *heavy* precipitation" rather than just "periods of precipitation." The recycled water specification prohibiting discharge of recycled water to the Use Area during times of precipitation or saturated soil conditions is intended to prevent recycled water runoff from occurring and also to minimize recycled water percolation below the root zone. However, Order R5-2013-0047 includes other specifications that require the Discharger to limit the amount of recycled water that is applied to the recycled water Use Area. These other specifications are also intended to prevent the discharge of recycled water from unreasonably degrading underlying groundwater and to prevent recycled water runoff. Order R5-2013-0047, specification IV.C.10. requires the Discharger to apply recycled water at "*reasonable agronomic rates designed to minimize the percolation of recycled water below the root zone (i.e., deep percolation)*." Order R5-2013-0047, specification IV.C.14. requires the Discharger to capture and return all runoff from the Use Area. Therefore, this Order removes recycled water specification IV.C.17.

#### ***Final Effluent Limitations for Copper***

11. Order R5-2013-0047 includes a final average monthly effluent limitation (AMEL) and a final maximum daily effluent limitation (MDEL) of 9.9 µg/L and 24 µg/L, respectively, for total recoverable copper.
12. On 31 May 2013, the Central Valley Water Board also adopted Time Schedule Order (TSO) R5-2013-0048 that provides a compliance schedule for copper. TSO R5-2013-0048 requires the Discharger to complete certain tasks to ensure compliance with the final

copper effluent limitations included in Order R5-2013-0047. One of the tasks requires the Discharger to conduct and submit the results of a water effect ratio (WER) study by 1 June 2015.

13. The Discharger submitted the results of a final WER study on 2 July 2014. The Discharger conducted the study per U.S. EPA's *Streamlined Water-Effect Ratio Procedure for Discharges of Copper* (EPA-822-R-01-005). Based on the results of the study, a dissolved and total recoverable WER of 3.1 is applicable to the Facility's discharge to Sand Creek.
14. Order R5-2013-0047, section VI.C.1.e., states that a default WER of 1.0 was used for calculating California Toxic Rule (CTR) criteria, but that if the Discharger performs studies to determine site specific WERs, Order R5-2013-0047 may be reopened to modify the effluent limitations.
15. Order R5-2013-0047, Fact Sheet (Attachment F), section IV.C.3.c., incorrectly states that "*the applicable acute (1-hour average) and chronic (4-day average) criteria for the receiving water are 24.4 µg/L and 15.4 µg/L, respectively for total recoverable [copper].*" The acute and chronic copper criteria of 24.4 µg/L and 15.4 µg/L, respectively, are based on the worst-case downstream ambient hardness. Using a WER of 3.1 and the same worst-case measured hardness as described in Order R5-2013-0047, Fact Sheet, section IV.C.2.d., the applicable copper acute and chronic criteria are 76 µg/L and 48 µg/L, respectively. As stated in the Order R5-2013-0047, section IV.C.3.c., the copper maximum effluent concentration (MEC) was 85 µg/L. Therefore, the discharge still has reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. The recalculated copper (total recoverable) maximum daily effluent limitation and average monthly effluent limitation, when using the CTR copper criteria calculated with a WER of 3.1, are 76 µg/L and 31 µg/L, respectively.
16. The copper MEC exceeds the copper effluent limitations when recalculated with a WER of 3.1. The TSO provides interim effluent limitations (MDEL = 180 µg/L and AMEL 124 µg/L) for copper effective until 30 May 2018. The Discharger is required to submit an Alternative Method of Compliance Work Plan, by 31 May 2016, if the discharge cannot comply with the revised final effluent limitations for copper derived from the results of the WER study.
17. Clean Water Act (CWA) section 402(o)(1) specifies that, in the case of effluent limitations established on the basis of CWA section 301(b)(1)(C) (i.e., water quality based effluent limitations [WQBELs]), a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with CWA section 303(d)(4). CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters. Sand Creek, a water of the United States, is a tributary to the Tule River within the Tulare-Buena Vista Lakes Watershed. There are no 303(d)

listings for Sand Creek, as described in Order R5-2013-0047, Fact Sheet, section III.D.1. Thus, Sand Creek is an attainment water for copper.

CWA section 303(d)(4)(B), which is applicable to attainment waters, specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with federal and state antidegradation requirements. As described in Findings 13 and 14, the copper effluent limitations in Order R5-2013-0047 were initially (at the time of permit issuance) based on a WER of 1.0 since a site-specific study had not yet been conducted for copper. The results from the July 2014 WER study revealed that, based on site-specific conditions, less stringent copper effluent limitations could still ensure the protection of freshwater aquatic life. Therefore, any increase in loading allowed by the relaxation of the WQBELs for copper will not cause a significant reduction of the receiving water quality and will not impact the beneficial uses in the receiving water. This conclusion is further supported by the fact that the Discharger infrequently discharges to Sand Creek (e.g., the Discharger has not discharged to Sand Creek since at least 2006).

18. CWA section 402(o) provides specific exceptions to the anti-backsliding prohibition contained in section 402(o)(1). CWA 401(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance. Order R5-2013-0047 contained effluent limitations for copper based on a default WER of 1.0. As previously described, the Discharger submitted the results of a WER study for copper on 2 July 2014. The results show the applicable WER for copper is 3.1 instead of 1.0 to calculate the CTR copper criteria. This results in less stringent WQBELs for copper. Thus, the relaxation of the effluent limitations for copper is in accordance with CWA section 402(o)(2)(B)(i), which allows for the relaxation of effluent limitations based on information that was not available at the time of permit issuance.

#### ***Use of Ultraviolet Light Disinfection for Discharge to the Wastewater Ponds***

19. Order R5-2013-0047 requires the Discharger to disinfect wastewater with ultraviolet light disinfection while discharging to the wastewater ponds when groundwater is within five feet of the bottom of the wastewater ponds. The Discharger, on 21 May 2013, submitted an amendment to the previously submitted "*Hydrogeologic Investigation Report and Groundwater Monitoring Well Installation Workplan.*" The 21 May 2013 amendment proposes adding three additional shallow (35 feet) monitoring wells located around the perimeter of the storage ponds and utilizing an existing non-potable well to enhance the groundwater potentiometric surface map. Therefore, this Order revises the compliance determination language in section VII.E. of Order R5-2013-0047 to allow the Executive Officer to approve additional wells to be used for determining compliance with the

groundwater elevation ultraviolet light disinfection requirement (section IV.C.1.c of Order R5-2013-0047).

***CEQA and Other Considerations***

20. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000, et seq.) ("CEQA") pursuant to California Water Code section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt and this Order only serves to implement a NPDES permit. (*Pacific Water Conditioning Ass'n, Inc. v. City Council of City of Riverside* (1977) 73 Cal.App.3d 546, 555-556.). Issuance of this Order is also exempt from the provisions of CEQA in accordance with California Code of Regulations, title 14, sections 15061(b)(2) and 15301.
21. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend the WDRs/NPDES Permit and has provided them with an opportunity to submit written views and recommendations.
22. On XX April 2015, in Fresno, California, after due notice to the Discharger and all other known affected persons and interested parties, the Central Valley Water Board conducted a public hearing at which evidence was received to consider this Order under the California Water Code.

**IT IS HEREBY ORDERED THAT:**

1. The Order number in Order R5-2013-0047 is revised throughout to R5-2013-0047-01.
2. The references to the California Department of Public Health in Order R5-213-0047 will be revised to State Water Resources Control Board, Division of Drinking Water (Division of Drinking Water).
3. The front page of Order R5-2013-0047 is revised to reflect the adoption, and subsequent changes, of this Order as shown in underline/strikeout format below:

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
 CENTRAL VALLEY REGION**

1685 E Street, Fresno, California 93706  
 Phone (559) 445-5116 Fax (559) 445-5910  
<http://www.waterboards.ca.gov/centralvalley>

**ORDER R5-2013-0047-01  
 NPDES NO. CA0081485  
 WASTE DISCHARGE REQUIREMENTS FOR THE**

**CUTLER-OROSI JOINT POWERS WASTEWATER AUTHORITY  
 WASTEWATER TREATMENT FACILITY  
 TULARE COUNTY**

The following Discharger is subject to waste discharge requirements as set forth in this Order:

**Table 1. Discharger Information**

<b>Discharger</b>	Cutler-Orosi Joint Powers Wastewater Authority
<b>Name of Facility</b>	Wastewater Treatment Facility
<b>Facility Address</b>	40401 Road 120
	Cutler, California 93615
	Tulare County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the Cutler-Orosi Joint Powers Wastewater Authority from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

**Table 2. Discharge Location**

<b>Discharge Point</b>	<b>Effluent Description</b>	<b>Discharge Point Latitude</b>	<b>Discharge Point Longitude</b>	<b>Receiving Water</b>
001	undisinfected secondary treated domestic wastewater	36 ° 30 ' 00 " N	-119 ° 17 ' 60 " W	First Encountered Groundwater
002	disinfected secondary treated domestic wastewater	36 ° 31 ' 23 " N	-119 ° 18 ' 12 " W	Sand Creek

**Table 3. Administrative Information**

This Order was adopted by the Regional Water Quality Control Board on:	<b>31 May 2013</b>
This Order shall become effective on:	<b>20 July 2013</b>
This Order shall expire on:	<b>1 May 2018</b>
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<b>2 November 2017</b>

I, **PAMELA C. CREEDON**, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **31 May 2013**, and amended on **XX April 2015** by Order R5-2015-XXXX.

\_\_\_\_\_  
**PAMELA C. CREEDON**, Executive Officer

4. The final effluent limitations for copper in Order R5-2013-0047, Limitation and Discharge Requirements, section IV.A.1.a., Table 6, are amended as shown, in part, in underline/strikeout format below:

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	<u>319.9</u>	--	<u>7624</u>	--	--

5. The recycled water specifications in Order R5-2013-0047, section IV.C. are amended as shown in underline/strikeout format below:

**13.** Areas irrigated with recycled water shall be managed to prevent breeding of mosquitoes or other vectors. The Discharger shall also ensure there is no standing water in the Use Area 48 hours after recycled water is applied. More specifically:

- ~~a. All applied irrigation water must infiltrate completely within 24 hours.~~
- ~~b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.~~
- ~~c. Low-pressure and un-pressurized pipelines and ditches, which are accessible to mosquitoes, shall not be used to store recycled water.~~

**14.** Discharges to the Use Area shall be managed to minimize erosion. Runoff from the Use Area must be captured and returned to the treatment facilities or Use Area.

15. Recycled water shall be managed to minimize contact with workers.
  - ~~16. There shall be no standing water in the Use Area 24 hours after recycled water is applied.~~
  - ~~17. The Discharger may not discharge recycled water to the Use Area during periods of precipitation or when soils are saturated.~~
  - 1618.** A 50-foot buffer zone shall be maintained between any watercourse and the wetted area produced during irrigations with recycled water. A 10-foot buffer zone may be maintained, in lieu of a 50-foot buffer zone, between Tout Ditch (canal adjacent to Road 120) and the wetted area produced during irrigation with recycled water if a double berm is constructed and maintained as a containment feature to ensure recycled water does not enter Tout Ditch. ~~After adoption of this Order, if a reduced buffer zone has been approved by the California Department of Public Health, this Order may be reopened.~~
  - 1719.** A 150-foot buffer zone shall be maintained between any spring or domestic well and a ~~50~~400-foot buffer zone shall be maintained between any irrigation well and the wetted area produced during irrigations with recycled water. After adoption of this Order, if a reduced buffer zone has been approved by the Division of Drinking Water, this Order may be reopened.
  - 1820.** A 150-foot buffer zone shall be maintained between any domestic or irrigation well and impoundment of recycled water.
  - ~~21. A 25-foot buffer zone shall be maintained between the Use Area and all property boundaries. If, after adoption of this Order, a reduced buffer zone has been approved by the California Department of Public Health, this Order may be reopened.~~
  - ~~22. A 30-foot buffer zone shall be maintained between the Use Area and all public roads. If, after adoption of this Order, a reduced buffer zone has been approved by the California Department of Public Health, this Order may be reopened.~~
  - 1923.** The perimeter of the Use Area shall be graded to prevent ponding along public roads or other public areas.
6. The reopener provision in Order R5-2013-0047, section VI.C.1.e., is amended as shown in underline/strikeout format below:
- e. Water Effect Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents, except for copper. A site-specific WER of 3.1 was used for total recoverable and dissolved copper (see section IV.C. of the Fact Sheet). In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper. If the Discharger performs

studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

7. Order R5-2013-0047, section VII.E., is amended as shown in the underline/strikeout format below:

**E. Use of Ultraviolet Light Disinfection for Discharge to the Wastewater Ponds.**

Effluent discharged to a wastewater pond shall be disinfected with ultraviolet light to comply with Section IV.C.1.c when the groundwater potentiometric surface map generated from depth to groundwater data collected from the groundwater monitoring well network, or other groundwater monitoring wells approved by the Executive Officer, indicate groundwater is within 5 feet of the bottom of the wastewater pond.

8. Order R5-2013-0047 Attachment F, section IV.C.2.d., is amended as shown in underline/strikeout format below:

**Table F-6a. Copper ECA Evaluation**

		Lowest Observed Effluent Hardness			180 mg/L (as CaCO <sub>3</sub> )
		Lowest Observed Upstream Receiving Water Hardness			100 mg/L (as CaCO <sub>3</sub> )
		Highest Assumed Upstream Receiving Water Copper Concentration			<u>299.4</u> µg/L <sup>1</sup>
		Copper ECA <sub>chronic</sub> <sup>2</sup>			<u>4815.4</u> µg/L
Effluent Fraction <sup>6</sup>		Fully Mixed Downstream Ambient Concentration			
		Hardness <sup>3</sup> (mg/L)	CTR Criteria <sup>4</sup> (µg/L)	Copper <sup>5</sup> (µg/L)	Complies with CTR Criteria?
High Flow ↓ Low Flow	1%	100.8	<u>299.4</u>	<u>299.4</u>	Yes
	5%	104	<u>309.6</u>	<u>309.6</u>	Yes
	15%	112	<u>3210.3</u>	<u>3210.2</u>	Yes
	25%	120	<u>3410.9</u>	<u>3410.9</u>	Yes
	50%	140	<u>3912.4</u>	<u>3812.4</u>	Yes
	75%	160	<u>4313.9</u>	<u>4313.9</u>	Yes
	100%	180	<u>4815.4</u>	<u>4815.4</u>	Yes

<sup>1</sup> Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 100 mg/L and a WER of 3.1.

<sup>2</sup> ECA calculated using Equation 1 for chronic criterion at a hardness of 180 mg/L and a WER of 3.1.

<sup>3</sup> Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.

<sup>4</sup> Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

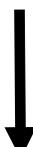
<sup>5</sup> Fully mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.

<sup>6</sup> 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).

~~As discussed above, the receiving water at times contains concentrations of copper that exceed water quality criteria associated with the hardness condition previous to the discharge. The 2006 study procedures remain applicable under these conditions. The discharge cannot cause or contribute to a violation of water quality criteria/objectives in the receiving water. Although metals concentrations downstream of the discharge exceed CTR criteria, the cause of the exceedance is not due to the discharge, it is due to the elevated metals concentrations upstream of the discharge. Implementing the procedures of the 2006 study does not result in an increase in toxicity downstream of the discharge, and in fact reduces the amount of toxicity already present in the receiving water. This is demonstrated in the example below for copper (see Table F-6b).~~

As shown in Table F-6b for copper, prior to the discharge the copper has been observed to exceed water quality criteria by up to 34%. When the receiving water contains some fraction of effluent, the percent exceedance is reduced. The greater the amount of effluent in the receiving water, the lower the percent exceedance, until a fully compliant state is achieved when the effluent constitutes the entire flow. The effluent limitation associated with copper, therefore, was sufficient to assure that the discharge never causes or contributes to a violation of a water quality criterion, and in fact reduces the amount of toxicity already present in the receiving water.

**Table F-6b. Copper ECA Evaluation**

		<b>Lowest Observed Effluent Hardness</b>		<b>180 mg/L (as CaCO<sub>3</sub>)</b>	
		<b>Lowest Observed Upstream Receiving Water Hardness</b>		<b>100 mg/L (as CaCO<sub>3</sub>)</b>	
		<b>Highest Observed Upstream Receiving Water Copper Concentration</b>		<b>12.5 µg/L<sup>1</sup></b>	
		<b>Copper ECA<sub>chronic</sub><sup>2</sup></b>		<b>15.4 µg/L</b>	
		<b>Fully Mixed Downstream Ambient Concentration</b>			
<b>Effluent Fraction<sup>6</sup></b>		<b>Hardness<sup>3</sup> (mg/L)</b>	<b>CTR Criteria<sup>4</sup> (µg/L)</b>	<b>Copper<sup>5</sup> (µg/L)</b>	<b>Percent Exceeding Criterion</b>
High Flow   Low Flow	0%	100	9.3	12.5	34%
	1%	100.8	9.4	12.5	33%
	5%	104	9.6	12.6	31%
	15%	112	10.3	12.9	26%
	25%	120	10.9	13.2	21%
	50%	140	12.4	14.0	12%
	75%	160	13.9	14.7	5%
	100%	180	15.4	15.4	0%

<sup>1</sup> Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 100 mg/L.

<sup>2</sup> ECA calculated using Equation 1 for chronic criterion at a hardness of 180 mg/L.

<sup>3</sup> Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.

<sup>4</sup> Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

<sup>5</sup> Fully mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.

<sup>6</sup> The effluent fraction ranges from 0% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

9. Table F-8 in Order R5-2013-0047 Attachment F, section IV.C.2.d., is amended as shown in underline/strikeout format below:

Based on the procedures discussed above, Table F-8 lists all the CTR hardness-dependent metals and the associated ECA used in this Order.

**Table F-8. Summary of ECA Evaluations for CTR Hardness-dependent Metals**

CTR Metals	ECA (µg/L, total recoverable)	
	acute	chronic
Copper <sup>1</sup>	<u>7624.4</u>	<u>4815.4</u>
Chromium III	2,810.3	335
Cadmium	8.59	3.9
Lead	164.8	6.42
Nickel	771.4	85.8
Silver	9.64	--
Zinc	197.2	197.2

<sup>1</sup> Calculated using a WER of 3.1. See section IV.C.3., for further discussion.

10. Order R5-2013-0047 Attachment F, section IV.C.3.c.i., is amended as shown in underline/strikeout format below:

**i. Copper**

**(a) WQO.** The Discharger submitted a Water Effect Ratio (WER) Study for copper prepared by Pacific EcoRisk on 2 July 2014. The WER Study was conducted per U.S. EPA's *Streamlined Water-Effect Ratio Procedure for Discharges of Copper* (EPA-822-R-01-005). Based on the results of the study, the Central Valley Water Board concludes that a dissolved and total recoverable WER of 3.1 is applicable to the Facility's discharge to Sand Creek.

The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Section 1.3 of the SIP contains requirements for conducting the RPA for CTR constituents. Step 1 of the RPA requires that CTR criteria be adjusted for hardness, as applicable. In this case, the minimum observed effluent hardness was used to adjust the CTR criteria for copper when comparing the MEC to the criteria and the minimum observed receiving water hardness was used when comparing the maximum background receiving water copper concentrations to the criteria. Using the default conversion factors, a WER of 3.1, and a reasonable worst-case measured hardness of the receiving water, as described in section IV.C.2.d of this Fact Sheet, the applicable acute (short-term 1-hour average) and chronic (4-day average) criteria for the effluent (which is the receiving

water at times)receiving water are 7624.4 µg/L and 4815.4 µg/L, respectively for total recoverable. Using a WER of 3.1 and a reasonable worst-case measured hardness as described in section IV.C.2.d. of this Fact Sheet, the applicable acute (~~short-term~~4-hour average) and chronic (4-day average) criteria for the upstream receiving water are 4314 µg/L and 299.2 µg/L, respectively for total recoverable.

- (b) RPA Results.** Copper was detected in the effluent at concentrations of 88 µg/L and 110 µg/L in November 2010. However, as indicated in section IV.C.3.b.i.(b), data collected during November 2010 is not representative of normal Facility operation due to maintenance activities on the secondary clarifier and the November 2010 data are not included in the RPA. Therefore, the maximum effluent concentration (MEC) for copper was 85 µg/L while the maximum observed upstream receiving water concentration was 12 µg/L. Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR chronic criteria for protection of freshwater aquatic life.
- (c) WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for copper. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for copper of 319.9 µg/L and 7624 µg/L, respectively, based on the CTR criteria for protection of freshwater aquatic life.
- (d) Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 85 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for copper are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a time schedule for compliance with the copper effluent limitations is established in TSO No. R5-2013-0047 in accordance with California Water Code section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with California Water Code section 13263.3.

11. Table F-11 in Order R5-2013-0047 Attachment F, section IV.C.4. is amended as shown in underline/strikeout format below:

**Table F-11. Summary of Water Quality-Based Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	<u>319.9</u>	--	<u>7624</u>	--	--
pH	standard units	--	--	--	6.5	8.3
Chloride	mg/L	--	--	175	--	--
Electrical Conductivity @ 25 °C	µmhos/cm	--	--	--	--	1
Boron	mg/L	--	--	1.0	--	--
Un-ionized Ammonia	mg/L	--	--	0.025	--	--
Settleable Solids	mL/L	0.1	--	0.5	--	--

<sup>1</sup> The 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average EC of the source water plus 500 µmhos/cm or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the EC shall be a flow-weighted average of all sources.

12. Table F-13 in Order R5-2013-0047, Attachment F, section IV.D.5. is amended as shown in underline/strikeout format below:

**Table F-13. Summary of Final Effluent Limitations**

Parameter	Units	Effluent Limitations					Basis <sup>1</sup>
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	mgd	--	--	2.0	--	--	DC
BOD <sub>5</sub>	mg/L	30	45	60	--	--	CFR
	% Removal	85	--	--	--	--	CFR
	lbs/day	500 <sup>2</sup>	750 <sup>2</sup>	1000 <sup>2</sup>	--	--	CFR
TSS	mg/L	30	45	60	--	--	CFR
	% Removal	85	--	--	--	--	CFR
	lbs/day	500 <sup>2</sup>	750 <sup>2</sup>	1000 <sup>2</sup>	--	--	CFR
pH	standard units	--	--	--	6.5	8.3	BP
Copper, Total Recoverable	µg/L	<u>319.9</u>	--	<u>7624</u>	--	--	CTR
Total Coliform Organisms	MPN/100mL	--	23 <sup>3</sup>	240	--	--	DPH
Chloride	mg/L	--	--	175	--	--	BP
EC	µmhos/cm	--	--	--	--	<sup>4</sup>	BP
Boron	mg/L	--	--	1.0	--	--	BP
Un-ionized Ammonia	mg/L	--	--	0.025	--	--	BP
Settleable Solids	mL/L	0.1	--	0.5	--	--	BP
Acute Toxicity	% survival	--	--	--	--	<sup>5</sup>	BP

Parameter	Units	Effluent Limitations					Basis <sup>1</sup>
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Chronic Toxicity	TUc	--	--	--	--	6	BP

<sup>1</sup> DC – Based on the design capacity of the Facility.  
 CFR – Based on secondary treatment standards contained in 40 CFR Part 133.  
 BP – Based on water quality objectives contained in the Basin Plan.  
 CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.  
 DPH – Based on CA Department of Public Health Recommendation.

<sup>2</sup> Based on a flow rate of 2.0 mgd in accordance with Effluent Limitation IV.A.1.f.

<sup>3</sup> Applied as a 7-day median effluent limitation. If discharge occurs for less than 7-days, median of all samples collected during the period of discharge.

<sup>4</sup> The 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average EC of the source water plus 500 µmhos/cm or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the EC shall be a flow-weighted average of all sources.

<sup>5</sup> Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:  
 Minimum for any one bioassay----- 70%  
 Median for any three consecutive bioassays ----- 90%

<sup>6</sup> The Discharger shall meet best management practices for compliance with the Basin Plan’s narrative toxicity objective, as allowed under 40 CFR 122.44(k).

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13. Order R5-2013-0047, Attachment G is amended as shown in underline/strikeout format below:

**ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS FOR CONSTITUENTS OF CONCERN**

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL <sup>1</sup>	Reasonable Potential
Aluminum	µg/L	430	NA	750	750	NA	NA	NA	NA	50	No
Arsenic	µg/L	2.7	2.4	150	340	150	NA	NA	NA	10	No
Chloride	mg/L	76	NA	230	860	230	NA	NA	175	250	No
Copper	µg/L	85	12	<u>48/29</u> <del>15/9.3<sup>2</sup></del>	<u>76/43</u> <del>24/14<sup>2</sup></del>	<u>48/29</u> <del>15/9.3<sup>2</sup></del>	1,300	NA	NA	1,000	Yes
Lead	µg/L	1.2	<5	3.2	82	3.2	NA	NA	NA	15	No
Nitrate as N	mg/L	15.6	NA	NA	NA	NA	NA	NA	NA	10	No
Silver	µg/L	<5	<5	4.1	4.1	NA	NA	NA	NA	100	No
Electrical Conductivity @25°C	µmhos/cm	845	NA	NA	NA	NA	NA	NA	source +500 or 1,000 max	900	No
Total Dissolved Solids	mg/L	530	NA	NA	NA	NA	NA	NA	NA	500	No

General Note: All inorganic concentrations are given as a total recoverable.  
 MEC = Maximum Effluent Concentration  
 B = Maximum Receiving Water Concentration or lowest detection level, if non-detect  
 C = Criterion used for Reasonable Potential Analysis  
 CMC = Criterion Maximum Concentration (CTR or NTR)  
 CCC = Criterion Continuous Concentration (CTR or NTR)  
 Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)  
 Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)  
 Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective  
 MCL = Drinking Water Standards Maximum Contaminant Level  
 NA = Not Available  
 < = less than

Footnotes:  
 (1) Municipal and Domestic Supply is not a Beneficial Use of Sand Creek; therefore, MCL's do not apply.  
 (2) Criteria based on reasonable worst case hardness/criteria based on lowest upstream hardness.

14. Order R5-2013-0047, Attachment H is amended as shown in underline/strikeout format below:

**ATTACHMENT H – CALCULATION OF WQBELS**

Parameter	Units	Most Stringent Criteria			Dilution Factors			HH Calculations			Aquatic Life Calculations								Final Effluent Limitations		
		HH	CMC	CCC	HH	CMC	CCC	$ECA_{HH} = AMEL_{HH}$	AMEL/MDEL Multiplier <sub>HH</sub>	MDEL <sub>HH</sub>	ECA Multiplier <sub>acute</sub>	LTA <sub>acute</sub>	ECA Multiplier <sub>chronic</sub>	LTA <sub>chronic</sub>	Lowest LTA	AMEL Multiplier <sub>95</sub>	AMEL <sub>AL</sub>	MDEL Multiplier <sub>99</sub>	MDEL <sub>AL</sub>	Lowest AMEL	Lowest MDEL
Copper, Total Recoverable	µg/L	1,000	<u>76</u> <del>24</del>	<u>31</u> <del>15</del>	0	0	0	1,000	2.44	2,441.2	0.22	<u>16</u> <del>5.16</del>	0.40	<u>19</u> <del>5.9</del>	<u>16</u> <del>5.12</del>	1.87	<u>31</u> <del>9.8</del>	4.57	<u>76</u> <del>24</del>	<u>31</u> <del>9.9</del>	<u>76</u> <del>24</del>

<sup>1</sup> USEPA Ambient Water Quality Criteria.

Any person adversely affected by this action of the Central Valley Water Board may petition the State Water Resources Control Board (State Water Board) to review this action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday (including mandatory furlough days), the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on XX April 2015.

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PAMELA C. CREEDON, Executive Officer