Comments of the

World Shipping Council

Submitted to the

California State Lands Commission

In the matter of

Notice of Informal Comment Period on Proposed Amendments to Article 4.7 - Performance Standards and Compliance Assessment Protocols for the Discharge of Ballast Water for Vessels Operating in California Waters

March 24, 2017
The World Shipping Council (“WSC” or “the Council”) files these comments in response to the California State Lands Commission’s (the “Commission”) Notice of Informal Comment Period published on February 7, 2017. The Notice seeks comments on the Commission’s proposal to amend Title 2, Division 3, Chapter 1, Article 4.7 of the California Code of Regulations to establish protocols to sample ballast water and assess vessel compliance with California’s performance standards for the discharge of ballast water. WSC appreciates the Commission’s invitation to comment on the proposed compliance assessment protocols to help inform the development of possible regulatory changes.

WSC is a non-profit trade association that represents the liner shipping industry, which operates containerships, vehicle carriers, and roll-on/roll-off vessels. Together, the Council’s members carry approximately 90% of the world’s containerized trade. Vessels operated by Council members make frequent calls in California ports, and the Council’s members would be directly and substantially affected by the proposed amendments in the Notice.¹

WSC’s comments on the proposed amendments in the Notice are provided below.

1. **The Proposed Compliance Assessment Program is Not Appropriate Because Technology to Meet California’s Ballast Water Standards Does Not Exist**

WSC recognizes the importance of protecting not only California waters, but all waters, from the transfer of aquatic invasive species from ships’ ballast water discharges. WSC has long advocated for the adoption of U.S. national ballast water discharge performance standards consistent with the most environmentally protective treatment standards that can be achieved using commercially available treatment technology.

Although California adopted its own ballast water performance standards in 2006, the Commission has also recognized the importance of having uniform ballast water standards. In its 2009 Ballast Water Efficacy Assessment Report, the Commission stated, “Commercial shipping is an international industry; any single ship may operate throughout several regions of the world. Ideally, performance standards should align both at the federal and international level and is preferable to a patchwork of standards adopted by individual states.”²

Since California adopted its standards in 2006, the U.S federal government has made substantial progress in addressing the threat of aquatic invasive species to U.S. waters by:

1. Adopting, in 2012, the International Maritime Organization (IMO) “D-2” standard as the USCG ballast water treatment standard based on findings of the Environmental Protection Agency (EPA) Science Advisory Board (SAB), the National Academy of Sciences (NAS), and other studies that determined that the “D-2” standard is the most stringent standard that can be achieved using currently available technology;

¹ A list of the Council’s members is available at [www.worldshipping.org](http://www.worldshipping.org).
(2) Adopting, in 2012, stringent U.S. Coast Guard (USCG) land-based and ship board type approval testing requirements that are based on the Environmental Technology Verification (ETV) Protocol, which was developed in partnership with more than 40 scientists and technical experts, including Commission staff, to verify the efficacy and reliability of BWM systems.

(3) Issuing USCG type approval certificates, in December 2016 and January 2017, to three ballast water management (BWM) systems as meeting the required D-2 treatment standard and being approved for use in U.S. waters. (Note: According to the USCG, one additional BWM system manufacturer recently filed an application for USCG type approval, more than a dozen BWM systems are currently being tested or have completed testing for U.S. type approval, and multiple additional applications for USCG type approval are expected this year).

The Notice indicates that the Commission plans to establish a sampling and compliance assessment program that would determine whether vessels fitted with USCG or IMO type approved BWM systems are meeting California’s performance standards, once those standards take effect.

While we do not object to the idea that installed BWM systems may periodically be sampled and assessed to confirm that they are meeting the treatment standard for which they were type approved, the Commission’s proposed program is fundamentally flawed because: (1) it would assess vessel compliance with standards that the Commission has already determined are not achievable using commercially available ballast water treatment technologies, and (2) compliance with the California standards is not measurable as it is outside the detection limits of the current scientific measurement techniques. The implementation of the proposed sampling and compliance assessment program would not change these facts.

The Commission’s 2017 Biennial Report on the California Marine Invasive Species Program notes that the Commission concluded in its “2014 Assessment of the Efficacy, Availability and Environmental Impacts of Ballast Water Treatment Technology for Use in California Waters” (2014 Assessment) that “there were no ballast water treatment technologies currently available to meet the California ballast water discharge standards.” More specifically, with respect to the “No Detectable Living Organism” Standard for Organisms > 50 microns, Appendix C of the 2014 Assessment indicates that not one of the 24 listed systems could meet the standard for both land-based and shipboard tests. Only one of the 24 systems had no detectable organisms in the treated water from land-based tests, and 4 of the 24 systems had no detectable organisms in the treated water from shipboard tests. With respect to organisms in the 10-50 micron size class, all 24 systems failed to meet the standard or were annotated with “lim det” because measuring compliance with the standard exceeds the limits of detection of currently available sampling and assessment methods.

The fact that California’s standards cannot be achieved is directly relevant to the question of whether it is appropriate to implement a compliance assessment program to determine what is already known – that vessels fitted with currently available BWM systems
are not able to meet the California standards. If the underlying standard is unattainable, as it is here, then compliance assessment will yield one of two outcomes. Either the compliance assessment is scientifically accurate, in which case all vessels will fail (because it is already known that no systems can meet the California standards) or the compliance assessment is not scientifically accurate, in which case it will create the impression that the standards are being met when they are, in fact, not. Neither outcome is consistent with California’s governing statute, which requires that ballast water discharge standards be based on the “best available technology economically achievable” (Cal. Pub. Res. Code §§ 71204.9).

Failure to have standards that can be achieved using commercially available technology places vessels fitted with treatment systems in an untenable situation. First, since the best commercially available treatment systems cannot eradicate all organisms from every ballast water discharge, it is a question of “when”, not “if”, vessels equipped with such systems would be found noncompliant. If, as a result, the Commission were to issue penalties to the affected vessels, there is nothing the noncompliant vessels could do to prevent further penalty action, because there is no better technology that a vessel owner could install.

The proposed compliance program will not result in treatment technologies achieving the standards above those that they achieve during extensive shipboard and land-based type approval testing. The proposed compliance program also will not protect California waters beyond the level of the USCG standard, will not result in the installation of more protective treatment technologies on ships calling in California, and will not provide the commercial vessels that discharge ballast water in California with an achievable set of rules.

We respectfully submit that, rather than proceeding with development of a program to assess compliance with standards that cannot be achieved, will expose vessels that install treatment technologies to penalties for noncompliance, and will provide no environmental benefits, it would be more productive to work with the Legislature to amend the California performance standards so they are consistent with the U.S. federal ballast water treatment standards.

2. The Proposed Compliance Assessment Program is Not Appropriate Because Current Measurement Techniques Cannot Demonstrate that Treatment Technology Meets the California Standards

Even if the California standards were achievable, and they are not, the proposed sampling and compliance assessment program would not be able to provide sufficient scientific resolution to be able to demonstrate that installed ballast water treatment technologies were achieving the California performance standards. In the chapter of the Commission’s 2014 Assessment entitled “Why Treatment Technologies Are Not Available”, the Commission noted that, “there are no suitable methods/technology to analyze ballast water samples to determine treatment system efficacy for some of the California performance standards.” This means that the proposed compliance assessment program can do no better than the best sampling and
assessment methodologies available today, which can assess standards at or just beyond the IMO D-2 level.

Assessing the “No Detectable Living Organism” Standard for Organisms > 50 Microns:
The Notice proposes (in Section 2296.2 (b)(2)) that a total of 3 cubic meters of treated ballast water be sampled to assess compliance with the “no detectable living organism” standard for organisms > 50 microns. This presents two problems. First, such a volume is ten times smaller than the minimum sample volume recommend on page 41 of the ETV Protocol for assessing organism populations > 50 microns to meet the USCG/D-2 standard, which allows for up to 10 living organisms to be present per cubic meter of treated water. Second, while it is certainly possible to collect and analyze 3 cubic meters of treated ballast water, even if no living organisms are detected in the treated sample, there may still be large numbers of living organisms left in the ballast tank because of the small size of the sample volume.³

Since the best commercially available treatment systems type approved by the USCG will have 10 or fewer organisms > 50 microns in dimension per cubic meter, a three cubic meter ballast water sample collected pursuant to this protocol may contain up to 30 organisms when the system is operating properly. There is a high likelihood, therefore, that any vessel equipped with a USCG approved BWM system would be unable to comply with this portion of the protocol. When such a vessel is found non-compliant with the California standards, the vessel is left with no option to try to comply with the standard, because none exists.

The Commission’s proposal to assess compliance with California’s “no detectable living organism” is scientifically and legally flawed because: (1) it suggests that a compliant sample is attaining a level of treatment efficacy that is in fact not being met, and (2) it makes enforcement an inherently arbitrary and capricious exercise, with a vessel’s compliance or noncompliance dependent on the happenstance of how organisms are distributed in any given sample.

Assessing the Standard for Organisms Between 10 and 50 Microns: The proposed sample volume (in Section 2296.2 (b)(3)) to assess the concentration of organisms between 10 and 50 microns is three liters. To determine if treated water meets the California standard for organisms between 10 and 50 microns -- a standard that is exactly 1,000 times stricter than the USCG standard -- the table on page 44 of the ETV Protocol suggests a sample volume of between 3,000 and 6,000 cubic liters.

While the ETV Protocol indicates that a 3-6 liter sample volume could be used to demonstrate that a system meets the USCG/D-2 standard for this organism size class, such a sample volume would provide nowhere near sufficient resolution to indicate that a standard 1,000 times higher than D-2 was being met. As with the proposed sample volume for organisms > 50 microns, the proposal here is equally flawed in that it would either suggest that a system is achieving a standard that it is not achieving or it would place a vessel fitted with

³ EPA SAB report at 27.
best available treatment technology at risk of being found non-compliant depending on the distribution of organisms in the collected sample.

The Commission is also proposing to allow use of the “Most Probably Number” (MPN) methodology for determining compliance with California’s 10-50 micron standard. We note that the USCG has determined that the use of MPN is not an accepted testing method for USCG type approval because MPN is not appropriate for a live/dead organism analysis and because MPN has not been validated to assess regrowth for the thousands of organisms that may be present in ship’s ballast water.

3. Biological Performance Monitoring and Rapid Assessment Tools

Section 2296 (a)(3) proposes that vessels, prior to discharging treated ballast water into California waters, must have the biological performance of installed BWM systems tested within the previous 24 months against the sampling and analysis requirements in Sections 2296.1 and 2296.2. Immediately above, we provided comments on the limitations of the sampling protocols proposed in Section 2296.2. Section 2296.1 refers to the use of “rapid assessment tools” for assessing non-compliance with California’s 10-50 micron organism standard, which is 1,000 times more stringent than the USCG/D-2 standard. While rapid assessment tools and procedures have been or are being developed to quickly assess compliance with the USCG/D-2 standard, we are aware of no commercially available rapid assessment tools that could accurately determine if a BWM system is meeting California’s standards. We see no value in requiring vessels to have their BWM systems monitored for biological performance using rapid assessment tools when: (1) such tools are not capable of providing sufficient resolution to indicate compliance with California’s standards, and (2) it is already known, based on substantially more rigorous type approval testing, that such BWM systems are not capable of meeting California’s performance standards.

4. Conclusion

WSC appreciates the opportunity to provide comments for the Commission’s consideration on the proposed sampling and compliance assessment program. No ballast water treatment technologies exist that can meet the California standards, and the standards themselves cannot be measured using currently available scientific assessment methods. These are findings from the Commission’s own 2014 Assessment of ballast water treatment technologies. Proceeding with the proposed compliance assessment program will not change these facts and will only place commercial vessels calling at California’s ports in an untenable situation in which they cannot meet California’s standards and, if penalized for noncompliance, such vessels would have no way to prevent further penalty action.

We respectfully recommend that the Commission take no further action to develop protocols to assess compliance with the California standards. Instead, we recommend that the Commission direct its efforts to provide the California Legislature with the information the
governing statute requires regarding the performance of currently available ballast water treatment systems. This would provide the Legislature with the information it needs to consider aligning California’s standards with the national ballast water treatment standards and would allow the Commission to focus on assisting with the implementation of those standards for vessels calling in California.

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