

June 29, 2009

Dear Potential Participant:

The San Diego Unified Port District (Port) is seeking parties interested in submitting/developing innovative replacements for copper-bearing coatings used on recreational boat hulls.

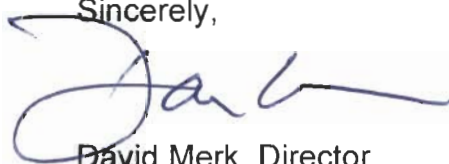
The Port oversees the tidelands around San Diego Bay, including eight boat basins which are home to nearly 7,000 recreational boats. Recently, the California State Water Resources Control Board (Board) found the waters in all of these marina basins to be impaired by copper from boat hull coatings. This prompted the Board to take enforcement action, requiring drastic reductions in copper loading into the Bay.

The Port has taken a very active role in the identification of alternative boat hull coatings and/or concepts that can reduce copper loading into the Bay. We now are seeking innovative approaches to achieving a reduction in copper loading, either through the use of alternative coatings or in the form of concepts which prevent copper from impacting marine life in the area.

You have been identified as potentially having an interest in this effort or are experienced in this field of study and are being invited to participate in this effort. The attached Request for Information describes the information we will need to evaluate any submittal. It should be noted that this problem, and the Port's approach to its resolution, has prompted the attention of regulators and the regulated community throughout the State of California and paint formulators around the world.

If you have any questions, please call Karen Holman at (619) 686-6254 or email kholman@portofsandiego.org.

Sincerely,



David Merk, Director
Environmental Services Department

DM:rg
Attachment
File: Copper TMDL
SDUPD Docs No. 368705



SAN DIEGO UNIFIED PORT DISTRICT
Environmental Services
P.O. BOX 120488
SAN DIEGO, CA 92112-0488
(619) 686-6254

June 29, 2009

**REQUEST FOR INFORMATION
FOR
NON-COPPER HULL PAINT PRODUCT DEVELOPMENT**

Submit Responses by: 4:00 p.m., July 31, 2009

Contact Person: Karen Holman
Environmental Services Department
(619) 686-6254

REQUEST OVERVIEW

The San Diego Unified Port District (Port) is seeking parties interested in assisting us in identifying options for addressing copper problems in San Diego Bay marinas which are associated with boat hull coatings. Specifically, the Port is seeking parties interested in: developing non-toxic boat hull coatings; submitting innovative replacements for copper-bearing coating; and/or recommending concepts that can reduce or eliminate copper leachate from impacting marine life in the area. The Port is requesting letters of interest from parties having experience with non-toxic hull coatings, hull coating application, or other experience related to non-copper hull coatings for recreational boat use.

PROBLEM STATEMENT

Marine organisms such as barnacles, tubeworms, and algae, collectively termed "fouling organisms," attach to boat hulls and can severely damage the hull and impact the performance of the vessel. To address this problem, boat paints which discourage the attachment of these fouling organisms are applied to the hulls. The most common antifouling practice in use today is the addition of a copper-based biocide in the formulation of the hull coating. Over time, this copper is released slowly from the coating and dispersed into the water through passive leaching of the paint or through in-water hull cleaning activities.

San Diego Bay is home to 8 marina basins, collectively containing nearly 7,000 recreational boats. The majority of these boats use copper-based antifouling coatings to prevent marine fouling. Recently, the waters in marina basins in San Diego Bay were found to be impaired by copper, prompting the California State Water Resources Control Board to take enforcement action requiring drastic reductions in copper loading into the Bay.

The Port believes that to meet the required reductions within the 17 year term of the enforcement action, a transition from copper-based coatings must occur. However, to successfully make the transition, certain obstacles must be overcome. Although the development of alternative coatings is a rapidly emerging market, the number of non-copper alternatives currently available is limited. Of greater concern is that many of the existing alternatives are not being used or have been found to be ineffective in the local environmental conditions. A final factor limiting the use of alternatives is that the existing alternatives tend to be much higher in cost and require more effort to maintain. Further efforts are needed to bring viable alternatives to the market, evaluate them and ensure they are effective in local conditions.

BACKGROUND

The Port has taken an active role in identifying and evaluating alternatives that could be used in place of copper-based hull coatings. Recently, the Port partnered with San Diego State University to develop an informational report on the status of antifouling technologies and strategies used worldwide. In 2007, the Port was awarded an EPA Pollution Prevention Grant for an alternative hull coatings project. This project's objectives were to find environmentally friendly test coatings that are: 1) effective in repelling or preventing fouling growth; 2) relatively easy to clean; and 3) cost effective to apply and maintain. The EPA Grant Project identified 46 non-copper-based coatings and has developed a process to test the coatings on fiberglass panels and on boat hulls.

One of the successful products that has resulted from the EPA Grant Project was the development of a standard analysis protocol for testing the effectiveness of new coatings. The analysis evaluates all coatings, and coating types, using a uniform approach, thereby minimizing any manufacturer bias. The analysis also combines both panel testing and boat hull testing to gain a practical understanding of the coating's effectiveness in "real-world" conditions. The protocol and testing process will become a standard method for evaluating fouling levels and cleaning requirements for alternative coatings, and may also become part of the process to identify coatings that are acceptable in copper-impaired waters. The other end product from the EPA Grant Project will be a list of viable alternatives. This list will set the standard for acceptable paints in areas impacted by copper and could serve as a tool to set policy-based decisions that directly impact/limit use of copper-based coatings.

As a result of the aforementioned projects, the Port has been successful in identifying a variety of non-toxic coatings that are either commercially available or in development. In doing so, the Port's recent efforts and the overall approach to resolving the copper problem has brought nationwide attention to the issue. It is anticipated that the Port will continue to test new and emerging coatings following the completion of this request, thus serving as a testing facility for products that arise from this request's funding.

SOLICITATION REQUEST

The Port is seeking parties to assist us in our effort to resolve copper loading into San Diego Bay. Specifically, the Port is seeking parties interested in: developing non-toxic boat hull coatings; submitting innovative replacements for copper-bearing coatings; and/or recommending concepts that can reduce or eliminate copper leachate from impairing the ambient water quality.

To be considered, parties interested in developing and/or submitting hull coatings must demonstrate that the coating must be effective in reducing copper loading and/or be a formulation which does not contain copper. In either case, the coating must function with the same effectiveness as those containing copper. To this end:

1. The coating formulation must not be currently commercially available.
2. The coating formulation must not contain an active biocide agent (metal, organic ingredient, etc).
3. Coatings must be easy to clean and relatively maintenance free, requiring a cleaning regime no more frequent than 3 weeks during summer months and 4 weeks during winter months.
4. Application cost should not exceed cost of a traditional copper paint application by more than 10%. Application cost estimates must include costs for stripping a hull of its original paint (if applicable), the use of primers or tie coats, and other special application techniques that may be required for applying the test coating.
5. Coatings must meet or exceed an anticipated 2 year performance effectiveness period (longevity) without incurring physical coating failures such as delamination or removal resulting from normal boat use.

Once developed, samples of the selected coating(s)/paint(s) will be evaluated using the Port's panel and boat hull testing methodology to evaluate the product's viability. The test process will utilize the standard paint test protocol developed as part of the Port's 2007 EPA Grant Project.

For parties interested in submitting concepts and/or recommending concepts that can reduce or eliminate copper leachate from impairing the ambient water quality, the Submitter must provide a detailed description of the concept, along with a statement of why or how the concept is unique or innovative.

SUBMITTAL INSTRUCTIONS

Parties interested in participating should submit a Letter of Interest that briefly describes their product or application. The Letter of Interest should be limited to two (2) pages and should contain the following information:

1. Name and contact information of the Submitter;
2. Institution (if any) with whom you are affiliated;
3. The Submitter's relevant experience with hull coatings, including but not limited to product formulations or coating application processes;
4. A brief description of the concept;
5. An estimated timeline for product development and anticipated product deliverable date;
6. Estimated cost of development.

The letter should demonstrate the Submitter's ability to develop an effective hull coatings alternative and enable it to be tested in San Diego Bay. Additionally, the letter should provide sufficient information for the Port to identify what end product will be developed and a rough estimate of the timeline needed for product development.

The Port may evaluate these submittals in consultation with the Submitter during which additional information may be requested from certain of the parties. At the Port's discretion, a more complete submittal may then be requested from the selected parties. It is anticipated that for those submitting information on hull coatings, a full submittal would include detailed information on: 1) the coating formulation, including verification that it does not contain active biocide ingredients; 2) a description of the application process for applying the coating; 3) an estimated longevity of the coating; 4) estimated application cost; and 5) a timeline for product development.

For those submitting information on concepts for preventing, in full or in part, copper leachate from impairing the ambient water quality, a more complete submittal would include detailed information on: 1) the concept being proposed; 2) how it can eliminate or remove copper from the water; 3) an estimated development cost; and 4) a timeline for development.

The Port may make available to selected parties funding to be used in the development of the concept, formulation of the paint, and/or application based upon the content of the Letter of Interest, the submittal and conversations between the Submitter and the Subcommittee. The amount of funding to be provided would be specific to the needs identified in the submittal and is expected to range between \$50,000 and 100,000. The Port reserves the right not to proceed further with this project.

SUBMITTAL DEADLINE

Letters of Interest shall be delivered to the Port no later than 4:00 p.m., July 31, 2009.

Mail or hand-deliver submittal to:

Karen Holman, Senior Environmental Specialist
Environmental Services Department
Port of San Diego
3165 Pacific Highway
San Diego, CA 92101

Mailing Address: P.O. Box 120488
San Diego, CA 92112-0488