

Safer Alternatives To Copper Antifouling Paint Project
Stakeholder Work Group Meeting Summary
1/21/09

I. Introductions & General Information

There were 31 participants in attendance and 5 participants contributing via conference call.

II. Hull Testing

The boat hull testing phase will evaluate the test coatings identified as top performers in the panel testing phase. The Project Team identified the following objectives for the hull testing phase: 1) evaluate coating performance in terms of maintenance and longevity; 2) evaluate different coating application methods; 3) Consider environmental impacts; and 4) evaluate the costs of the alternative coatings.

A. Draft Design & Questions

The Project Team proposed a tiered approach to facilitate the evaluation of application, performance, and environmental issues in the most efficient manner. The tiered approach prioritizes the test coatings used in the boat hull test phase by placing more weight on the non-biocides and taking into consideration the potential environmental impacts of coatings with active ingredients. Tier 1 includes five non-biocides coatings, Tier 2 includes four zinc-oxide only and the organic biocide only coatings and Tier 3 includes ten active ingredient coatings. The Project Team proposed to evaluate ten coatings on boat hulls:

- All 5 Tier 1 (non-biocide) coatings,
- One top performing hard non-biocide coating,
- One organic biocide coating and One zinc oxide coating, and
- Two Tier 3 coatings with Zinc Pyrithione (active ingredient).

Constraints in available resources will dictate how many test coatings will be evaluated in the boat hull testing phase. One constraint is obtaining test boats for the study.

B. Hull Testing Application

Finding cost effective solutions is an important component of transitioning boaters to alternative coatings. Therefore, the Project Team will be identifying ways to reduce the initial application costs of non-biocides. To determine this, different methods will be evaluated, such as spraying or roll-on. The Project Team will also look into whether non-biocides can be applied over copper, as this would reduce application costs. The Project Team may also consider applying all non-biocides on two boats each if an adequate number of boats are available. Reference data will be provided by tracking one or two boat hulls which were painted with copper-based paints in the same timeframe as the test coatings. In addition, all test coatings containing an active ingredient are required to meet the Air Pollution Control District (APCD) VOC limits (330 g/L). The Project Team

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will continue discussions with coating suppliers to understand what the options are for each coating.

C. Hull Testing Performance: Assessment and Cleaning

The Project Team discussed how the test coatings will be evaluated during the boat hull phase. The Project Team plans to identify the frequency and intensity of cleaning required for each coating, as well as identify if/when physical failures occur. Performance evaluations will be scheduled on a standardized 3 week schedule. Designated project hull cleaners will work with the Project Team to conduct the assessments of fouling growth and identification of physical failure of the coatings, perform cleaning only when needed, and identify the level of effort needed to clean hull. The hull cleaners will be assessing fouling growth on each boat hull using a standard cleaning rating. All cleaning will be performed by hand.

D. Study Vessels and Boater Participation

Boat owners interested in participating in the study will be required to have their boat available for a 2 year test period. The boat owners will also be responsible for a portion of the application costs. The Project Team discussed the need for keeping the boat hull testing as consistent as possible. As such, the Project Team proposes to use no more than 20 boats for this project. Items to consider include vessel type (power or sail), speed, frequency of use, as well as similar size.

While the hull testing portion of the project will be limited to 20 boats, the Project Team recognizes that evaluating other boats with alternative paints may provide valuable information and an assessment in a “real world” setting. The Project Team discussed how secondary efforts, or other paint testing efforts occurring in the San Diego Bay, may be reviewed and incorporated into the Project. One option would be to use other alternative coating information to better assess a coating’s performance and longevity. Another option could be to better determine the appropriate cleaning tools/frequency for alternative coatings. The Project Team intends to develop and maintain a database of all boats identified as having coatings which were involved in the study and use this information to improve coating assessments.

E. Environmental Issues

Environmental impacts may be assessed by evaluating leaching rates of zinc and organic biocide products and/or evaluating their toxicity. Based on input from previous stakeholder meetings, the Project Team proposed utilizing panels to evaluate the identified environmental concerns. The Project Team discussed how data obtained during testing required for registration could be used to evaluate test coatings with active ingredients, if applicable. The Team proposed to phase in leaching rate testing on panels at some point in the study and may also consider performing toxicity tests on the coatings. These efforts will be more thoroughly reviewed/considered later this year.

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F. Cost Assessment

Cost is an integral element to finding viable options. Therefore, the Project Team will consider cost to apply coatings, tie coats, and primers, as well as the cost of cleaning the coatings. The cost assessment will also consider the cleaning frequency and the required level of effort. Physical failures due to cleaning or use will be noted, as the longevity of the coating is an important consideration when selecting coatings.

Comments/Concerns

There were comments on whether proper application of non-biocide coatings required the copper paint to be stripped prior to application. Coating suppliers responded stating that stripping tends to be a case by case situation. Also, many of the non-biocide coatings can be reapplied in the future without stripping as long as the surface preparation is correctly performed. Additionally, for optimal performance, coating suppliers have indicated fouling release coatings should be sprayed as this method produces a smoother surface. The boatyards have indicated a preference to roll-on application. The Project Team will work with the coating suppliers and boatyards to determine the most appropriate approach.

A concern was raised regarding how the coatings with active ingredients will comply with APCD VOC limits. One suggestion was to work with suppliers to ensure their products are within the VOC limits, as the VOC limit includes both primer and topcoats. In addition, a workgroup member explained the APCB regulations allow each boatyard to apply up to 20 gallons of non-regulated paints per year. The Project Team will discuss with the boatyards whether it is feasible to use part of their allocation for this study.

There were concerns about boaters withdrawing their boat after the coatings have been applied, thereby eliminating information on that assigned coating. The Project Team suggested including duplicates, or 2 boats per coating, especially for non-biocides as suggested earlier for coating application assessment. In addition to providing additional data, duplicates will prevent the removal, and the consequential loss of data, of a coating from the study if a boat is removed from the project. The ability to have duplicates will depend on the number of boats available. An audience member commented while the duplication of non-biocides is appreciated, the Project Team should consider evaluating the different application methods of a single paint on one boat. This option has been considered, but there was group consensus to apply one coating per boat.

A workgroup member mentioned that a UC SeaGrant study, available in June 2009, will present the results of a cost effectiveness evaluation of various paints. The Project Team agreed this information will be useful and will review it.

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An audience member asked how the Project Team will determine when a coating required cleaning. The Project Team will be working with selected hull divers to develop criteria and ratings to standardize the process. Workgroup members suggested to focus the rating system and cost effectiveness evaluation on the ease and frequency of cleaning. The maintenance costs for some paints can be lower due to a lower cleaning frequency. A coating supplier noted that many non-biocide coatings typically have higher application costs, which may be offset by the lower cleaning frequency and increased longevity of the product. Another audience member mentioned that some ceramic coatings may be able to withstand a more aggressive cleaning mechanism or tool.

Clarification was requested on the size and type of boat the Project Team is seeking for the hull testing. The study will include both power and sailboats in the 25' and 40' size range.

Clarification was also requested on how the project will examine environmental concerns. As stated above, the decision was made to focus on non-biocide coatings during hull testing. Leaching rate information is publicly available through DPR. As such, environmental testing will include literature review (registration data, outside testing data, etc) and potentially panel testing for toxicity and/or leaching. If toxicity or leaching rate testing is performed, only the top performing biocide coatings will be evaluated.

An attendee raised a concern regarding the potential need for stripping after the project is over because statements were made pertaining to the potential need to strip off the non-biocide coating prior to each re-application. Coating suppliers commented most ceramic coatings can be reapplied over the same type of paint without stripping as long as the surface is prepped properly and in good shape. It was noted that while there are a number of non-biocides which may be reapplied over themselves, there are some silicone coatings that require stripping before every reapplication. An audience member noted the increased longevity of the non-biocides, relative to common copper paints, means the paints won't have to be reapplied as often.

The group discussed that moving forward all new boats should be painted with non-biocide paint. This would eliminate the need to strip a copper paint at a later date, thereby reducing overall costs. The Project Team understands this is an important factor in transition and is interested in breaking into the new sales area. The Project Team requested help from the suppliers to address this in the future.

A coating supplier commented some of the coatings are commercially available, while some are not, and was interested to know if the Project Team was going to account for the status on each of the coatings in the study. The commercial availability of each coating will be addressed.

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III. Cost Sharing

The Project Team presented the process for determining cost sharing for the boat hull testing phase. The overall costs and potential cost share options were identified (Table 1). The Project Team is interested in minimizing the application cost to the boat owner and is currently working with the boat owners, coating suppliers and boatyards to determine the appropriate cost share allocations. The Project Team also discussed two options for cost sharing and reimbursement. The first option involved payments directly to the boatyards and divers for their services. A second option would be to establish an IRTA bank account for receiving payments, which would then be directed to pay the boatyards and divers for their services. Based on group discussion, the Project Team will decide upon the best option.

The Project Team stated that agreements will need to be developed and signed between the Port and boaters, boatyards, and hull cleaners prior to initiation of any work associated with the boat hull testing. In general, the agreements will outline the project terms and each party's responsibilities. The draft agreements will also identify the responsible party for application and cleaning costs. The Project Team will continue to refine the study design, finalize cost options with all parties involved, and continue efforts to finalize contracts.

Table 1 Draft Cost Share Proposal

	Haul out	Apply (Prep, Strip, etc)	Paint, Primer	Re-Apply	Cleaning
Port/IRTA		X		X	
Boatyard		X		X*	
Supplier		X	X	X	
Boater	X	X			X
Cleaner					Set rate

To use discounted rate

Comments/Concerns

The audience raised concerns about how the project will address coating failure after the two year study period ends. One suggestion was to have a contract extending beyond the initial two years. Others felt that all fiscal liabilities should only be valid during the study period, and upon completion, the study will not be responsible for repainting. The two year time frame pertains to the typical length of time that a copper-based paint lasts. Another audience member suggested including a condition in the contract stating if a coating fails or is unacceptable to the boat owner, the boat owner must then apply a non-copper coating to their vessel. The Project Team will be reviewing all of the options and requested

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coating suppliers to submit any contract language that may be useful in the agreements.

A workgroup member recommended fairly dividing the workload amongst the boatyards since some of the test coatings may require more labor and time. The application methods for some coatings may require more equipment and higher costs. In addition, many of the participating boat owners have a preferred boatyard. The Project Team will be taking all of these factors into consideration when pairing a selected coating with a boat owner and boatyard.

There was considerable discussion regarding hull cleaning, use of designated hull cleaners, and the need for underwater routine maintenance for non-study related items. Some were concerned about not being able to use their current hull cleaner, and proposed that they keep their cleaner to clean the metal parts, while the project hull cleaner cleans the test coating only. Others commented that only project hull cleaners should clean the boat hulls and metal parts in the study for the two year time period to minimize the number of people coming into contact with the boat hulls during the study. There was also discussion raised on how to determine costs for these efforts. It should be noted that this topic had numerous conflicting viewpoints and no consensus was reached during the meeting. The Project Team will consider all comments/perspectives raised during the meeting when making the final decision regarding divers and hull cleaning.

There was discussion regarding the cost reimbursement options (presented above). The Project Team will continue to work with the divers and boat owners to determine the best options for all parties involved.

An audience member suggested including a supervisory element into the assessment/cleaning protocol. It was also suggested to verify hull cleaners' experience with non-biocides and appropriate BMPs. Others stated that it is extremely important to only allow those divers selected (not the entire diving company) to be a part of the project to ensure consistency in the assessments. A marina manager asked that marina requirements for hull cleaners also be taken into consideration. The Project Team acknowledged that they will be present during each assessment/cleaning effort and there will be continual communication between the divers and the team as to what is needed for each boat.

Coating suppliers and hull cleaners will be able to provide input on the cleaning methodologies and assessment rating systems. Coating suppliers are encouraged to provide input on any cleaning restrictions their coatings may have. More discussion on the cleaning protocol will occur at the next stakeholder meeting.

A workgroup member stated that compiling information on the number of SIYB boats having non-copper coatings may be beneficial in outreach efforts. San Diego Yacht Club representatives mentioned that they are developing a database

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that has boat/coating information. They are hoping to eventually obtain data on approximately 1,000 boats by using surveys

IV. Other Items (Meetings/Deadlines)

February – April, 2009: Apply coatings to boat hulls

March 11, 2009: Stakeholder work group meeting to finalize hull testing protocol

April 1 – October 31, 2009:

- Begin testing phase
- Summer hull test evaluation