`State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. R4-2006-XXXX

ISSUANCE OF A TIME SCHEDULE ORDER

DIRECTING
THE CITY OF SAN BUENAVENTURA TO
COMPLY WITH THE REQUIREMENTS PRESCRIBED IN ORDER NO. 00-143
(Ventura Water Reclamation Facility)
(NPDES PERMIT NO. CA0053651)

REVISED TENTATIVE

The California Regional Water Quality Control Board, Los Angeles Region (hereafter Regional Board), finds:

1. The City of San Buenaventura (City) owns and operates the Ventura Water Reclamation Facility (Ventura WRF) located at 1400 Spinnaker Drive, Ventura. The Ventura WRF discharges tertiary treated wastewater to the Santa Clara River Estuary (Estuary) under Waste Discharge Requirements contained in Order No. 00-143, adopted by this Regional Board on October 12, 2000. Order No. 00-143 also serves as a permit under the National Pollutant Discharge Elimination System (NPDES Permit No. CA0053651).

2. The Enclosed Bays and Estuaries Policy stipulates that waste discharges to estuaries can only be allowed if the wastewater discharge can be shown to enhance the quality of the receiving waters above that which would occur in the absence of the discharge. In 1977, the Los Angeles Regional Board accepted the City's demonstration of enhancement, based on a discharge rate of 5.6 million gallons per day. Since the City's current discharge rate often exceeds this threshold, the Regional Board has requested that the City update the enhancement demonstration.

3. In May 1996, the City submitted Phase 1 of the NPDES Limit Achievability Study (Study), which identified new permit limits that could not be immediately complied with. This Study also determined if certain source control actions applied to controllable discharges could reduce discharge concentrations below effluent limits contained in the permit. The Study indicated that the City was in compliance with most limits. However, the following pollutants were problematic: dichlorobromomethane, copper, lead, nickel, and zinc.

   Zinc appeared to be the only problem pollutant that could be reduced in concentration by source control actions. Zinc orthophosphate was used as a corrosion control additive in the water supply and the substitution of another chemical compound proved successful.

   Dichlorobromomethane results from the addition of chlorine used in the disinfection process and cannot be reduced in concentration with the current treatment process. Currently, the City is using ammonia addition for control of organochlorimine.

   Concentrations of copper, lead, and nickel cannot be controlled by source control actions.

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4. Order No. 00-143 contains the following effluent limits for copper based on the California Toxics Rule's (CTR) saltwater aquatic life criteria, which is more stringent than that for freshwater:

Constituent	Units	Monthly Average	Daily Maximum
Copper	µg/L	2.0	2.9

The City could not comply immediately with the copper limits. Therefore, concurrent with Order No. 00-143 adopted on October 12, 2000, the Regional Board issued a Time Schedule Order (TSO) (Order No. 00-144). This TSO was amended four times (Order Nos. 01-058, R4-2002-0195, R4-2003-0059, and R4-2004-0095), and ultimately provided the City until September 10, 2005, to achieve compliance. A summary of each TSO and their associated study results are listed below:

A. Time Schedule Order No. 00-144, adopted on October 12, 2000:

a. Requirements

i. Comply with the following deadlines:

Task	Due Date
• Design a Water Effects Ratio Study, recalculation procedure, a Resident Species Procedure, or translator study for consideration and approval/disapproval by the Executive Officer for copper.	January 1, 2001
• Complete the study approved by the Executive Officer.	January 1, 2002
• Achieve full compliance with the copper limitation.	October 12, 2002

ii. Submit quarterly progress reports to describe the progress of the approved study and to report on efforts to achieve compliance with the limits in Order No. 00-143 by October 12, 2002.

iii. Comply immediately with the following interim effluent limit for copper specified in Order No. 00-144:

Constituent	Units	Monthly Average	Daily Maximum
Copper	µg/L	18	52

In the interim, the TSO requires the City to comply with interim limits based on the freshwater aquatic criteria. The City had 9 violations on copper interim limits between June 2001 and June 2002.

b. Study results

i. Metal Translator Study and Salinity Profile indicate the following:

- Metal concentrations entering the study area from upstream closely approximate those found in the treated wastewater. Nickel concentrations are slightly lower in the treated wastewater; zinc concentrations appear to be slightly higher; copper concentrations appear to be approximately the same; and lead was not detected.

- The salinity in the Estuary is predominantly below the saltwater threshold of 10 parts per thousand, but is over the freshwater threshold of 1 part per thousand 95% of the time according to the definition in 40 CFR Part 131 (California Toxics Rule). However, salinity levels fluctuate considerably, approaching freshwater levels during periods when the mouth of the lagoon is closed, but increasing to levels of 10 parts per thousand or higher when the lagoon is open to ocean water influence.

- The ability of the City to be in compliance with the copper limits is not significantly improved by the addition of a site-specific translator when applying the saltwater water quality criteria.

ii. The *Resident Species Study* indicates that the species composition in ecosystem of the Estuary currently tends toward **freshwater** conditions. However, some saltwater species also exist.

B. Order No. 01-058, adopted on April 26, 2001, Amending Time Schedule Order No. 00-144:

This Order amended Order No. 00-144, extended the submittal due date of the above-mentioned study (see Finding 3.A.a.) from January 1, 2001 to March 1, 2001. This Order also extended the study completion date from January 1, 2002 to July 1, 2002 to accommodate a 14-month study period. The date to achieve full compliance with the copper limitation was not extended and remained at October 12, 2002.

C. Order No. R4-2002-0195, adopted on December 12, 2002, Amending Time Schedule Order No. 00-144:

Regional Board staff wanted to evaluate other studies available on the Estuary, evaluate impacts on effluent limitations of other constituents, recalculate the reasonable potential analyses and effluent limitations, and consult with resource agencies and other interested parties before submitting recommendations to the Board regarding the request of the City. Therefore, to provide adequate time for Regional Board staff to undertake these activities, the Board granted staff's request to extend the compliance date from October 12, 2002, to March 31, 2003.

D. Order No. R4-2003-0059, adopted on April 3, 2003, Amending Time Schedule Order No. R4-2002-0195:

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a. Required the Discharger to conduct the following tasks according to their corresponding completion dates:

Task		Due Date
i.	Design and submit a detailed Work Plan for the Updated Enhancement Study on the Santa Clara River Estuary for approval by the Executive Officer.	July 1, 2003
ii.	Submit the first-year preliminary report of an Updated Enhancement Study according to the Work Plan approved by the Executive Officer	June 1, 2004
iii.	Submit the final report of an Updated Enhancement Study for approval by the Executive Officer.	May 1, 2005
iv.	Achieve full compliance with the copper limitations.	September 10, 2005

b. Submit semi-annual reports describing the progress of the approved study and the City's efforts to achieve compliance by September 10, 2005, with the copper limits in Order No. 00-143.

c. If the Updated Enhancement Study demonstrates that the wastewater discharge from the Ventura WRP does benefit the Estuary, then the discharge into the Estuary would be permitted to continue, and also, depending on study conclusions, the fresh water criteria would be applied to calculate the final copper effluent numeric limitations.

d. Comply immediately with the following interim effluent limits for copper:

Constituent	Units	Monthly Average	Daily Maximum
Copper	µg/L	18	52

E. Time Schedule Order No. R4-2004-0095, adopted on June 10, 2004, rescinding Time Schedule Order Nos. 00-144, 01-058, R4-2002-0195, and R4-2003-0059:

a. Required the Discharger to conduct the following tasks according to their corresponding completion dates:

Task		Due Date
i.	Follow-up and add lead, mercury, nickel, selenium, zinc, cyanide, and aldrin to the existing biological task within the Work Plan that supports issuance of this Time Schedule Order;	June 11, 2004
ii.	Submit the final report of an Updated Enhancement Study for approval by the Executive Officer; and	May 1, 2005

iii. Achieve full compliance with the final lead, mercury, copper, nickel, selenium, zinc, cyanide, and aldrin limitations. — September 10, 2005

b. Submit semi-annual reports describing the progress of the approved study and the City's efforts to achieve compliance by September 10, 2005, with the copper, lead, mercury, nickel, selenium, zinc, cyanide, and aldrin limits in Order No. 00-143. Semi-annual reports were required to be submitted by the first day in the months of April and October. The first report was due on October 1, 2004.

c. Comply immediately with the following interim effluent limits:

Constituent	Units	Monthly Average[i]	Daily Maximum[i]
Copper	µg/L	36[ii]	---
Lead	µg/L	63[iii]	68
Mercury	µg/L	1.3	1.6
Nickel	µg/L	66[iv]	---
Selenium	µg/L	55[v]	---
Zinc	µg/L	123	149
Cyanide	µg/L	11	13
Aldrin	µg/L	0.14	0.19

i. In most cases, the Interim effluent limits, based on effluent data collected from July 1995 to December 1999, were derived statistically at 95 and 99% confidence levels for monthly average and daily maximum, respectively. However, some statistically-derived interim limits would not be able to be met, because the data were not normally distributed. In this case, the maximum effluent concentration (MEC) would be applied as interim limits.

ii. The MEC for copper, 36 µg/L, was chosen as the interim effluent limit, because the interim monthly average and daily maximum, 25 and 31 µg/L, respectively, were less than the MEC.

iii. The MEC for lead, 63 µg/L, was chosen as the interim effluent limit, because the interim monthly average, 42 µg/L, was less than the MEC. The calculation of interim effluent limits was based on effluent data collected from July 1995 to December 2003, because effluent data were reported as "non-detect" from July 1995 to December 1999.

iv. The MEC for nickel, 66 µg/L, was chosen as the interim effluent limit, because the interim monthly average and daily maximum, 37 and 55 µg/L, respectively, were less than the MEC.

v. The MEC for selenium, 55 µg/L, was chosen as the interim effluent limit, because the interim monthly average and daily maximum, 37 and 48 µg/L, respectively, were less than the MEC.

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d. If the Updated Enhancement Study demonstrates that the wastewater discharge from the Ventura WRP does benefit the Estuary, then either the fresh water or human health-organisms only criteria would be applied to calculate the final copper, lead, mercury, nickel, selenium, zinc, cyanide, and aldrin effluent numerical limitations.

e. All other provisions and requirements of Order No. 00-143 not in conflict with this Order remained in full force and effect.

f. Based upon the Updated Enhancement Study, the City contended that the discharge enhances the estuary because:

   i. The effluent discharged is of better quality than other sources entering the estuary (stormwater runoff, urban runoff, agricultural discharge, groundwater), thus improving water quality within the estuary above that which would exist without the wastewater discharge.

   ii. The wastewater discharge increases the extent of habitat in the estuary.

   iii. The wastewater discharge replaces flows appropriated for upstream uses.

   iv. The wastewater discharge flushes the estuary and helps maintain water quality during dry weather periods.

   v. The discharge channel provides a continuous source of water during breach outflow events when the lagoon drains.

   vi. The wastewater discharge (particularly within the discharge channel) provides high quality habitat for the tidewater goby, an endangered species.

g. The City also contended that there is no adverse impact to water quality or beneficial uses associated with the existing wastewater discharge to the estuary:

   i. Contaminants in the discharge are not affecting sediment quality (low incidence of sediment toxicity and no evidence that metals are accumulating in sediments).

   ii. Contaminants in the discharge are not affecting water quality (low incidence of water column toxicity and the occasional toxicity observed appears to be related to sources other than the wastewater discharge).

   iii. The discharge has not altered habitats over time (historically, the estuary was dominated by freshwater flows and vegetation types present in the estuary appear to have been similar both prior to and subsequent to initiation of the wastewater discharge.

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h. Regional Board staff met with the City, Resource Agencies and other Interested Parties to review the Updated Enhancement Study and the City's conclusions (meetings held at the Ventura WRF on March 27, 2006 and June 12, 2006). The following concerns were raised with respect to the continued wastewater discharge to the estuary:

   i. The freshwater discharge probably has shifted the natural brackish water environment to an unnatural and undesirable freshwater environment (however, since the discharge has existed for almost 50 years, it may be impossible to prove what the historical natural baseline condition was prior to initiation of the wastewater discharge).

   ii. The discharge causes the estuary lagoon to breach periodically during the summer, an unnatural and undesirable event (which could adversely affect the tidewater goby, an endangered species, as well as birds that nest on the berm, such as least terns and snowy plovers.

   iii. The effluent quality may contribute to poor water quality in the estuary (some toxicity observed in sediments and water column, accelerated eutrophication due to high nutrient concentrations, low dissolved oxygen, low salinity).

   iv. Steelhead may be adversely impacted if the estuary is unsuitable as a nursery area for juveniles.

   However, concerns also were raised with respect to eliminating the wastewater discharge to the estuary:

   i. The freshwater discharge creates additional habitat for the tidewater goby (and other aquatic organisms) by expanding the size of the estuary.

   ii. The side channel carrying the freshwater discharge into the estuary creates a refuge which protects tidewater gobies from being flushed out of the estuary during high flow events.

   iii. The discharge may help flush the estuary and dilute pollutants entering the estuary from upstream sources.

   Several alternatives have been identified, including to eliminate the discharge from the estuary or reduce the volume discharged (construct an ocean outfall, move the discharge location upstream of the estuary to a freshwater location, increased reclamation of wastewater effluent, seasonal discharge prohibition). The pros and cons of each alternative are summarized below:

   For PROS of Ocean Discharge:

   i. Construction of an ocean outfall would eliminate the discharge to the estuary.

ii. The ocean discharge may help the Estuary return to a more natural condition.

For CONS of Ocean Discharge:

i. The tidewater goby, an endangered species may be adversely impacted through loss of habitat, particularly loss of the refuge area created by the discharge channel.

ii. The habitat in the Estuary for the other species could disappear as well.

iii. The cost of the new ocean outfall is approximately $5,500,000, which is very expensive.

iv. The adverse impacts on ocean are unknown.

For PROS of Effluent Discharge Reduction:

i. The quantity of effluent discharge would be reduced from current 10 MGD to 5.6 MGD, which was the basis of the 1976 Enhancement Study.

ii. Flow conditions during the dry weather period would be closer to natural conditions.

iii. Beneficial reuse of wastewater effluent could be increased through additional water reclamation efforts.

For CONS of Effluent Discharge Reduction:

i. Reduced flow would not eliminate the unwanted toxicant and nutrient loads.

ii. Reduced flow could still have adverse impacts on ecology and hydrology of the Estuary.

iii. Reduced flow could lead to increase nutrient and other constituent concentrations, due to lack of dilution of other pollutant sources entering the estuary.

iv. Reduced flow could decrease habitat area and further endanger endangered species.

v. Reduced flow may not restore estuary to the natural condition present prior to initiation of the wastewater discharge.

For PROS of Outfall Relocations from the Estuary to Upstream:

i. Discharge moved to upstream could reduce the direct impacts on the Estuary.

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For CONS of Outfall Relocations from the Estuary to Upstream:

i. Discharge moved to upstream may not solve the problem, because the extra freshwater eventually flow back to the Estuary.

ii. The cost of constructing pipelines is very expensive.

iii. The adverse impacts on upstream are unknown.

F. Time Schedule Order No. R4-2006-0034, adopted on March 9, 2006:

a. Comply immediately with the following interim effluent limits:

Constituent	Units	Monthly Average[i]	Daily Maximum[i]
Copper[ii]	µg/L	13	16
Nickel[iii]	µg/L	9.3	15
Zinc[ii]	µg/L	62	72

i. The interim effluent limits, based on effluent data collected from January 2003 to August 2005, were derived statistically at 95 and 99% confidence levels using Minitab software for monthly average and daily maximum, respectively.

ii. The monthly average and daily maximum effluent concentrations are based upon normal distribution.

iii. The monthly average and daily maximum effluent concentrations are based upon lognormal distribution.

b. The above interim limits are effective from March 9, 2006 and will expire on December 31, 2006 in order for Regional Board staff to renew the NPDES permit. If the current NPDES Permit Order No. 00-143 is renewed and adopted prior to December 31, 2006, then TSO No. R4-2006-0034 automatically expires on the same date of the effectively reissued NPDES Permit.

c. The City shall report the information of the updated installation of primary clarifier facility on April 1, 2006, July 1, 2006, October 1, 2006 to the Regional Board.

d. All other provisions and requirements of Order No. 00-143 not in conflict with this Order remain in full force and effect.

To date, the City has made timely submittals of all technical reports required by this Regional Board through its TSOs and continuously updates its facilities in order to comply the final effluent limits.

5. The recent effluent data show that the City cannot immediately comply with the final copper, nickel, and zinc limits in the current Order No. 00-143 as follows:

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Constituent	Units	Monthly Average	Daily Maximum
Copper[2]	µg/L	2.0	2.9
Nickel[2]	µg/L	5.3	15.2
Zinc[2]	µg/L	38	95

The City of Ventura has installed temporary facilities for improved primary clarifier performance since the first quarter of 2003, this addition of Iron salt has improved removal of copper, nickel, and zinc by November 2005 (see data below). The effluent concentration of zinc (9.0 µg/L to 26.5 µg/L) was further reduced between February 2006 to August 2006. Neither copper nor nickel was detected between February 2006 and August 2006. Permanent facilities for iron salt addition will be completed in November 2007. **The quality of the effluent with respect to metal concentrations has greatly improved. Accordingly, interim limits have been adjusted downward to reflect this improvement.**

Constituent	Units	Monthly Average before Installation (October 2000 to December 2002)	Monthly Average after Installation (January 2003 to November 2005)	Monthly Average after Installation (February 2006 to August 2006)
Copper	µg/L	18	12.0	<6
Nickel	µg/L	9.7	7.1	<10
Zinc	µg/L	69	57.1	18.5

Therefore, the City requested a TSO with interim limits and a compliance schedule to achieve compliance until the NPDES Permit can be renewed.

6. Regional Board staff is concerned that eliminating the entire discharge to the Estuary could cause immediate degradation of environmental values, which are such as:

   A. Reductions in the extent of habitat now utilized by multiple species;

   B. Removal of habitat for Tidewater Goby;

   C. Extinction of endangered species existing in the Estuary; and,

   D. The potential degradation of lagoon water quality as a result of the loss of dilution provided by the effluent discharge. (Evidence from the studies indicates that these benefits are most critical during the summer and fall periods of lowest and sometimes non-existent flows from upstream.)

7. On September 11, 2006, Regional Board staff had a meeting with staff of the Ventura WRF to discuss the possibility of gradually decreasing the wastewater discharge rate through increased reclamation. During this meeting it was also discussed that the Regional Board would need to modify the current requirement that the City must discharge a minimum of 5.6 mgd, to allow for increased reclamation.

8. This enforcement action is being taken for the protection of the environment and as such is exempt from the provisions of the California Environmental Quality Act (Public

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Resources Code, Section 21100, et.seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

9. Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Order within 30 days of its adoption, by filing a petition with the State Board. A petition must be sent to the State Water Resources Control Board, 1001 I Street, Sacramento, CA 95814.

The Board notified the City of San Buenaventura and interested agencies and persons of its intent to issue this Time Schedule Order.

The Board, in a public hearing, heard and considered all testimony pertinent to this matter. All orders, studies, and other document referred to above and records of hearings and testimony therein are incorporated by reference made a part of the administrative record.

IT IS HEREBY ORDERED that pursuant to the California Water Code section 13300, the City of San Buenaventura, as operator of the Ventura Water Reclamation Facility, shall:

1. Comply immediately with the following interim effluent limits:

Constituent	Units	Monthly Average	Daily Maximum
Copper	µg/L	13[A]	16[A]
Nickel	µg/L	6.7[B]	7.8[B]

   A. The interim effluent limits, based on normal distribution and effluent data collected from January 2003 to August ~~2005~~2006, were derived statistically at 95 and 99% confidence levels using Minitab software for monthly average and daily maximum, respectively.

   B. The interim effluent limits, based on normal distribution and effluent data collected from January 2003 to August 2006, were derived statistically at 95 and 99% confidence levels using Minitab software for monthly average and daily maximum, respectively.

2. The above interim limits of **copper** and **nickel** are effective from **December 14, 2006** and will expire on December 31, 2007. This will provide Regional Board staff with time to renew the NPDES permit and fully explore all ramifications.

3. It is Regional Board's intention that staff endeavor to renew the NPDES permit in the Spring 2007. This renewal should propose to lift the requirement of maintenance flows to the Estuary so that reclamation can be increased and discharges to the Estuary incrementally decreased.

4. The minimal detection limits for copper and nickel have to be equal or less than 2.0 µg/L and 5.3 µg/L, respectively. These two numeric limitations are monthly average for copper and nickel, based upon the CTR Saltwater Criteria. The appropriate analytical methodologies are used to evaluate the performance of the iron salt addition facilities.

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5. The City shall develop a plan within 60 days of the adoption of this TSO to increase reclamation, resulting in a decrease of the wastewater discharge from the current average of 10 mgd, and plans to conduct studies to assess the effects of such a reduction. The plan should include the following components ~~[??]~~:

Task		Completion
A.	Establish Monitoring Elements Necessary to Detect Negative Impacts of Reduced Maintenance Flows to the Santa Clara Estuary	April 30, 2007
B.	Complete a Reclamation Master Plan Revision to:	
	a. Identify New Reclamation Opportunities	
	b. Define Capital Facilities Plan to Implement Selected Reclamation Alternatives*	April 30, 2008
C.	Change Existing City Council Reclamation Policies	
	a. Hearings*	
	b. Change Adoption*	November 30, 2008
D.	Construction and Implementation*	Dependent on Selected Alternatives and Financing

*: These deliverables are not considered enforceable under this TSO, as these due dates extend beyond the expiration date of this Order.

6. All other provisions and requirements of Order No. 00-143 not in conflict with this Order remain in full force and effect.

7. This TSO expires on December 31, 2007

I, Jonathan S. Bishop, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on December 14, 2006.

Jonathan S. Bishop
Executive Officer

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