CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0078

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER R5-2008-0077 (NPDES PERMIT NO. CA0079502)

CITY OF ROSEVILLE
DRY CREEK WASTEWATER TREATMENT PLANT
PLACER COUNTY

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

1. On 12 June 2008, the Central Valley Water Board issued Waste Discharge Requirements (WDR) Order R5-2008-0077, prescribing waste discharge requirements for the City of Roseville's Dry Creek Wastewater Treatment Plant, Placer County. For the purposes of this Order, the City of Roseville is hereafter referred to as "Discharger" and the Dry Creek Wastewater Treatment Plant is hereafter referred to as "Facility."

2. Order R5-2008-0077 established an average monthly effluent limit (AMEL) and a maximum daily effluent limit (MDEL) based on reasonable potential to exceed the zinc criterion. The effluent limits were included in Table 6 Effluent Limitations shown in part below:

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Zinc, Total Recoverable	µg/L	35	--	71	--	--

3. On 12 June 2008, the Central Valley Water Board issued Time Schedule Order (TSO) R5-2008-0078 that provided a compliance schedule for zinc and several other constituents. The TSO established an interim maximum daily effluent limitation of 221 µg/L. The TSO requires compliance with the final effluent limitations by 1 June 2013, which corresponds to the expiration date of the current permit (Order R5-2008-0077). If the Discharger is not able to come into compliance with the final effluent limits by 1 June 2013, they will no longer receive protection from mandatory minimum penalties under TSO R5-2008-0078.

4. On 25 July 2012 the Discharger's consultant provided the Discharger with a technical memorandum titled *Updated Analysis of Effluent Zinc Data Sets for the City of Roseville's Pleasant Grove Wastewater Treatment Plant and Dry Creek Wastewater Treatment Plant* (Technical Memorandum). This technical memorandum provided analysis of zinc data collected before and after the use of higher purity nitric acid to preserve metals samples for analysis. Therefore, Order R5-2008-0077 is being

reopened under section VI.C.1.b.ii of the Order, which states *"When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance."* The Technical Memorandum provided new information not available at the time of permit issuance that justifies removal of the final zinc effluent limits as discussed in the following findings.

5. In February 2008 the Discharger began using higher purity nitric acid to preserve metals samples for analysis. The following is a comparison of data collected pre and post ultra-pure nitric acid preservation.

Zinc Effluent Data

	Nitric Acid	Ultra-pure Nitric Acid
Date Range	February 2005 – January 2006	February 2008 – June 2012
Number of Data Points	8	49
Mean	**56**	**38**
Median	60	38
Maximum	**71**	**51**
Coefficient of Variation	0.24	0.14

The change in preservative has resulted in more accurate measurement of effluent metals concentrations as demonstrated by the smaller coefficient of variation and consistently lower zinc concentrations as shown by the lower mean and maximum concentrations.

6. Based on data collected between February 2005 and June 2012, the minimum effluent hardness was 54 mg/L as $CaCO_3$. The applicable zinc criterion for this hardness is 71 µg/L, which is greater than the maximum effluent concentration of 51 µg/L observed after the use of ultra-pure nitric acid (data collected between February 2008 and June 2012). Therefore, based on new information the discharge no longer exhibits reasonable potential to exceed the zinc criterion.

7. 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 limits [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. Dry Creek, the receiving water for the Facility discharge, is a tributary to Natomas East Main Drainage Canal. The Natomas East Main Drainage Canal is an attainment water for zinc. 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 the antidegradation policy. The removal of the WQBELs for zinc will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the removal of zinc WQBELs

complies with antidegradation requirements and does not violate anti-backsliding requirements.

The Discharger's 25 July 2012 Technical Memorandum provided new information that was not available at the time of adoption of Order R5-2008-0077 that demonstrates reasonable potential does not exist for zinc, which satisfies the anti-backsliding requirements and the reopener provision of the Order, allowing for the removal of the zinc final effluent limitations from Order R5-2008-0077.

8. 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 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.)

9. On 31 May 2013, in Rancho Cordova, California, after due notice to the Discharger and all other affected persons, the Central Valley Water Board conducted a public hearing at which evidence was received to consider Order R5-2013-0078 amending Order R5-2008-0077 to reduce particular minimum monitoring and sampling frequencies.

IT IS HEREBY ORDERED THAT:

1. The final effluent limitations for zinc are amended in Order R5-2008-0077 Limitations and Discharge Requirements, section IV.A.1.a., Table 6, as shown in part in underline/strikeout format below

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
~~Zinc, Total Recoverable~~	~~µg/L~~	~~35~~	~~--~~	~~71~~	~~--~~	~~--~~

2. The minimum sampling frequency for zinc is amended in Order R5-2008-0077 Appendix E, Monitoring and Reporting Program, section IV.A.1., Table E-3 Effluent Monitoring, as shown in part in underline/strikeout format below:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
~~Zinc, Total Recoverable~~[6]	~~µg/L~~	~~24-hr composite~~	~~1/month~~	~~1~~

3. The compliance schedule progress reporting schedule is amended in Order R5-2008-0077 Appendix E, Monitoring and Reporting Program, section X.D.1., Table

E-10 Reporting Requirements for Special Provisions Progress Reports, as shown in part in underline/strikeout format below:

Table E-10. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Compliance Schedules for Final Effluent Limitations for cadmium ~~and zinc~~, compliance with final effluent limitations. (Section VI.C.7)	**1 June**, annually, until final compliance

4. Order R5-2008-0077 Appendix F, Determining the Need For WQBELs, section IV.C.3.b. is amended as shown in underline/strikeout format below:

   b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum, ammonia, cadmium, carbon tetrachloride, cyanide, chlorine residual, dibromochloromethane, dichlorobromomethane, iron, manganese, and mercury~~, and zinc~~. WQBELs for these constituents are included in this Order. A summary of the reasonable potential analysis (RPA) is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

5. Order R5-2008-0077 Appendix F, Determining the Need For WQBELs, section IV.C.3.dd. is amended as shown in underline/strikeout format below:

   dd. **Zinc.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. Using the worst-case ambient measured hardness of the effluent (54 mg/L), the applicable chronic criterion (maximum 4-day average concentration) and the applicable acute criterion (maximum 1-hour average concentration) are both 71 µg/L, as total recoverable.

   The MEC for total zinc was 51~~71~~ µg/L, based on 49~~eight~~ samples collected between February 2008~~2005~~ and June 2012~~December 2006~~, while the maximum observed upstream receiving water total zinc concentration was 22 µg/L, based on 11 samples collected between January 2002 and December 2002. Therefore, the discharge does not exhibit ~~has a~~ reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for zinc. ~~No dilution is allowed~~

~~due to the fact that Dry Creek is an effluent dominated receiving water. An AMEL and MDEL for total zinc of 35 µg/L and 71 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Table F-15 for WQBEL calculations).~~

~~The sample results for the effluent indicate that the Discharger will not be able to meet the new limitations. The Discharger has indicated in an Infeasibility Report submitted 17 March 2008, and revised on 2 May 2008, that additional time will be required to comply with the final effluent limits for zinc. To allow for additional time beyond 18 May 2010, a TSO for compliance with zinc final effluent limitations is established in Order No. R5-2008-0078 in accordance with CWC sections 13300 and 13385. Order No. R5-2008-0078 also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.~~

6. Order R5-2008-0077 Appendix F, WQBEL Calculations, section IV.C.4.b. is amended as shown in underline/strikeout format below:

   b. Effluent limitations for aluminum, ammonia, cadmium, carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, <u>and</u> mercury <u>,</u> ~~, and zinc~~ were calculated in accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations for these parameters.

7. Order R5-2008-0077 Appendix F, WQBEL Calculations, section IV.C.4.c. paragraph four is amended as shown in underline/strikeout format below:

   WQBELs were calculated for aluminum, ammonia, cadmium, dichlorobromomethane, dibromochloromethane, carbon tetrachloride, cyanide, <u>and</u> mercury <u>,</u> ~~, and zinc~~ as follows in Tables F-7 through F-15, below.

8. Order R5-2008-0077 Appendix F, WQBEL Calculations, section IV.C.4.c. Table F-15 WQBEL Calculations for Zinc is amended as shown in underline/strikeout format below:

~~Table F-15. WQBEL Calculations for Zinc~~

	~~Acute~~	~~Chronic~~
~~Criteria (µg/L)(1)~~	~~71~~	~~71~~
~~Dilution Credit~~	~~No Dilution~~	~~No Dilution~~
~~ECA~~	~~71~~	~~71~~
~~ECA Multiplier~~	~~0.32~~	~~0.53~~
~~LTA~~	~~22.8~~	~~37.45~~
~~AMEL Multiplier (95th%)~~	~~1.55~~	~~(1)~~
~~**AMEL** (µg/L)~~	~~**35**~~	~~(1)~~
~~MDEL Mulitplier (99th%)~~	~~3.11~~	~~(1)~~
~~**MDEL** (µg/L)~~	~~**71**~~	~~(1)~~

~~(1) Limitations Based on acute LTA~~

9. Order R5-2008-0077 Appendix F, WQBEL Calculations, section IV.C.4.c. Table F-16 Summary of Water-quality Based Effluent Limitations is amended as shown in part in underline/strikeout format below:

Table F-16. Summary of Water Quality-based Effluent Limiations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
~~Zinc, Total Recoverable~~	~~µg/L~~	~~35~~	~~--~~	~~71~~	~~--~~	~~--~~

10. Order R5-2008-0077 Appendix F, WQBEL Calculations, section IV.D.2., sentence six, Averaging Periods for Effluent Limitations is amended as shown in underline/strikeout format below:

> This Order utilizes maximum daily effluent limitations in lieu of average weekly effluent limitations for ammonia, aluminum, cadmium, carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, and mercury ~~, and zinc~~ as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream.

11. Order R5-2008-0077 Appendix F, Table F-17 Summary of Final Effluent Limitations is amended as shown in part in underline/strikeout format below:

Table F-17. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
~~Zinc, Total Recoverable~~	~~µg/L~~	~~35~~	~~--~~	~~71~~	~~--~~	~~--~~	~~CTR~~

12. Order R5-2008-0077 Appendix F, Effluent Monitoring, section VI.B.2.c. is amended as shown in underline/strikeout format below:

    c. Monitoring data collected over the previous Order term for aluminum, cadmium, carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, mercury, ~~zinc,~~ iron, and manganese indicate reasonable potential to exceed water quality criteria for these pollutants. Therefore, monthly effluent monitoring for aluminum, cadmium, carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, mercury, ~~zinc,~~ iron, and manganese has been added to this Order. Because nitrate is generated as part of the wastewater treatment plant operations, monthly effluent monitoring for nitrate has been added to the Order to determine the effectiveness of the tertiary treatment system to control nitrates.

13. Order R5-2008-0077 Appendix G, Summary of Reasonable Potential Analysis is amended as shown in underline/strikeout format below:

ATTACHMENT G - SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Zinc	µg/L	51~~71~~	22	71	71	71	--	--	--	5,000	No~~Yes~~

14. Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and the 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, 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
    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 31 May 2013.

ORIGINAL SIGNED BY KENNETH D. LANDAU FOR

PAMELA C. CREEDON, Executive Officer