IT IS HEREBY ORDERED THAT:

Waste Discharge Requirements Order No. R5-2007-0075 (NPDES No. CA0078581) is amended solely to modify the effluent limitations for EC and allow a chronic aquatic life dilution credit, which results in the revision of the chronic whole effluent toxicity numeric monitoring trigger. This amendment requires changes to Effluent Limitations IV.A.1.a., Provisions VI.C.1.f. and VI.C.2.iii. of the Limitations and Discharge Specifications, and Section IV.C.2.c., Section IV.C.3.h. (paragraph 2), Section IV.C.3.o.v., Section IV.C.5.b., Section VII.B.1.d., Section VII.B.2.a. (paragraph 3), and Tables F-6, F-7, and F-8 of the Fact Sheet. Order No. R5-2007-0075 shall be amended as follows:

1. Limitations and Discharge Specifications, Effluent Limitations, IV.A.1.a., Table 6, is amended as follows:

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Electrical Conductivity	µmhos/cm	~~--~~ 850	--	~~719~~	--	--

This modification to the effluent limitation for electrical conductivity is also made in the Fact Sheet (Attachment F) at Section IV.C.3.o.v., Table F-7, and Table F-8.

2. Limitations and Discharge Specifications, Provisions VI.C.1.f., Reopener Provisions, is amended as follows:

   f. **Mixing Zone Study for Copper:** There is the potential that the Sacramento River provides assimilative capacity and that a mixing zone and dilution credits could be considered for compliance with acute aquatic life criteria for copper. Dilution credits and mixing zones shall only be considered by the Regional Water Board after the Discharger has completed site-specific mixing zone study and demonstrated to the satisfaction of the Regional Water Board that a dilution credit is appropriate. If the Discharger chooses to conduct a mixing zone study, it shall be conducted in accordance with the procedures outlined in Appendix 5 of the SIP. If after completion of the mixing zone study, it is determined that dilution credits are appropriate, then this Order may be reopened if necessary to modify effluent limitations for copper.

3. Limitations and Discharge Specifications, Provisions VI.C.2.iii., Chronic Whole Effluent Toxicity, is amended as follows:

   iii. **Numeric Monitoring Trigger.** The numeric toxicity monitoring trigger is > ~~**1 TUc**~~ **16 TUc**(where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

4. Fact Sheet, Section IV.C.2.c., Assimilative Capacity/Mixing Zone, is amended as follows:

c. **Assimilative Capacity/Mixing Zone.** Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Any available dilution may be used to calculate protective effluent limitations by applying water quality criteria at the edge of the defined mixing zone. These calculations include receiving water pollutant concentration that are typically based on reasonable worst-case conditions for flow and concentration. For completely mixed discharges, the SIP allows the dilution for acute aquatic life criteria and objectives to be calculated using a ratio of the lowest 1-day average flow that occurs (on average) once every 10 years (1Q10) to the maximum daily effluent flow. In addition, the SIP allows dilution for chronic aquatic life criteria and objectives to be calculated using the ratio of the lowest 7-day average flow that occurs (on average) once every 10 years (7Q10) to the maximum effluent 4-day daily average flow; and for human health criteria and objectives to be calculated using the ratio of harmonic mean flow to the long term arithmetic mean effluent flow. For incompletely mixed discharges, the SIP requires the dilution credits and mixing zones only be allowed after the Discharger has completed an independent mixing zone study and demonstrated to the satisfaction of the Regional Water Board that a dilution credit is appropriate.

There are two USGS flow monitoring stations in the vicinity of the Discharge. The upstream USGS station No.11447500 at Sacramento has flow data available for the period from 1 October 1948 to 30 September 1979; the downstream USGS station No.11447650 at Freeport has flow data available for the period from 1 October 1948 to 30 September 2005. In the Discharger's 30 August 2005 Report of Waste Discharge, the Facility provided a dilution analysis based on flow data from the USGS downstream station at Freeport since the upstream station at Sacramento does not typically provide data during the critical summer low flow period. Flow data at the Freeport station were used for estimation of 1Q10, 7Q10 and harmonic mean flows. Based on a comparison between flow data at the Freeport station and available data from the upstream station at Sacramento, the Discharger determined that a factor of 90 percent of the flows at the downstream Freeport station would be used as a conservative estimation of the upstream receiving water flows. Based on the analysis provided by the Discharger, the Regional Water Board considers that this is an appropriate approach for estimation of 1Q10, 7Q10 and harmonic mean flows.

The Discharger's daily flow data from 1 January 2000 through 1 August 2005 were used to calculate the maximum daily flow of 14.6 mgd, the 4-day average of daily maximum flows (13.1 mgd), and the long-term arithmetic mean flow of 5.6 mgd

Calculated dilution ratios are presented as follows:

Table F-3. Receiving Water Flows, Discharge Flows, and Associated Dilution Ratios

Water Quality Criteria	Receiving Water Flow Rate, mgd	Discharge Flow Rate, mgd	Calculated Dilution Ratio
Acute aquatic life toxicity criteria	2,335 (1Q10)	14.6[1]	160:1
Chronic aquatic life toxicity criteria	2,408 (7Q10)	13.1[2]	184:1
Human health-based criteria	9,174 (Harmonic Mean)	5.6[3]	1,640:1

[1] Maximum daily flow.
[2] 4-day average of daily maximum flows.
[3] Long term arithmetic mean flow.

The CWA directs states to adopt water quality standards to protect the quality of its waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR 122.44 and 122.45). The USEPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Policy or SIP) and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Regional Water Board may use the USEPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) (TSD).

The allowance of mixing zones by the Regional Water Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the [TSD]. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge.*"

Section 1.4.2 of the SIP states, in part, "*...with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers ... The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone*

granted by the Regional Board. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board."

For completely-mixed discharges, the Regional Water Board may grant a mixing zone and apply a dilution credit in accordance with Section 1.4.2.1 of the SIP. For incompletely-mixed discharges, the Discharger must perform a mixing zone study to demonstrate to the Regional Water Board that a dilution credit is appropriate. In granting a mixing zone, the SIP states that a mixing zone shall be as small as practicable, and meet the conditions provided in Section 1.4.2.2 as follows:

"A mixing zone shall be as small as practicable. The following conditions must be met in allowing a mixing zone:

A: A mixing zone shall not:

(1) compromise the integrity of the entire water body;
(2) cause acutely toxic conditions to aquatic life passing through the mixing zone;
(3) restrict the passage of aquatic life;
(4) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;
(5) produce undesirable or nuisance aquatic life;
(6) result in floating debris, oil, or scum;
(7) produce objectionable color, odor, taste, or turbidity;
(8) cause objectionable bottom deposits;
(9) cause nuisance;
(10) dominate the receiving water body or overlap a mixing zone from different outfalls; or
(11) be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy."

The decision to allow dilution credits depends upon whether a discharge is completely or incompletely mixed. For constituents where water quality criteria are based on human health objectives, critical environmental impacts are expected to occur far downstream from the source such that complete mixing is a valid assumption. Therefore, for purposes of establishing WQBELs in this Order, dilution credits have been granted for constituents with human health-based criteria using Table F-3. However, for constituents with aquatic life toxicity-based criteria, where impacts can occur over a small spatial scale near the effluent discharge point, complete mixing is not a valid assumption. ~~such that dilution credit has not been granted for these constituents~~. ~~This Order includes a provision that allows the permit to be reopened to allow dilution credits if the~~

~~Discharger completes a mixing zone and dilution study that demonstrates to the satisfaction of the Regional Water Board that a dilution credit is appropriate.~~ Therefore, the Discharger developed a chronic aquatic life toxicity mixing zone study to evaluate the available dilution for compliance with chronic aquatic life criteria. The report titled, "Department of General Services Toxicity Reduction Evaluation (TRE) Report: Chronic Aquatic Life Toxicity Mixing Zone Study" dated May 2008 demonstrates that a dilution credit of 16:1 is adequately protective of aquatic life in the receiving water. A mixing zone extending a maximum of 640 feet downstream, 100 feet in width, and a maximum depth of 4.4 feet was estimated in the modeling. The Sacramento River at the point of discharge is 600 feet wide and approximately 25 feet in depth. A dilution credit for compliance with acute aquatic life criteria is not allowed in this Order, because the mixing zone study did not evaluate acute conditions.

The chronic mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the waterbody or overlap existing mixing zones from different outfalls. The chronic mixing zone is very small relative to the large size or the receiving water. The chronic mixing zone is approximately 12.5 miles from the nearest drinking water intake and does not overlap a mixing zone from a different outfall.

The discharge will not cause acutely toxic conditions to aquatic life passing through the mixing zone, because this Order requires compliance with an acute toxicity effluent limitation and requires acute bioassays using 100% effluent. Compliance with the acute toxicity effluent limitation assures the effluent is not acutely toxic.

The discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws, because the chronic mixing zone is very small and acutely toxic conditions will not occur in the mixing zone.

The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable color, odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the proposed Order requires receiving water limitations and discharge prohibitions to prevent these conditions from occurring.

As suggested by the SIP, in determining the extent of or whether to allow a mixing zone and dilution credit, the Regional Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the chronic mixing zone and dilution credit is adequately protective of the beneficial uses of the receiving water.

The chronic mixing zone therefore complies with the SIP. The mixing zone also complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the

same reasons discussed above. In determining the size of the mixing zone, the Regional Water Board has considered the procedures and guidelines in the EPA's Water Quality Standards Handbook, 2d Edition (updated July 2007), Section 5.1, and Section 2.2.2 of the TSD. The SIP incorporates the same guidelines. The mixing zone is limited to a small zone of initial dilution in the immediate vicinity of the discharge. The TSD indicates that this limitation achieves the objectives of preventing lethality to passing organisms and preventing significant human health risks.

5. Fact Sheet, Paragraph 2 of Section IV.C.3.h., Determining the Need for WQBELs for Copper, is amended as follows:

The MEC for total copper was 22 µg/L, based on five samples collected between March 2002 and August 2005, while the maximum observed upstream receiving water total copper concentration was 3 µg/L. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. ~~Since the Discharger has not provided a mixing zone and dilution study for the determination of dilution credits for acute and chronic aquatic life criteria, no dilution is allowed~~. As discussed in section IV.C.2.c. of the Fact Sheet, a dilution credit of 16:1 is allowed for compliance with chronic aquatic life criteria. No dilution is allowed for acute aquatic life criteria. An AMEL and MDEL for total copper of 2.31 µg/L and 4.64 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Table F-8 for WQBEL calculations).

6. Fact Sheet, Table F-6, is amended as follows:

Table F-6. WQBEL Calculations for Copper

	Acute	Chronic
Criteria, total (µg/L) (1)	4.64	3.43
Dilution Credit	No Dilution	~~No Dilution~~16
ECA, total recoverable (2)	4.64	~~3.43~~ 16.71
ECA Multiplier (3)	0.32	0.53
LTA	1.49	~~1.81~~ 8.8
AMEL Multiplier (95th%) (4)(5)	1.55	(7)
AMEL (µg/L)	2.31	(7)
MDEL Multiplier (99th%) (6)	3.11	(7)
MDEL (µg/L)	4.64	(7)

(1) CTR aquatic life criteria, based on a hardness of 31 mg/L as $CaCO_3$.
(2) ECA calculated per section 1.4.B, Step 2 of SIP. This allows for the consideration of dilution.
(3) Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
(4) Assumes sampling frequency n=>4.
(5) The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(6) The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(7) Limitations based on acute LTA

7. Fact Sheet, Section IV.C.5.b., Whole Effluent Toxicity, is amended as follows:

b. **Chronic Aquatic Toxicity.** The previous Order No. R5-2002-0016 required quarterly chronic whole effluent toxicity monitoring in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. Chronic toxicity data showed that the numeric toxicity monitoring trigger of ~~1~~ 16 TUc ~~was exceeded for *Pimephales promelas* in September 2004 and for *Ceriodaphnia* dubia in September and December 2006~~has not been exceed based on 19 chronic whole effluent toxicity tests conducted from October 2002 to April 2008.

~~No dilution has been granted for the chronic condition.~~ Therefore, ~~chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates~~ the discharge ~~has~~ does not have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective.

~~Numeric chronic WET effluent limitations have not been included in this order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, *"In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).~~

However, ~~T~~to ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic whole effluent toxicity

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~~[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)~~

testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, Special Provisions VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation, it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

8. Fact Sheet, Section VII.B.1.d., Reopener Provisions, is amended as follows:

   d. **Mixing Zone Study for Copper:** For constituents with aquatic life toxicity-based criteria, where impacts can occur over a small spatial scale near the effluent discharge point, complete mixing is not a valid assumption. For incompletely mixed discharges, the SIP requires the dilution credits and mixing zones only be allowed after the Discharger has completed an independent mixing zone study and demonstrated to the satisfaction of the Regional Water Board that a dilution credit is appropriate. The Discharger has requested dilution credits and mixing zones for compliance with chronic aquatic life ~~acute and chronic~~ criteria, by developing a chronic aquatic life toxicity mixing zone study. The report titled, "Department of General Services Toxicity Reduction Evaluation (TRE) Report: Chronic Aquatic Life Toxicity Mixing Zone Study" dated May 2008 demonstrates that a chronic aquatic life dilution credit of 16:1 is adequately protective of aquatic life in the receiving water. However, the Discharger has not provided the appropriate study~~ies~~ for allowance of a dilution credit for acute aquatic life criteria. If the Discharger chooses to conduct a mixing zone study for acute aquatic life criteria, it shall be conducted in accordance with the procedures outlined in Appendix 5 of the SIP. If after completion of the mixing zone study, it is determined that dilution credits are appropriate, then this Order may be reopened if necessary to modify effluent limitations.

9. Fact Sheet, Paragraph 3 of Section VII.B.2.a., Chronic Whole Effluent Toxicity Requirements, is amended as follows:

   Monitoring Trigger. A numeric toxicity monitoring trigger of > ~~1 TUc~~ 16 TUc(where TUc = 100/NOEC) is applied in the provision~~, because this Order does not allow any dilution for the chronic condition~~. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at ~~100~~ 6.25 percent effluent.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on **<DATE>**.

PAMELA C. CREEDON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2008-0186

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER NO. R5-2007-0075 (NPDES PERMIT NO. CA0078581)

CALIFORNIA DEPARTMENT OF GENERAL SERVICES, CENTRAL PLANT OPERATIONS
HEATING AND COOLING FACIILITY
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. On 22 June 2007, the Regional Water Board adopted Waste Discharge Requirements Order No. R5-2007-0075, prescribing waste discharge requirements for the California Department of General Services, Central Plant Operations, Heating and Cooling Facility, Sacramento County. For the purposes of this Resolution, the California Department of General Services is hereafter referred to as "Discharger" and the Central Plant Operations, Heating and Cooling Facility is hereafter referred to as "Facility."

2. The Facility provides heating and cooling to downtown State office buildings and discharges non-contact cooling water from a spray header into the Sacramento River. The sources of cooling water to the Facility are obtained from a Ranney Collector beneath the Sacramento River, Front Street Well, P Street Well, and, on an emergency basis, from the City of Sacramento municipal water distribution system. Since adoption of Order No. R5-2007-0075, an additional well (Q Street Well) has been installed for use on an emergency basis due to the failure of the Ranney Collector. The Ranney Collector has historically supplied most of the single pass, non-contact cooling water to the Facility. The Q Street Well was constructed as part of the Central Plant Renovation to provide supplemental cooling water for the Facility.

3. No chemicals are added to the supply water, which is used in a once-through system to re-condense refrigerant and carry away unwanted heat. There is no treatment of the cooling water at the Facility prior to discharge. Wastewater is discharged to the Sacramento River, a water of the United States, within the Lower Sacramento Watershed.

4. The Discharger plans to cease the river discharge within the term of Order No. R5-2007-0075. The Discharger is currently constructing closed loop mechanical cooling towers with a thermal storage tank. Installation of the cooling towers would result in the elimination of the need to discharge condenser effluent directly to the Sacramento River. Elimination of the discharge to the Sacramento River is planned for 2010.

Electrical Conductivity Effluent Limitations

5. Although the discharge did not show reasonable potential to cause or contribute to an instream exceedance of applicable water quality objectives for salinity, performance-based effluent limitations for electrical conductivity (EC) were required as stated in the Fact Sheet (Attachment F) Section IV.C.3.o.v. of Order No. R5-2007-0075:

"v. ***Salinity Effluent Limitations.*** *Based on the relatively low reported salinity in the effluent, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the discharge is to the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region wide effort to address salinity in the Central Valley and Resolution 68-16, which requires that existing high quality waters be maintained until it has been demonstrated that any change will be consistent with the maximum benefit to the people of the State. Therefore, in accordance with Resolution 68-16, this Order includes a performance-based maximum daily effluent limitation of 719 µmhos/cm for EC to limit the discharge to current levels. It also requires the Discharger to prepare a salinity evaluation and minimization plan."*

Based on the rationale discussed above, Order No. R5-2007-0075 includes Effluent Limitations IV.A.1.a., which reads in part as follows:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 6:

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Electrical Conductivity	µmhos/cm	--	--	719	--	--

6. The Ranney Collector has continued to degrade, with increasingly frequent failures of the individual laterals that comprise the collector; therefore, the Discharger has begun to make greater use of the new Q Street Well. The increased use of the Q Street Well (and diminished use of the Ranney Collector) has resulted in EC effluent limitation exceedances. The Q Street Well produces water with higher EC than the Ranney Collector. When the Q Street Well is used to comprise a substantial portion of the non-contact cooling water, the discharge EC is greater than the historical maximum EC values that were used to calculate the existing performance-based effluent limitation. Consequently, the need for use of the Q Street Well is a change from the conditions known at the time the Order was adopted, and the Discharger, by letter dated 5 September 2008, requested a revision to the performance-based EC effluent limitations to more accurately reflect current operating conditions.

7. Based on recent effluent EC data from the Facility with the use of the new Q Street Well, the discharge does not show reasonable potential to cause and/or contribute to an instream exceedance of applicable water quality objectives for salinity. The average EC concentration since the Discharger began use of the Q Street Well is 583 µmhos/cm, which does not exceed any applicable water quality objectives. However, as discussed in Finding 5, above, effluent limitations for EC are included in the Order due to salinity issues in the Delta. Since the performance of the facility has changed, it is appropriate to modify the performance-based effluent limitations for EC based on recent water quality data that reflects current operating conditions. The intermittent use of the new Q Street Well results in short periods of elevated effluent EC, which is expected to have

no effect on the overall salinity of the Delta. Furthermore, the Discharger is nearing completion of a project to eliminate the discharge to the Sacramento River. Therefore, modifying the performance-based effluent limitations for EC is consistent with State Water Resources Control Board Resolution 68-16 (Antidegradation Policy).

8. Order No. R5-2007-0075 includes a maximum daily effluent limitation for EC. The Discharger requested a longer averaging period (e.g. monthly or annual) for consistency with recent permits adopted by the Regional Water Board. The Regional Water Board finds that a longer averaging period for EC is appropriate for this situation, because intermittent daily spikes in effluent EC would have no effect on the beneficial uses of the receiving water or the overall salinity of the Delta due to the significant amount of dilution available and the intermittent nature of the spikes. Therefore, this Resolution modifies the effluent limitations for EC to reflect current operations and the appropriate averaging period. An average monthly effluent limitation of 850 µmhos/cm has been established based on the statistical projection of the running monthly average effluent EC concentrations from weekly effluent data collected between July 2007 and August 2008.

Whole Effluent Toxicity Requirements

9. For compliance with the Basin Plan's narrative toxicity objective, Order No. R5-2007-0075 requires the Discharger to conduct chronic whole effluent toxicity testing as specified in the Monitoring and Reporting Program (Attachment E, Section V). Furthermore, the Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the numeric toxicity trigger of >1 chronic toxicity unit (TUc) (where TUc = 100/NOEC), the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity.

10. Historically, the Facility discharge comprises a maximum of 0.6 percent on the Sacramento River by volume. However, at the time Order No. R5-2007-0075 was adopted, there was insufficient information to allow a dilution credit for compliance with chronic aquatic life criteria. Therefore, the toxicity numeric monitoring trigger was established without the allowance for dilution. A reopener provision was included in the Order to allow the permit to be reopened should the Discharger provide sufficient information to allow a chronic toxicity dilution credit.

11. Quarterly chronic toxicity testing and subsequent accelerated monitoring tests for the discharge indicate potential toxicity detection for *Ceriodaphnia dubia* (water flea) reproduction (> 1 TUc) from January 2007 to January 2008. In January 2008, the Discharger submitted a Toxicity Reduction Evaluation (TRE) Action Plan/Work Plan that was approved by the Executive Officer. The Work Plan called for a study entitled "Toxicity Reduction Evaluation (TRE) Report: Chronic Aquatic Life Toxicity Mixing Zone Study". This study was identified as the most appropriate toxicity control strategy for the Facility discharge because of (1) the large dilution in the Sacramento River and (2) the cooling water discharge will cease in 2010. This study, submitted in May 2008,

evaluated the suitability of a mixing zone based on an aquatic and non-aquatic life assessment of impacts to beneficial uses and is used to form the technical basis for changes to the chronic whole effluent toxicity numeric monitoring trigger.

12. The Discharger, by letter dated 28 May 2008, requested a revision to the chronic whole effluent toxicity numeric monitoring trigger. This Resolution amends Order No. R5-2007-0075 to allow a dilution credit for chronic aquatic life criteria and revises the chronic whole effluent toxicity numeric monitoring trigger.

13. Sections 402(o)(2) and 303(d)(4) of the Clean Water Act and federal regulations at title 40, Code of Federal Regulations (CFR) section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require a reissued permit to be as stringent as the previous permit, with some exceptions where limitations and/or requirements may be relaxed. The chronic whole effluent toxicity numeric monitoring trigger and the effluent limitation for EC have been relaxed by this Resolution. The data presented in the Discharger's May 2008 study demonstrates the suitability of a mixing zone and supports the change to the chronic whole effluent toxicity numeric monitoring trigger. Furthermore, the installation of the Q Street Well due to failures of the Ranney Collector has resulted in a change in operation of the Facility, requiring a change to the performance-based effluent limitations for EC. The study submitted by the Discharger and the change in Facility operations are considered new information by the Regional Water Board. The increases of the chronic whole effluent toxicity numeric monitoring trigger and EC effluent limitation are consistent with federal anti-backsliding regulations and the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. The impact to water quality will be insignificant.

14. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000, et seq.), in accordance with CWC section 15321 (a)(2), Title 14, of the California Code of Regulations.

15. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to amend waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

16. Any person adversely affected by this action of the Board may petition the State Water Resources Control Board to review this action. The petition must be received by the State Water Resources Control Board, Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

IT IS HEREBY ORDERED THAT:

Waste Discharge Requirements Order No. R5-2007-0075 (NPDES No. CA0078581) is amended solely to modify the effluent limitations for EC and allow a chronic aquatic life dilution credit, which results in the revision of the chronic whole effluent toxicity numeric monitoring trigger. This amendment requires changes to Effluent Limitations IV.A.1.a., Provisions VI.C.1.f. and VI.C.2.iii. of the Limitations and Discharge Specifications, and Section IV.C.2.c., Section IV.C.3.h. (paragraph 2), Section IV.C.3.o.v., Section IV.C.5.b., Section VII.B.1.d., Section VII.B.2.a. (paragraph 3), and Tables F-6, F-7, and F-8 of the Fact Sheet. Order No. R5-2007-0075 shall be amended as follows:

1. Limitations and Discharge Specifications, Effluent Limitations, IV.A.1.a., Table 6, is amended as follows:

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Electrical Conductivity	µmhos/cm	~~--~~<u>850</u>	--	~~719~~	--	--

This modification to the effluent limitation for electrical conductivity is also made in the Fact Sheet (Attachment F) at Section IV.C.3.o.v., Table F-7, and Table F-8.

2. Limitations and Discharge Specifications, Provisions VI.C.1.f., Reopener Provisions, is amended as follows:

   f. **Mixing Zone Study for Copper:** There is the potential that the Sacramento River provides assimilative capacity and that a mixing zone and dilution credits could be considered for compliance with <u>acute</u> aquatic life criteria for copper. Dilution credits and mixing zones shall only be considered by the Regional Water Board after the Discharger has completed site-specific mixing zone study and demonstrated to the satisfaction of the Regional Water Board that a dilution credit is appropriate. If the Discharger chooses to conduct a mixing zone study, it shall be conducted in accordance with the procedures outlined in Appendix 5 of the SIP. If after completion of the mixing zone study, it is determined that dilution credits are appropriate, then this Order may be reopened if necessary to modify effluent limitations for copper.

3. Limitations and Discharge Specifications, Provisions VI.C.2.iii., Chronic Whole Effluent Toxicity, is amended as follows:

   iii. **Numeric Monitoring Trigger.** The numeric toxicity monitoring trigger is > ~~**1 TUc**~~ <u>**16 TUc**</u>(where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

4. Fact Sheet, Section IV.C.2.c., Assimilative Capacity/Mixing Zone, is amended as follows:

c. **Assimilative Capacity/Mixing Zone.** Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Any available dilution may be used to calculate protective effluent limitations by applying water quality criteria at the edge of the defined mixing zone. These calculations include receiving water pollutant concentration that are typically based on reasonable worst-case conditions for flow and concentration. For completely mixed discharges, the SIP allows the dilution for acute aquatic life criteria and objectives to be calculated using a ratio of the lowest 1-day average flow that occurs (on average) once every 10 years (1Q10) to the maximum daily effluent flow. In addition, the SIP allows dilution for chronic aquatic life criteria and objectives to be calculated using the ratio of the lowest 7-day average flow that occurs (on average) once every 10 years (7Q10) to the maximum effluent 4-day daily average flow; and for human health criteria and objectives to be calculated using the ratio of harmonic mean flow to the long term arithmetic mean effluent flow. For incompletely mixed discharges, the SIP requires the dilution credits and mixing zones only be allowed after the Discharger has completed an independent mixing zone study and demonstrated to the satisfaction of the Regional Water Board that a dilution credit is appropriate.

There are two USGS flow monitoring stations in the vicinity of the Discharge. The upstream USGS station No.11447500 at Sacramento has flow data available for the period from 1 October 1948 to 30 September 1979; the downstream USGS station No.11447650 at Freeport has flow data available for the period from 1 October 1948 to 30 September 2005. In the Discharger's 30 August 2005 Report of Waste Discharge, the Facility provided a dilution analysis based on flow data from the USGS downstream station at Freeport since the upstream station at Sacramento does not typically provide data during the critical summer low flow period. Flow data at the Freeport station were used for estimation of 1Q10, 7Q10 and harmonic mean flows. Based on a comparison between flow data at the Freeport station and available data from the upstream station at Sacramento, the Discharger determined that a factor of 90 percent of the flows at the downstream Freeport station would be used as a conservative estimation of the upstream receiving water flows. Based on the analysis provided by the Discharger, the Regional Water Board considers that this is an appropriate approach for estimation of 1Q10, 7Q10 and harmonic mean flows.

The Discharger's daily flow data from 1 January 2000 through 1 August 2005 were used to calculate the maximum daily flow of 14.6 mgd, the 4-day average of daily maximum flows (13.1 mgd), and the long-term arithmetic mean flow of 5.6 mgd.

Calculated dilution ratios are presented as follows:

Table F-3. Receiving Water Flows, Discharge Flows, and Associated Dilution Ratios

Water Quality Criteria	Receiving Water Flow Rate, mgd	Discharge Flow Rate, mgd	Calculated Dilution Ratio
Acute aquatic life toxicity criteria	2,335 (1Q10)	14.6[1]	160:1
Chronic aquatic life toxicity criteria	2,408 (7Q10)	13.1[2]	184:1
Human health-based criteria	9,174 (Harmonic Mean)	5.6[3]	1,640:1

[1] Maximum daily flow.
[2] 4-day average of daily maximum flows.
[3] Long term arithmetic mean flow.

The CWA directs states to adopt water quality standards to protect the quality of its waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR 122.44 and 122.45). The USEPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Policy or SIP) and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Regional Water Board may use the USEPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) (TSD).

The allowance of mixing zones by the Regional Water Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the [TSD]. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge.*"

Section 1.4.2 of the SIP states, in part, "...*with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers ... The applicable priority pollutant criteria and objectives are to be met*

throughout a water body except within any mixing zone granted by the Regional Board. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board."

For completely-mixed discharges, the Regional Water Board may grant a mixing zone and apply a dilution credit in accordance with Section 1.4.2.1 of the SIP. For incompletely-mixed discharges, the Discharger must perform a mixing zone study to demonstrate to the Regional Water Board that a dilution credit is appropriate. In granting a mixing zone, the SIP states that a mixing zone shall be as small as practicable, and meet the conditions provided in Section 1.4.2.2 as follows:

> *"A mixing zone shall be as small as practicable. The following conditions must be met in allowing a mixing zone:*
>
> *A: A mixing zone shall not:*
> *(1) compromise the integrity of the entire water body;*
> *(2) cause acutely toxic conditions to aquatic life passing through the mixing zone;*
> *(3) restrict the passage of aquatic life;*
> *(4) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;*
> *(5) produce undesirable or nuisance aquatic life;*
> *(6) result in floating debris, oil, or scum;*
> *(7) produce objectionable color, odor, taste, or turbidity;*
> *(8) cause objectionable bottom deposits;*
> *(9) cause nuisance;*
> *(10) dominate the receiving water body or overlap a mixing zone from different outfalls; or*
> *(11) be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy."*

The decision to allow dilution credits depends upon whether a discharge is completely or incompletely mixed. For constituents where water quality criteria are based on human health objectives, critical environmental impacts are expected to occur far downstream from the source such that complete mixing is a valid assumption. Therefore, for purposes of establishing WQBELs in this Order, dilution credits have been granted for constituents with human health-based criteria using Table F-3. However, for constituents with aquatic life toxicity-based criteria, where impacts can occur over a small spatial scale near the effluent discharge point, complete mixing is not a valid assumption. ~~such that dilution credit has not been granted for these constituents~~. ~~This Order includes a provision that allows the~~

~~permit to be reopened to allow dilution credits if the Discharger completes a mixing zone and dilution study that demonstrates to the satisfaction of the Regional Water Board that a dilution credit is appropriate.~~ Therefore, the Discharger developed a chronic aquatic life toxicity mixing zone study to evaluate the available dilution for compliance with chronic aquatic life criteria. The report titled, "Department of General Services Toxicity Reduction Evaluation (TRE) Report: Chronic Aquatic Life Toxicity Mixing Zone Study" dated May 2008 demonstrates that a dilution credit of 16:1 is adequately protective of aquatic life in the receiving water. A mixing zone extending a maximum of 640 feet downstream, 100 feet in width, and a maximum depth of 4.4 feet was estimated in the modeling. The Sacramento River at the point of discharge is 600 feet wide and approximately 25 feet in depth. A dilution credit for compliance with acute aquatic life criteria is not allowed in this Order, because the mixing zone study did not evaluate acute conditions.

The chronic mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the waterbody or overlap existing mixing zones from different outfalls. The chronic mixing zone is very small relative to the large size or the receiving water. The chronic mixing zone is approximately 12.5 miles from the nearest drinking water intake and does not overlap a mixing zone from a different outfall.

The discharge will not cause acutely toxic conditions to aquatic life passing through the mixing zone, because this Order requires compliance with an acute toxicity effluent limitation and requires acute bioassays using 100% effluent. Compliance with the acute toxicity effluent limitation assures the effluent is not acutely toxic.

The discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws, because the chronic mixing zone is very small and acutely toxic conditions will not occur in the mixing zone.

The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable color, odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the proposed Order requires receiving water limitations and discharge prohibitions to prevent these conditions from occurring.

As suggested by the SIP, in determining the extent of or whether to allow a mixing zone and dilution credit, the Regional Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the chronic mixing zone and dilution credit is adequately protective of the beneficial uses of the receiving water.

The chronic mixing zone therefore complies with the SIP. The mixing zone also complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Regional

Water Board has considered the procedures and guidelines in the EPA's Water Quality Standards Handbook, 2d Edition (updated July 2007), Section 5.1, and Section 2.2.2 of the TSD. The SIP incorporates the same guidelines. The mixing zone is limited to a small zone of initial dilution in the immediate vicinity of the discharge. The TSD indicates that this limitation achieves the objectives of preventing lethality to passing organisms and preventing significant human health risks.

5. Fact Sheet, Paragraph 2 of Section IV.C.3.h., Determining the Need for WQBELs for Copper, is amended as follows:

The MEC for total copper was 22 µg/L, based on five samples collected between March 2002 and August 2005, while the maximum observed upstream receiving water total copper concentration was 3 µg/L. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. ~~Since the Discharger has not provided a mixing zone and dilution study for the determination of dilution credits for acute and chronic aquatic life criteria, no dilution is allowed~~. As discussed in section IV.C.2.c. of the Fact Sheet, a dilution credit of 16:1 is allowed for compliance with chronic aquatic life criteria. No dilution is allowed for acute aquatic life criteria. An AMEL and MDEL for total copper of 2.31 µg/L and 4.64 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Table F-8 for WQBEL calculations).

6. Fact Sheet, Table F-6, is amended as follows:

Table F-6. WQBEL Calculations for Copper

	Acute	Chronic
Criteria, total (µg/L) (1)	4.64	3.43
Dilution Credit	No Dilution	~~No Dilution~~16
ECA, total recoverable (2)	4.64	~~3.43~~ 16.71
ECA Multiplier (3)	0.32	0.53
LTA	1.49	~~1.81~~ 8.8
AMEL Multiplier (95th%) (4)(5)	1.55	(7)
AMEL (µg/L)	2.31	(7)
MDEL Multiplier (99th%) (6)	3.11	(7)
MDEL (µg/L)	4.64	(7)

(1) CTR aquatic life criteria, based on a hardness of 31 mg/L as $CaCO_3$.
(2) ECA calculated per section 1.4.B, Step 2 of SIP. This allows for the consideration of dilution.
(3) Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
(4) Assumes sampling frequency n=>4.
(5) The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(6) The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(7) Limitations based on acute LTA

7. Fact Sheet, Section IV.C.5.b., Whole Effluent Toxicity, is amended as follows:

b. **Chronic Aquatic Toxicity.** The previous Order No. R5-2002-0016 required quarterly chronic whole effluent toxicity monitoring in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. Chronic toxicity data showed that the numeric toxicity monitoring trigger of ~~1~~ 16 TUc ~~was exceeded for *Pimephales promelas* in September 2004 and for *Ceriodaphnia* dubia in September and December 2006~~has not been exceed based on 19 chronic whole effluent toxicity tests conducted from October 2002 to April 2008.

~~No dilution has been granted for the chronic condition.~~ Therefore, ~~chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates~~ the discharge ~~has~~ does not have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective.

~~Numeric chronic WET effluent limitations have not been included in this order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, *"In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).~~

However, ~~T~~to ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, Special Provisions VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective

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~~[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)~~

actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation, it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

8. Fact Sheet, Section VII.B.1.d., Reopener Provisions, is amended as follows:

   d. **Mixing Zone Study for Copper:** For constituents with aquatic life toxicity-based criteria, where impacts can occur over a small spatial scale near the effluent discharge point, complete mixing is not a valid assumption. For incompletely mixed discharges, the SIP requires the dilution credits and mixing zones only be allowed after the Discharger has completed an independent mixing zone study and demonstrated to the satisfaction of the Regional Water Board that a dilution credit is appropriate. The Discharger has requested dilution credits and mixing zones for compliance with chronic aquatic life ~~acute and chronic~~ criteria, by developing a chronic aquatic life toxicity mixing zone study. The report titled, "Department of General Services Toxicity Reduction Evaluation (TRE) Report: Chronic Aquatic Life Toxicity Mixing Zone Study" dated May 2008 demonstrates that a chronic aquatic life dilution credit of 16:1 is adequately protective of aquatic life in the receiving water. However, the Discharger has not provided the appropriate study~~ies~~ for allowance of a dilution credit for acute aquatic life criteria. If the Discharger chooses to conduct a mixing zone study for acute aquatic life criteria, it shall be conducted in accordance with the procedures outlined in Appendix 5 of the SIP. If after completion of the mixing zone study, it is determined that dilution credits are appropriate, then this Order may be reopened if necessary to modify effluent limitations.

9. Fact Sheet, Paragraph 3 of Section VII.B.2.a., Chronic Whole Effluent Toxicity Requirements, is amended as follows:

   Monitoring Trigger. A numeric toxicity monitoring trigger of > ~~1 TUc~~ 16 TUc(where TUc = 100/NOEC) is applied in the provision~~, because this Order does not allow any dilution for the chronic condition~~. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at ~~100~~ 6.25 percent effluent.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on **5 December 2008**.

Original Signed By
PAMELA C. CREEDON, Executive Officer