

COMMENTS
ON
REVISED TENTATIVE WASTE DISCHARGE REQUIREMENTS
FOR
NPDES NO. CA0079367
Issued March 2, 2007

PLACER COUNTY DEPARTMENT OF FACILITY SERVICES
PLACER COUNTY SEWER MAINTENANCE DISTRICT NO. 3
WASTEWATER TREATMENT PLANT
PLACER COUNTY

Submitted March 30, 2007

I. FACTUAL CORRECTIONS

Page F-3, Table. “Facility Permitted Flow” should read “Facility Permitted ADWF”. See item 5 on page 7 of the previous NPDES Permit for this facility.

Page F-5, Table. Move the 0.3 Flow value from the Maximum Daily column to the Average Monthly column and add a footnote that states “The average daily dry weather discharge flow shall not exceed 0.30 million gallons.” This text is a direct quote from item 5 on page 7 of the previous NPDES Permit.

Page F-5, Footnote 2. Change the footnote to read Maximum Instantaneous flow recorded 31 December 2005, the daily flow recorded on this day was 0.45 mgd. It needs to be changed as a factual correction.

Page F-5, C. 2. “Design Flow” should read “Design Dry Weather Flow”.

Page F-40, Footnote 1. Footnote should read “Based upon an average dry weather flow of 0.3 mgd.” See item 5 on page 7 of the previous NPDES Permit for this facility. This change was made in several other locations of the tentative permit including the tables on page 13.

II. COMMENTS ON THE REVISED CEASE & DESIST ORDER

Page 2, last sentence. Change 30 January to 31 January to agree with date provided on p. 4 of Order.

Page 4, #3 – Interim Limit for Nitrate. Maximum daily interim limit should be 33.8 mg/L as N, not 32, based on mean plus 3.3 standard deviations. The County’s data set shows a 151 mg/L as NO₃, which converts to 33.6 mg/L as N. See also Fact Sheet p. F-29.

III. COMMENTS ON THE REVISED TENTATIVE NPDES PERMIT

Page 10-11. Final Effluent Limitations – Discharge Point D-001 table. The revised tentative permit includes new seasonal effluent concentration and mass limitations for ammonia. The County believes there are errors in the calculations used to develop the effluent limitations. Also see comment for p. F-24 (Table F-8) (below), which provides additional detail and the County’s recommended corrections.

Page 11, Table footnote #1. This footnote was modified to clarify that the mass effluent limitations are based on Average Dry Weather Flow. This same clarification needs to be made in the Fact Sheet table (see p. F-40, section IV.D.1).

Page 11, Table footnote #2. The County requests the following edits to this footnote that were discussed and agreed to at a meeting with Regional Water Board staff held on February 15, 2007.

“The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with ~~the lowest possible detectable level for organochlorine pesticides with a~~ maximum acceptable detection level of 0.05 µg/L.”

Page 11, IV.A.C – Mercury Mass Limit. The revised tentative permit includes a new mass effluent limitation for total mercury based on a maximum reported effluent concentration of 0.0023 µg/L recorded on March 29, 2002. However, the maximum reported dissolved mercury concentration for SMD3 effluent of 0.01495 µg/L occurred in a sample collected on December 2, 2002. The correct mass limitation for total mercury based on this dissolved mercury value should be 0.001138 pounds/month. Additionally, the maximum reported total mercury concentration in SMD3 effluent was 0.00797 µg/L in a sample collected on June 1, 2005 and equates to a total mercury mass limitation of 0.000606 pounds/month. The County believes that the establishment of a mass limit based on the lower 0.0023 µg/L value, and disregard for either of the higher dissolved or total mercury values reported in SMD3 effluent, is inappropriate. The County requests that the total mercury mass limitation be changed to 0.001138 pounds/month. See also p. F-40.

It should be noted that the concentration of total recoverable mercury in the December 2, 2002 sample was 0.00178 µg/L, and the County believes that the dissolved and total mercury values measured in the sample were reversed in the lab’s report based on a review of the available information. The composite sample was collected using clean methods consisting of filling two sample bottles, with filtration in the lab for the dissolved mercury measurement. The laboratory analysis (Frontier Geosciences, Seattle, WA) was conducted using research-level, ultra clean techniques. A review of other discharger data (Placer County SMD1 WWTP, City of Placerville Hangtown Creek WWTP) collected by the County’s consultant (Robertson-Bryan, Inc.) from the same time period, and using identical sampling methods and Frontier Geosciences for analyses, indicates that the SMD3 reported dissolved mercury value of 0.01495 µg/L is consistent with the other WWTP’s total mercury values (0.020 and 0.010 respectively). In addition the SMD3 reported total mercury value of 0.00178 µg/L is consistent with the other WWTP’s dissolved mercury values (0.003 and 0.001 respectively) (see table below). Thus, the available information fully supports the conclusion that the dissolved mercury value for SMD3 does not reflect sample contamination, but was merely reversed with the total mercury value, and should be considered in the setting of the County’s mass limitation for total mercury.

Location	Reported Total Hg µg/L	Reported Dissolved Hg µg/L
Placer County SMD3 WWTP	0.00178	0.01495
Placer County SMD1 WWTP	0.02000	0.00300
Placerville Hangtown Creek WWTP	0.01000	0.00100

Page 12, IV.A.2.a (Table). The revised tentative permit includes a compliance schedule for achieving the final effluent limitation for aluminum, with final compliance required by May 18, 2010. This final compliance deadline, however, is the deadline required for achieving compliance with effluent

limitations based on CTR criteria. As the permit (page 30, VI.C.6) and Fact Sheet (page 55, VIII.B.8.b) acknowledge, the applicable aluminum criteria is not CTR and the compliance schedule should not be subject to CTR compliance deadlines. The County report, "County of Placer Infeasibility Analysis and Time Schedule Justifications for Sewer Maintenance District No. 3" (Infeasibility Analysis) identifies proposed actions that will be implemented over 5 years to achieve compliance with the aluminum effluent limitation. Therefore, the appropriate location to identify the interim performance-based effluent limitation for aluminum is the table in VI.A.2.b (page 13).

Page 23, First full paragraph. This section should be edited as follows:

"The discharger's Infeasibility Analysis, dated January 2007, provides justification for a compliance schedule and meets the requirements of Section 2.1 of the SIP. The justification in the Analysis provides for a time schedule for the Discharger to comply with all new limitations for bromodichloromethane and chlordibromomethane (California Toxic Rule (CTR) constituents) by 18 May 2010, and new limitations for new and organochlorine pesticides limitation (based on Basin Plan objectives) in five years from the effective date of this Order and new and existing limitations for nitrates (Basin Plan) and copper (CTR) in four years from this Order. The Analysis includes the Discharger's final determination date regarding regionalization of this facility with the City of Roseville Dry Creek WWTP. The Discharger's Infeasibility Analysis further justified the need for compliance schedules beyond 18 May 2010 for CTR constituents and identified the potential need for additional compliance schedules beyond the time frames specified above for other constituents should the County's final decision (to be made by 31 January 2008) be to regionalize this facility.

Allowance of an additional compliance schedule beyond the dates specified above may be granted in a subsequent enforcement order (for example, Time Schedule Order or Cease and Desist Order), as the Regional Water Board deems necessary."

Similar edits are needed at p. F-55.

Page 24. e. Floating Ammonia Limits. The County has not requested floating ammonia limits. This section should be deleted.

Page 29, 5. a. Other Special Provisions. This section of the revised tentative permit was modified to include the phrase "When required by this order..." The County previously commented on this section that the Regional Water Board may establish applicable water quality based effluent limitations, but do not have the legal authority to prescribe the treatment process (Water Code § 13360(a).) This language prescribes treatment process. The County requests that the language in 5.a be deleted from the permit, per discussions and agreement to do so at a meeting with Regional Water Board staff held on February 15, 2007. See also comment for p. F-31.

Page 30. 6. a. Compliance Schedules. The County requests the following edits be made to this section to clarify the findings of its Infeasibility Analysis. (added text; ~~deleted text~~)

"This Order contains The Discharger's Infeasibility Analysis justified compliance schedules for CTR constituents beyond ~~must comply with new effluent limitations for CTR constituents on or before~~ 18 May 2010. Consequently, allowance of additional compliance schedules beyond the 18 May 2010 date specified for CTR constituents in this Order may be granted in a subsequent enforcement order. New final Effluent Limitations for aluminum, are based on U.S. EPA aquatic life criteria. New final Effluent Limitations for 4,4-DDD, 4,4-DDT, aldrin, alpha-BHC, beta-endosulfan, and endrin are based on the Basin Plan non-detect narrative objective. New final Effluent Limitations for total coliform bacteria and nitrates (mass effluent limitation only) are based on levels needed to protect

receiving water. The Discharger must comply with these new and/or newly interpreted effluent limitations based on Basin Plan objectives by the final compliance date specified in this Order. As justified by the Discharger's Infeasibility Analysis, allowance of additional compliance schedules beyond the dates specified in this Order for meeting Basin Plan objectives may be granted in a subsequent enforcement order should the County's final decision (to be made by 31 January 2008) be to regionalize this facility.

Page 30. 6. a. Leave the word “are” in the text in line 6.

Page 30. 6. a. The fifth sentence states that effluent limitations are based on levels needed to protect receiving water. It should state that the limits are based on levels needed to protect “beneficial uses in” receiving water.

Page 32. Mass Effluent Limitations. The County Requests the following edits to this language.

“Compliance with the mass effluent limitations will be determined during ~~average~~ dry-weather periods only when groundwater is at or near normal and runoff is not occurring.”

Page A-1: Definitions. The County Requests the following edits to this language.

“Average Dry Weather Flow: ~~daily average flow when groundwater is at or near normal and runoff is not occurring~~ the average flow in the three consecutive driest months of the year.”

Page C-1. Flow Schematic shows chlorination before filtration. It should be filtration before chlorination.

Page F-4 –Regionalization date. Change 30 January to 31 January.

Page F-5. Footnote 2. Change the word “recorder” to recorded.”

Page F-8 Municipal, Domestic and Agricultural Water Supply. This paragraph has been modified to state that the agricultural beneficial use applies based on Basin Plan agricultural water quality objectives. Water quality objectives are not a basis for applying beneficial uses. Rather, applicable beneficial uses drive applicable water quality objectives. The Order does not state any proper basis for application of the agricultural beneficial use to Miners Ravine. This paragraph further suggests that State Water Board Resolution 88-63 is a basis for applying agricultural use. Resolution 88-63, however, only addresses municipal and domestic use and is not a basis for applying agricultural use.

Page F-24 (Table F-8). As described below, the County believes the seasonal effluent limits should be based directly on the criteria applicable to the worst-case conditions. If a State Implementation Plan (SIP) procedure is to be applied to the criteria to develop more restrictive effluent limitations, corrections to what Board staff have presented in the Tentative Order would be required.

The SIP procedure for calculating effluent limitations is a particular example from the EPA guidance found in Section 5.4 of the Technical Support Document for Water Quality-Based Toxics Control (TSD). The TSD discusses the role of statistical considerations of waste load allocations (WLA) in Section 5.3.1 and makes the following points about effluent variability under normal operations:

The objective is to establish permit limits that result in the effluent meeting the WLA under normal operation conditions virtually all the time. It is not possible to guarantee, through permit limits, that a WLA will never be exceeded. (p.96)

Since effluents are variable and permit limits are developed based on a low probability of exceedance, the permit limits should consider effluent variability and ensure that the requisite loading from the WLA is not exceeded under normal conditions. (p.97)

Furthermore the TSD makes clear that the direct application of WLA as permit limits requires consideration of effluent variability.

If the chronic WLA is used alone as the AML [average monthly limit], the limit may be protective against acute and chronic effects depending upon effluent variability. (p. 96)

The County believes there is an adequate effluent dataset to evaluate effluent variability and ensure that the direct application of seasonal “worst-case” scenario ammonia effluent criteria (CMC and 30-day CCC), as permit limits, are protective against acute and chronic effects. The “worst-case” CMC and 30-day CCC (calculated from maximum permitted effluent pH and seasonal maximum 30-day average effluent temperatures) are protective because it can be demonstrated that exceedance of the “worst-case” criteria as permitted effluent limits would occur before effluent concentrations reached levels that would adversely affect aquatic life.

The “worst-case” CMC and 30-day CCC, calculated from the maximum permitted effluent pH (8.2) and the seasonal maximum 30-day average effluent temperatures (26°C in summer; 18°C in winter), are as follows:

Worst-case summer: CMC of 3.83 mg/L and 30-day CCC of 0.855 mg/L
Worst-case winter: CMC of 3.83 mg/L and 30-day CCC of 1.43 mg/L

The SMD3 plant is an existing plant without plans for expansion in the life of the permit and with a robust data set for near daily measurements of effluent pH and temperature. The tentative permit requires continuous monitoring of effluent pH and 5-days per week measurement of both effluent temperature and ammonia.

The probability associated with protecting aquatic life with “no more than one excursion in three years” is 99.9% calculated as one day in 3 years. The seasonal ammonia CMC and 30-day CCC calculated from the observed 99.9% measured, paired effluent pH and temperature dataset are as follows (period of record is July 2002 through November 2006):

Summer: CMC of 10.6 mg/L and 30-day CCC of 1.57 mg/L
Winter: CMC of 16.7 mg/L and 30-day CCC of 3.87 mg/L

As is shown above, the “worst-case” CMC and 30-day CCC are more restrictive than is necessary to protect aquatic life at a “no more than one excursion in three years” level of protection, based on the well-characterized effluent variability of the SMD3 facility. Therefore, direct application of the seasonal “worst-case” criteria as effluent limitations would provide a substantial buffer of protection between exceedance of effluent limits and the criteria necessary to protect aquatic life.

If the revised seasonal ammonia effluent limitations procedure, as identified in Table F-8, is used (as described below), corrections to the calculations would be necessary to derive appropriate effluent

limitations. The County has identified several errors in the effluent limit calculation procedures depicted in Table F-8 of the current Tentative Order. The errors and necessary corrections are described below.

The County contacted Regional Water Board staff to acquire the data used to derive statistical variables identified in Table F-8 that was used to calculate the effluent limitations. Based on a review of the available information in Table F-8, it appears there are two factual errors in calculating chronic ECA multipliers. First, the 95% probability basis was used for calculating chronic ECA multipliers, where in fact the 99% probability ECA factors should have been used.

Second, the EPA recommended criteria values expressed, for ammonia, as 30-day average concentrations are not directly amenable with the State Implementation Plan (SIP) procedure for calculating effluent limitations. The SIP plan and the California Toxics Rule (CTR) assume a 4-day CCC. The procedures for calculating effluent limitations described in the (SIP) are based on the EPA Technical Support Document (TSD) procedures. In fact, the equation on page 8 of the SIP for ECA multipliers is also the equation in Box 5-2 and Table 5-1 of the TSD (pages 100 and 102). The TSD makes clear in several places that chronic waste load allocation (WLA) is based on a 4-day criteria.

EPA’s recommended aquatic life criteria for both individual toxicants and whole effluent toxicity are specified as two numbers: the criterion continuous concentration is applied as a 4-day average concentration; and the criterion maximum concentration is applied as a 1-hour average concentration. (TSD, p. xiv)

Acute effects are limited based upon 1-hour exposures at critical conditions, close to the point of discharge, or where necessary, at the end of the pipe. Chronic effects are limited based on 4-day exposures after mixing at critical conditions. (TSD, p.99)

Table 5-1 of the TSD makes a direct connection between a 4-day criteria and the ECA multiplier calculation by listing the equation for the chronic long-term average, which includes the chronic ECA multiplier equation, under the heading “Chronic (4-day average).” In both the SIP and the TSD the σ_4 is required to calculate the chronic ECA multiplier and defined as:

$$\sigma_4^2 = \ln(CV^2/4 + 1)$$

To appropriately use a 30-day criteria the chronic ECA multiplier equation needs to be modified. The 30-day criterion should be applied by modifying the equation in Box 5-2 of the TSD as follows:

$$LTA = WLA_C \cdot \exp\left[0.5 \cdot \sigma_{30}^2 - z \cdot \sigma_{30}\right]$$

where $\sigma_{30}^2 = \ln(CV^2/30 + 1)$

Finally, the proposed effluent limitations expressed as an AMEL should be based on an “n” value representative of the averaging period over which samples are collected. With the permit requirement of 5-days per week ammonia monitoring, this would average out to 21 samples per month.

Based on these corrections, the calculations produce the following limits.

Summer	May 1 to October 31	
	Acute	Chronic 30d
pH	8.2	8.2
Temp	N/A	26
Criteria (mg/L)	3.83	0.86
Dilution Credit	--	--
CV	1.60	1.60
ECA	3.83	0.86
ECA multiplier (99%)	0.137	0.535
LTA	0.525	0.458
Sampling n	21	21
AMEL Multiplier (95%)	--	1.65
AMEL (mg/L)	--	0.755
MDEL Multiplier (99%)	--	7.29
MDEL (mg/L)	--	3.34
Notes:	Early Life Stages present Salmonids present	

Winter	November 1 to April 30	
	Acute	Chronic 30d
pH	8.2	8.2
Temp	N/A	18
Criteria (mg/L)	3.83	1.43
Dilution Credit	--	--
CV	1.70	1.70
ECA	3.83	1.43
ECA multiplier (99%)	0.131	0.517
LTA	0.501	0.741
Sampling n	21	21
AMEL Multiplier (95%)	1.69	--
AMEL (mg/L)	0.849	--
MDEL Multiplier (99%)	7.63	--
MDEL (mg/L)	3.83	--
Notes:	Early Life Stages present Salmonids present	

Page F-30-31, Pathogens. The Fact Sheet (see p. F-31) has been modified, including the second full paragraph that states: *“In addition to coliform testing, a turbidity effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average.Therefore, to ensure compliance with the DHS recommended Title 22 disinfection criteria, weekly average effluent limitations are impracticable for turbidity. This Order contains effluent limitations and a tertiary level of treatment, or equivalent, during low stream flow conditions, that are necessary to protect the beneficial uses of the receiving water.”*

The revised tentative permit fails to include a compliance schedule for the final turbidity effluent limitation. The tentative permit limitations section (see page 11, IV.A.1.f) and rationale provided in the Fact Sheet (see page F-31, IV.C.3.p) fail to acknowledge that the average daily effluent limitation of 2 NTU is a new limitation, more stringent than the prior permit. The tentative permit further ignores the evidence provided by the County that the County cannot immediately comply with this new turbidity limit. The Basin Plan allows for a compliance schedule for new limits that cannot be immediately achieved (Basin Plan at p. IV-16.) Failure to provide a compliance schedule for the final turbidity effluent limitation, and associated interim performance-based effluent limitation, is inconsistent with past permitting actions by Board staff, is not explained or addressed in any way, and is arbitrary and unreasonable. If staff requires a compliance schedule shorter than requested by the County in its infeasibility analysis, then agreement needs to be reached on a schedule that is as short as practicable.

We reiterate the above comment (see p. 29, 5.a) that any language specifying a treatment process for this facility is beyond the legal authority of the Board and this permit (Water Code § 13360(a)) and, therefore, reference to specific treatment processes must be deleted. Further, specification of a treatment process cannot be used as a basis for developing new, more restrictive effluent limitations. Rather, more stringent effluent limitations must be water quality based, necessary to meet water quality standards. (33 U.S.C., § 1311(b)(1)(C).) The Order does not include any water quality based explanation for the new, more restrictive turbidity effluent limit. A statement that a particular treatment process can or “should” comply with a new, more restrictive effluent limitation is not proper justification for such an effluent limitation. While the Order makes reference to DHS Title 22 requirements, DHS recommended Title 22 disinfection criteria are applicable to use of recycled water, and are not applicable to treated effluent discharged to surface waters per se. The Order does not provide a sound evidentiary basis for application of Title 22 disinfection criteria to protect receiving water beneficial uses. The statement that Title 22 disinfection criteria applies is not supported by the

record. The County requests that the text added on p. F-31 be revised to address this comment and that, if the new turbidity effluent limit is maintained, a compliance schedule be added to the permit for the new, more restrictive turbidity limits.