CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

CEASE AND DESIST ORDER NO. R2-2010-XXXX

REQUIRING THE NOVATO SANITARY DISTRICT TO CEASE AND DESIST DISCHARGING PARTIALLY-TREATED WASTEWATER TO WATERS OF THE STATE

WHEREAS the California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter "Regional Water Board"), finds that:

1. The Novato Sanitary District (hereinafter "Discharger") owns and operates the Novato Wastewater Treatment Plant (hereinafter "Novato Plant"), its associated sewage collection system, and one effluent discharge outfall to San Pablo Bay. The Novato Plant treats wastewater from a primarily residential service area serving the City of Novato and adjacent areas with a current population of about 60,000.

2. The Novato Plant has an average dry weather flow (ADWF) design capacity of 6.55 million gallons per day (mgd). The annual ADWF was 3.91 mgd, based on flow data from January 2006 – April 2009.

3. The Discharger also owns and operates the Ignacio Wastewater Treatment Plant (hereinafter "Ignacio Plant") as a roughing plant; effluent from the Ignacio Plant flows to Novato Plant for further treatment.

4. The Discharger is currently implementing significant capital improvements that include construction of major new wastewater treatment facilities. These facilities are being installed to address the aging infrastructure, to accommodate limited future service area growth, to consolidate operations at the Novato Plant, and to comply with all effluent limitations. As of this time, the Discharger has completed construction of the Ignacio transfer pump station and Ignacio conveyance force main to convey wastewater flows to Novato Plant. The Novato Plant is undergoing a major overhaul with the installation of new headworks, a new influent pump station, two new primary clarifiers, two new aeration basins, two new secondary clarifiers, an ultraviolet disinfection facility, a new effluent pump station, a new gravity belt thickener, a second digester, new odor control facilities, and new electrical facilities. The Discharger intends to decommission the Ignacio Plant once these new facilities at the Novato Plant are complete.

5. NPDES Permit No. CA0037958 (Regional Water Board Order No. R2-2010-XXXX) regulates the discharge of Novato Plant effluent and contains the water quality-based effluent limitations (WQBELs) listed in Table 1, below, among others.

Table 1: Water Quality-Based Effluent Limits in Order No. R2-2010-XXXX

Parameter	Units	WQBELs	
		Average Monthly Effluent Limit (AMEL)	Maximum Daily Effluent Limit (MDEL)
Copper	µg/L	6.9	13
Carbon Tetrachloride	µg/L	4.4	8.8
Dieldrin	µg/L	0.00014	0.00028
Total Ammonia	mg/L	1.3	4.7

6. The Discharger cannot currently comply with the copper, carbon tetrachloride, dieldrin, and total ammonia WQBELs listed in Table 1, as explained below:

   a. For copper, statistical analysis of effluent data collected over the period of January 2004 to April 2009 (ranging from 3.8 – 39 µg/L) shows that the 95th percentile (20 µg/L) is greater than the AMEL (6.9 µg/L); the 99th percentile (37 µg/L) is greater than the MDEL (13 µg/L); and the mean (9.8 µg/L) is greater than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (4.6 µg/L). Based on this analysis, the Regional Water Board concludes that immediate compliance with the copper WQBELs is infeasible. [1]

   b. For carbon tetrachloride, all effluent data were non-detect except one detected value. It is impossible to fit a probability distribution to the data to estimate percentiles; therefore, feasibility to comply with the WQBELs was evaluated by comparing the maximum effluent concentration (MEC) (7.6 µg/L) to the AMEL (4.4 µg/L). Because the MEC exceeds the AMEL, the Regional Water Board concludes that immediate compliance with the carbon tetrachloride WQBELs is infeasible.

   c. For dieldrin, all effluent data were non-detect except one detected value. It is impossible to fit a probability distribution to the data to estimate percentiles; therefore, feasibility to comply with the WQBELs was evaluated by comparing the MEC (0.018 µg/L) to the AMEL (0.00014 µg/L). Because the MEC exceeds the AMEL, the Regional Water Board concludes that immediate compliance with the dieldrin WQBELs is infeasible.

[1] The statistical feasibility analysis consisted of the following steps:
- Use statistical software (MiniTab) to fit a statistical distribution of the effluent data.
- Calculate the mean, 95th, and 99th percentiles of the effluent data for each constituent considered (using the fitted distribution).
- Compare the mean, 95th, and 99th percentiles with the long-term average (LTA), average monthly effluent limit (AMEL), and maximum daily effluent limit (MDEL) calculated using the procedure in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005).
- If any of the LTA, AMEL, and MDEL exceeds the mean, 95th percentile, or 99th percentile, respectively, it may be infeasible for the Discharger to immediately comply with the WQBELs.
- Where the 95th and 99th percentiles cannot be estimated due to too few data or too many data being non-detect, the determination is based on staff judgment after examining the raw data, such as direct comparison of the maximum effluent concentration (MEC) with the AMEL. If the MEC is greater than the AMEL, it may be infeasible for the Discharger to immediately comply with WQBELs.

d. For total ammonia, statistical analysis of effluent data collected over the period of April 2008 to April 2009 (ranging from 0.25 – 21.7 mg/L) shows that the 95th percentile (12 mg/L) is greater than the AMEL (1.3 mg/L); the 99th percentile (23 mg/L) is greater than the MDEL (4.7 mg/L); and the mean (4.1 mg/L) is greater than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (1.0 mg/L). Based on this analysis, the Regional Water Board concludes that immediate compliance with the total ammonia WQBELs is infeasible.

7. Water Code § 13301 authorizes the Regional Water Board to issue a cease and desist order when it finds that a waste discharge is taking place, or threatening to take place, in violation of Regional Water Board requirements. Because the Discharger will violate or threatens to violate required effluent limits, a cease and desist order is necessary to ensure that the Discharger achieves compliance with the copper, carbon tetrachloride, dieldrin, and total ammonia WQBELs.

8. Cease and Desist Order No. R2-2008-0029 already contains a time schedule and specific actions to comply with copper and cyanide limits in the previous permit (Regional Water Board Order No. R2-2004-0093, as amended by Order No. R2-2008-0026).

9. Analysis undertaken to support the existing permit (Order No. R2-2010-XXXX) demonstrates that the Discharger can comply with the cyanide WQBELs in the existing permit; therefore, Cease and Desist Order No. R2-2008-0029 is no longer necessary to ensure cyanide compliance. (Statistical analysis of cyanide effluent data collected over the period of January 2004 to April 2009 [ranging from 0.08—7.0 µg/L] shows that the 95th percentile [4.9 µg/L] is less than the AMEL [6.6 µg/L]; the 99th percentile [6.1 µg/L] is less than the MDEL [15 µg/L]; and the mean [2.2 µg/L] is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability [3.8 µg/L]. Based on this analysis, the Regional Water Board concludes that immediate compliance with the cyanide WQBELs is feasible.)

10. This Order establishes an updated time schedule for the Discharger to complete necessary facility upgrades to address its imminent and threatened violations for copper, carbon tetrachloride, and dieldrin. These facility upgrades are expected to result in the Discharger's ability to comply with the copper, carbon tetrachloride, and dieldrin WQBELs. This Order also establishes a time schedule for the Discharger to study receiving water quality to better understand the impact of its ammonia discharges and, if necessary, design and construct facility upgrades to address its imminent and threatened violations of the total ammonia WQBELs.

11. The time schedule is intended to be as short as possible; however, it accounts for uncertainty in determining exactly when facility upgrades can be completed. It is based on reasonably expected times needed to implement each required action. The Regional Water Board may wish to revisit these assumptions as more information becomes available.

12. As part of the time schedule to achieve compliance, this Order requires the Discharger to comply with interim effluent limits. These interim limits are intended to ensure that the Discharger maintains at least its existing performance while completing all actions required

during the time schedule. The interim limitations for these pollutants are presented in Table 2, below. The copper interim effluent limit is the same as in Cease and Desist Order No. R2-2008-0029. The total ammonia interim effluent limit is the same as the limit in the previous permit (Order No. R2-2004-0093). The carbon tetrachloride and dieldrin interim effluent limits are the same as the MECs.

Table 2. Interim Effluent Limitations

Parameter	Units	Maximum Daily Interim Effluent Limitations	Monthly Average Interim Effluent limitations
Copper	µg/L	19	--
Carbon Tetrachloride	µg/L	--	7.6
Dieldrin	µg/L	--	0.018
Total Ammonia	mg/L	--	6.0

13. This Order is an enforcement action and, as such, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21000 et seq.) in accordance with 14 CCR §15321.

14. The Regional Water Board notified the Discharger and interested persons of its intent to consider adoption of this Cease and Desist Order, and provided an opportunity to submit written comments and appear at a public hearing. The Regional Water Board, in a public hearing, heard and considered all comments.

IT IS HEREBY ORDERED, that Cease and Desist Order No. R2-2008-0029 is rescinded upon the effective date of this Order, except for enforcement purposes, and that in accordance with Water Code §13300, the Discharger shall comply with the following provisions:

1. Prescribed Actions. The Discharger shall comply with the required actions in Tables 3 and 4 in accordance with the time schedules provided therein to comply with applicable WQBELs. Deliverables listed in Tables 3 and 4 shall be acceptable to the Executive Officer, who will review them for adequacy and compliance with the Tables 3 and 4 requirements.

Table 3. Time Schedule and Prescribed Actions for Copper, Carbon Tetrachloride, and Dieldrin

Action	Deadline
a. Comply with the interim effluent limits for copper, carbon tetrachloride, and dieldrin listed in Table 2 at monitoring location EFF-001 (see Order No. R2-2010-XXXX).	Upon effective date of this Order
b. Document and certify complete construction of Novato Plant aeration basins and one secondary clarifier.	June 30, 2010
c. Document and certify complete construction of Novato Plant influent pump station, second primary and secondary clarifier, UV disinfection, gravity belt thickener, and second digester.	December 31, 2010
d. Document and certify completion of all facility upgrades, place upgrades into operation, and comply with copper, carbon tetrachloride, and dieldrin WQBELs of Regional Water Board Order No. R2-2010-XXXX (NPDES Permit No. CA0037958)	June 30, 2011

Table 4. Time Schedule and Prescribed Actions for Total Ammonia

Actions	Deadline
a. Comply with the total ammonia interim effluent limit for total ammonia listed in Table 2 at monitoring location EFF-001 (see Order No. R2-2010-XXXX).	Upon effective date of this Order
b. Submit a study plan to evaluate the effects of ammonia discharges on the receiving water and the potential for the receiving water to exceed applicable water quality objectives. The study plan shall include the following elements: • sampling locations (effluent and receiving water, at a location that is accessible and as close to the outfall as possible), • sampling and analysis protocols, • sampling parameters (including, at a minimum, pH, salinity, temperature, hardness, and total ammonia), • data interpretation models and other methods to be used (representing conservative, reasonable worst case conditions), and • implementation schedule.	Within 90 days of Order No. R2-2010-XXXX effective date
c. Begin implementation of the study plan developed for action (b).	Upon the 2010/2011 bay discharge starts.
d. Submit an initial study report that includes the following elements: • sampling results, data interpretation, and conclusions, such as receiving water characterization, seasonal/diurnal variability, etc.; • proposed mixing zone and dilution credit, if any (with justification consistent with *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* § 1.4.2.2); • determination if there is reasonable potential for the discharge to cause receiving water to exceed applicable ammonia objectives (based on any proposed dilution and based on a no dilution scenario) using procedures outlined in *Technical Support Document for Water Quality-Based Toxics Control* (1991) (see Order No. R2-2010-XXXX, Fact Sheet, Section D.3.d, Attachment F); • if there is reasonable potential, total ammonia effluent concentration goals that account for applicable ammonia objectives and criteria that may foreseeably become applicable standards or objectives within the term of the permit or the next permit term, such as USEPA's *1999 Update of Ambient Water Quality Criteria for Ammonia* (EPA-822-R-99-014); and • compliance attainability with the total ammonia concentration goals described above.	June 30, 2011

Actions	Deadline
e. If there is reasonable potential and there would be compliance difficulty with the total ammonia concentration goals in action (d), submit a <u>follow-up study plan</u> that includes the following elements: • investigate treatment options to achieve compliance with the ammonia concentration goals, including a description and summary of the treatment options with a discussion of the pros and cons of each, • plan for bench scale tests or pilot scale tests or both, and • implementation schedule.	September 1, 2011
f. If there is reasonable potential, continue monitoring the effluent and receiving water to determine compliance with total ammonia effluent concentration goals based on the ammonia objectives in effect at that time. If there is no reasonable potential, and the Executive Officer concurs in writing, continue monitoring the effluent and receiving water and submit a <u>final study report</u> summarizing the monitoring data, findings, and conclusions. The Discharger needs not comply with actions (g) through (i).	Annually, on February 1, with annual self-monitoring reports (SMRs). Final study report is due January 2, 2015
g. Begin implementation of the follow-up study plan developed for action (e).	October 15 , 2011
h. Submit a <u>final study report</u> summarizing the results of action (g) and identifying the following, as applicable: (1) measures the Discharger will take to comply with the ammonia concentration goals, including the following, as relevant: i. development of preliminary design specifications, ii. development of final design specifications, iii. procurement of funding, iv. acquisition of necessary permits and approvals, and v. construction; and (2) implementation schedule for the above measures.	September 30, 2012
i. Begin implementation of the measures identified for action (h) consistent with the implementation schedule identified for action (h).	October 15, 2012
j. Submit annual status reports that contain, at minimum, monitoring data collected during the previous year and necessary updates to all study plans.	Annually, on February 1, with annual self-monitoring reports (SMRs)
k. Comply with the total ammonia WQBELs in the Regional Water Board Order No. R2-2010-XXXX (NPDES Permit No. CA0037958)	June 30, 2015

2. <u>Reporting Delays</u>. If the Discharger is delayed, interrupted, or prevented from meeting one or more deadlines of the time schedules in Tables 3 and 4 due to circumstances beyond its reasonable control, the Discharger shall promptly notify the Executive Officer, provide the reasons and justification for the delay, and propose a time schedule for resolving the delay.

3. Consequences of Non-Compliance. If the Discharger fails to comply with the provisions of this Order, the Executive Officer is authorized to take further enforcement action or to request the Attorney General to take appropriate actions against the Discharger in accordance with Water Code §§ 13331, 13350, 13385, and 13386. Such actions may include injunctive and civil remedies, if appropriate, or the issuance of an Administrative Civil Liability Complaint for Regional Water Board consideration.

4. Effective Date. This Order shall become effective on July, 1, 2010.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 12, 2010.

BRUCE H. WOLFE
Executive Officer