



State of Ohio Environmental Protection Agency

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I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

**Certified Mail**

By: Donna Kossick Date: 12-1-08

Re: Statewide  
Grant of Section 401 Water Quality Certification (U.S. EPA Vessel General Permit for Discharges Incidental to the Normal Operation of Commercial Vessels and Large Recreational Vessels)

Issue Date: December 1, 2008  
Effective Date: December 1, 2008

Ladies and Gentlemen:

The Director of Ohio Environmental Protection Agency hereby authorizes discharges under the above referenced NPDES permit under Section 401 of the Federal Water Pollution Control Act and is subject to the following modifications and/or conditions:

Section 401 Water Quality Certification

Pursuant to Section 401 of the Federal Water Pollution Control Act, Public Law 95-217, the Director of Ohio Environmental Protection Agency hereby certifies that the above-referenced project will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act.

Antidegradation Statement

I have determined that a lowering of water quality in waters where ocean-going ships' travel is necessary. In accordance with OAC 3745-1-05, this decision was reached only after examining a series of technical alternatives, reviewing social and economic issues related to the degradation, and considering all public and appropriate intergovernmental comments. The lowering of water quality is necessary to accommodate important social or economic development in the area in which the water body is located.

**I. WATER QUALITY STANDARDS AND IMPACTS**

**a. Ohio Narrative Water Quality Standards and Nuisance Species**

Ohio Water Quality Standards (WQS) contain narrative conditions to prohibit nuisance conditions in waters of the state. The specific standard states that "To every extent practical and possible as determined by the director, these waters shall be .... Free from materials entering the waters as a result of human activity producing color, odor or other conditions in such a degree as to create a nuisance;" [Ohio Administrative Code 3745-1-04(C)].

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director

In this rule, the term materials is not defined or limited; Ohio considers that this condition applies to non-indigenous nuisance species. The federal NPDES permit does not adequately prevent the introduction of new non-indigenous species.

b. Ohio Narrative Water Quality Standards for Toxicity

The narrative WQS also contain a provision prohibiting toxicity: “To every extent practical and possible as defined by the director, these waters shall be....Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life and/or are rapidly lethal in the mixing zone;” [Ohio Administrative Code 3745-1-04(D)].

The federal NPDES permit requirement for salt water ballast exchange means that ballast water discharges to fresh water will contain large concentrations of dissolved solids; these solids have the potential to be toxic to fresh water aquatic life, and discharges must meet the narrative toxicity standard.

c. Chlorine Limits, Biocides and Experimental Ballast Water Treatment

The discharge limits for residual chlorine do not meet Ohio WQS for continuous discharges. The federal NPDES permit’s total residual chlorine discharge standard is 100 ug/l for discharges from experimental ballast water treatment systems. This limit meets Ohio WQS for 2 hour/day discharges, but does not meet WQS for continuous discharges.

Ohio has used its authority to establish site-specific WQS to establish a separate inside-mixing-zone maximum criterion for short-term exposures to chlorine (less than 2 hours/day). This criterion for exposures less than 2 hours/day is 200 ug/l; the otherwise applicable criterion is 38 ug/l. [OAC 3745-1-35 and -36]

Discharges of other biocides must meet the narrative water quality standard for toxicity noted above. [OAC 3745-1-04(D)].

## II. SPECIFIC CONDITIONS

a. Ballast Water Controls

Given the number of invasive species already in the Great Lakes, the number of recent introductions, and the likelihood of increased ship traffic, the existing program of ballast water control is not effective in preventing the introduction of invasive non-native organisms, and therefore does not meet Ohio’s narrative WQS. A system of ballast water treatment would reduce the number of live organisms in ballast water, and is the most effective approach to meeting the nuisance WQS. [OAC 3745-1-04(C)]

Treatment systems to reduce the number of live organisms discharged in ballast water exist and are continuing to be developed. These treatment systems are intended to kill and/or filter all organisms from ballast water so that they are not discharged. Several of the treatment systems being designed to meet the discharge standards of the International Maritime Organization (IMO) can remove a large percentage, if not all, organisms. Ohio EPA is certifying IMO standards because they are the most widely accepted and tested standards in the world. These treatment systems shall be operated to maximize the destruction and/or removal of organisms in the ballast water, with the object of discharging no viable organisms.

Ohio EPA believes that the IMO certification is sufficient demonstration that these treatment standards are “practical and possible” methods for meeting ballast water treatment standards for ocean-going ships. More restrictive standards proposed or adopted by certain other states (such as California and New York) have not been demonstrated to be “practical and possible”, and can not be applied at this time.

Ohio EPA also believes that there are reasons to treat existing vessels that operate exclusively within the Great Lakes differently than those that operate outside the Lakes. The effluent flows of ballast water are larger than ocean-going vessels, are discharged more rapidly than the ballast water of ocean-going vessels, and space for treatment equipment is limited on existing lake vessels. These factors affect the practicability of treatment. Ohio EPA believes that IMO treatment standards is not “practical and possible” at this time for existing vessels operating exclusively within the Great Lakes;

These factors may or may not apply to new vessels in the Great Lakes. Ohio EPA is extending the schedule for treatment on new Great Lakes-only vessels to gain extra time to evaluate these discharges for treatment. The schedule for these new vessels is given below.

The treatment standards in Table A apply to vessels operating exclusively in the Great Lakes, launched after January 1, 2016.

Discharges of ballast water from vessels that operate outside of the Great Lakes must meet an International Maritime Organization-certified treatment standard according to the following schedule:

For vessels launched prior to January 1, 2012, and meeting the applicability criteria in the federal NPDES permit, treatment shall be installed and operational to meet the performance standards for organisms included in Table A by January 1, 2016.

For vessels launched after January 1, 2012, and meeting the applicability criteria in the federal NPDES permit, treatment shall be installed and operational to meet the performance standards for organisms included in Table A prior to commencement of vessel operation in Ohio State waters of Lake Erie.

Table A. Biological Performance Standards for Ballast Water Treatment Technology

Parameter	Limit	Limit Type	Sample Type
Organisms >50 microns in minimum dimension	<10 viable /m <sup>3</sup>	Daily average	Composite
Organisms 10-50 microns in minimum dimension	<10 viable /ml	Daily average	Composite
Escherichia coliform	<250 cfu / 100 ml	Daily average	Composite
Intestinal enterococci	<100 cfu /100 ml	Daily average	Composite

Note 1 - Analysis required by the above table shall be performed consistent with the protocols currently being validated by the EPA Environmental Technology Verification Program (EPA/U.S. Coast Guard/Naval Research Laboratory) and/or the following Great Ships Initiative protocols:

- Procedure for Algae/Small Protozoan Sample Analysis, Procedure for Zooplankton Sample Analysis, Procedure for the Detection and
- Enumeration of Enterococci by Membrane Filtration, Procedure for Microbial Analysis using the Heterotrophic Plate Count Method, and
- Procedure for the Detection and Enumeration of E. coli by Membrane Filtration available online at <http://www.nemw.org/GSI/protocols.htm>

“Composite” sample type is a combination of individual grab samples taken at periodic intervals over the specified time period. Either samples taken at equal time intervals shall be combined using a volume of each sample that is proportional to the flow that sample represents, or equal volume samples shall be combined that are taken at intervals of equal flow volumes.

“Viable organism” means organisms that are living and able to reproduce.

Until these standards are effective, all vessels shall meet the Best Management Practices (BMP) requirements of the federal NPDES permit, including the salt water ballast exchange or salt water flushing requirements for ocean-going vessels.

In addition to the discharge standards in Table A, discharges of any biocide or toxic chemical shall not be toxic to organisms in ambient waters, or rapidly lethal within the mixing zone [OAC 3745-1-04(D)]:

If the federal government adopts treatment standards more stringent than IMO, then those standards shall replace the above treatment standards for new treatment systems installed after the date those federal standards go into effect.

The Director will evaluate treatment standards equivalent to IMO or more restrictive standards for all vessel classes covered by the federal general permit (including both ocean-going vessels and vessels that operate only in the Great Lakes) when he issues the next certification on this permit. The decision to require IMO or more restrictive treatment standards will be based on treatment system availability and costs, and other considerations required by law.

**b. Salt Water Discharges**

It is likely that discharges of ballasted sea water will not meet the toxicity narrative water quality standard if discharged in the relatively shallow water of Ohio's Lake Erie ports, due to the dissolved solids levels in sea water. Discharges in the open waters of the Lake minimize the risk of toxicity, and will allow the standard to be met. In order to prevent toxicity to ambient organisms or rapidly lethal conditions, discharges of ballasted sea water within the breakwalls of Ohio's Lake Erie Ports is prohibited.

**c. Ballast Treatment – Chlorine Discharge Limits**

For experimental ballast water treatment systems using chlorine, discharges must meet a maximum chlorine limit of 38 micrograms per liter (ug/l) if the discharge lasts for more than 2 hours/day; the limit is 200 ug/l if the discharge is 2 hours/day or less. [OAC 3745-1-07 (inside-mixing-zone maximum water quality standards, definition and applicability), OAC 3745-1-35, (site-specific WQS, exposure time-based criteria), OAC 3745-1-36 (aquatic life criteria calculation procedures, equivalency of IMZM with FAV criteria), OAC 3745-2-05(B)(3) (maximum limits for discharges to lakes)] These standards apply to all ballast water treatments – both experimental and those treatments installed to meet IMO standards.

Ohio EPA acknowledges that the limit of 38 ug/l is less than the Ohio EPA practical quantification level for residual chlorine analysis (50 ug/l). Analyses less than or equal to 50 ug/l are judged to be in compliance with this certification.

**d. Ballast Treatment – Other Biocides**

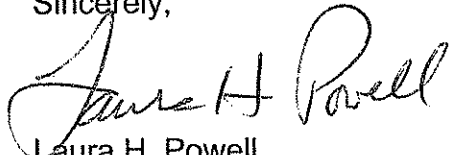
Biocides other than chlorine used in ballast water treatment must meet Ohio's narrative toxicity water quality standard. To meet the 'no rapidly lethal conditions' narrative, discharges of all biocides must meet inside-mixing-zone water quality standards (Final Acute Values) as determined by the OAC Rule 3745-1-36 [Great Lakes Initiative rule procedures]. The discharge of organic quaternary ammonium compounds is prohibited.

Certification conditions may be revised in order to meet water quality standards after a change in water quality standards or criteria has been completed and approved. This certification may be modified, or alternatively, revoked and reissued, to comply with any applicable water quality effluent limitations.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
309 South Fourth Street, Room 222  
Columbus, OH 43215

Sincerely,



Laura H. Powell  
Assistant Director

cc: Sean Ramach, U.S. EPA, Region 5  
Mary Knapp, U.S. Fish & Wildlife Service  
Sean Logan, Director, ODNR  
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