California Sportfishing Protection Alliance
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Ms. Patricia Leary, Chief, NPDES Unit, Sacramento Delta Watershed
Mr. James Marshall, P.E.
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, California 95670-6114 Via Electronic Submission

Re: Tentative Waste Discharge Requirements, NPDES No. CA0079154 and Time Schedule Order for City of Tracy Regional Wastewater Treatment Facility

Dear Ms. Leary and Mr. Marshall:

On behalf of the California Sportfishing Protection Alliance, Watershed Enforcers and San Joaquin Audubon (hereinafter CSPA), thank you for this opportunity to comment on the proposed permit (Order or Tentative Permit) for the Tracy Wastewater Treatment Plant (Discharger). We appreciate staff's cheerful assistance in assisting us in understanding the issues and acknowledge their prodigious effort in developing the Tentative Permit. However, we remain concerned that the Order contravenes federal regulations and is not protective of severely degraded fisheries and receiving waters. We also note that the new format is needlessly confusing, redundant and complex and represents a backward step from previous NPDES permit packets.

South Delta waterways are habitat and migration corridors for a number species protected under federal and state endangered species acts. Species include: Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha* - federal and state listed as threatened); Central Valley steelhead (*Oncorhynchus mykiss* -federal listed as threatened); Delta smelt (*Hypomesus transpacificus* - federal and state listed as threatened); Sacramento splittail (*Pogonichthys macrolepidotus* - California species of concern). Depending upon water-year and operation of the export pumps, other listed species can be drawn into these waterways including winter-run Chinook salmon (*Oncorhynchus tshawytscha* - federal and state listed as endangered). Additionally, fall/late-fall-run Chinook salmon is both a federal and California species of concern. Green sturgeon (*Acipenser medirostris*) is proposed for federal listing and is a California species of concern. The Longfin smelt (*Spirinchus thaleichths*), hardhead (*Mylopharodon conocephalus*) and Sacramento perch (*Archoplites interruptus)* are identified as California species of concern. Further, a number of non-special status species (i.e., striped bass, largemouth bass, smallmouth bass, catfish, panfish, etc.) are found in the South Delta.

Receiving waters in the vicinity of the Discharger's outfall are degraded and included on the California 303(d) list of impaired waterways as incapable of supporting identified beneficial uses because of diazinon, chlorpyrifos, organo-chlorine Group A pesticides, DDT, mercury, electrical conductivity, unknown toxicity and dissolved oxygen deficiencies. Elevated temperatures are increasingly acknowledged to be a limiting factor to critical life stages for a number of species.

The Delta's pelagic fisheries are experiencing catastrophic collapse. The California Department of Fish and Game's Delta smelt index, a measure of relative abundance, was only 26 in last fall's mid-water trawl survey compared to 899 in 1995 (the lowest in the 43 years of record). Longfin smelt abundance index was 129, the second lowest on record (it was 81,790 in 1967). The striped bass index was 121 (it was 20,038 in 1967). The Threadfin shad population index was 2866 (as recently as 2001, it was 14,402). Adult white sturgeon numbers have dropped from an estimated 144,000 in 1998 to a 50-year low of about 10,000 in 2005. Estuary phytoplankton production has decreased about one order of magnitude while zooplankton production is down one to two orders of magnitude. The special team of federal and state scientists investigating the pelagic organism decline in the Delta has identified toxic pollutants as one of the three major suspected causes of the collapse of the pelagic fishery.

Given the depleted fisheries and degraded state of South Delta waters, any permit regulating the discharge of pollutants must stringently comply with federal regulations, contain protective limits and not allow increases in concentration or mass loading of pollutants. Unfortunately, the Tentative Permit falls short in this regard.

The following set forth our principle concerns:

1. The flow limitations in the Order fail to comport with federal regulations.
2. The limitation for acute toxicity is inconsistent with Basin Plan and federal requirements.
3. The Order fails to contain an effluent limitation for chronic toxicity.
4. The Order violates state and federal endangered species acts.
5. The antidegradation analysis is woefully inadequate and inconsistent with the state's antidegradation policy.
6. Temperature limitations violate the Basin Plan, Thermal Plan and federal regulations.
7. The Order illegally allows an unpermitted discharge to Sugar Cut Slough.
8. The Order allows degradation of groundwater.
9. Failure to include an effluent limitation for dissolved oxygen violates federal regulations.
10. The ammonia limitation does not comply with the Basin Plan's narrative toxicity objective and fails to employ a "worst case" scenario.
11. The Order fails to include limits for methylmercury.
12. Monitoring requirements are inadequate.

Our detailed comments follow.

The flow limitations in the Order fail to comport with federal regulations

The Federal Regulations, at 40 CFR 122.45 (b), require that POTW effluent limitations, standards, or prohibitions be based on design flow. Virtually every engineering textbook includes *Ten States Standards* as standard engineering design and a recognized civil engineering basis for wastewater treatment plant (WWTP) design parameters. Pursuant to these standards;

a. Average Dry Weather Flow (ADWF) represents the daily average flow when groundwater is at or near normal and runoff is not occurring.
b. Maximum Wet Weather Flow (MWWF) represents the total maximum flow received during any 24-hour period when the groundwater is high and runoff is occurring.
c. Peak Hourly Wet Weather Flow (PHWWF) represents the total maximum flow received during one-hour when groundwater is high, runoff is occurring, and domestic and commercial flows are at their peak.

The PHWWF must be used to evaluate the effect of hydraulic peaks on the design of pumps, piping, clarifiers, and any other flow sensitive aspects.

The discharge flow limitations in the Tentative Permit are presented as average monthly for ADWF and as maximum daily for peak-wet weather flow (PWWF). Unfortunately, the technical basis for the flow limitations is not discussed in the permit. The federal definition of daily maximum is an average for the day. Therefore the PWWF limitation is actually a daily average. The monthly average ADWF and one day's average wet weather flow (PWWF) are not acceptable WWTP design parameters. Consequently, the flow limitations contained in the permit are not based on acceptable WWTP design parameters and therefore fail to comply with federal regulations.

The limitation for acute toxicity is inconsistent with Basin Plan and federal requirements

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This section of the Basin Plan further states, in part that, compliance with this objective will be determined by analysis of indicator organisms.

The Tentative Permit requires that the Discharger conduct acute toxicity tests and states that compliance with the toxicity objective will be determined by analysis of indicator

organisms. However, the Tentative Permit contains a discharge limitation that allows 30% mortality (70% survival) of fish species in any given toxicity test.

The Tentative Permit acknowledges in detail that there is no assimilative capacity in the receiving stream for individual toxic pollutants. It further acknowledges that ambient waters are impaired for unknown toxicity. Allowing 30% mortality in acute toxicity tests allows that same level of mortality in the receiving stream, in violation of federal regulations and contributes to exceedance of the Basin Plan's narrative water quality objective for toxicity. Accordingly, the Order should be revised to prohibit acute toxicity.

The Order fails to contain an effluent limitation for chronic toxicity

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including state narrative criteria for water quality. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

The Tentative Permit states that: "…to ensure compliance with the Basin Plan's narrative toxicity objective, the discharger is required to conduct whole effluent toxicity testing…" Attachment F, page 59. However, sampling does not equate with or ensure compliance.

The Tentative Permit requires the Discharger to conduct an investigation of the possible sources of toxicity if a threshold is exceeded. This language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An effluent limitation for chronic toxicity must be included in the Order.

The Order violates state and federal endangered species acts

As discussed above, South Delta waterways are listed on the 303(d) list as impaired because of unknown toxicity and are home to species protected by state and federal endangered species acts. There is no remaining assimilative capacity for toxicity, toxic pollutants or oxygen demanding constituents. Astonishingly, the Tentative Permit allows acute toxicity, fails to limit chronic toxicity and, as we discuss below, includes effluent limits that are not protective of listed species. The Tentative Permit is likely to result in the illegal "take" of listed species and will likely result in the destruction or adverse modification of critical habitat in violation of Section 9 of the federal Endangered Species Act (ESA).

The Order has been developed with federal funds and is issued pursuant to U.S. Environmental Protection Agency (EPA) authorization. Consequently, the Regional

Board and/or EPA must enter into formal consultation with both the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the ESA. The discharge of toxicity and toxic pollutants by the Discharger is a violation of Section 9 of the ESA and requires an incidental take permit pursuant to Section 10 of the ESA. The Regional Board's issuance of an Order that authorizes and/or "causes" an illegal "take" is also a violation of Section 9 of the ESA. Consequently, both the Discharger and the Regional Board must secure incidental take permits from NMFS and USFWS.

The Tentative Permit will also likely result in an illegal "take" of listed species pursuant to Section 2080 of the California Fish and Game Code; i.e., the California Endangered Species Act (CESA). The Discharger must obtain a permit under Section 2081 or a consistency determination under Section 2080.1 of CESA. Unlike ESA, CESA requires that authorized take be "fully mitigated" and that all required measures be "capable of successful implementation." Since there are no provisions for time schedules under CESA, the Discharger must comply with protective limits as soon as possible and certainly prior to any increase in the rate of discharge. The inadequate toxicity, temperature, ammonia, and dissolved oxygen limits in the Tentative Permit should be revised to be fully protective of listed species. The Discharger and Regional Board must initiate consultation with the California Department of Fish and Game.

The antidegradation analysis is woefully inadequate and inconsistent with the state's antidegradation policy

Two significant expansions of the wastewater treatment plant are discussed in the Tentative Permit. The antidegradation discussion states that:

a. The increase will not cause a violation of water quality objectives.
b. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge.
c. The receiving water may exceed applicable water quality objectives for certain constituents as described in this Order, and
d. The Order requires the Discharger, in accordance with specified compliance schedules, to meet requirements that will result in the use of best practicable treatment or control of the discharge and will result in compliance with water quality objectives.

However, there are numerous constituents shown in Table F-1 that have significant increases in the mass of pollutants discharged that are not specifically discussed in the analysis. Nor does the antidegradation analysis discuss why the wastewater treatment plant is allowed expansion that does not result in full permit compliance and does not achieve best practicable treatment or control of the discharge.

For example, the antidegradation analysis fails to adequately discuss the significant increase in oxygen demanding substances or available best practicable treatment or control of the discharge of these substances. The Tentative Permit allows a 78% increase

in mass loading of nitrate and a 77% increase in mass loading of phosphorous. This translates to an additional 187 lbs/day of nitrate and 186 lbs/day of phosphorus discharged from the expanded wastewater treatment plant. The Tentative Permit establishes that receiving waters are impaired for dissolved oxygen. Nitrogen and phosphorus are the primary contributors to eutrophication and increased mass loading of these constituents will cause a further oxygen demand on an already impaired waterbody. Nitrogen and phosphorus can be treated and removed from the discharge through readily available technologies. Failure to employ these commonly used technologies will cause, and significantly contribute to, violation of the water quality objective for dissolved oxygen.

The Tentative Permit allows an expansion of the wastewater treatment plant. Compliance Schedules 4(b)(i) states that the permitted average dry weather discharge flow may increase to 10.8 mgd and the permitted peak wet weather discharge flow may increase to 26 mgd. However the Discharger is not required be in compliance with the effluent limitations for electrical conductivity (EC). The antidegradation analysis does not discuss why an increased flow is allowed until the Discharger confirms that an expanded wastewater system can comply with all effluent and receiving water limitations. Allowing an interim expansion without requiring complete compliance is contrary to the statement in the antidegradation analysis that the flow increase will not cause a violation of water quality objectives. The antidegradation analysis fails to discuss why the wastewater treatment plant is allowed any expansion that does not result in full permit compliance and does not achieve best practicable treatment or control of the discharge.

The above discussion also applies to temperature and apparently for bis2(ethyl-hexyl)phthalate, copper, dibromochloromethane and bromodichloromethane which have compliance dates of 1 January 2008.

The Tentative Permit fails to properly implement the Basin Plan's Antidegradation Policy. The discharge must be capable of achieving 100% compliance with Effluent and Receiving Water Limitations prior to allowing an expansion of the Waste Water Treatment Plant.

Temperature limitations violate the Basin Plan, Thermal Plan and federal regulations

The Tentative Permit contains an Effluent Limitation that states: "The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F." It also includes a Receiving Water Limitation that states that the discharge shall not cause: "The creation of a zone, defined by water temperatures of more than 1ºF above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of the river channel at any point or a surface temperature rise greater than 4ºF above the natural temperature of the receiving water at any time or place."

Unless the Order is allowing a mixing zone, compliance with the proposed effluent limitation would cause immediate violation of the Receiving Water Limitations. The receiving water limitations are apparently based on Basin Plan water quality objectives, whereas the Effluent Limitation appears to have no technical or legal explanation. Federal Regulations, 40 CFR 122.44(d)(1)(i), requires an effluent limitation be adopted whenever a pollutant discharge has a reasonable potential to exceed a water quality standard or objective. A discharge at 20°F above the natural receiving water temperature will clearly cause exceedance of a 4°F Receiving Water objective. The Effluent Limitation allowing a 20°F increase in temperature violates federal regulations and must be removed from the Order.

The receiving water limitation in the proposed permit for temperature clearly misstates the Basin Plan and Thermal Plan. Both require that: "*No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.*" In other words, no discharge shall cause a temperature rise greater than 4ºF throughout the water column of surface waters. The Tentative Permit requires: "the discharge shall not cause… a *surface temperature rise* greater than 4ºF above the natural temperature of the receiving water at any time or place." A change in surface water temperature is clearly different than a change in the temperature at the waters surface. The proposed permit language does not accurately reflect the Basin Plan and Thermal Plan objective for temperature, violates 40 CFR 122.44(d)(1)(i) and must be changed.

The Order illegally allows an unpermitted discharge to Sugar Cut Slough

The Tentative Permit contains a Provision (2d) and a Sugar Cut Slough Monitoring Study. The Provision states: "In a June 1995 report prepared by CH2M Hill for the Discharger, it was concluded that the ponds leak to the shallow groundwater and the groundwater is in hydraulic connection with Sugar Cut Slough." The Provision then states, in part: "…additional monitoring is necessary to determine if the unlined ponds are in hydraulic continuity and if they are affecting water quality in Sugar Cut Slough." The Discharger's consultants have already concluded that there is hydraulic continuity between wastes from the facility and with surface waters. The Clean Water Act and California Water Code, Section 13376, clearly requires submittal of a Report of Waste Discharge for the discharge of waste to surface waters. There is sufficient information to conclude that waste material, regardless of quality, is being discharged to surface waters from leaking wastewater ponds. A Provision requiring a workplan rather than immediate submittal of a Report of Waste Discharge does not comply with applicable laws. The Order must be revised to require the Discharger to submit a Report of Waste Discharge for its illegal discharge to Sugar Cut Slough.

The Order allows degradation of groundwater

The discussion concerning biosolids dewatering, in Attachment F, page 16, states that the facility currently degrades groundwater quality with their practice of discharging sludge to sand lined drying beds. It is proposed to pave the sludge drying bed with a "relatively impermeable" barrier of asphaltic concrete. A "relatively impermeable" barrier will still

allow wastes to migrate to groundwater and is not best practicable treatment and control (BPTC) of the discharge. Completely impermeable lining materials are readily available and would prohibit pollutant migration to groundwater. . A "relatively impermeable" barrier is not BPTC. The Order should be revised to require BPTC for discharges to groundwater.

Failure to include an effluent limitation for dissolved oxygen violates federal regulations

The Tentative Permit states that the receiving waters are impaired for dissolved oxygen. The discharge contains oxygen-demanding substances. In numerous locations, the Order establishes that receiving water lacks assimilative capacity for additional oxygen demanding constituents. The proposed permit contains a Receiving Water Limitation for DO. The discharge presents a reasonable potential to cause or contribute to exceedance of the Basin Plan's water quality objective for DO. In accordance with Federal Regulations, 40 CFR 122.44, the Tentative Permit is required to contain an Effluent Limitation for DO.

The ammonia limitation is not protective of the Basin Plan's narrative toxicity objective and fails to employ a "worst case" scenario

The toxicity of ammonia varies with pH and temperature. The proposed permit finds that there is a reasonable potential for ammonia in the discharge to exceed water quality standards, therefore in accordance with federal regulations an Effluent Limitation is required to be included in the permit. The Effluent Limitation must be adequate to maintain compliance with the narrative water quality objective 100% of the time.

In assessing acute toxicity, the permit states that the maximum observed pH was 9.3. The permit the states that: "however, due to the variability of pH sampling, using the maximum pH may be overly protective. Therefore, the 90th percentile of pH readings was used to determine the acute design pH." The final Effluent Limitations must be protective of all events over the five-year life of the permit; therefore the worst-case pH should be used in developing the final ammonia limitation. There is NO documentation that pH variability would not result in a recurrence of an effluent pH of 9.3 during the life of the permit and a resulting toxic discharge. To the contrary, a 9.3 pH has occurred and recurrence is statistically probable. The 90th percentile pH of 8.5 does not produce an ammonia effluent limitation that is fully protective over the life of the permit. There were 280 receiving water pH observations made from July 1998 through November 2003; 53 months or approximately 1,590 days. With this relatively infrequent sampling, there is no reason to assume that the worst-case pH during this period was actually detected. The effluent pH values were not even discussed in assessing the acute toxicity for ammonia, although the chronic limitations are being established without benefit of dilution. The permit writer does not provide any statistical or rhetorical evidence that use of a 90th percentile receiving water pH results in a protective effluent limitation for ammonia.

For chronic toxicity, a median of the 280 pH observations was utilized in developing an ammonia effluent limitation. The permit states that: "the median was chosen for chronic toxicity, because over a period of time receptors would be exposed to a more or less average ammonia concentration." The median receiving water pH is then compared to the effluent median pH and the permit concludes that since the receiving water median pH is higher that the effluent median pH, that the critical pH was selected. The critical pH is the maximum observed value, not a relative median. The permit writer's statement that: "… receptors would be exposed to a more or less average ammonia concentration" comparing an average time period to the use of a median has no statistical basis. The median pH value does not produce an ammonia effluent limitation that will be protective of all events over the five-year life of the permit.

With respect to chronic toxicity, a 30-day average temperature was used in developing the ammonia effluent limitation. The above discussions are also accurate for this use of temperature. The proposed limitation is not based on the worst-case discharge that has been observed in the discharge and is not protective of all conditions that will be observed over the life of the permit. The permit presents no technical explanation or statistical analysis in an attempt to justify the use of medians and average values as compared to worst case observed conditions.

The proposed ammonia effluent limitation is not protective of the Basin Plan's narrative toxicity objective and if not corrected using the worst case observed pH and temperature, will allow toxic discharges to a receiving stream with no assimilative capacity. The Tentative Permit must be modified to include effluent limits that prevent acute and chronic toxicity from ammonia.

The Order fails to include limits for methylmercury

The Tentative Permit includes an interim effluent mass limitation, or cap, for total mercury. Inexplicably, it ignores methylmercury; the bioaccumulative and biodamaging form of mercury. Regional Board TMDL staff has consistently maintained that the pending Delta Mercury TMDL will require substantial reductions in the mass loading of methylmercury from wastewater treatment plants. The Tentative Permit must include an interim cap on methylmercury loading.

The Tentative Permit states that, if the Regional Board determines that a mercury offset program is feasible, the Order may be reopened to reevaluate the interim mercury mass loading limitation(s) and the need for mercury offset program. An explicit permit re-opener to include final load reductions established in the Delta Mercury TMDL must be incorporated in the Order.

Monitoring requirements are inadequate

The Monitoring and Reporting Program requires collection and analysis of total mercury. It must also require that methylmercury samples be collected and analyzed. Since sulfate concentrations affect methylation rates, sulfate should be analyzed concurrently with total

and methyl mercury. Monthly methylmercury and sulfate sampling should also be required for receiving water monitoring.

Grab samples for metals and semi volatile constituents are inappropriate for effluent monitoring. Flow proportional 24-hour composite sampling for metals and semi-volatile constituents is necessary. Continuous pH, EC and turbidity should also be required as they are inexpensive.

In summary, the Order should be revised to:

1. Include flow limits based on acceptable WWTP design parameters.
2. Prohibit all acute toxicity.
3. Include an effluent limitation for chronic toxicity.
4. Comply with state and federal endangered species acts.
5. Restrict mass loading of impairing constituents to current levels and require compliance with effluent and receiving water limitations prior to expansion.
6. Comply with temperature limitations is the Basin Plan, Thermal Plan and federal regulations.
7. Require a Report of Waste Discharge for present discharges to Sugar Cut Slough
8. Require an appropriate liner for discharges to groundwater.
9. Include an effluent limitation for dissolved oxygen.
10. Include defensible effluent limits that prevent acute and chronic toxicity from ammonia.
11. Include an interim cap on methylmercury loading and an explicit re-opener to establish final methylmercury load reductions.
12. Require monitoring for methylmercury and sulfate, flow proportional 24-hour composite effluent sampling for metals and semi-volatile constituents and continuous pH, EC and turbidity monitoring.

Thank you for considering these comments. If you have questions or require clarification, please contact me at 209-464-5067.

Sincerely,

Bill Jennings, Executive Director