



Environmental Utilities
Administration
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May 2, 2008

Ms. Diana Messina
Senior Engineer
Sacramento Watershed
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive
Rancho Cordova, CA 95670

SUBJECT: Tentative (3 April 2008) Waste Discharge Requirements and Time Schedule Order for the City of Roseville, Pleasant Grove Wastewater Treatment Plant

Dear Ms. Messina:

On behalf of the City of Roseville, we would like to thank you for the opportunity to review and comment on the *Tentative Order (3 April 2008) Waste Discharge Requirements for the City of Roseville, Pleasant Grove Wastewater Treatment Plant* ("PGWWTP") (referred to hereafter as the "PGWWTP Tentative Order"). Based on our review of the PGWWTP Tentative Order (tentative order), the City has identified the comments provided below. Also, Attachment 1 contains an Update to the Infeasibility Analyses for the PGWWTP to justify compliance schedules for certain constituents. Where appropriate, we have summarized the information contained in the Update to the Infeasibility Analyses in our comments below. We have also included comments on the Revised Time Schedule Order updated on April 18, 2008.

As you know, the City is simultaneously reviewing and providing comments on the *Tentative Order (3 April 2008) Waste Discharge Requirements for the City of Roseville, Dry Creek Wastewater Treatment Plant* ("DCWWTP") (referred to hereafter as the "DCWWTP Tentative Order"). The City's comments on the DCWWTP TO are provided in a separate letter. However, because the City must administer and comply with the provisions contained in both Tentative Orders, the City seeks to have the two Tentative Orders be consistent, to the extent feasible. Thus, some of the comments for PGWWTP TO suggest using language contained in the DCWWTP TO, and vice versa. We have identified this as a reason for the requested revision, where applicable.

I. Comments on Tentative Order

A. Concurrent compliance schedules

The City requests in-permit compliance schedules through May 18, 2010 for the following California Toxic Rule (CTR) constituents: cadmium, zinc, cyanide, dibromochloromethane, and dichlorobromomethane. Because the in-permit compliance schedules are unable to provide adequate time to ensure compliance with the final effluent limits for these constituents, the City also requests that the Regional Board adopt a Time Schedule Order (TSO) now for these constituents that would run concurrently with the permit. The TSO should be effective upon permit adoption and provide the City protection from mandatory minimum penalties for the additional time necessary to comply with final effluent limits for the constituents. The City has provided appropriate justification for the in-permit compliance schedules as well as additional time for a TSO that protects the City from mandatory minimum penalties. (See Attachment 1, Update to the City of Roseville Pleasant Grove Wastewater Treatment Plant Infeasibility Analyses.) Within the TSO, the City requests additional time for the various constituents as follows:

- compliance with the final effluent limits for cadmium and zinc by May 31, 2013;
- compliance with the final effluent limits for cyanide by May 31, 2013; and
- compliance with final effluent limits for dibromochloromethane and dichlorobromomethane by December 31, 2012.

In all cases, the request for protection from mandatory minimum penalties will not cause the TSO to exceed five (5) years, and all time schedules in the TSO are as short as possible.

B. Compliance schedule for fluoride

Based on the justifications presented in Attachment 1, Update to the City of Roseville Pleasant Grove Wastewater Treatment Plant Infeasibility Analyses, the City finds that it will take five (5) years for the City to comply with the final effluent limitation for fluoride. The City has identified the main source of fluoride to be from the industrial discharger, NEC Electronics Company. Fluoride found in NEC's discharge comes from hydrofluoric acid, which is an essential compound used in the chip manufacturing process. The City is currently working with NEC regarding the need to reduce fluoride concentrations in NEC's discharge to the PGWWTP. While NEC and the City both realize that the reduction of fluoride is necessary, it will take some time for the City and NEC to resolve the issue. For example, the City will need to establish a fluoride limit in NEC's next industrial discharge permit. Also, NEC will need to research and explore options related to changes in the manufacturing process or identify appropriate pretreatment processes for removing fluoride from the industrial

discharge. To allow the City and NEC time to address the issue, the City requests that the Regional Board adopt a TSO that includes a 5 year compliance schedule. The TSO would be effective upon permit adoption and provide the City protection from mandatory minimum penalties through May 31, 2013.

C. Total Residual Chlorine

The Final Effluent Limitations for Total Residual Chlorine in Sections IV.A.1.d (p. 13) and IV.A.2.d (p. 14) indicate a need to measure total residual chlorine to the one-thousandth ($1/1000^{\text{th}}$) mg/L (e.g. 0.011 mg/L, as a 4-day average; and 0.019 mg/L, as a 1-hour average). The City understands that these limits are derived from a draft SWRCB policy on chlorine limits. However, there has been much concern regarding the ability of continuous monitoring equipment (e.g. on-line chlorine analyzers) to measure, in the field, to this level of accuracy. These concerns have been expressed by on-line chlorine analyzer manufacturers, consulting engineers and the Instrumentation Testing Association (ITA) and presented to the SWRCB. They are summarized below:

- On-line (i.e. amperometric) chlorine analyzers are susceptible to inaccuracy from a variety of common interferents. Depending on the residual concentration being measured, the following interferents can create inaccuracies:
 - Dissolved Oxygen
 - Bromine
 - Iodine
 - Sulfites
 - Sulfides
- Published on-line chlorine analyzer accuracies can vary from 1% to 5% of the reading, or 0.002 mg/L to 0.010 mg/L, whichever value is greater, for a typical analyzer spanned to 10 mg/L range. Manufacturer-stated sensitivity is 0.001 mg/L; however the accuracy is, at a minimum, two times greater than the stated sensitivity. These stated sensitivities apply during benchtop studies, not during field applications. Field applications have significantly lower sensitivities as discussed below.

While the analyzer provides a readout with digits to the one-thousandth mg/L, there is little significance to the value indicated in the one-thousandth column. Based on our 15 years of optimizing online chlorine analyzers for process control and compliance reporting, it is our experience that the field application of these online analyzers, considering the calibrations and maintenance, can only be relied upon to accurately

measure to the one-hundredth mg/L in wastewater effluent. Therefore, the City requests that the limits be revised to:

i. 0.01 mg/L, as a 4-day average; and

ii. 0.02 mg/L, as a 1 hour average

These limits are as protective of the receiving water aquatic life as those in the TO and will allow real in-field measurements of chlorine and dechlorination agent. The City cannot provide any measurement device that reliably, in the field, measures to the one-thousandth mg/L. Commensurate changes should be made in Attachment F, Section IV.C.3.j in the first full paragraph on p. F-23.

D. Compliance Determination Language

The compliance determination language in Section VII (p.36) should be revised to include a provision for Effluent Mass Limitations. We recommend that the PGWWTP Order include language that is similar to that found in other Central Valley permits (e.g., City of Tracy – Order No. R5-2007-0036; City of Vacaville – Order No. R5 - 2008-xxxx, adopted April 25, 2008). The following language should be added to Section VII on p. 37:

Effluent Mass Limitations. The effluent mass limitations contained in Final Effluent Limitations IV.A.1.a., IV.A.2.a., and Interim Effluent Limitations IV.A.3.a. are based on the permitted average dry weather flow calculated as follows:

Mass (lbs/day) = Flow (mgd) x Concentration (mg/L) x 8.34 (conversion factor)

If the effluent flow exceeds the permitted average dry weather flow due to wet weather storm events, or is outside the three consecutive dry weather months or when groundwater is above normal and runoff is occurring, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a., IV.A.2.a., and Interim Effluent Limitations IV.A.3.a shall not apply.

E. Reporting Laboratories Used

In VI.A.2.n on p. 22 of the Tentative Order, it is requested that ‘*and USEPA*’ be removed to be consistent with the DCWWTP Tentative Order. EPA forms do not allow for entry of this information.

F. Use of IC25

In Section VI.C.2.a.iii on p. 25 of the Tentative Order, the City requests that the following be added after the first sentence:

IC25 may be substituted for NOEC at the discretion of the Executive Officer.

The City would like the option of substituting IC25 for NOEC when measuring toxicity. The City currently reports toxicity as $TU = 100/IC_{25}$. The City believes that IC25 is a more dependable approximation of the no effect level and provides a better indication of the ability to see an effect in the toxicity test. This perspective is supported by USEPA. USEPA has consistently recommended the use of point estimates (e.g., IC_{25}) rather than hypothesis tests to analyze whole effluent toxicity data since the issuance of the *Technical Support Document for Water Quality-based Toxics Control* in 1991. (TSD, EPA/505/2-90/001, page 6). In the TSD, the USEPA discusses the relative merits and limitations of both techniques, and concludes, 'comparisons of both types of data indicate that an IC_{25} is approximately the analogue of an NOEC derived using hypothesis testing. For the above reasons, if possible, the IC_{25} is the preferred statistical method.'

G. Revisions to Monitoring and Reporting Program (MRP)

- a. The first sentence of Section I.C of on p. E-1 is repetitious with respect to I.B. on p. E-1, and the City asks that it be deleted. The City also requests that the requirement in the second sentence of I.C to report all laboratories used be changed to a requirement to maintain records of all laboratories used, to simplify reporting. Several laboratories are used to perform the analyses depending on the constituent. In addition, labs may change for a variety of reasons including purchasing guidelines and other City policies. The City will maintain records of all laboratories used as described in Attachment E, Monitoring and Reporting Program. This change also necessitates a commensurate change in Section VI.A.2.n on p. 22.
- b. On p. E-3 of the Monitoring and Reporting Program, the City requests that the monitoring frequency for bis (2-ethylhexyl) phthalate in Table E-3 be reduced from monthly to quarterly due to lack of any detected data above the WQO. This is consistent with the monitoring requirements for this constituent in the DCWWTP Tentative Order.
- c. In footnote 3 of Table E-3, the effluent monitoring locations are not at the outfall. The City requests that this footnote be revised to read:

Effluent temperature monitoring shall be at ~~the outfall~~ EFF-001.

H. Additional Requested Changes

1. Provision II.B. on p. 5: 31.5 acres in the first full paragraph should be changed to 31.8 acres.
2. Provision II.B. on p. 5: the phrase, '*and addition of fine screens*', should be deleted from last sentence in the 3rd full paragraph to be consistent with Attachment F, Section II.E (p. F-8).
3. Table 7 on p. 14 contains an effluent limitation for 1,1-dichloroethylene. This limitation should be deleted to be consistent with Table 6 on p. 12 and with Attachment F, Section IV.C.3.o. p. F-25.
4. In Section IV.A.2.d, top of p. 15. the sentence: '*This limitation applies...is used at the facility.*' should be replaced with the language from Section IV.A.1.d: '*The total residual chlorine effluent limitation are effective until the Discharger submits written certification that a chlorine-based disinfection system is not longer in use and chlorine-containing chemicals are not added to the treatment process for wastewater discharged to the receiving water.*'
5. Section IV.A.3 on p.15: the tables and compliance dates should be consistent with the Update to the Infeasibility Analysis (Attachment 1) and interim effluent limits should also be consistent with those listed in the Revised Time Schedule Order (including the City's comments on the TSO).
6. Section VI.C.2.c on p. 28: the compliance date should be revised to read 'and/or 2 years' instead of 'and/or ii years'.
7. In the first sentence of Section VI.C.4.b on p.30: '*to prevent*' is repeated. The sentence should be revised as follows:

The emergency storage basin shall be used only to prevent-to prevent discharge....
8. In Section VI.C.7.a on p. 35, Compliance Schedules: this section needs to be consistent with other sections (e.g. IV.A.3) and the TSO that incorporates the City's comments below. Therefore, as discussed in our comment I.A. above, in addition to interim limits for cadmium and zinc, the TO should contain interim effluent limits for cyanide, dibromochloromethane, and dichlorobromomethane.
9. Provision VII.C.7 on p. 37: '*e.g.*' should be changed to '*i.e.*' to be consistent with the DCWWTP TO.
10. In Table E-1 of Attachment E on p. E-2: '*prior to any treatment processes*' should be deleted from the description of INF-001 to allow for sample collection at the most

practical location. For example, influent samples are best collected downstream of the bar screens but, under certain interpretations, bar screens may be considered a treatment process.

11. In Table E-1 of Attachment E on p. E-2: the description of EFF-001 should be revised to read '*A Location(s) representative of...*' because it may be necessary to collect samples at more than one location to get representative effluent samples depending on the constituent.
12. In Table E-3 of Attachment E on p. E-3 and E-4: the *Sample Type* should be changed to '*Grab*' for bis (2-ethylhexyl) phthalate, cyanide, dibromochloromethane, dichlorobromomethane, 1,1-dichloroethylene, fluoride, and nitrate. The *Sample Type* for persistent chlorinated hydrocarbon pesticides in Table E-3 should be changed to '*Composite*'. The requested changes to Table E-3 are shown below:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Bis (2-Ethylhexyl) Phthalate ⁷	µg/L	24-hr Composite <i>GRAB</i>	1/month	1,8
Cyanide, Total (as CN) ⁷	µg/L	24-hr Composite <i>GRAB</i>	1/month	1
Dibromochloromethane ⁷	µg/L	24-hr Composite <i>GRAB</i>	1/month	1

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dichlorobromomethane ⁷	µg/L	24-hr Composite <i>GRAB</i>	1/month	1
1,1-Dichloroethylene ⁷	µg/L	24-hr Composite <i>GRAB</i>	1/month	1
Fluoride	µg/L	24-hr Composite <i>GRAB</i>	1/month	1
Mercury, Total Recoverable	µg/L	24-hr Composite	1/month	1
Nitrate Nitrogen, Total (as N)	mg/L	24-hr Composite <i>GRAB</i>	1/month	1
Zinc, Total Recoverable ⁷	µg/L	24-hr Composite ⁶	1/month	1
Iron, Total Recoverable	µg/L	24-hr Composite ⁶	1/month	1
Manganese, Total Recoverable	µg/L	24-hr Composite ⁶	1/month	1
Persistent Chlorinated Hydrocarbon Pesticides ⁹	µg/L	Grab <i>COMPOSITE</i>	1/year	1
Priority Pollutants and Pollutants of Concern ⁷	µg/L	10	11	1

¹ As specified in 40 CFR Part 136.

13. In Table E-3 of Attachment E on p. E-3 and E-4, the Minimum Sampling Frequency for Bis (2-Ethylhexyl) Phthalate should be changed from monthly to quarterly to be consistent with Table E-3 of the DCWWTP TO.

14. In Table E-3 of Attachment E on p. E-3 and E-4, the Minimum Sampling Frequency for 1,1-Dichloroethylene should be change from monthly to quarterly to be consistent with Attachment F, Section IV.C.3.o on p. F-25
15. In Attachment E, the last sentence of Section V.D.1 and Section V.D.2. on p. E-7 should refer to 'quarterly' discharger self-monitoring reports instead of 'monthly' discharger self-monitoring reports to be consistent with the first sentence in V.D.1 that states '*chronic toxicity monitoring results shall be reported to the Regional Water Board on the schedule for quarterly sampling...*'
16. In Table F-1 p. FG-3: the row for WDID should be removed to be consistent with the DCWWTP TO.
17. In II.E. on p. F-8: 31.5 acres should be changed to 31.8 acres and 49.5 million gallons should be changed to 65.1 million gallons to be consistent with Section II.B of the TO (p 5.) and as noted in I.H.1 above.
18. The pH of 9.0 on Table F-5 on p. F-15 should be revised 8.0 to be consistent with Tables 6 and 7 on p. 12 and 14, respectively.
19. Footnote 5 for Table F-5 on p. F-15 should be revised as follows:

Based on permitted ADWF of 15 mgd. Effective ~~until~~ upon completion of upgrades to Facility.

20. In Attachment F, Section IV.C.3.i (p. F-22, cadmium) and IV.C.3.cc (p. F-34, zinc) should be revised to reflect the need for a 5 year compliance schedule that would be included in the TSO and that would be effective upon permit adoption as discussed in the Comments on the Revised TSO (II.A.i below) and as discussed above in I.A. Recommended revisions for both of the referenced sections of the Fact Sheet are:

~~Based on the Discharger's performance in implementing their correctly action plan to comply by 18 May 2010, the Regional Water Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with the final effluent limits for [zinc/cadmium].~~ The Discharger has indicated that additional time may be necessary to comply with final effluent limitations for [cadmium/zinc] beyond 18 May 2010. To allow for additional time beyond 18 May 2010, a time schedule order for compliance with [cadmium/zinc] final effluent limitations is established in Order No. R5-2008-xxxx in accordance with CWC sections 13300 and 13385. Order No. R5-2008-xxxx also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

21. In Table F-14 on p. F-39: the maximum pH should be changed to 8.0 to be consistent with Tables 6 and 7 on p. 12 and 14, respectively. In addition, the footnote reference after '7-Day Median of 2.2' should refer to footnote 5 instead of footnote 6. In the row for Turbidity, the footnote reference after '2' should refer to footnote 6 instead of footnote 7.
22. In Attachment F, Section IV.E on p. F-47, the Interim Effluent Limitations needs to be changed commensurate with the Update to the Infeasibility Analyses for the PGWWTP and the corrected TSO.
23. In Attachment F, Section VII.B.7.a on p. F-63 should include all constituents for which compliance schedules have been requested. Specifically, cyanide, dibromochloromethane, and dichlorobromomethane should be added to this section. Additionally, the time requested for compliance should be consistent with Attachment 1, Update to the Infeasibility Analyses for the PGWWTP.

II. Comments on the Revised Time Schedule Order

The City has reviewed the Revised Tentative Time Schedule Order (TSO) for the PGWWTP dated April 18, 2008, and has the following comments:

- A. There are inconsistencies between the compliance dates in the TSO and those requested by the City in its Update to the Infeasibility Analyses. They are as follows:
 - i. The TSO should include compliance schedules and interim effluent limits for cadmium and zinc as requested in the updated Infeasibility Analyses and as discussed above in I.A.
 - ii. On p. 5 of the TSO, the date for achieving full compliance with dibromochloromethane and dichlorobromomethane is January 1, 2012. The City requests that this date be January 1, 2013 to be consistent with the schedule in the Update to the Infeasibility Analyses (Attachment 1).
 - iii. In Order No. 2. on p. 6 of the TSO, the date through which the interim limits for dibromochloromethane and dichlorobromomethane are effective is incorrectly shown as December 31, 2011. The City requests that this date be December 31, 2012 to be consistent with the schedule in the Update to the Infeasibility Analyses (Attachment 1).
- B. The interim effluent limit for fluoride on p. 6 of the TSO is listed as 11,200 ug/L as a maximum daily effluent limitation. The final effluent limit in the Tentative Order is a calendar year concentration. The City requests that the interim limit be on a calendar year basis to be consistent with the final effluent limit in the Tentative Order.
- C. All dates shown in Order No. 1 on p. 5 of the TSO should be consistent with the dates in the Update to Infeasibility Analyses (Attachment 1) and the applicable sections of the tentative order.

Ms. Diana Messina
Re: Tentative Order for PGWWTP
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In conclusion, we appreciate the opportunity to review the PGWWTP Tentative Order and provide comments. We also appreciate the time taken by you on April 11, 2008 to discuss the PGWWTP Tentative Order and our primary issues of concern. Due to these early communications, we are confident that we can collectively put forward a Tentative Order for the PGWWTP that is protective of water quality. If you have any questions on these comments or the attachments, please feel free to contact me at (916) 774-5754.

Sincerely,

A handwritten signature in black ink, appearing to read 'Art O'Brien', with a stylized flourish at the end.

Art O'Brien
Wastewater Utility Manager

Encl.