

March 6, 2009

Diana Messina, Senior Engineer
dcmessina@waterboards.ca.gov
California Water Quality Control Board, Central Valley Region
10020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

RE: Donner Summit PUD Comments and Recommendations:

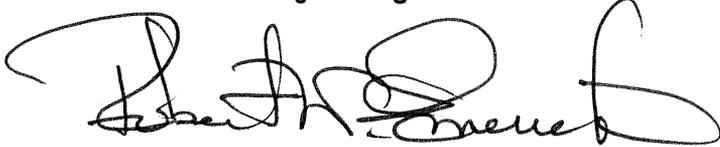
- Tentative NPDES Permit (Permit)
- Tentative Cease and Desist Order (CDO)
- Tentative NPDES Permit options addressing dilution (Options)

Dear Ms. Messina:

The Donner Summit Public Utilities District (District) provides the following comments and recommendations to the three subject items, Permit, CDO, and Options, in Attachments A, B, and C, respectively, to this cover letter. I have been authorized to submit these comments on behalf of the District. If you have any questions regarding the submittal of these comments, please contact Tom Skjelstad (General Manager) at 530-426-3456.

Sincerely,

ECO:LOGIC Engineering for Donner Summit Public Utilities District



Robert W. Emerick, Ph.D., P.E.
Principal

Attachments

cc: Robert W. Emerick, Ph.D., P.E., ECO:LOGIC Engineering

Attachment A

Comments and Recommendations, Tentative NPDES Permit

Page	Comment or Recommendation
1	Table 2 should list Discharge Points LND-1 and REC-1 in the appropriate boxes under 001, the discharge to South Yuba River. Also, the "Receiving Water" box for REC-1 should not include reference to "South Yuba River" unless the intent (as would be clarified in the Fact Sheet) is to disclose that the melt from snow made from effluent will enter the South Yuba River, as does all snow melt on the watershed
4	All references to 0.52 mgd should reflect that 1) this is an ADWF limitation, and 2) that this limitation is expandable to 0.82 mgd, as stated in the current Order. Without reference to ADWF finding, II.A could be interpreted as limiting the effluent discharge to "up to 0.52 mgd". The current maximum design discharge rate to the South Yuba River is 1.7 mgd (see Section E of the ROWD) with maximum discharge flows to date being 0.97 mgd (see Section C of ROWD). The District believes that disclosing current permitted, and planned average and maximum discharge rates provides public disclosure and transparency of what the District is doing, and what it may do if warranted by both 1) the need to provide service, and 2) compliance with effluent limitations and receiving water limitations.
4 and 5	Under II.B, add REC-1 and state that effluent snowmaking may occur at Soda Springs Ski Area (as described on page 17 under #14).
9	Under II.M, should the reference to water quality-based effluent limitations include aldrin, alpha BHC, silver, and coliform (an indicator of possible pathogens) for completeness and accuracy?
11	Under III, add Discharge Prohibition F reading as follows: F. The Average Dry Weather Flow (ADWF) influent to the wastewater treatment facility shall not exceed 0.52 mgd, without prior written approval of the Regional Water Board's Executive Order. In no case, shall the ADWF exceed 0.82 mgd.
11	Under IV.A.1: Change "when weather or snow conditions preclude" to "when soil, weather, or snow conditions preclude". This reflects that we cannot use LND-1 when the soil is still saturated though the snow has melted and the weather is fair.
12	Table 6: The ammonia and nitrate limitations should reflect that these are "as N" limitations. Additionally, all mass limitations in Table 6 should reflect the maximum design discharge rate of the facility in the winter/spring river discharge period, which is 1.7 mgd, not 0.52 mgd. As noted in a previous comment, maximum day discharge flows to the river have been as high as 0.97 mgd; well above the mass limitation flow basis of 0.52 mgd, but well below the design flow limitation of 1.7 mgd. The nitrate limit in the table needs to increase to 31mg/L reflecting a 30Q10 dilution ratio of 2.13 and proper use of the SIP equation: $ECA=C+P(C-B)$.
12	Item IV.1.f: Discharge to the river does not occur under Average Dry Weather Flow conditions; therefore this Discharge Specification is meaningless, and may mislead the public into thinking that the District either discharges under Average Dry Weather Flow conditions, or discharges no more than 0.52 mgd to the river (as also implied by Footnote 1, in Table 6), neither of which is correct. The design flow for this facility under winter/spring conditions is 1.7 mgd, as noted earlier.
14	Item IV.B.5 should be changed to read "24 hours" rather than "12 hours" so as to be in agreement with Orders IV.B.12.a and IV.B.14.
14	Under IV.B.8, it would be appropriate to clarify that the <u>average daily pH</u> shall not be less than 6.5 or greater than 8.5. The pH at the pond surface is expected to exceed 8.5 in the afternoons in summer as a result of photosynthesis by algae and aquatic plants.
14	Item IV.B.10: As written, IV.B.10 is in conflict with IV.A.1 and the ROWD which require applying effluent to LND-1 whenever the LND-1 soil and its vegetation are capable of absorbing the effluent. It is recommended that IV.B.10 read as follows to be in compliance with IV.A.1, ROWD, and the District's understanding of the Basin Plan: " <i>Hydraulic loading of effluent shall be at reasonable rates to minimize runoff</i> ".
14	Item IV.B.15 should read "before forecast precipitation" rather than "before precipitation" because the

Comments and Recommendations, Tentative NPDES Permit

	operator cannot determine definitively whether rain will or will not occur within 24 hours following effluent irrigation, particularly at this location where afternoon thunderstorms may occur unexpectedly.
15	In Table 8, there is no need for any mass limitations because these limitations are not subject to 40 CFR.
15	Item IV.C.2: The turbidity language and limitations should be modified to be consistent with Item VI.C.5.e on pages 29 and 30,
16	Item IV.C.7: The reference to "User's Reclamation Plan" should be changed to "Title 22 Engineers Report" which covers signage.
16	Item IV.C.8: This is not applicable to snowmaking reclamation because 1) the reclaimed water is expected to "escape" the use area when the made snow melts, and 2) snowmaking does not involve "good irrigation practices".
16	In Item IV.C.12, "based on peak daily design flow" should be revised to "based on peak daily dry weather design flow" as prescribed in Title 22, Section 60301.230
17	Item IV.C.14: Change "will be required approval" to "will be required to have, in writing, the approval".
18	Item V.A.8: An averaging period of one month is requested for assessing compliance with the 0.5 change in pH requirement as discussed in the ROWD (page G-9 and G-10). It is the District's understanding that EPA guidance states that changes in pH within the 6.5 and 8.5 range are not critical in general.
19	Item V.A.17: An averaging period of one month is requested for assessing compliance with these turbidity limitations as discussed in the ROWD (page G-8).
19	Item V.B: The District does not believe it can comply with this groundwater limitation as written. The District's effluent has more salinity (a conservative contaminant) than snowmelt (the source of background groundwater quality); therefore, as a matter of conservation of mass, the District believes its LND-1 operation must cause some degradation of shallow groundwater quality. It would be unusual for snowmelt dissolution of area soils to cause shallow groundwater to have an overall salinity and specific salt ion concentrations equal to or greater than those in that portion of the applied effluent that percolates to below the root zone of the volunteer annual grasses growing on LND-1, which naturally concentrate effluent salinity by evapotranspiration. The LND-1 disposal method is vital to the District, and is in concert with the Basin Plan. It is the District's understanding that some degradation of shallow groundwater occurs under all effluent reclamation sites. Would "Groundwater Limitations" language from one of these other reclamation permits be more appropriate than the tentative permit language (which sets the District up to stop using an effluent disposal method recommended by the Basin Plan)?
22	Item VI.A.2.I: Because of the waste concentrating effect of water conservation, WWTPs may be running out of treatment capacity even though their "waste flow" may be holding steady or even decreasing. To be perfectly clear as to the intent of this Standard Provision, "whose waste flow has been increasing" should be revised to read "whose waste flow or load has been increasing."
27	Item VI.C.2.b.iii: Installation of the diffuser requires a CEQA analysis, and a Corps of Engineers 404 permit for working in the river. The timing of receipt of 404 permits is difficult to forecast, and is largely beyond the control of the District. The 3-year schedule in Item VI.C.2.b.iii means the diffuser must be installed by April 2012. This means the actual construction must occur in late summer 2010 (unlikely because of permitting), or late summer 2011 (possible, if there are no problems with the 404 permit). If Item VI.C.2.b.iii moves installation to 3.5 years from adoption of this Order, then diffuser construction in late summer 2012 becomes possible and likely, considering CEQA and permitting issues related to this specific high-profile effluent discharge. Accordingly, the District recommends changing "within 3 years" to "within 3.5 years" in Item VI.C.2.b.iii. Based on recent delays in receiving 404 permits, it is not unlikely that construction may need to be as late as late summer 2013 or 2014. If the 404 permit becomes a special problem for the District, this will be reported to the Regional Water Board.
29	Item VI.C.5.e: These Turbidity Operational Requirements should apply to EFF-001 only when discharging to Discharge Point 001 (Item IV.A) and REC-1 (Item IV.C), but not to LND-1 (Item IV.B) based on the LND-1 BOD/TSS limitations of 30/30 mg/L. This recommendation also allows the District a window in time each summer when the filters can be taken out of service, such as for major maintenance, without violating this Special Provision. Recommended language is to change "turbidity measured at EFF-001," to "turbidity measured at EFF-001, when discharging to Discharge Point 001 or REC-1,".
30	Item VI.C.6.a: Effluent discharged to REC-1 must comply with Title 22 tertiary recycled water requirements. Effluent discharged to Discharge Point 001 must comply with the same requirements, or equal. Effluent discharged to LND-1 need not comply with either of the foregoing based on the LND-1

Comments and Recommendations, Tentative NPDES Permit

Discharge Specifications (Table 8). Accordingly, it is recommended that Item 6.a be replaced with the following:

Wastewater discharged to REC-1 shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3, (Title 22). Wastewater discharged to Discharge Point 001 shall meet the foregoing Title 22 requirement, or equivalent.

- 31 Item VI.C.7.a.ii: To avoid any confusion regarding when compliance with final effluent limitations for aluminum and manganese is to be achieved, Item VI.C.7.a.ii should be rearranged to read: "Corrective Action Plan/Implementation Schedule. Within six months from the effective date of this Order, the Discharger shall submit to the Regional Water Board a corrective action plan and implementation schedule to assure compliance with the final effluent limitations for aluminum and manganese."
- 32 Item VII.C: Change "ADWF effluent limitations" to "ADWF discharge prohibition" in both the title and text to be consistent with the recommended change to Item III that sets a limitation on ADWF without potentially misleading the public as to the timing and magnitude of effluent discharges to the river.
- C-1 The Flow Schematic (Attachment C) should be modified slightly for clarity. Specifically, under the effluent discharge label "TO SODA SPRINGS SKI AREA", the "(SUMMER)" parenthetical should be replaced with "(LND-1 and REC-1)". Under the effluent discharge label "TO RIVER", the "(WINTER)" parenthetical should be replaced with "(DISCHARGE POINT 001)".
- E-2 In Table E-1 under "Discharge Point Name", "LND-1" should be reported below "001" and aligned horizontally with "Treated Effluent Land Applied (LND)"; and "REC-1" should be reported below "LND-1" and aligned horizontally with "Treated Effluent for Reclamation (REC)".
- E-2 The title "IV. Effluent Monitoring Requirements" should be changed for clarity to read "IV. Effluent Monitoring Requirements When Discharging to South Yuba River."
- E-3 The title "Table E-3. Effluent Monitoring" should be changed for clarity to read "Table E-3. Effluent Monitoring When Discharging to River".
- E-3 In Table E-3, the parameter "Total Dissolved Solids" should be changed to "Total Dissolved Fixed Solids" so that the District is monitoring actual effluent salinity per the intent of this requirement.
- E-3 The following revisions to the frequency of monitoring in table E-3 are requested for the reasons as stated.

Parameter	Minimum Sampling Frequency		Reason for Request
	Tentative Order	Requested	
Temperature pH	1/day 1/day	2/week 2/week	The need for daily temperature and pH data is unknown. These data cannot be correlated with other data unless the other data are also monitored on a daily basis. For a minor discharge, 2/week temperature and pH sampling coordinated with the other 2/week effluent monitoring should be adequate.
Chromium VI	1/month	1/year	There does not appear to be a chromium VI problem; therefore, data collection for confirmation of this belief should be commensurate with the risks involved. Annual testing for a minor discharge will provide 5 additional data for the next permit renewal to either drop all concerns about this contaminant, or include a chromium VI effluent limitation.
Priority Pollutants	1/year	None or 1/quarter in 3 rd year	These tests are relatively costly, and therefore a financial burden for all minor dischargers. This is particularly in the District's case, where major capital improvements to the WWTP appear to be needed. Priority Pollutant monitoring does not appear to be required of other minor dischargers in similar situations: San Andreas (Order No. R5-2009-0007) and Colusa (No. R5-2008-0184). Other recent permits require quarterly testing in the third year of the permit. Either precedented approach would reduce District costs, and therefore would be preferred to annual testing.

- E-4 The title "V. Whole Effluent Toxicity Testing Requirements" should be changed for clarity to "V. Whole Effluent Toxicity Testing Requirements When Discharging to River".
- E-5 In Item V.B.7, reference to "Table E-5" should be changed to "Table E-4".

Comments and Recommendations, Tentative NPDES Permit

E-7	Table E-5 should include monitoring the parameters "BOD 5-day 20°C" and "Total Suspended Solids" (per Table 8) on a 2/week basis.
E-9	The title "Table E-7a. Receiving water Monitoring Requirements" should be changed for clarity to "Table E-7a. Receiving Water Monitoring Requirements When Discharging to River".
E-9	In Table E-7a, the frequency of monitoring seems excessive for a minor discharge of tertiary effluent when the river does not change that much from day-to-day within a week. The issue for the District is maximizing environmental benefit from the funds available to the District. Funds used for monitoring become available for funding treatment and disposal system improvements. In Table E-7a, the District recommends 1/week monitoring for all parameters except for "Fecal Coliform Organisms" and "Radionuclides". Considering the effluent total coliform limitation of 2.2 MPN/100 mL, it is impossible for the discharge to cause a violation of the fecal coliform receiving water limitation of 200 MPN/100 mL (Item V.A.1). To reduce waste of public money, fecal coliform monitoring should be per 5 years. The District knows of no evidence suggesting its effluent causing radionuclide problems in the receiving water.
E-15	Table E-10: This table appears to be in error. The Order (VI.C.1.c, VI.C.3.b, and VI.C.7.a.iii) requires pollution prevention plans for aluminum and manganese, but not ammonia, copper, cyanide, and zinc. The CDO (under Item 2) requires a pollution prevention plan for ammonia, nitrate, copper, cyanide, aldrin, alpha BHC, silver, and zinc. Table E-10 should be revised to reflect what is in the Order, and let the CDO and its requirements stand as a separate document/order, which it is.
F-3	In Table F-1, "Facility Permitted Flow" should be followed by "0.52 million gallons per day expandable to 0.82 mgd, ADWF basis". The information following "Facility Design Flow" should read "1.7 mgd, expandable to 2.6 mgd, peak flow basis".
F-4	Item I.B: The reference of "up to 5.2 millions gallons per day (mdg)" should be revised to "up to 0.52 million gallons per day (mgd), ADWF basis,".
F-6	Item III.C.1 makes reference to "Magnolia Creek" which should be changed to "South Yuba River". It is highly unlikely that South Yuba River at this location has the beneficial uses of warm freshwater aquatic habitat, warm fish migration habitat, or warm spawning habitat.
F-9	Item III.E.1.b: As stated earlier, the District does not believe it complies with the Groundwater Limitations as stated in Item V.B., or here, based on conservation of mass principles. This item, and Item V.B, should be revised to reflect that some degradation is expected, but that WQOs are not expected to be exceeded.
F-12	Item IV.B.2.b references to flow, and Table F-3, mass limitations should reflect the design flow of 1.7 mgd per previous comments and the ROWD.
F-18	Item IV.C.2.c: The estimate of 30Q10 is too low. The values shown in the table are 30Q50 values (the lowest values from a 50-year database) which were reported in Table H-2 of the ROWD (in the units of cfs). Estimates of low flows in the South Yuba River at the effluent discharge point in the most critical months of November, December, and January are presented in the following table, based on an expanded dataset for 1943 to 2008 (i.e., 65 years of data with some 1994/1995 data being absent such that there are only 65, not 66, years of data).

Lowest 7 Years of Monthly Average Flows at DSPUD Discharge Point for Water Years 1943 to 2008

Flow Ranking	November		December		January	
	Flow, mgd	Year	Flow, mgd	Year	Flow, mgd	Year
Lowest flow	0.550	1990	0.647	1990	0.754	1991
2 nd lowest flow	0.725	1952	1.013	1978	1.02	1977
3 rd lowest flow	1.197	1987	1.040	1943	1.85	1944
4 th lowest flow	1.246	2003	1.073	1976	1.89	1960
5 th lowest flow	1.253	1958	1.158	1958	2.23	1949
6 th lowest flow	1.310	1977	1.182	1959	3.584	1987
7 th lowest flow	1.598	1995	1.429	1949	4.142	2001
30Q10 flow (a)(b)	1.454	---	1.306	---	3.863	---

(a) Best guess of 30Q10 flow for each month based on a 65-year database (65 years ÷ 10 year return frequency = 6.5, the flow ranking roughly estimating one-in-ten year return frequency low monthly flows).

Comments and Recommendations, Tentative NPDES Permit

(b) Estimated by linear interpolation between the 6th and 7th lowest flows.

The flow ratio data for these critical months are presented below. The highest monthly discharge flows in the following table have been increased from those in the Tentative Order to reflect that current peak flow (about 1.0mgd) is less than the design peak flow of 1.7mgd (which is the key design limit, not the "associated" ADWF of 0.52mgd).

Month	30Q10 (mgd)	Highest Monthly Discharge Flow Under Design Conditions (mgd)	Ratio (Receiving Water to Effluent Flow)
Jan	3.863	0.561	6.89
Nov	1.454	0.289	5.03
Dec	1.306	0.612	2.13

The lowest of these 30Q10 ratios, 2.13, is less than any of the 30Q50 ratios for the "less critical" months of February through October listed in the Fact Sheet; therefore there is no need to study these other months. Based on the 30Q10 approach to nitrate regulation proposed by the Regional Water Board in the Fact Sheet, the lowest 30Q10 ratio is 2.13, not 1.8, and the calculation of the nitrate effluent limitation should be revised accordingly.

F-21 and 22 Item 3.b: In the third paragraph, "2.25 "times" should be changed to "2.5 times". Regarding the fourth paragraph, State Board staff have said that the State Board's guidance on avoiding floating limitations applies only to CTR constituents, not ammonia. The District requests that Regional Water Board staff investigate this matter further, or allow the District time to press State Board staff on this point for written guidance.

F-28 Item IV.C.3.I: This section needs to be revised to reflect that the minimum monthly 30Q10 dilution estimate for the river is 2.13 not 1.8, as documented in the foregoing comment. Therefore, the ECA and AMEL would be calculated using a D of 2.13:

$$\text{AMEL} = \text{ECA} + \text{C} + \text{D}(\text{C} - \text{D}) = 10 + 2.13(10 - 0.05) = 31 \text{ mg/L as N}$$

F-39 and 43 Tables F-14 and F-15 need to specify that the ammonia and nitrate effluent limitations are "as N".

Attachment B

Comments and Recommendations, Cease and Desist Order

Page	Comment or Recommendation
2	Finding 4: The effluent limitations need to be updated to reflect changes to the Tentative Order. Specifically that the ammonia and nitrate limitations are as N, and that the nitrate limitation is 36 mg/L (as discussed in Attachment A). The mass limitation on nitrate should be removed.
3	The District is confused as to the purpose of the interim nitrate limitation of 53 mg/L (needs to be noted "as N") when exceedances of the final effluent limitation on nitrate (currently set at 18 mg/L, which is expected to be raised to 36 mg/L based on the 30Q10 information provided) are not exempt from mandatory minimum penalties as noted in CDO Finding 14.

Tentative NPDES Permit Options Addressing Dilution

These options are contrary to the district's wastewater facilities planning as outlined in its Report of Waste Discharge. These options are contrary to the requirement in the Tentative Order that the District install a cross-river diffuser to facilitate rapid mixing of the effluent into the river. Compliance with effluent limitations without dilution credits is a virtual financial impossibility for the District without grant funding.

Without dilution credits, the District has no compliant capacity, or credible plan to bring the current service population into compliance. Clearly, service to failing septic tank systems in the area would have to cease. Sewer service to all areas outside District boundaries may need to cease. The District may need to file for bankruptcy based on fines accumulated for non-compliant effluent discharges in the absence of dilution credits.

None of the foregoing appears to be consistent with maximum benefit to the people of California; therefore, it appears that the Regional Water Board should be planning to assign dilution credits under SIP to the District as soon as evidence warranting assigning dilution credits is provided. That evidence for nitrate and dichlorobromomethane has been provided. If nitrate and dichlorobromomethane dilution credits are not assigned at this time, then there is little reason to believe they, or any other dilution credits, will ever be assigned to the District. In that case, the District will need to pole its constituency to determine what action(s) the people wish their utility to take on their behalf. Without lawful sewer service their properties are virtually valueless. The option of no dilution credits appears to be infeasible; therefore the document entitled "Tentative Dilution Options" should be withdrawn as being infeasible.