

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

INVESTIGATIVE ORDER NO. R9-2011-0036

AN ORDER DIRECTING SAN DIEGO UNIFIED PORT DISTRICT

**TO SUBMIT TECHNICAL REPORTS PERTAINING TO
SHELTER ISLAND YACHT BASIN DISSOLVED COPPER
TOTAL MAXIMUM DAILY LOAD**

The California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board) finds:

- 1. Total Maximum Daily Load Adoption.** The San Diego Water Board adopted Resolution No. R9-2005-0019 amending the Water Quality Control Plan for the San Diego Basin (Basin Plan) to incorporate the Shelter Island Yacht Basin (SIYB) Dissolved Copper Total Maximum Daily Load (TMDL) on February 9, 2005. The SIYB Dissolved Copper TMDL Basin Plan amendment became effective on December 2, 2005.

- 2. Water Quality Standards.** The purpose of the TMDL is to identify and implement actions to reduce dissolved copper loads discharging into SIYB to attain numeric water quality objectives for dissolved copper in San Diego Bay which are equal to the California Toxics Rule (CTR) water quality values for dissolved copper in sea water. Chronic exposure concentrations must not exceed 3.1 micrograms per liter ($\mu\text{g/L}$) over a 4-day average, and acute exposure concentrations must not exceed 4.8 $\mu\text{g/L}$ over a 1-hour average. The Basin Plan also includes narrative water quality objectives for toxicity and pesticides applicable to all inland surface waters, enclosed bays, estuaries, coastal lagoons, and ground waters in the San Diego Region. Meeting the numeric and narrative water quality objectives will be protective of the most sensitive beneficial uses for San Diego Bay and SIYB. Meeting the numeric water quality objectives for dissolved copper should ensure that the narrative water quality objectives for toxicity and pesticides are also met.

- 3. TMDL Compliance Schedule.** The compliance schedule for the SIYB Dissolved Copper TMDL requires the annual dissolved copper loads discharged to SIYB to be reduced in four stages to achieve the requirements of the TMDL as summarized in the table below:

Stage	Required Dissolved Copper Load Reduction	Compliance Date
1	0%	December 1, 2007
2	10%	December 1, 2012
3	40%	December 1, 2017
4	76%	December 1, 2022

4. **Sources of Dissolved Copper Discharges.** Based on the TMDL source analysis,¹ the primary source of dissolved copper loads discharging to SIYB is associated with boat hulls coated with copper-based anti-fouling paints (AFPs). The copper-based AFPs on the boat hulls passively leach 93 percent of the total annual copper load directly into the water column. An additional 5 percent of the total annual copper load is discharged during the underwater cleaning of boat hulls coated with copper-based AFPs. The remaining 2 percent of the total annual copper load discharged to SIYB is comprised of urban runoff, direct atmospheric deposition, and background levels.
5. **Persons Responsible for the Discharges.** The San Diego Unified Port District (Port District), SIYB marina owners/operators, persons owning boats moored in SIYB, and underwater hull cleaners operating in SIYB are responsible for the discharge of copper waste from boat hull AFPs to SIYB waters.

The Port District holds and manages as trust property on behalf of the People of the State of California the land occupied by the SIYB marinas at all times since 1963. During this time the marinas have congregated over 2,000 vessels in the semi enclosed SIYB by way of conditional lease or license agreements with owners of boats moored within the marina leasehold. The high density of boats in an area with reduced tidal flushing has resulted in elevated levels of copper in SIYB. Persons owning boats moored in SIYB are responsible for discharges of copper waste because hull coating leachate containing copper is continuously generated whenever their vessel hull is exposed to water. Underwater hull cleaners are responsible for discharges of copper because the physical process of removing fouling organisms from a vessel's hull painted with copper-based antifouling paints while underwater, results in the release of dissolved copper into surrounding SIYB waters. To a much lesser extent, the City of San Diego also discharges copper from its municipal separate storm sewer systems (MS4s) to SIYB waters. Each of these parties is considered and referred to as a Discharger in this Investigative Order.

6. **TMDL Implementation Plan.** The Port District has coordinated the development of a draft *Shelter Island Yacht Basin Dissolved Copper Total Maximum Daily Load Implementation Plan* (Implementation Plan), dated October 2009. The draft implementation plan proposes to reduce dissolved copper discharges to SIYB through the implementation of BMPs that directly or indirectly facilitate the conversion of boat hulls coated with copper-based AFPs to alternative AFPs with little or no copper. This approach is expected to have the greatest effect on reducing dissolved copper loads discharging to SIYB by removing the source of the majority of the copper. This approach may also be applicable to other marinas and harbors in San Diego Bay.

¹ San Diego Water Board, 2005. Total Maximum Daily Load for Dissolved Copper In Shelter Island Yacht Basin, San Diego Bay, Resolution No. R9-2005-0019 Basin Plan Amendment and Technical Report, dated February 9, 2005.

- 7. Additional Dissolved Copper Impairments in San Diego Bay.** The issue of dissolved copper discharging from boat hulls and causing impairments to water quality and beneficial uses is not limited to SIYB. In addition to SIYB, several other marinas and harbors within San Diego Bay (Americas Cup Harbor, Harbor Island (East Basin), Harbor Island (West Basin), Coronado Cays, Glorietta Bay, and Chula Vista Marina) impaired by dissolved copper are now included on the Clean Water Act Section 303(d) List of Water Quality Limited Segments (303(d) List) that was adopted by the San Diego Water Board on December 16, 2009 under Resolution No. R9-2009-0163.
- 8. Primary Monitoring and Reporting Responsibility.** The San Diego Water Board has the discretion to name the Port District as a Discharger for the purposes of providing technical reports on the progress of the SIYB TMDL implementation in this Investigative Order and hereby does so, consistent with its responsibility for the actions, omissions and operations of its tenants and to the extent indicated by previous State Water Board and San Diego Water Board orders.

The Port District is a special government entity, created in 1962 by the San Diego Unified Port District Act, California Harbors and Navigation Code Appendix I, in order to manage San Diego Harbor, and administer certain public lands along San Diego Bay. The Port District, as trustee with the rights and responsibilities of ownership of the lands occupied by SIYB marinas, has the authority to require SIYB marina owners/operators, persons owning boats moored in SIYB, and underwater hull cleaners operating in SIYB to implement actions to reduce dissolved copper load to SIYB. The Port District also has the authority to require SIYB marina owners/operators, persons owning boats moored in SIYB, and underwater hull cleaners operating in SIYB to report on the actions implemented to reduce dissolved copper loads to SIYB.

- 9. Legal and Regulatory Authority.** This Order confirms and implements (1) section 13225 of the Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code, commencing with Section 13000); (2) applicable federal regulations (Code of Federal Regulations (CFR) Title 40); (3) all applicable provisions of statewide Water Quality Control Plans adopted by the State Water Board and the Basin Plan adopted by the San Diego Water Board including beneficial uses, water quality objectives, and implementation plans; (4) State Water Board policies and regulations, including Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California); and (5) relevant standards, criteria, and advisories adopted by other state and federal agencies.
- 10. Basis for Requiring Technical Reports.** California Water Code section 13225 provides authority for the San Diego Water Board to require local agencies such as the Port District to submit technical reports on water quality control, even though those entities may not be waste dischargers. Local agencies can be required to investigate the scope, causes, and sources of water pollution, and potential practices or control measures to prevent it. The only restriction is that the burden of preparing the reports must bear a reasonable relationship to the need for and the benefits to be obtained from the reports.

11. Need For and Benefit of Technical Reports. Data on the number of boat hulls converted from copper-based AFPs to alternative AFPs are needed to monitor the progress of implementing the SIYB Dissolved Copper TMDL and achieving the required dissolved copper load reductions. Water quality monitoring data are needed to monitor the dissolved copper concentrations in the water column in SIYB to determine when the water quality objectives are attained and beneficial uses restored. The Dischargers have already developed a draft *Shelter Island Yacht Basin TMDL Implementation Compliance Monitoring Plan*, dated October 2009. These actions will result in the restoration and protection of water quality necessary to support the designated beneficial uses in SIYB. The burden of providing the reports required under this Order bears a reasonable relationship to the need for the report and the benefits to be obtained from the report.

12. California Environmental Quality Act. Adoption of this Order is for the protection of the environment and is exempt from the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) in accordance with section 15308, Chapter 3, Title 14 of the California Code of Regulations (CCR). This action is also exempt from the provisions of CEQA in accordance with section 15061(b)(3) of Chapter 3, Title 14 of the CCR because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

IT IS HEREBY ORDERED, pursuant to California Water Code section 13225, that the Port District must comply with the following directives:

A. TECHNICAL REPORTS

- 1. Implementation Plan.** The Port District must prepare and submit to the San Diego Water Board, **no later than May 31, 2011**, the final Implementation Plan for the SIYB Dissolved Copper TMDL. Any updates proposed to the Implementation Plan must be submitted with each annual monitoring and progress report.
- 2. Monitoring Plan.** The Port District must prepare and submit to the San Diego Water Board, **no later than May 31, 2011**, a monitoring plan to track the progress of implementing the SIYB Dissolved Copper TMDL and achieving the required dissolved copper load reductions. Implementation of the final monitoring plan must begin no later than July 1, 2011 unless otherwise directed in writing by the San Diego Water Board. Any updates proposed to the monitoring plan may be submitted with each annual monitoring and progress report. The monitoring plan, at a minimum, must include:

 - a. **Quality Assurance Project Plan.** A Quality Assurance Project Plan (QAPP) describing the project objectives and organization, functional activities, and quality assurance/quality control protocols for the monitoring. The monitoring, sampling and analytical methods must be consistent with the State Water Board Surface Water Ambient Monitoring Program (SWAMP) data QAPP and management protocols. The QAPP objectives include:

 - i. Documenting changes in water quality over time in SIYB with respect to dissolved copper and enabling comparison of baseline data and TMDL target values with conditions;
 - ii. Determining whether the “trajectory” of the measured water quality values points toward attainment of the dissolved copper water quality objectives;
 - iii. Evaluating the effectiveness of the TMDL implementation actions over time and determining the need for revisions to improve the implementation plan; and
 - iv. Providing the monitoring data needed to evaluate the overall TMDL implementation effectiveness and success in attaining dissolved copper water quality objectives in SIYB.
 - b. **Conceptual Model.** A Conceptual Model identifying the physical and chemical factors that control the fate and transport of pollutants and receptors that could be exposed to pollutants in the water and sediment. The Conceptual Model will serve as the basis for assessing the appropriateness of the monitoring plan design. The Conceptual Model must be refined and updated as SIYB characterization data becomes available. The initial Conceptual Model must

include a discussion of the level of uncertainty of conclusions, outline data gaps in the initial Conceptual Model, and describe the additional work needed to complete the Conceptual Model. The Conceptual Model must consider:

- Points of discharge into SIYB;
 - Tidal flow and/or direction of predominant currents;
 - Historic or legacy conditions in the vicinity;
 - Nearby land and marine uses or actions;
 - Beneficial Uses;
 - Potential receptors of concern; and
 - Other sources or discharges in the immediate vicinity.
- c. ***Spatial Representation.*** A monitoring station network in SIYB to define dissolved copper trends. The network must be designed to ensure that the monitoring stations are spatially representative of water quality conditions within SIYB. Results from the network will be used to document whether implementation of MPs / BMPs by dischargers translate to decreased dissolved copper levels in SIYB and reduced dissolved copper loading to SIYB.
- d. ***Existing Data and Information.*** The monitoring plan must take into consideration existing data and information of appropriate quality. The plan must characterize baseline conditions in SIYB with respect to dissolved copper to place future monitoring data into perspective and document progress towards cleaner water.
- 3. Annual Monitoring and Progress Reports.** The Port District must prepare and submit annual monitoring and progress reports for the SIYB Dissolved Copper TMDL Implementation Plan and Monitoring Plan to the San Diego Water Board no later than January 31 of each year, beginning on **January 31, 2012**. The annual monitoring and progress reports must, at a minimum, contain the following information:
- a. ***SIYB TMDL Implementation.*** An evaluation, interpretation and tabulation of data and information on SIYB Dissolved Copper TMDL activities undertaken by the Dischargers including:
- (i) ***Vessel Conversions.*** Assess vessel conversions from copper-based AFPs to alternative AFPs, including:
 - [a] Total number of slips or buoys in SIYB available to be occupied by vessels;
 - [b] Number of unoccupied slips or buoys and length of time unoccupied during each year;

- [c] Number of vessels confirmed with copper-based AFP hull coating and approximate length of time occupying a slip or buoy in SIYB during each year;
 - [d] Number of vessels confirmed with alternative AFP hull coating, by alternative AFP type, and approximate length of time occupying a slip or buoy in SIYB during each year;
 - [e] Number of vessels with unconfirmed information about hull coating and approximate length of time occupying a slip or buoy in SIYB during each year;
 - [f] An estimate of the dissolved copper load reduction achieved, in terms of kilograms and percent, for the year;
 - [g] Any other data or information relevant to annual tracking of vessels in SIYB occupying slips or buoys and conversions from copper-based AFPs to alternative AFPs.
- (ii) *SIYB BMP Implementation.* Describe BMPs or other actions that have been implemented by the Dischargers to reduce dissolved copper discharges from boat hulls into SIYB. BMPs and other actions implemented and required to be implemented by underwater hull cleaners must be described.
- b. ***San Diego Bay-wide BMP Implementation.*** Describe BMPs or other actions that can be, will be, or have been implemented by the Port District to reduce dissolved copper discharges from boat hulls into harbors or marinas, other than SIYB, within San Diego Bay.
- c. ***SIYB TMDL Monitoring.*** An evaluation, interpretation, and tabulation of water quality sampling and analysis data, including:
- i. *Sample Locations and Numbers.* The locations, type, and number of samples must be identified and shown on a site map.
 - ii. *Sample Analyses.* The sample collection and laboratory analytical methods, quality assurance / quality control results, time and date of sample collection and other pertinent information must be described.
 - iii. *Conceptual Model Update.* Refinements and updates to the Conceptual Model based on available data must be described. The description must include identification of monitoring data needed to verify or refine assumptions, resolve uncertainties, and improve the scientific foundation of the TMDL.

- iv. *Water Quality Trends.* Interpretations and conclusions, as to whether the “trajectory” of the measured water quality values points toward attainment of the dissolved copper water quality objectives, must be provided.

B. PROVISIONS

1. **Duty to Comply:** The Port District must obtain all permits and access agreements needed to implement the requirements of this Order. The Port District must properly manage, treat, and/or dispose of contaminated water samples in accordance with applicable federal, state, and local laws and regulations.
2. **Request to Provide Information:** The Port District may present characterization data, preliminary interpretations and conclusions as they become available, rather than waiting until a report is prepared. This type of on-going reporting can facilitate a consensus being reached between the Port District and the San Diego Water Board and may result in overall reduction of the time necessary to meet data needs.
3. **Laboratory Qualifications:** Unless otherwise permitted by the San Diego Water Board, all analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health. The Port District must use a laboratory capable of producing and providing quality assurance / quality control (QA/QC) records for San Diego Water Board review. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports submitted to the San Diego Water Board.
4. **Laboratory Analytical Reports:** Any report presenting new analytical data is required to include the complete laboratory analytical report(s). The laboratory analytical report must be signed by the laboratory director and contain:
 - a. Complete sample analytical report;
 - b. Complete laboratory quality assurance / quality control (QA/QC) report;
 - c. Discussion of the QA/QC data, and
 - d. A transmittal letter that shall indicate whether or not all the analytical work was supervised by the director of the laboratory, and contain the following statement, *"All analyses were conducted at a laboratory certified for such analyses by the CDPH in accordance with current procedures approved by the United States Environmental Protection Agency."*
5. **Analytical Methods:** Specific methods of analysis must be identified in the technical reports. If the Dischargers propose to use methods or test procedures other than those included in the most current version of "Test Methods for Evaluations Solid Waste, Physical/Chemical Methods, SW846" (U.S. Environmental Protection Agency) or "Guidelines Establishing Test Procedures for the Analysis of Pollutants; Procedures for Detection and Quantification" (40 CFR 136) the exact methodology must be submitted for review and must be approved by the San Diego Water Board prior to use.

6. Signatory Requirements: All documents submitted to the San Diego Water Board must be signed and certified as follows.

- a. All reports required by this Order must be signed as follows:
- (i) For a corporation, by a principal executive officer of at least the level of vice-president;
 - (ii) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
 - (iii) For a municipality, state, federal or other public agency, by either a principal executive or ranking elected official.
 - (iv) By a duly authorized representative of the person designated above (B.6.a.(1), B.6.a.(ii), or B.6.(a)(iii)). A person is a duly authorized representative only if:
 - [a] The authorization is made in writing by a person described in paragraph B.6.a above;
 - [b] The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
 - [c] The written authorization is submitted to the San Diego Water Board.
- b. Any person signing a document required by this Order must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7. Submittal of Documents

All documents submitted to the San Diego Water Board in compliance with this Order must be submitted in electronic format (compact disk (CD-ROM or CD) in a Portable Document Format (PDF), unless otherwise directed. All electronic format documents required under this Order must be submitted to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340
Attn: Mr. Wayne Chiu, Southern Watershed Unit

8. **Records Maintenance:** The Port District must retain records of all monitoring information, including all calibration and maintenance records, and copies of all plans and reports required by this Order. Records must be maintained for a minimum of five years from the date of the sample, measurement, or report. This period may be extended at the request of the San Diego Water Board.
9. **Changes to Order:** This Order may be amended, rescinded, or updated by the Executive Officer. The Dischargers may propose changes or alternatives to the requirements in this Order if a valid rationale for the changes is shown. The filing of a request by the Dischargers for amending, rescinding, or updating this Order, or notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

C. NOTIFICATIONS

1. **Enforcement Discretion:** The San Diego Water Board reserves its right to take any enforcement action authorized by law for violations of the terms and conditions of this Order.
2. **Requesting Administrative Review by the State Water Board:** Any person affected by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations Title 23 section 2050. The petition must be received by the State Water Board (Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812) within 30 days of the date of this Order. Copies of the laws and regulations applicable to filing petitions will be provided upon request.

Ordered By: _____



David W. Gibson
EXECUTIVE OFFICER
March 11, 2011