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May 12, 2009



**VIA EMAIL**

Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board Members
1001 I Street, 24th Floor
Sacramento, CA 95814
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Re: City of Tracy's Comments on the Revised Draft Order for **A-1846(a) and A-1846(b) – May 19, 2009 Board Meeting**

Dear Ms. Townsend and Members of the State Water Board:

On behalf of the City of Tracy ("City"), in addition to the comments made previously, we submit the following comments on the proposed Final Draft Order issued for public comment on May 7, 2009:

A. Electrical Conductivity

1. The Draft Order Should be Amended to be Consistent with the 2001 Tosco Decision

The Revised Draft Order ignores the City's and other parties' comments that no final numeric effluent limitation for Electrical Conductivity (EC) is or should be required.[1] Moreover, the proposed changes ignore previous precedent dealing with similar issues.

As Mr. Baggett no doubt recalls, the State Water Resources Control Board (State Board) wrestled with a very similar issue in 2001 regarding infeasible limits for dioxin. Although salinity is not a priority pollutant, the holding in what is commonly known as the *Tosco* case should be reviewed and incorporated into the final Order issued on the Tracy Permit.

[1] In addition, the Revised Draft Order ignores the factual inaccuracy that remains, namely an allegation on page 6 that "No one disputes this fact" that reasonable potential exists. Both the City and CVCWA dispute this fact if the objective at issue only applies after a certain date and at certain compliance points in the Delta. As such, this inaccurate statement should be removed.

The State Board's decision in the *Tosco* case mirrors the situation at hand: a regulatory assumption of no assimilative capacity exists; the waterbody is listed on the 303(d) list and a TMDL has not been completed; the effluent limits proposed equal the water quality objective applied end-of-pipe; the effluent limits may be technically infeasible and, ultimately, unnecessary; no one expects structural controls, such as reverse osmosis, to be implemented; and the State Board recognizes that the best solution is a long term planning process, such as a TMDL. *See In the Matter of the Review on its Own Motion of Waste Discharge Requirements for the Avon Refinery*, SWRCB Order No. WQ 2001-06 at pgs. 23-24.

However, instead of requiring a final numeric effluent limit in the permit as is being proposed in the Tracy Revised Draft Order, the *Tosco* case required that the permit include a TMDL-based compliance schedule and that the permit include findings as to why a final limit was not included in the permit. Specifically, the permit must only express the Regional Water Board's intent to include in a later permit revision "the final water quality-based effluent limitation as an enforceable limitation (based on either the [applicable] criterion or on future regulatory developments, such as TMDL development)." *Id.* at 25. This reasonable approach was upheld as lawful by a California Court of Appeals. *Communities for a Better Environment (CBE) v. SWRCB*, 109 Cal.App.4th 1089 (2003).

In the interim, under the *Tosco* approach, the permit would require performance-based mass limits to ensure that the impairment does not worsen. The Tracy Permit already includes a mass load limit for Total Dissolved Solids of 13,688 tons/year (*see* Tracy Permit at Provision IV.A.5.f. and VII.H.) as well as other salinity control requirements that are adequate and enforceable as explained in our previous comment letter.

It is unreasonable for the State Board to mandate a more stringent approach when dealing with a non-priority pollutant like EC then it did with a bioaccumulative priority pollutant like dioxin. For these reasons, the City of Tracy requests that the following changes, consistent with Order WQ 2001-06, be made to the Revised Draft Order:

**Section II.A., pg. 10:** "We remand the permit for the Regional Water Board to calculate effluent limitations for EC based on any available site-specific data and modeling. If the City is unable to comply with these limits, the Regional Water Board should include appropriate compliance schedules in the permit based on TMDL development. Permit findings need only reflect that the final water quality-based effluent limitations for EC will be derived from wasteload allocations in the applicable TMDL, or from other the result of various planning options described above that occur in the interim before a TMDL is completed. ~~inclusion of the final water quality based effluent limits designed to implement the numeric water quality objectives contained in the Bay-Delta Plan, and, if appropriate, a planning process. This does not mean that the City must immediately comply with these limits~~ ~~The Central Valley Water Board may adopt a time schedule for compliance, as it did with the permit at issue~~. In addition, the permit shall maintain interim performance-based limits for salinity. Interim, performance-based mass limits are a reasonable step to preserve the status quo until the final

water quality-based effluent limitations can be established after the adoption of a TMDL or as a result of planning processes designed to address salinity holistically within the southern Delta."

2. The Revised Draft Order should recognize that the City has already requested a change to the Bay-Delta standards for salinity.

The Revised Draft Order at pgs. 9-10 states the following:

> "If it appears that there are no feasible ways to reduce the level of EC to meet the water quality objective, the Central Valley Water Board could then consider various planning options: a total maximum daily load (TMDL) for Old River[16]; site-specific water quality objectives~~:~~ a amendment to the basin plan, or a request to the State Water Board for an amendment to the Bay-Delta Plan; or, if the timing allows, the results of the State and Central Valley Water Boards' joint study and planning process regarding management of salt in the watershed (CV-SALTS, Central Valley Salinity Alternatives for Long-Term Sustainability).

This sentence does not recognize that the City has already submitted a request to the State Water Board for amendment(s) to the Bay-Delta Plan. *See attached* Letter from the City of Tracy to the SWRCB (April 6, 2009)(requesting review of the applicable beneficial uses, site-specific objectives, objectives based on constituents of EC instead of EC, alternative numeric objectives for EC, use of long term averages, and modification of the implementation plan). The review of the Bay-Plan objectives for EC in the South Delta are on-going and should be recognized as such in the Revised Draft Order.

B. Bis(2-ethylhexyl)phthalate

1. The Revised Draft Order should provide Additional Guidance on the Use of Estimated, J-Flagged Data.

Tracy appreciates the changes made to the Draft Order related to reasonable potential for bis(2-ethylhexyl)phthalate ("bis-2"). However, one sentence on page 19 should be clarified in order to provide additional guidance to the Regional Water Boards on how estimated j-flagged data should be utilized. As such, the City recommends the following changes:

> **Section II.E., pg. 19:** "While it may be appropriate in some instances to base a reasonable potential determination on a J-flagged (estimated) sample where the sample exceeds the applicable water quality objective and where the estimate is explicitly found to be reliable, in this case the Central Valley Water Board properly used its discretion to rely only on the more accurate split analysis."

In addition, Tracy supports the amendments to the section on bis-2 suggested by the Central Valley Regional Water Board in their letter of May 12, 2009 submitted on the Revised Draft Order.

2. Footnote 40 Needs to be Inserted.

The Revised Draft Order indicates a footnote 40 on page 18, but no such footnote exists. This needs to be remedied in the final Order. It may be that footnote 39 should have been renumbered as footnote 40 instead of stricken.

The City hopes that these comments will be carefully considered and that the Revised Draft Order will be modified as requested. On the other issues, the City commits to work with the Regional Water Board on remand to include adequate findings to justify the other provisions related to dilution and ammonia.

Respectfully submitted,

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April 6, 2009

**VIA EMAIL - BAY-DELTA@WATERBOARDS.CA.GOV AND U.S. MAIL**

Chris Carr
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 95812-2000

Re: **City of Tracy's Comment Letter - Southern Delta Salinity/San Joaquin River Flows WQCP Workshop**
Client-Matter No. 07547.00004

Dear Mr. Carr:

On behalf of the City of Tracy, we hereby submit comments relating to the salinity objectives in the southern Delta region and the implementation plan for the same as requested under the Matters for Discussion set forth in the February 13, 2009 workshop notice.

1. ***What should the salinity objectives be to protect agricultural beneficial uses in the southern Delta and where and when should those objectives apply?***

   a. **Federal law does not mandate protection of Agricultural Beneficial Uses.**

The agricultural (AGR) beneficial use is not a federally required use designation as under the Clean Water Act, only the so-called fishable/swimmable uses are required to be designated, and only where attainable. *See* 33 U.S.C. §1251(a)(2). Water quality standards under federal law need only consider the use and value of waters for agriculture and other purposes. 33 U.S.C. §1313(c)(2)(A).

Agricultural uses also do not meet the federal definition of "existing" beneficial uses. EPA regulations define "existing use" as "those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards." 40 C.F.R. §131.3(e). The regulations' reference to "uses actually attained in the water" disqualifies an off-

stream agricultural use as an "existing use" under 40 C.F.R. §131.3(e).[1]

This construct makes sense since ample precedent exists nation-wide for off-stream uses having to treat water prior to its ultimate use. This is true of drinking water uses as well as agricultural and industrial uses. If this were not the case, one could take this situation to ludicrous extremes. For example, if a microchip manufacturer wanted to use river water for its industrial uses, but needed distilled water, that would be the most sensitive use, but to get the receiving water to that level, if even possible, would kill any aquatic life using the water as an in-stream use. Thus, it makes more sense and is more reasonable for off-stream users to treat or blend stream water with potable or ground water to achieve the water quality levels necessary to support the off-stream use.

b. **Where necessary, water quality objectives should be adopted on a site-specific basis.**

The imposition of a non-regulatory agricultural water quality goal of 700 µmhos/cm for Electrical Conductivity ("EC") is not reasonably required to be applied to all parts of the southern Delta. Site specific evaluations must be made before using a water quality goal derived from research based on prevailing conditions in the Middle East, an area with different climactic and hydrological characteristics. *See Own Motion Review of the City of Woodland,* State Board Order No. WQO 2004-0010 (April 22, 2004); *see also* definition of "water quality control plan" and "water quality objectives" in Water Code §13050(j) and (h); Water Code §13241 (requiring consideration, among other things, of quality of available water, water quality conditions that can be *reasonably* achieved, economics, and the need to develop housing within the region).

In the *City of Woodland* Order, the State Board determined that when the Regional Board applies narrative objectives such as the 700 µmhos/cm water quality goal for EC, the Regional Board must evaluate whether the specific numerical values used "are relevant and appropriate to the situation at hand." *Id.* Applying an EC value without further study as to its general applicability, was found by the State Board to be inappropriate. *Id.* at pg. 7. The State Board further found that "the true suitability of a given water depends on the specific conditions of use and on the management capability of the user." *Id.* (emphasis added). Similar rationale would apply to actions taken by the State Board.

In the *Woodland* case, as is the case here for the Bay-Delta Plan, the specific uses of all of the waters, to which the EC objectives were applied, were not studied to determine an appropriately protective EC value given the actual and probable future uses of the waters in question. A site

[1] Federal antidegradation regulations also do not apply in this case. EPA regulations require that "existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." 40 C.F.R. § 131.12(a)(1). As previously stated, salt-sensitive agricultural uses are neither "existing uses" nor "instream water uses" as defined by federal regulations. Moreover, historically, before the creation of the levees and canals in the Delta, salinity levels were often high due to tidal influences from the San Francisco Bay.

specific analysis of the salt-sensitive crops grown in each area of the Delta, other waters available and being used as a water supply, a determination as to whether these crops are likely to be impacted by higher salinity water based on the manner in which those crops are irrigated, and a determination of whether any actual adverse impacts have been registered to confirm the necessity of additional restrictions above and beyond existing salinity levels must be undertaken before using water quality goals as applicable and enforceable objectives. This applies not only to the regional boards in basin planning, but to the State Board in statewide or area-wide water quality control plans.

The State Board has also made it clear that guidance numbers (such as water quality goals or maximum contaminant levels ("MCLs")) "cannot be interpreted as an absolute value." *See* SWRCB WQO 2004-0010 at pg. 7. Rather, a determination must be made as to whether site-specific conditions and other factors required to be considered under state law allow some relaxation in the value imposed. *Ibid.*; *see also* Water Code §13241. That was not done in this case when the 700/1000 µmhos/cm were originally imposed in the Bay-Delta Plan at particular compliance points, or later when imposed system wide throughout the Delta.

Given the State Board's *Woodland* decision and its guidance set forth in its non-precedential *City of Manteca* decision, SWRCB Order No. 2005-0005, the salinity objectives in the Bay-Delta Plan must be reviewed and modified accordingly. When a regulation or other statutory interpretation by an administrative agency appears to be erroneous because of subsequent administrative decisions, it is the agency's duty to conform to the correct interpretation. *See Pacific Motor Transport Co. v. State Board of Equalization*, 28 Cal. App. 3d 230, 242 (1972). Otherwise, the agency would be allowed to function in a manner "wholly unintended by the law." *Id.* Furthermore, the State Board has specifically found that "the treatment of [State Board] decisions and orders as precedent helps provide greater consistency and predictability in agency decision making." *See In the Matter of Fishery Protection and Water Right Issues of Lagunitas Creek*, State Board Order No. WR96-1 at pg. 22, n.11 (1996). For these reasons, and similar to the holding in the State Board's *Woodland* Order, the EC objective should not be used as an enforceable regulation in the form of a water quality objective or in orders and permits until an analysis of the proper number is determined.

c. **Salinity objectives may not be best measured by EC.**

Electrical conductivity is not a pollutant, it merely represents the ability of a material to carry electrical current. In water, EC is generally used as a measure of the mineral or other ionic concentration. Conductivity is a measure of the purity of water or the concentration of ionized chemicals in water. However, conductivity is only a quantitative measurement: it responds to all ionic content and cannot distinguish particular conductive materials in the presence of others. Only ionizable materials will contribute to conductivity; materials such as sugars or oils are not conductive. *See* http://www.wileywater.com/Contributor/Sample_2.htm

Instead of focusing on EC, the actual constituents that predominantly make up the measurement

of EC (*e.g.*, sodium, sulfur, metals, etc.)[2] and potentially adversely affect salt-sensitive agriculture should be the focus of the water quality objective review. Since not all constituents measured by EC affect salt-sensitive agriculture, regulating through EC is overbroad. For this reason, the scope of the potential salinity objectives, not just the EC objective, should be explored.

d. **Alternative objectives for EC and longer term averages for the objective must be considered.**

Notwithstanding the above, if a water quality objective for EC is retained, that objective should be set at 1600 µmhos/cm (i.e., the highest end of the allowable range of MCL values for EC in 22 C.C.R. Table 64449-B) and this value should apply year round as an annual average.[3]

A lower objective should only apply site-specifically where water from the Delta (or a particular waterbody therein) is actually being used for salt-sensitive agriculture and there are no management options that could allow for higher salinity water to be used (e.g., less salty water used for blending, irrigation management techniques, etc.). Blanket application of an EC objective without site specific ground-truthing of the need for such an objective is over broad, arbitrary, and capricious.

2. ***What should the program of implementation be for the southern Delta salinity objectives?***

a. **The Implementation Plan has never directly addressed municipal wastewater discharges.**

Water quality control planning for salinity has a long history in the Delta. The water quality objectives for EC applied by the Central Valley Regional Water Board are set forth in Table III-5 of the Sacramento/San Joaquin Basin Plan. The footnote to Table III-5 of the Basin Plan explains that the water quality objectives in the table were "taken from the State Water Board's Water Quality Control Plan for Salinity, May 1991." The document referred to in the Basin Plan is the "Water Quality Control Plan for Salinity, San Francisco Bay/Sacramento-San Joaquin Delta Estuary, 91-15 WR, May 1991." (1991 Delta Plan.) The 1991 Delta Plan was one of the first in a series of documents that the State Board has prepared and adopted in its efforts to protect water quality in the Delta area through the coordinated exercise of the State Board's authority over

[2] *See* Kenneth Barbalace http://klbprouctions.com/. Periodic Table of Elements - Sorted by Electrical Conductivity. EnvironmentalChemistry.com. 1995 - 2009. Accessed on-line: 4/3/2009 http://EnvironmentalChemistry.com/yogi/periodic/electrical.html

[3] Even the 700 µmhos/cm water quality goal was anticipated to be a long-term average. *See* Order No. R5-2007-0036 at pg. F-43; *Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29,* Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985).

water rights and water quality.[4]

Table 1-1 of the 1991 Delta Plan specified water quality objectives for EC to protect agriculture in all areas covered by the plan, whether such protection was necessary or not. The table included water quality objectives for EC applicable at the Vernalis gauge station--and three southern Delta locations--of 0.7 millimhos per centimeter (mmhos/cm) or 700 μmhos/cm from April 1 through August 31, and 1.0 mmhos/cm or 1000 μmhos/cm from September 1 through March 31.[5]

Although the Delta Plan was adopted in 1991, it did not require the EC objectives to be fully implemented until 1996. The table also included the statement that, if a contract has been negotiated between the Department of Water Resources, the U.S. Bureau of Reclamation, and the South Delta Water Association, that contract will be reviewed prior to implementation of the specified EC standard for the southern Delta, and appropriate revisions will be made to the objectives after considering the needs of other beneficial uses.

Rather than focusing primarily on meeting water quality objectives through regulation of discharges, the 1991 Delta Plan expressly provided "the State Board recognizes that the flow requirements and salinity objectives are largely to be met by the regulation of water flow." (1991 Delta Plan, pg. 2-2.) With respect to reducing the quantity of salt in the southern Delta area, the State Board established a goal of reducing the salt load discharged to the San Joaquin River by at least 10 percent and estimated that goal could be met through increased irrigation efficiency to reduce subsurface drainage. The State Board referred to development of a salt load reduction policy, the goals of which "should be achieved through development of best management practices and waste discharge requirements for non-point source dischargers." (1991 Delta Plan pg. 7-5.)

In May 1995, the State Board adopted a revised water quality control plan for the Delta. ("Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, 95-1WR, May 1995" (1995 Delta Plan, also incorporated herein by reference).) The 1995 Delta Plan delayed the implementation date for the EC objectives in the southern Delta until December 31, 1997. (1995 Delta Plan, pg. 17, Table 2.) In discussing the implementation program for meeting the southern Delta agricultural salinity objectives, the Plan states:

> "Elevated salinity in the southern Delta is caused by low flows, salts imported in irrigation water by the State and federal water projects, and discharges of land-derived

[4] The State Board's water quality control plans for the Sacramento/San Joaquin Delta have been based, in part, upon recognition of the interrelationship between water rights and water quality in the complex Delta system. In addition to addressing the effect of water diversions from the Delta and upstream tributaries on water quality in the Delta, the plans discuss the effects that largely unregulated agricultural irrigation return flows have had on the increased discharge of salt to the Delta and Delta tributaries.

[5] The values were specified as maximum 30-day running averages of mean daily EC. As stated above, consideration of long term averages, such as annual averages, should be undertaken during this water quality planning effort.

> salts primarily from agricultural drainage. Implementation of the objectives will be accomplished through the release of adequate flows to the San Joaquin River and control of saline agricultural drainage to the San Joaquin River and its tributaries.[6] Implementation of the agricultural salinity objectives for the two Old River sites shall be phased in so that compliance with the objectives is achieved by December 31, 1997.
>
> "..... The SWRCB will evaluate implementation measures for the southern Delta agricultural salinity objectives in the water right proceeding."

(1995 Delta Plan, pg. 29.)

On March 15, 2000, the State Board adopted Revised Water Right Decision 1641, which once again addressed the relationship between water diversions and implementation of Delta water quality objectives and determined that "the actions of the CVP are the principal cause of the salinity concentrations exceeding the objectives at Vernalis. *See* SWRCB Revised Decision 1641 at pg. 83. This State Board decision also states:

> "Water quality in the southern Delta downstream of Vernalis is influenced by San Joaquin River inflow; tidal action; diversions of water by the SWP, CVP, and local water users; agricultural return flows; and channel capacity. (R.T. pg. 3668; DWR 37, pg. 8.) The salinity objectives for the interior southern Delta can be implemented by providing dilution flows, controlling in-Delta discharges of salts, or by using measures that affect circulation in the Delta....
>
> "Even when salinity objectives are met at Vernalis, the interior Delta objectives are sometimes exceeded. (R.T. pg. 3677; SWRCB le, Figures [IX-19]-[IX-26]; SWRCB 76.) Exceedance of the objectives in the interior Delta is in part due to water quality impacts within the Delta from in-Delta irrigation activities. (R.T. pg. 7794.)
>
> "..... In 1987, DWR and SDWA identified flow barriers that could be constructed in the southern Delta to enhance water levels and circulation. The DWR, the USBR and the SDWA have agreed that the salinity problems in the southern Delta can be mitigated using the barrier program.... Since 1991, DWR has been installing and operating temporary barriers to assist SDWA diversions. Permanent barriers are proposed as components of the preferred alternative for the ISDP. (DWR 37.)
>
> "The construction of permanent barriers alone is not expected to result in attainment of the water quality objectives. . . The objectives can be met consistently only by providing more dilution or by treatment. (R.T. pg. 3737.) ... Modeling shows that construction and operation of the temporary barriers should achieve water quality of 1.0 mmhos/cm at the interior stations under most hydrologic conditions.
>
> "The DWR and the USBR are partially responsible for salinity problems in the southern Delta because of hydrologic changes that are caused by export pumping. Therefore, this

[6] Water Code section 13242 requires implementation plans for all water quality objectives to identify what entities must undertake activities to come into compliance with the objective. Failure to identify particular entities implies that no implementation activities are required by those entities.

order amends the export permits of the DWR and of the USBR to require the projects to take actions that will achieve the benefits of the permanent barriers in the southern Delta to help meet the 1995 Bay-Delta Plan's interior Delta salinity objectives by April 1, 2005. Until then, the DWR and the USBR will be required to meet a salinity requirement of 1.0 mmhos/cm [equivalent to 1000 μmhos/cm]. If, after actions are taken to achieve the benefits of barriers, it is determined that it is not feasible to fully implement the objectives, the SWRCB will consider revising the interior Delta salinity objectives when it reviews the 1995 Bay-Delta Plan...."

(Revised Water Right Decision 1641, pgs. 86-88, emphasis added.)

Revised Water Right Decision 1641 summarized the State Board's conclusions regarding salinity problems in the southern Delta as follows:

"..... Salinity problems in the southern Delta result from low flows in the San Joaquin River and discharges of saline drainage water to the river. The actions of the CVP are the principal causes of the salinity concentrations exceeding the objectives at Vernalis. Downstream of Vernalis, salinity is influenced by San Joaquin River inflow, tidal action, diversions of water by the SWP, CVP, and local water users, agricultural return flows, and channel capacity. Measures that affect circulation in the Delta, such as barriers, can help improve the salinity concentrations."

(Revised Water Right Decision 1641, pg. 89.)

Although the 1641 water right decision did not amend the water quality objectives in the 1995 Delta Plan, the decision redefined the responsibilities of the Department of Water Resources and the Bureau of Reclamation for implementation of several provisions of the plan, including the southern Delta EC objectives. Footnote 5 to Table 2 of the decision provides that:

"The 0.7 EC objective [equivalent to 700 μmhos/cm] becomes effective on April 1, 2005. The DWR and USBR shall meet 1.0 EC at these stations year round until April 1, 2005. The 0.7 EC objective is replaced by the 1.0 EC objective from August after April 1, 2005 if permanent barriers are constructed or equivalent measures are implemented in the southern Delta and an operations plan that reasonably protects southern Delta agriculture is prepared by the DWR and the USBR and approved by the Executive Director of the SWRCB. The SWRCB will review the salinity objectives for the southern Delta in the next review of the Bay-Delta objectives following construction of the barriers."

(Revised Water Right Decision 1641, pg. 182.)

The State Board took action with respect to the EC water quality objectives in the southern Delta through the adoption of State Board Resolution No. 2004-0062 on September 30, 2004. The resolution adopted the staff report for the periodic review of the 1995 Delta Plan and affirmed the plan as it then existed until changed by action of the State Board. In adopting the staff report, the State Board accepted the recommendation to receive further information to help decide whether to amend several provisions of the plan, including the southern Delta EC objectives. The State Board also accepted the staff recommendation to consider amending the Program of

Implementation section of the plan as necessary for implementation of any changes to the EC water quality objectives for the southern Delta or other revised objectives. *See* State Board Resolution No. 2004-0062, pgs. 1 and 2.[7]

Review of the documents discussed above leads to several conclusions regarding the southern Delta EC objectives from the 1991 and 1995 Delta Plans. First, the lengthy record of prior State Board decisions and water quality control plans for the Delta establishes that the salinity problems in the southern Delta are the result of many inter-related conditions, including water diversions upstream of the Delta, water diversions within the Delta for export and local use, high levels of salinity in irrigation return flows discharged to Delta waterways and tributaries, groundwater inflow, seasonal flow variations, and natural tidal conditions. Second, although discharges of treated wastewater to the Delta or its tributaries under NPDES permits might be demonstrated to affect EC in some very limited areas of the southern Delta near the discharge, previous State Board decisions and water quality control plans and related environmental documents did not discuss treated effluent discharges as a source of salinity in the southern Delta or consider the environmental, economic, or water quality impacts of using these EC objectives as end-of-pipe effluent limits as required under Water Code section 13241.

Similarly, previously adopted implementation programs for complying with the EC objectives in the southern Delta focused primarily on providing increased flows and reducing the quantity of salts delivered to the Delta and its tributaries by irrigation return flows and groundwater. The record also establishes that the implementation date for actions to implement the 0.7 mmhos/cm EC objective [equivalent to 700 µmhos/cm] for April through August was repeatedly postponed. In fact, revised Water Right Decision 1641 placed primary responsibility for meeting the EC objectives on the Department of Water Resources and the Bureau of Reclamation, and did not require those agencies to implement the 0.7 mmhos/cm [700 µmhos/cm] EC objective until April 1, 2005.

While salinity levels in Old River near the City of Tracy is generally low, these levels vary over time. The EC data collected at Old River background receiving water sample locations from July 1998 through November 2003 showed that EC in the receiving water had a long-term average of 640µmhos/cm over 277 sampling events, which is below the salinity objective of 700 µmhos/cm if applied as a long term average. *See* Fact Sheet for Tracy's permit (Order No. R5-2007-0036) at pg. F-43. However, instantaneous values for EC in the receiving water from 1975 to 1994 ranged from 195 to 2090 µmhos, reflecting numerous exceedances of current EC water quality objectives of 700 µmhos/cm and 1000 µmhos/cm. *Id.* Hourly EC data from the Department of Water Resources' Mossdale monitoring station (RSAN087) in the San Joaquin River located above the point where the Old River exits the San Joaquin River show that, from December 2000 through September 2002, the conductivity of the San Joaquin River ranged from 299 µmhos/cm to 1131 µmhos/cm, but averaged 721 µmhos/cm, just above the 700 µmhos/cm

[7] The staff report adopted in State Board Resolution No. 2004-0062 recommended that the State Board not consider changes to the EC objectives upstream of Vernalis and several other provisions of the 1995 Delta Plan at this time.

objective.

Application of long-term averages dampens out the ebbs and spikes in salinity over time and makes the objective more attainable. For these reasons, the EC objectives, assuming maintained, should be amended to be annual averages that reflects the natural fluctuations of salinity from wet and dry weather, drought, and other conditions.

b. **If municipal wastewater will be part of the implementation plan for meeting whatever salinity objectives ultimately apply, then the State Board must consider the consequences of that decision.**

There are really only two ways to deal with salinity issues, dilute the salts or separate them out of the water supply. The feasibility and consequences of both must be considered.

To provide a more concrete example, we provide the facts related to the City of Tracy's wastewater discharges. The City relies upon groundwater sources, water from the Delta-Mendota Canal, and some Sierra water for the drinking water it delivers.[8] Based on the review of effluent EC data for the period July 1998 through December 2004, the average EC level in the City's effluent was 1753 µmhos/cm, with a range of 1008 to 2410 µmhos/cm in 305 samples. *See* Order No. R5-2007-0036 at pg. F-43.

The City estimates that while changes in its water supply to increase the percentage of Sierra water in its overall supply has reduced the EC of the effluent it discharges to the river, instantaneous samples will still significantly exceed 1000 µmhos/cm. The City estimates that implementation of other source control measures for salinity may not reduce the EC of its effluent to an average level less than 1000 or 700 µmhos/cm as a short-term (monthly or less) average. Although the City may potentially be able to place controls on additions of salt to their system, such as from water softeners,[9] other state policies and requirements, such as low flow showers and water conserving toilets, have exacerbated salinity levels by removing much of the diluting water from the system.

The City contends that the only way it could assure compliance with a 700 µmhos/cm EC effluent limitation would be through the use of fresh water to dilute its discharges (which may not be allowed given state water rights laws) or the construction and operation of a reverse osmosis water treatment facility. The City estimates that the annualized cost of constructing reverse osmosis facilities would be at least $19.2 million. This is in addition to the current operating cost of $8.5 million per year. Moreover, this technology is very energy-intensive and produces a highly saline brine by-product for which no real disposal alternatives exist.

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[8] The EC of the Sierra surface water supply is approximately 100 µmhos/cm.

[9] Health and Safety Code section 116786 establishes requirements governing local regulation of water softeners and provides that local ordinances may not require removal of water softeners installed before the effective date of the ordinance.

Even if these fiscal and environmental costs could be born, the City's use of reverse osmosis would have relatively little effect on the ambient EC levels of water downstream in the river because of the relatively high salinity levels already in the receiving water and the relatively small portion of flow provided by the City's discharge. These facts were demonstrated by the Department of Water Resources modeling of Tracy's discharge and its *de minimus* effect downstream. *See* Tracy's Permit, Order No. R5-2007-0036 at pgs. F-47 and F-48 ("even if the Tracy discharge were removed it would not solve the salinity problems in the area.").

Consequently, any decision to include municipal wastewater facilities in the implementation plan for salinity must consider that the current objectives would require use of reverse osmosis to treat the municipal wastewater effluent on a large scale and must consider the expected environmental effects of that requirement.

In Tracy's case, the 700 µmhos/cm EC receiving water objective for April through August in the southern Delta frequently may not be consistently met notwithstanding the City's discharge, and requiring the City to comply with an effluent limitation of 700 µmhos/cm EC would not significantly change the EC of water in the southern Delta area, yet would place the City in civil and criminal jeopardy for not doing so. 33 U.S.C. §1319; Water Code section 13385.

In addition, the State Board's 1991 and 1995 Delta Plans, Revised Water Right Decision 1641, and State Board Resolution No. 2004-0062 all establish that the State Water Board's intended implementation program for meeting the 700 µmhos/cm EC objective was based primarily upon providing increased flows, possible construction of salinity barriers, and reducing the salt load entering the San Joaquin River from irrigation return flows and groundwater. Adding new sources to the implementation plan requires a new analysis and potentially different objectives due to the economic and growth impacts. *See accord* Water Code §13241 (factors that must be considered when adopting WQOs) and §13242 (requiring implementation plans for all objectives).

The causes and potential solutions to the salinity problems in the southern Delta are highly complex subjects that have received and are continuing to receive attention from the State Water Board in the exercise of its coordinated authority over water rights and water quality. Although the ultimate solutions to southern Delta salinity problems have not yet been determined, previous actions establish that the State Water Board intended for municipal wastewater permit effluent limitations to play no significant role with respect to achieving compliance with the EC water quality objectives in the southern Delta. If the State Board intends to change that, then the State Board should include a schedule of compliance to allow time for other regulatory actions on salinity to progress toward achievement of the objectives in the South Delta (*e.g.*, the salt and boron TMDL), to consider other potential alternatives to reverse osmosis, and to design and construct treatment and brine disposal facilities. Immediate construction and operation of reverse osmosis facilities to treat discharges from municipal wastewater treatment plants without a compliance schedule does not represent a reasonable regulatory approach.

Under Water Code section 13242, the State Board must (a) describe the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private, and (b) include a time schedule for the actions to be taken. A failure to comply will not only result in unreasonable regulatory requirements, but would be contrary to law.

For the reasons provided herein, the City of Tracy recommends that serious consideration be given to the manner in which salinity is being regulated in the Delta. Blanket regulation without site-specific considerations should be avoided. In addition, time should be provided for any municipal entity to come into compliance as municipalities were not historically considered to be part of the equation for meeting the Delta salinity objectives previously.

Respectfully submitted,

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