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June 19, 2007

VIA HAND DELIVERY

Ms. Gita Kapahi
Chief, Bay Delta/Special Projects Unit
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812-2000

Re: Request for restrictions on and increased monitoring of sewage discharges by Sacramento Regional Wastewater Treatment Plant to prevent degraded water quality and to protect delta smelt and drinking water supplies

Dear SWRCB Members:

The State Water Project's ("SWP") urban water service contractors¹ and Contra Costa Water District ("CCWD") (collectively "Drinking Water Agencies") submit these comments in response to the June 5, 2007, notice of "workshop to receive recommendations to improve fishery resources, including actions to slow or stop the decline of delta smelt, and improve water quality conditions in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary." These comments are in addition to those being submitted separately by the State Water Contractors organization on behalf of all SWP contractors.

Background

The sudden delta smelt decline has shut down the Delta water diversions upon which many of the Drinking Water Agencies depend to serve more than 20 million Californians living in the Bay Area, San Joaquin Valley, Santa Barbara coast and as far south as San Diego. Several court actions have reviewed the extent to which ongoing Delta diversions comply with

¹ Alameda County Water District, Zone 7 of Alameda County Flood Control & Water Conservation District, Antelope Valley-East Kern Water Agency, Castaic Lake Water Agency, Central Coast Water Agency, Crestline-Lake Arrowhead, Kern County Water Agency, Metropolitan Water District of Southern California, Mojave Water Agency, Napa County Flood Control & Water Conservation District, Palmdale Water District, San Bernardino Valley Municipal Water District, San Gabriel Valley Municipal Water District, San Geronio Pass Water Agency, San Luis Obispo Flood Control & Water Conservation District and Santa Clara Valley Water District.

various environmental laws, and a federal court judgment will soon be entered for delta smelt protection. With operation of the SWP and Central Valley Project ("CVP") already being addressed by the courts, it is imperative that the SWRCB act immediately to address other factors that are, or may be, contributing to a delta smelt decline that is jeopardizing California's single largest source of water supply.

Our comments focus upon the first two bullets on page 2 of the workshop notice, which requests recommendations and information on actions the State Water Resources Control Board ("SWRCB" or "State Board") may take to slow or stop the decline of Delta smelt and to improve conditions for fishery resources by:

- exercising its water quality authority under section 13267 of the California Water Code to require that persons who discharge waste, furnish the State Water Board with technical or monitoring reports; and
- reducing or ceasing point and nonpoint sources of pollution into the Delta.

We are concerned that delta smelt, salmon, steelhead and other aquatic biological resources are now being harmed by discharges of toxic waste, pharmaceuticals, pesticides, chlorine, heat, pH-affecting wastes and other pollution being discharged directly into the delta smelt's federally designated "critical habitat" in the north Delta by the Sacramento Regional Wastewater Treatment Plant ("Treatment Plant") at Freeport. The Treatment Plant is owned and operated by the Sacramento Regional County Sanitation District ("Sanitation District") and now discharges more than 154 million gallons per day ("mgd") (172,500 acre-feet per year) of secondary-treated municipal sewage collected from a 435-square-mile service area encompassing the Sacramento metropolitan area. The Sanitation District does not sample and report every pollutant actually contained in its discharge and which threatens delta smelt, salmon, steelhead and other aquatic biological resources. For example, the discharge and effects of pharmaceuticals and certain pesticides are not individually monitored and reported.

The Sanitation District prepared the following chart² listing "select constituents" detected in its Treatment Plant discharge through monitoring conducted in 1998-2000:

CONSTITUENT	UNITS	NUMBER OF SAMPLES	NUMBER OF SAMPLES WITH DETECTS	CONCENTRATION			
				MINIMUM DETECTED	MAXIMUM DETECTED	MEDIAN	AVERAGE
Conventional Constituents							
Alkalinity	mg/l as CaCO ₃	149	149	96	190	140	140
Ammonia	mg/l as N	312	312	8.27	24.5	16.3	16.2
BOD	mg/l	1067	1067	5.57	17.2	9.37	9.65
Bromide	mg/l	6	3	0.48	0.50	n/a	n/a
Nitrate	mg/l as N	158	72	0.10	28	0.10	0.98
Nitrite	mg/l as N	157	71	0.10	0.80	0.10	0.17
Total Kjeldahl nitrogen	mg/l as N	33	33	12.6	25.5	18.1	19.1
pH	pH units	1090	1090	5.15	7.22	6.54	6.52
Phosphorus, total	mg/l	35	35	3.68	5.80	4.90	4.72
Temperature	degrees F	1096	1096	56.20	80.66	72.89	72.93
Total organic carbon	mg/l	102	102	4.9	26	17	16.8
Total dissolved solids	mg/l	113	113	250	460	380	375
Total suspended solids	mg/l	1096	1096	2.5	21.5	7.1	7.3
Metals (Total / Dissolved)							
Arsenic	µg/l	63 / 35	63 / 35	1.46 / 1.44	3.77 / 3.28	1.97 / 1.76	2.23 / 1.94
Copper	µg/l	49 / 67	49 / 67	2.86 / 2.65	11.10 / 9.26	5.18 / 4.65	5.43 / 4.87
Lead	µg/l	49 / 56	49 / 56	0.06 / 0.13	1.46 / 0.42	0.49 / 0.27	0.52 / 0.26
Mercury	µg/l	118 / 116	118 / 116	0.00386 / 0.00174	0.0249 / 0.00928	0.00841 / 0.00281	0.00866 / 0.00304
Selenium	µg/l	17	10	0.10	0.26	0.16	0.17
Silver	µg/l	21 / 21	21 / 19	0.11 / 0.01	0.46 / 0.10	0.32 / 0.06	0.30 / 0.05
Zinc	µg/l	21 / 21	21 / 21	27.3 / 25.1	40.4 / 38.0	31.8 / 29.8	32.3 / 30.2
Organics							
1,4 Dichlorobenzene	µg/l	63	46	0.50	1.3	0.83	0.82
Bis(2-ethylhexyl)phthalate	µg/l	48	36	1.0	7.0	1.9	2.0
Carbon tetrachloride	µg/l	63	6	1.6	2.7	n/a	n/a
Chlorodibromomethane	µg/l	63	1	0.70	0.70	n/a	n/a
Chloroform	µg/l	62	62	7.1	13	9.7	9.6
Dichlorobromomethane	µg/l	63	8	0.55	0.64	n/a	n/a
Dichloromethane (Methylene chloride)	µg/l	63	57	0.5	26	1.4	2.3
Tetrachloroethene	µg/l	63	45	0.5	5.3	0.7	1.0
Pesticides							
Lindane	µg/l	40	6	0.03	0.20	n/a	n/a
Diazinon	µg/l	48	48	0.048	0.340	0.140	0.146
Chlorpyrifos	µg/l	47	34	0.050	0.128	0.040	0.041

² See Draft EIR for Sacramento Regional Wastewater Treatment Plant 2020 Master Plan, Table 4.4-5 at

The Sanitation District has described its Treatment Plant as "the largest inland discharger in Northern California," and the Treatment Plant discharge is classified as "major" by the United States Environmental Protection Agency ("EPA"). The Sanitation District has been ordered to monitor certain pollutants, or categories of pollutants, in its discharge. For example, Condition No. E.11 of Central Valley Regional Water Quality Control Board ("Regional Board") Order No. 5-00-188 (August 4, 2000) adopting Waste Discharge Requirements ("WDRs") for the Treatment Plant requires performance of a three-species chronic toxicity testing protocol. If trigger levels are exceeded, the condition requires the Sanitation District to carry out a toxicity reduction evaluation work plan. The Drinking Water Agencies are concerned about whether this chronic toxicity requirement has been fully carried out and, if so, whether chronic toxicity has actually occurred.

An April 2006 report prepared by TDC Environmental for the SWRCB's Urban Pesticides Pollution Prevention Project, titled "Annual Research and Monitoring Update 2006," states: "The Sacramento Regional County Sanitation District has experienced chronic effluent toxicity to *Ceriodaphnia dubia* (water flea) since April 2004 (Maidrand and Bennett 2005)." If so, the SWRCB should assess what the Treatment Plant operator has done to prevent further chronic toxicity problems and should consider the need for immediate corrective action to prevent harm to delta smelt and other aquatic biological resources affected by the Treatment Plant's discharge. A scientific analysis should be performed to determine whether delta smelt may be more susceptible to chronic toxicity than the three species the Treatment Plant apparently is testing. Further, additional scientific analysis should be performed to determine whether the Treatment Plant's ongoing discharges may be harming the food that delta smelt eat.

The Treatment Plant discharges hundreds, if not thousands, of individual chemical compounds from the sewage generated by more than 1 million people living and working in the Treatment Plant's 435-square mile service.³ Even if the Treatment Plant's acute and chronic toxicity testing has been fully carried out, the Drinking Water Agencies are concerned that the additive chronic and acute toxicity effect of chemical compound mixtures occurring both at the discharge and farther downstream are not being assessed. The SWRCB should direct an immediate review of all the Treatment Plant's acute and chronic toxicity testing reports to determine whether existing testing results show the need for toxics control measures and whether additional testing is required to better assess potential impacts on delta smelt. This review would assist the SWRCB and others in narrowing in on contributing causes to reported toxicity events in Rio Vista, or elsewhere in the Delta, that may have harmed delta smelt.

p. 4.4-32 (August 2003).

³ The Treatment Plant also receives for treatment up to 60 mgd of combined stormwater and municipal sewage from the City of Sacramento, introducing an additional range of pollutants to the Sacramento River discharge.

Among the unmonitored, but potentially harmful, compounds likely to occur in the Treatment Plant's Sacramento River discharge are endocrine disrupters, which have been shown to impair natural fish and invertebrate reproduction. See, e.g., Kidd, Karen A., Blanchfield, Paul J., Mills, Kenneth H., Palace, Vince P., Evans, Robert E., Lazorchak, James M., Flick, W. Robert, *Collapse of a Fish Population After Exposure to a Synthetic Estrogen*, 104 Proceedings of the National Academy of Sciences at 8897-8901 (2007); Kolodziej, E.P., Gray, J.L., Sedlak, D.L., *Quantification of Steroid Hormones With Pheromonal Properties in Municipal Wastewater Effluent*, 22 Environ. Toxicol. Chem. at 2622-2629 (2003); Williamson, K.S., May, B., *Incidence of Phenotypic Female Chinook Salmon Positive for the Maile Y-chromosome-specific Marker OtY1 in the Central Valley, California*, 14 J. Aquat. Anim. Health at 176-183 (2002); Kolpin, W. Dana, Furlong, T. Edward, Meyer, T. Michael, Thurman, Michael E., Zaugg, D. Steven, Barber, B. Larry, Buxton, T. Herbert, *Pharaceuticals, Hormones, and Other Organic Wastewater Contaminants in U.S. Streams 1999-2000*, 36 Environ. Scie. Technology at 1202-1211 (2002) (U.S. Geological Survey study reviewing stream water samples for 95 individual organic wastewater contaminants originating from human antibiotics, prescription drugs, nonprescription drugs and other wastewater sources); Purdom, C.E., Hardiman, P.A., Bye, V.J., Eno, N.C., Tyler, C.R., Sumpter, J.P., *Estrogenic Effects of Effluents From Sewage Treatment Works*, 8 Chem. Ecol. at 275-285 (1994). Based on a growing body of science, the scientific literature has concluded that "[m]unicipal effluents may need treatment beyond advanced secondary treatment to remove estrogenicity" Hemming, Jon M., Allen, Joel H., Thuesen, Kevin A., Turner, Philip K., Waller, William T., Lazorchak, James M., Lattier, David, Chow, Marjorie, Denslow, Nancy, Venables, Barney, *Temporary and Spatial Variability in the Estrogenicity of a Municipal Wastewater Effluent*, 57 Ecotox. and Env't'l Safety at 303-310 (2004).

The minnows in the above-cited population crash study published in the May 2007 Proceedings of the National Academy of Sciences have a two- to four-year lifecycle. Delta smelt live just one year, making the impact of any endocrine disruption on delta smelt potentially catastrophic. Effluent sampling, bioassay and additional scientific study should be performed on an ongoing basis to determine whether the Treatment Plant's discharge may be contributing to endocrine disruption that impairs the delta smelt's reproductive success.

Service Area and Treatment Plant Discharge Expansions Are Now Being Carried Out Without Adequate Review and Mitigation of Significant Impacts On Water Quality and Aquatic Biological Resources, like Delta Smelt

The Treatment Plant serves the cities of Sacramento, Citrus Heights, Elk Grove, Folsom and unincorporated Sacramento County. The expansion of the service area and past and ongoing construction of massive new "interceptor" pipes will collect sewage from fast growing West Sacramento, north Natomas and western Placer County. All sewage pipes now lead to the Sanitation District's Treatment Plant, whose 3,500-acre site is intended ultimately to receive, process and discharge 517 mgd of sewage into the Sacramento River at Freeport.

As the next step in its expansion plan, the Sanitation District is now asking the Regional Board to renew and amend its WDR/National Pollutant Discharge Elimination System ("NPDES") permit to allow a 42 percent increase in the Treatment Plant's sewage processing and discharge to 218 mgd.⁴ Rather than incorporating updated sewage treatment technology into the plant expansion project, the Sanitation District is proposing only to "re-rate" the existing conventional secondary treatment process facilities to discharge 207 mgd, and then to expand those facilities to accommodate further increased sewage volumes. Increasing the discharges from the existing 1970s-design treatment process by 42 percent, without increasing the *level* of treatment, will cause a 42 percent increase in the amount of toxics, pharmaceuticals, pesticides and other pollution that is directly injected into the delta smelt's federally designated "critical habitat"—and the heart of California's water supply.

The 42 percent discharge increase will also exacerbate the Treatment Plant's ongoing failure to comply with the SWRCB's Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California ("Thermal Plan"). Although the ongoing temperature problem creates a barrier to fish passage in the Sacramento River at Freeport, the Sanitation District argues that fish can squeeze by the barrier, along the river's margins. In reviewing the grounds for excepting the Treatment Plant's discharge from the Thermal Plan, the Regional Board concluded that such marginal fish passage seemed inadequate and that the Sanitation District had failed to show that a balanced indigenous population of shellfish, fish or wildlife inhabited the receiving water in the vicinity of the outfall—as required for a continuing Thermal Plan exception.⁵ The significance of thermal discharge impacts to delta smelt, salmon, steelhead and other aquatic biological resources should be assessed along with alternative approaches to achieving Thermal Plan compliance

The Sanitation District's NPDES permit request for its 218 mgd secondary-treated discharge expansion is inconsistent with California water law and with the federal Endangered Species Act, which prohibits adverse modification of critical habitat for delta smelt and other federally listed fish species and prohibits "harm" to these species from adverse habitat change.

**The California Constitution Requires the State's Water Resources
Be Put to Beneficial Use to the Fullest Extent of Which They are Capable**

In 1928, Californians amended their Constitution to establish the State's fundamental water policy:

It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of

⁴ The Treatment Plant's existing baseline discharge level is 154 mgd (average dry weather flow). A copy of the Treatment Plant's originally approved WDR/NPDES permit is attached to this letter.

⁵ See September 29, 2003, letter from Central Valley Regional Water Quality Control Board's Patricia Leary to Joyce Horizumi, Sacramento County Department of Environmental Review and Assessment re comments on Treatment Plant expansion Environmental Impact Report.

the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

(Cal. Const., Art. X, § 2.)

Anti-degradation Policy
Prohibits a 42 Percent Increase in Mass Pollutant Emissions
Absent Overriding Considerations

The SWRCB's Statement of Policy with Respect to Maintaining High Quality of Waters in California mandates that:

Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water and will not result in water quality less than that prescribed in the policies.

(SWRCB Resolution No. 68-16, ¶ 1 ["Anti-degradation Policy"].) This means existing water quality must be maintained unless it is affirmatively demonstrated that specific benefits associated with a proposed pollution discharge's water quality degradation outweigh that degradation.

In 1972, the United States Congress enacted the Federal Water Pollution Control Act ("Clean Water Act"). The Clean Water Act's objective:

is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that . . . it is the national goal that the discharge of pollutants into the navigable waters be eliminated

.....

(33 U.S.C. § 1251(a)(1).)

To help achieve that statutory objective, the United States Environmental Protection Agency ("EPA") incorporated Anti-degradation Policy into federal water quality

regulations requiring states to implement programs to preserve water quality, to protect beneficial uses of water and to allow water quality degradation only if such degradation were required to accommodate significant economic and social development. Federal Anti-degradation Policy requires states to regulate pollution discharges to ensure compliance with a two-tiered mandate:

(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. ["Tier I" requirement]

(2) Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. ["Tier II" requirement]

(40 C.F.R. § 131.12.)

In 1987, EPA Region IX published guidance explaining that federal Anti-degradation Policy applies to the renewal of existing NPDES permits and to increases in the discharge of pollutants from point sources due to municipal growth. (EPA Region 9, "Guidance on Implementing the Anti-degradation Provisions of 40 C.F.R. 131.12," at pp. 2-3, June 3, 1987.) The EPA guidance also addressed repeated incremental increases in mass emissions:

Repeated or multiple small changes in water quality can result in significant water quality degradation. To prevent such cumulative adverse impacts, a baseline of water quality must be established for each potentially affected water body.

(*Id.* at 6.) Additional EPA guidance explains that the Anti-degradation Policy applies to a proposed increase in mass emissions of a pollutant to a receiving water.

The antidegradation review requirements of this provision of the antidegradation policy are triggered by any action that would result in the lowering of water quality in a high-quality water. Such activities as new discharges or expansion of existing facilities would presumably lower water quality and would not be permissible unless the State conducts a review consistent with the previous paragraph. In addition, no permit may be issued, without an antidegradation review, to discharge to high-quality waters with effluent limits greater than current loadings if such loadings will cause a lowering in water quality.

The SWRCB has interpreted its own Anti-degradation Policy as incorporating the preceding federal Anti-degradation Policy, and the Central Valley Region Basin Plan requires the Regional Board to implement SWRCB Resolution No. 68-16 consistent with federal policy. (California Regional Water Quality Control Board, Central Valley Region, Regional Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins (Fourth Edition, revised), at p. IV-8.00, 2004.)

The SWRCB requires a complete, Tier II anti-degradation analysis assessing whether degradation is acceptable due to overriding socio-economic benefits, if there is:

a substantial increase in mass emissions of a pollutant, even if there is no other indication that the receiving waters are polluted

and if there is:

reissuance or modification of permits which would allow a significant increase in the concentration or mass emission of any pollutant in the discharge.

(SWRCB, "Administrative Procedures Update, Antidegradation Policy Implementation for NPDES Permitting," at p. 3, July 2, 1999.)

The Sanitation District seeks to hide the Anti-degradation Policy conflict, or violation, posed by its Treatment Plant expansion's 42 percent increase in mass pollution loadings by refusing to perform a complete anti-degradation analysis. During California Environmental Quality Act ("CEQA") review, the Sanitation District utterly disregarded the Anti-degradation Policy in concluding that the water quality impacts of its 42 percent discharge expansion will be insignificant. The Regional Board reviewed the discharge expansion's environmental impact report ("EIR") and found the EIR's determination of no significant water quality impacts to be wrong and unsupportable.⁶ The Regional Board told the Sanitation District

⁶ *Id.*

that: "Based on the information presented in the DEIR, the proposed project does not meet the antidegradation policy" According to the Regional Board, this and other analytical failings "prevent adequate evaluation of the effects of the proposed discharge on water quality." (*Id.*)

Absent a sound evaluation of the water quality impacts from a 42 percent discharge expansion, the Sanitation District cannot reasonably conclude that the expansion's impacts on delta smelt, salmon, steelhead and other aquatic biological resources will be insignificant.

Conclusion

The Drinking Water Agencies request:

- Review of all acute toxicity monitoring and three-species chronic toxicity monitoring results for Treatment Plant effluent, review of Sanitation District action or inaction in response to monitoring results, assess need for further toxicity testing, and potentially direct corrective action to prevent any acute or chronic toxicity to delta smelt, salmon and other aquatic biological resources, including the food that delta smelt eat.
- Sampling and analysis of plant effluent for known and suspected endocrine-disrupting compounds and analysis of effects on delta smelt, salmon and other aquatic biological resources.
- Increased sampling and analysis of plant effluent for toxics and other pollutants known to occur in the Delta, including pyrethroids, and assessment of effects on delta smelt, salmon and other aquatic biological resources.
- Review of Treatment Plant discharge noncompliance with Thermal Policy, resulting impairment to fish passage, assessment of factual basis for extended compliance exception, and determination whether exception should be continued.
- No net increase in pollutant loadings to the Sacramento River from the Sanitation District's request to increase Treatment Plant discharges to 218 mgd or beyond.

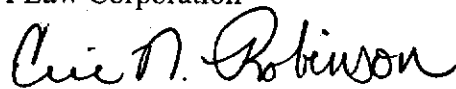
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- Review of alternative sewage treatment approaches to accommodate proposed 42 percent treatment capacity expansion without increasing concentrations and mass loadings of toxics and other pollutants into the drinking water supply for more than 20 million Californians.

Sincerely,

KRONICK, MOSKOVITZ, TIEDEMANN & GIRARD
A Law Corporation



Eric N. Robinson

ENR
Enclosure

cc: Central Valley Regional Water Quality Control Board
State Water Contractors
Zone 7, Alameda County Flood Control & Water Conservation District
Alameda County Water District
Metropolitan Water District of Southern California
Santa Clara Valley Water District
Contra Costa Water District
Sacramento Regional County Sanitation District

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