



COMDTPUB P16700.4
NVIC

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 8-99

Subj: GUIDANCE FOR THE ENFORCEMENT OF THE 1999 AMENDMENTS TO TITLE 33 CODE FEDERAL REGULATION (CFR) PART 151, IMPLEMENTATION OF THE NATIONAL INVASIVE SPECIES ACT OF 1996 (NISA 1996)

- Ref: (a) Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA 1990) (Public Law 101-646)
 (b) NISA 1996 (Public Law 104-332)
 (c) Implementation of the of NISA1996, 33 CFR Part 151 Subpart, C and D
 (d) Guidelines for the Control and Management of Ship’s Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens International Maritime Organization (IMO) Resolution A.868 (20)), adopted November 1997

- PURPOSE. This Navigation and Vessel Inspection Circular (NVIC) provides guidance for U.S. Coast Guard Officer in Charge, Marine Inspections (OCMI), Captains of the Port (COTP), Port State Control Officers (PSCO), vessel owners, operators, flag states, and classification societies concerning compliance with and enforcement of the requirements of the recent amendments to 33 CFR Part 151, Implementation of the NISA 1996 (reference (c)). The amendments can be found at Enclosure (1) and include minor revisions to Subpart C and the addition of Subpart D. The requirements under Part C, Ballast Water Management for Control of Nonindigenous Species on the Great Lakes and Hudson River remain unchanged except for minor revisions to the definitions. Subpart D, Ballast Water Management for Control of Nonindigenous Species in Waters of the U.S., represents a major revision to the regulations and is the focus of this NVIC.
- DIRECTIVES AFFECTED. None.

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3. BACKGROUND.

- a. Aquatic nuisance species invasions through ballast water are recognized as a serious threat to global biological diversity and human health. In November 1997, the (IMO), Marine Environmental Protection Committee (MEPC) issued voluntary ballast water management guidelines which it recommended be adopted by all maritime nations (reference (d)).
- b. On November 29, 1990, Congress enacted the Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) (Public Law 101-646)(reference (a)). Congress enacted NANPCA to prevent and control infestations of zebra mussels and other non-indigenous aquatic nuisance species in the Great Lakes.
- c. On October 26, 1996, Congress enacted the NISA 1996 (Public Law 104-332)(reference (b)) which amended and reauthorized the NANPCA 1990. Congress enacted NISA 1996 to provide for ballast water management to prevent the introduction and spread of non-indigenous species into the waters of the U.S.
- d. On April 8, 1993, the Coast Guard published a final rule titled "Ballast Water Management for Vessels Entering the Great Lakes in the Federal Register" (58 FR 18330). The rule established mandatory regulations for the Great Lakes in 33 CFR Part 151, Subpart C. On December 30, 1994, the Coast Guard published a final rule titled "Ballast Water Management for Vessels Entering the Hudson River" in the Federal Register (59 FR 67632), expanding the regulations in Part 151 to include portions of the Hudson River, which connects to the Great Lakes.
- e. On April 10, 1998, the Coast Guard published a Notice of Proposed Rulemaking (NPRM) titled "Implementation of the NISA 1996 " in the Federal Register (63 FR 17782). The Coast Guard received 53 letters commenting on the notice of proposed rulemaking (NPRM). Several letters requested more time to comment. On June 16, 1998, the Coast Guard reopened the comment period until August 8, 1998 (63 FR 32780). No public meetings were requested or held. On May 17, 1999, the Coast Guard published a final rule which amended 33 CFR Part 151, Vessels Carrying Oil, Noxious Liquid Substances, Garbage, Municipal or Commercial Waste, and Ballast Water.

4. DISCUSSION.

- a. Ballast water from ships is one of the largest pathways for the intercontinental introduction and spread of ANS. To implement NISA, this new Coast Guard rule: (1) makes minor amendments to existing regulations for the Great Lakes ecosystem; (2) establishes voluntary ballast water management guidelines for all other waters of the U.S.; and (3) establishes mandatory reporting and sampling procedures for nearly all vessels entering U.S. waters. Under the rule, a self-policing program is established where, with some exceptions, ballast water management outside of the Great Lakes ecosystem is voluntary for a period of 3 years. Within 30 months of the issuance of the final rule, the Coast Guard must report to Congress on the program's effectiveness. If the Coast Guard determines that the voluntary program is ineffective at controlling the introduction or spread of nonindigenous species, the rate of effective compliance is found

to be inadequate, or vessel operators do not report in sufficient numbers to permit the Coast Guard to assess the effectiveness, the guidelines become mandatory and carry civil and criminal penalties.

b. The key provisions of the Coast Guard's ballast water management program are:

- (1) Voluntary Guidelines. These guidelines include suggested precautionary practices that should be taken by every vessel to minimize the uptake and release of harmful aquatic organisms, pathogens or sediments. Among these are: not ballasting in conditions where the uptake of ballast water should be minimized, or where practicable, avoided (e.g., contaminated areas); regularly cleaning sediments from ballast tanks; avoiding ballast discharges near sensitive areas; discharging only the minimum amount of ballast water necessary for safe vessel operations; developing and maintaining a vessel specific ballast water management plan; and training shipboard personnel in the various management practices. The most operationally significant guideline addresses what to do with the ballast water a vessel must discharge in the course of its voyage. The rule asks vessels carrying ballast water into waters of the U.S. after having operated beyond the Exclusive Economic Zone (EEZ) to employ one of the following ballast water management practices:
 - (a) Prior to entry into waters of the U.S., conduct an exchange of ballast water beyond the EEZ, in an area no less than 200 miles from any shore and where the water depth exceeds 2000 meters;
 - (b) Retain the ballast water onboard;
 - (c) Use an alternative method of ballast water management that has been submitted to and approved by the Commandant prior to the vessel's voyage;
 - (d) Discharge ballast water to an approved reception facility such as a containment area that is approved to accept such material; or
 - (e) Under extraordinary conditions, conduct a ballast water exchange within an area agreed to by the COTP at the time of the request, or after notification to the COTP within an area listed as an Alternate Exchange Zone.

A vessel exercising options (c) - (e) needs to contact the Headquarters' Ballast Water Management Program Coordinator for additional information at (202) 267-0500.

- (2) Mandatory Requirements. In addition to the voluntary precautions in 33 CFR 151 Subpart D, vessels bound for the Great Lakes or Hudson River must comply with the provisions of 33 CFR 151 Subpart C (ballast water exchange or retention on board). Vessels engaged in the foreign export of Alaskan North Slope Crude Oil must conduct a ballast water exchange and associated recordkeeping in accordance with 15 CFR 754.2(j)(iii). The information required by 33 CFR 151.2045 must be submitted as outlined below. In all cases, submittal of a completed Ballast Water Reporting Form (Appendix to 33 CFR 151, Subpart D) to the appropriate party fulfills this reporting requirement. Submittal of the International Maritime Organization Ballast Water Reporting Form will also fulfill this reporting requirement. (For data entry purposes, the U.S. form is the preferred form.)

- (a) U.S. or Canadian flagged vessels bound for the Great Lakes must telefax the information to COTP Buffalo (315-764-3283) at least 24 hours prior to vessel's arrival in Montreal, Quebec.
 - (b) Foreign flagged vessels bound for the Great Lakes must telefax the information to COTP Buffalo (315-764-3283) at least 24 hours prior to the vessel's arrival in Montreal, Quebec. Completion of the ballast water section of the St. Lawrence Seaway's required "Pre-Entry Information From Foreign Flagged Vessels," and submittal in accordance with the applicable Seaway notice also fulfills this requirement.
 - (c) Vessels bound for the Hudson River north of the George Washington Bridge must telefax the information to COTP New York (718-354-4249) before the vessel enters the waters of the U.S.
 - (d) Vessels bound for all other U.S. ports must transmit the information via facsimile, electronically, or surface mail to the Commandant, U.S. Coast Guard, c/o the Smithsonian Environmental Research Center (SERC) as detailed in TAB 2 to Enclosure (2). COTPs are not required to track the submission of these reports. Only those vessels that are boarded will be asked for evidence of compliance.
- (3) Compliance Monitoring. To monitor compliance with both the mandatory and voluntary aspects of the Coast Guard's ballast water management program:
- (a) COTPs will examine documents, take samples of ballast water and sediments, and make other appropriate inquiries to assess compliance during the course of Port State Control, Flag State or random ballast water inspections. (See Enclosure (2)).
 - (b) Information from these inspections, as well as the data submitted on the Ballast Water Reporting Forms, will be compiled by the Coast Guard maintained National Ballast Information Clearinghouse (NBIC). Based on this data, existing databases on the number of vessel arrivals, and assessment criteria developed by the ANS Task Force, the effectiveness of these guidelines will be assessed.

5. NATIONAL BALLAST WATER MANAGEMENT SURVEY.

- a. The Coast Guard will conduct a nationwide survey to assess the validity of the data submitted voluntarily by vessels. The survey will include all COTP zones outside of the Great Lakes that receive international ship traffic, including those of San Juan and Guam. Vessels to be surveyed will be selected on a random basis. This information will be provided in advance by Coast Guard Headquarters. In some instances, the randomly selected vessel will have been identified for inspection under either the Port State Control or Flag State inspection programs. For the most part, however, the "survey" boardings will be in addition to these activities and conducted solely for the purpose of verifying ballast water management practices and reporting. With the cooperation of shipboard personnel, the Coast Guard boarding officers will complete a questionnaire addressing the vessel's ballast water management practices and take onboard measurements of the physical properties of the ship's ballast water, including a salinity test. These activities will be performed in accordance with Enclosure (2).

- b. The purpose of the survey is to verify the accuracy and effectiveness of the self-reporting. The boarding personnel will interview the ships' crew and collect a ballast water sample for simple analysis. The interview will allow for a direct comparison between the information previously submitted by the ship via the Ballast Water Reporting Form and the verbal responses provided to Coast Guard personnel as they complete an interview questionnaire for the same ship.
- c. The interview will consist of approximately 20 questions, the responses to which will be entered electronically into a hand held computer. (See TABs 6 and 7 of Enclosure (2)). The information will then be downloaded into a desktop computer and transmitted via e-mail to the NBIC. A Marine Safety Information System Port Safety Boarding Report will be completed to aid in program evaluation and resource allocation. If a hand held computer is not available, a printed copy of the questionnaire (TAB (6) of Enclosure (2)) should be completed and faxed or mailed to the NBIC.
- d. Following the interview, Coast Guard personnel will collect ballast water samples from the ship's ballast tanks. Using a handheld refractometer, the water will be tested onboard the vessel for salinity to assess the likelihood that an exchange was conducted. This procedure is expected to take approximately 15-20 minutes. A salinity measurement of less than 30 parts per thousand will be interpreted as indicating that either an exchange did not occur or it was very inefficient. A ship with a low salinity reading will be determined to have not met the requirement for an effective ballast water exchange.
- e. It must be remembered that there are no penalty provisions associated with Subpart D. Implementing the voluntary national guidelines should be viewed as means to educate vessel owners, operators and personnel of the environmental consequences associated with the spread of ANS, and the critical role ballast water management plays in their control.
- f. U.S. Coast Guard Environmental Standards Division (G-MSO-4) is working with the Office of Compliance (G-MOC) and the Marine Safety School to incorporate ballast water management training into their curriculum by September 1999. All units involved with ballast water management boardings are expected to develop a local training and qualification program and should contact the Ballast Water Management Program Coordinator (G-MSO-4) for assistance at (202) 267-0500. Enclosure (3) provides suggested training items.
- g. As well as from the program coordinator, more information on the Ballast Water Management Program and associated issues can be obtained from the following Web sites.

Coast Guard: www.uscg.mil/hq/g-m/mso4/Contents.htm

National Ballast Information Clearinghouse: www.serc.si.edu/invasions/ballast.htm

6. ACTION.

- a. OCMI's and COTPs will refer to the enclosed guidance to ensure vessels comply with the requirements of NISA.
- b. The Standard Operating Procedure (SOP) contained in Enclosure (2) details boarding criteria, data collection, data recording, sampling and testing procedures, the care and use of instruments, and important health and safety considerations.
- c. OCMI's and COTPs shall bring the enclosed guidance to the attention of affected parties within their areas of responsibility. Interested owners, operators, flag Administrations and classification societies are encouraged to review the guidance contained in the circular.

Encl: (1) May 17, 1999 Amendments to 33 CFR 151 Subparts C&D
(2) Ballast Water Management Program Standard Operating Procedures
(3) Qualification Sheets

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Amendments to 33 CFR 151 Subparts C and D
Interim Rule - Subject to revision based on public comment
Published in Federal Register 17 May 1999

PART 151--VESSELS CARRYING OIL, NOXIOUS LIQUID SUBSTANCES, GARBAGE, MUNICIPAL OR COMMERCIAL WASTE, AND BALLAST WATER

1. The authority citation for part 151 continues to read as follows:

Authority: 33 U.S.C. 1321(j)(1)(C) and 1903; E.O. 12777, 3 CFR, 1991 Comp. p.351; 49 CFR 1.46.

§§ 151.1500--151.1516 (Subpart C) [Amended]

Subpart C--Ballast Water Management for Control of Nonindigenous Species in the Great Lakes and Hudson River

2. The authority citation for part 151 subpart C continues to read as follows:

Authority: 16 U.S.C. 4711; 49 CFR 1.46.

3. Revise the subpart heading to read as shown above.

§ 151.1504 [Amended]

4. In §151.1504, revise the definition of “ballast water” and add definitions in alphabetical order to read as follows:

§ 151.1504 Definitions.

* * * * *

Ballast water means any water and suspended matter taken on board a vessel to control or maintain, trim, draught, stability, or stresses of the vessel, regardless of how it is carried.

Ballast tank means any tank or hold on a vessel used for carrying ballast water, whether or not the tank or hold was designed for that purpose.

* * * * *

Sediments means any matter settled out of ballast water within a vessel.

* * * * *

5. Add subpart D, consisting of §§ 151.2000 through 151.2065, to read as follows:

Subpart D--Ballast Water Management for Control of Nonindigenous Species in waters of the United States.

Sec.

151.2000 What is the purpose of this subpart?

151.2005 To which vessels does this subpart apply?

151.2010 Which vessels are exempt from the mandatory requirements?

151.2015 Is a vessel in innocent passage exempt from the mandatory requirements?

151.2020 To what ballast water does this subpart apply?

151.2025 What definitions apply to this subpart?

151.2030 Who is responsible for determining when to use the safety exemption?

151.2035 What are the voluntary ballast water management guidelines?

151.2040 What are the mandatory requirements for vessels carrying ballast water into the waters of the United States after operating beyond the exclusive economic zone?

151.2045 What are the mandatory recordkeeping requirements?

151.2050 Are there methods to monitor compliance with this subpart?

151.2055 Where are the Alternate Exchange Zones Located?

(Reserved)

151.2060 What must each application for approval of an alternative compliance technology contain?

(Reserved)

151.2065 What is the standard of adequate compliance determined by the ANSTF for this subpart?

(Reserved)

Appendix to Subpart D of Part --Ballast Water Reporting Form and Instructions for Ballast Water Reporting Form

Subpart D--Ballast Water Management for Control of Nonindigenous Species in Waters of the United States

Authority: 16 U.S.C. 4711; 49 CFR 1.46.

§ 151.2000 What is the purpose of this subpart?

This subpart implements the provisions of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) (16 U.S.C. 4701-4751), as amended by the National Invasive Species Act of 1996 (NISA).

§ 151.2005 To which vessels does this subpart apply?

(a) Sections 151.2000 through 151.2035(a) of this subpart apply to all vessels, U.S. and foreign, equipped with ballast tanks that operate in the waters of the United States.

Sections 151.2035

(b) through 151.2065 apply to all vessels, U.S. and foreign, carrying ballast water into the waters of the United States after operating beyond the exclusive economic zone, except those vessels exempted in § 151.2010 and § 151.2015.

§ 151.2010 Which vessels are exempt from the mandatory requirements?

Four types of vessels are exempt from the requirements in §§ 151.2040 and 151.2045:

(a) A crude oil tanker engaged in the coastwise trade.

(b) A passenger vessel equipped with a functioning treatment system designed to kill aquatic organisms in the ballast water. The treatment system must operate as designed.

(c) A Department of Defense or Coast Guard vessel subject to the requirements of section 1103 of the Act, or any vessel of the Armed Forces, as defined in the Federal Water Pollution Control Act(33 U.S.C. 1322(a)) that is subject to the "Uniform National Discharge Standards for Vessels of the Armed Forces" (33 U.S.C. 1322(n)).

(d) A vessel that will discharge ballast water or sediments only at the same location where the ballast water or sediments originated. The ballast water or sediments must not mix with ballast water or sediments from areas other than the high seas.

§ 151.2015 Is a vessel in innocent passage exempt from the mandatory requirements?

A foreign vessel merely traversing the territorial sea of the United States (i.e., not entering or departing a U.S. port, or not navigating the internal waters of the U.S.) is exempt from the requirements of §§ 151.2040 and 151.2045, however such vessels are requested not to discharge ballast water into the waters of the United States unless they have followed the voluntary guidelines of § 151.2035.

§ 151.2020 To what ballast water does this subpart apply?

This subpart applies to all ballast water and associated sediments taken on a vessel in areas--

- (a) Less than 200 nautical miles from any shore, or
- (b) With water that is less than 2,000 meters (6,560 feet, 1,093 fathoms) deep.

§ 151.2025 What definitions apply to this subpart?

- (a) Unless otherwise stated in this section, the definitions in 33 CFR 151.1504, 33 CFR 160.203, and the United Nations Convention on the Law of the Sea apply to this part.
- (b) As used in this part--

ANSTF means the Aquatic Nuisance Species Task Force mandated under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA).

Captain of the Port (COTP) means the Coast Guard officer designated as the COTP, or a person designated by that officer, for the COTP zone covering the first U.S. port of destination. These COTP zones are listed in 33 CFR part 3.

Exchange means to replace the water in a ballast tank using one of the following methods:

(a) Flow through exchange means to flush out ballast water by pumping in mid-ocean water at the bottom of the tank and continuously overflowing the tank from the top until three full volumes of water has been changed--to minimize the number of original organisms remaining in the tank.

(b) Empty/refill exchange means to pump out the ballast water taken on in ports, estuarine, or territorial waters until the tank is empty, then refilling it with mid-ocean water; masters/operators should pump out as close to 100 percent of the ballast water as is safe to do so.

IMO guidelines mean the Guidelines for the Control and Management of Ships' Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens (IMO Resolution A.868 (20), adopted November 1997).

NANCPA means the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990.

NBIC means the National Ballast Water Information Clearinghouse operated by the Coast Guard and the Smithsonian Environmental Research Center as mandated under NISA.

NISA means the National Invasive Species Act of 1996, which reauthorized and amended NANCPA.

United States means the States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands.

Voyage means any transit by a vessel destined for any United States port from a port or place outside of the EEZ, including intermediate stops at a port or place within the EEZ. For the purpose of this rule, a transit by a vessel from a United States port to any other United States port, if at any time the vessel operates outside the EEZ or equivalent zone of Canada, is also considered a voyage.

Waters of the United States means waters subject to the jurisdiction of the United States as defined in 33 CFR §2.05-30, including the navigable waters of the United States. For this regulation, the navigable waters include the territorial sea as extended to 12 nautical miles from the baseline, pursuant to Presidential Proclamation No. 5928 of December 27, 1988.

§ 151.2030 Who is responsible for determining when to use the safety exemption?

(a) The master, operator, or person-in-charge of a vessel is responsible for the safety of the vessel, its crew, and its passengers.

(b) The master, operator, or person-in-charge of a vessel is not required to conduct a ballast water management practice (including exchange), if the master decides that the practice would threaten the safety of the vessel, its crew, or its passengers because of adverse weather, vessel design limitations, equipment failure, or any other extraordinary conditions. If the master uses this section, and the--

(1) Vessel is on a voyage to the Great Lakes or Hudson River, the vessel must comply with the requirements of §151.1514 of subpart C (Ballast water management alternatives under extraordinary conditions); or

(2) Vessel is on a voyage to any port other than the Great Lakes or Hudson River, the vessel shall not be required to perform a ballast water management practice which the master has found to threaten the safety of the vessel, its crew, or its passengers because of adverse weather, vessel design limitations, equipment failure, or any other extraordinary conditions.

(c) Nothing in this subpart relieves the master, operator, or person-in-charge of a vessel, of the responsibility for ensuring the safety and stability of the vessel or the safety of the crew and passengers, or any other responsibility.

§ 151.2035 What are the voluntary ballast water management guidelines?

(a) Masters, owners, operators, or persons-in-charge of all vessels equipped with ballast water tanks that operate in the waters of the United States are requested to take the following voluntary precautions to minimize the uptake and the release of harmful aquatic organisms, pathogens, and sediments:

(1) Avoid the discharge or uptake of ballast water in areas within or that may directly affect marine sanctuaries, marine preserves, marine parks, or coral reefs.

(2) Minimize or avoid uptake of ballast water in the following areas and situations:

(i) Areas known to have infestations or populations of harmful organisms and pathogens (e.g., toxic algal blooms).

(ii) Areas near sewage outfalls.

(iii) Areas near dredging operations.

(iv) Areas where tidal flushing is known to be poor or times when a tidal stream is known to be more turbid.

(v) In darkness when bottom-dwelling organisms may rise up in the water column.

(vi) Where propellers may stir up the sediment.

(3) Clean the ballast tanks regularly to remove sediments. Clean the tanks in mid-ocean or under controlled arrangements in port, or at dry dock. Dispose of your sediments in accordance with local, State, and Federal regulations.

(4) Discharge only the minimal amount of ballast water essential for vessel operations while in the waters of the United States.

(5) Rinse anchors and anchor chains when you retrieve the anchor to remove organisms and sediments at their place of origin.

(6) Remove fouling organisms from hull, piping, and tanks on a regular basis and dispose of any removed substances in accordance with local, State and Federal regulations.

(7) Maintain a ballast water management plan that was developed specifically for the vessel.

(8) Train the master, operator, person-in-charge, and crew, on the application of ballast water and sediment management and treatment procedures.

(b) In addition to the provisions of 151.2035(a), you (the master, operator, or person-in-charge of a vessel) are requested to employ at least one of the following ballast water management practices, if you carry ballast water into the waters of the United States after operating beyond the EEZ:

(1) Exchange ballast water beyond the EEZ, from an area no less than 200 nautical miles from any shore, and in waters more than 2,000 meters (6,560 feet, 1,093 fathoms) deep, before entering waters of the United States.

(2) Retain the ballast water on board the vessel.

(3) Use an alternative environmentally sound method of ballast water management that has been approved by the Coast Guard before the vessel begins the voyage. Submit the requests for approval of alternative ballast water management methods to the Commandant (G-MSO-4), U.S. Coast Guard Headquarters, 2100 Second Street SW., Washington, DC 20593-0001. The phone number is 202-267-0500.

(4) Discharge ballast water to an approved reception facility.

(5) Under extraordinary conditions, conduct a ballast water exchange within an area agreed to by the COTP at the time of the request.

§ 151.2040 What are the mandatory requirements for vessels carrying ballast water into the waters of the United States after operating beyond the Exclusive Economic Zone (EEZ)?

(a) The master, owner, operator, person-in-charge of a vessel bound for the Great Lakes or Hudson River, which has operated beyond the EEZ during any part of its voyage, regardless of intermediate ports of calls within the waters of the United States or Canada, must comply with paragraphs (c through f) of this section, all of § 151.2045, and with the provisions of 33 CFR 151 subpart C.

(b) A vessel engaged in the foreign export of Alaskan North Slope Crude Oil must comply with paragraphs (c through f) of this section, all of § 151.2045, and with the provisions of 15 CFR 754.2(j)(iii). That section (15 CFR 754.2(j)(iii)) requires a mandatory program of deep water ballast exchange (i.e., at least 2,000 meters water depth and recordkeeping), unless doing so would endanger the safety of the vessel or crew.

(c) The master, owner, operator, agent, or person-in-charge of a vessel carrying ballast water into the waters of the United States after operating beyond the EEZ, unless specifically

exempted by §§ 151.2010 or 151.2015, must provide the information required by § 151.2045 in electronic or written form to the Commandant, U.S. Coast Guard or the appropriate COTP as follows:

- (1) For a United States or Canadian Flag vessel bound for the Great Lakes. You must fax the required information to the COTP Buffalo 315-764-3283 at least 24 hours before the vessel arrives in Montreal, Quebec.
- (2) For a foreign flagged vessel bound for the Great Lakes. You must--
 - (i) Fax the required information to the COTP Buffalo 315-764-3283 at least 24 hours before the vessel arrives in Montreal, Quebec; or
 - (ii) Complete the ballast water information section of the St. Lawrence Seaway required “Pre-entry Information from Foreign Flagged Vessels Form” and submit it in accordance with the applicable Seaway notice.
- (3) For a vessel bound for the Hudson River north of the George Washington Bridge. You must telefax the information to the COTP New York at 718-354-4249 before the vessel enters the waters of the United States (12 miles from the baseline).
- (4) For a vessel not addressed in paragraphs (c)(1), (c)(2), and (c)(3) of this section. Before the vessel departs from the first port of call in the waters of the United States, you must--
 - (i) Mail the information to U.S. Coast Guard, c/o Smithsonian Environmental Research Center (SERC), P.O. Box 28, Edgewater, MD 21037-0028; or
 - (ii) Transmit the information electronically to the NBIC at www.serc.si.edu/invasions/ballast.htm; or
 - (iii) Fax the information to the Commandant, U.S. Coast Guard, c/o the NBIC at 301-261-4319.
- (d) If the information submitted in accordance with paragraph (c) of this section changes, you must submit an amended form before the vessel departs the waters of the United States.
- (e) This subpart does not authorize the discharge of oil or noxious liquid substances (NLS) in a manner prohibited by United States or international laws or regulations. Ballast water carried in any tank containing a residue of oil, NLS, or any other pollutant must be discharged in accordance with the applicable regulations.
- (f) This subpart does not affect or supersede any requirement or prohibition pertaining to the discharge of ballast water into the waters of the United States under the Federal Water Pollution Control Act (33 U.S.C. 1251 to 1376).

§ 151.2045 What are the mandatory recordkeeping requirements?

(a) The master, owner, operator, or person in charge of a vessel carrying ballast water into the waters of the United States after operating beyond the EEZ, unless specifically exempted by §§ 151.2010 or 151.2015 shall keep in written form, records that include the following information (Note: Ballast tank is any tank or hold that carries ballast water regardless of design):

- (1) Vessel information. Include the--
 - (i) Name;
 - (ii) International Maritime Organization (IMO) Number (official number if IMO number not issued);
 - (iii) Vessel type;
 - (iv) Owner or operator;

- (v) Gross tonnage;
- (vi) Call sign; and
- (vii) Port of Registry (Flag).

(2) Voyage information. Include the date and port of arrival, vessel agent, last port and country of call, and next port and country of call.

(3) Total ballast water information. Include the total ballast water capacity, total volume of ballast water on board, total number of ballast water tanks, and total number of ballast water tanks in ballast. Use units of measurements such as metric tons (MT), cubic meters (m³), long tons (LT), and short tons (ST).

(4) Ballast Water Management. Include the total number of ballast tanks/holds that are to be discharged into the waters of the United States or to a reception facility. If an alternative ballast water management method is used, please note the number of tanks that were managed using an alternative method, as well as the type of method used. Indicate whether the vessel has a ballast water management plan and IMO guidelines on board, and whether the ballast water management plan is used.

(5) Information on ballast water tanks that are to be discharged into the waters of the United States or to a reception facility. Include the following:

(i) The origin of ballast water. This includes date(s), location(s), volume(s) and temperature(s) [If a tank has been exchanged, list the loading port of the ballast water that was discharged during the exchange.].

(ii) The date(s), location(s), volume(s), method, thoroughness (percentage exchanged if exchange conducted), sea height at time of exchange if exchange conducted, of any ballast water exchanged or otherwise managed.

(iii) The expected date, location, volume, and salinity of any ballast water to be discharged into the waters of the United States or a reception facility.

(6) Discharge of Sediment. If sediment is to be discharged within the jurisdiction of the United States include the location of the facility where the disposal will take place.

(7) Certification of Accurate Information. Include the master, owner, operator, person in charge, or responsible officer's printed name, title, and signature attesting to the accuracy of the information provided and certifying compliance with the requirements of this subpart.

(8) Change to Previously Submitted Information.

(a) Indicate whether the information is a change to information previously submitted for this voyage.

(b) The master, owner, operator, or person in charge of a vessel subject to this section, must retain a signed copy of this information on board the vessel for 2 years.

(c) The information required of this subpart may be used to satisfy the ballast water recordkeeping requirements for vessels subject to § 151.2040(a) and (b).

(d) A sample form and the instructions for completing the form are in the appendix to this subpart. If you complete the "Ballast Water Reporting Form" contained in the IMO Guidelines or complete the ballast water information section of the St. Lawrence Seaway required "Pre-entry Information Flagged Vessels Form," then you have met the requirements of this section.

§ 151.2050 What methods are used to monitor compliance with this subpart?

(a) The COTP may take samples of ballast water and sediment, examine documents, and make other appropriate inquiries to assess the compliance of any vessel subject to this subpart.

(b) The master, owner, operator, or person in charge of a vessel subject to this section, shall make available to the COTP the records required by § 151.2045 upon request.

(c) The NBIC will compile the data obtained from submitted reports. This data will be used, in conjunction with existing databases on the number of vessel arrivals, to assess vessel reporting rates.

§ 151.2055 Where are the alternate exchange zones located?

(Reserved)

§ 151.2060 What must each application for approval of an alternative compliance technology contain?

(Reserved)

§ 151.2065 What is the standard of adequate compliance determined by the ANSTF for this subpart?

(Reserved)

Appendix to Subpart D of Part 151--Ballast Water Reporting Form and Instructions for Ballast Water Reporting Form

Dated: 5/11/99

R.C. North

Rear Admiral, U.S. Coast Guard, Assistant Commandant for Marine Safety and Environmental Protection

BALLAST WATER MANAGEMENT PROGRAM

STANDARD OPERATING PROCEDURES

1. PURPOSE. The procedures outlined below provide general guidance for COTPs in monitoring vessel compliance with the voluntary and mandatory guidelines under 33 CFR 151 Subpart D for ballast water management and the collection of data for the National Ballast Water Management Survey. This data will be submitted to the National Ballast Information Clearinghouse (NBIC) located at the Smithsonian Environmental Research Center (SERC) and will be used to establish ballast water management and delivery patterns for ships that enter waters of the U.S. from outside the Exclusive Economic Zone (EEZ). It is important to remember that penalty provisions apply only to vessels calling in the Great Lakes and certain portions of the Hudson River.
2. DISCUSSION. The interim rule on ballast water management, “Implementation of the National Invasive Species Act of 1996,” was published in the Federal Register on May 17, 1999. These regulations are intended to limit the introduction and spread of aquatic nuisance species into waters of the U.S. Presently, the primary means of preventing this is to replace ballast water taken on in foreign ports (and potentially containing harmful organisms capable of surviving in U.S. coastal waters) with deep ocean water which presents a less hospitable environment to the coastal organisms and kills them. The Coast Guard inspection program will verify effective ballast water exchange by measuring the salinity of onboard ballast water. Ballast water with a salinity measurement of more than 30 parts per thousand (ppt) will be considered as having been effectively exchanged. Inspections will include an interview of shipboard personnel and an examination of ballast water management records to determine if the reports submitted by vessels prior to entering U.S. waters are accurate reflections of shipboard ballast water management activities. These inspections will be conducted on a random basis as discussed in TAB 1.
3. INSPECTION PROCEDURES.
 - a. Prior to conducting a ballast water examination, personnel shall be familiar with:
 - (1) These procedures, paying particular attention to the health and safety measures;
 - (2) 33 CFR 151 Subparts C and D as they apply to the local COTP zone; and
 - (3) The vessel’s history as shown in the Marine Safety Information System.
 - b. As education of the maritime community is a central element of the Coast Guard’s ballast water management program, once on board the vessel, inspection personnel should ensure the master or senior member of the crew either already has, or is provided with, copies of the:
 - (1) Ballast Water Informational Pamphlet (TAB 2);
 - (2) Ballast Water Reporting Form (TAB 3);

- (3) Guidelines for Filling Out the Ballast Water Reporting Form (TAB 4); and
 - (4) Example Ballast Water Reporting Form (TAB 5).
- c. The inspection team should emphasize that:
- (1) The exchange of ballast water is presently voluntary, but will become mandatory in the future if there is a lack of voluntary compliance;
 - (2) Submittal of the Ballast Water Reporting Form as specified in 33 CFR 151.2040 is mandatory as NISA requires the Coast Guard to collect this information. A failure by the maritime industry to submit this information will eventually lead to regulations with both civil and criminal penalty provisions;
 - (3) The vessel must maintain records on ballast water management as specified by 33 CFR 151.2045; and
 - (4) The Coast Guard is collecting this data to determine the level of voluntary compliance and the effectiveness of a voluntary program in controlling the introduction and spread on nonindigenous species and harmful organisms in vessels' ballast water.
- d. The inspecting personnel will conduct an interview with the ship's crew, which includes the questions in TAB 6. These questions regarding ballast water management history complement those on the Ballast Water Reporting Form. The approximately 20 questions are contained in an electronic format on a handheld computer. TAB 7 details the operation of the handheld computer and the process for submitting the data to the NBIC via the desktop computer in your office. If the electronic form is not available, a hard copy of the questionnaire (TAB 6) should be completed and either faxed to the NBIC at (301) 261-4319 or mailed to:

U.S. Coast Guard
c/o Smithsonian
P.O. Box 28
Edgewater, MD 21037-0028

- e. The inspection team should examine the shipboard records containing the information required in 33 CFR 151.2045, and determine if it appears that the vessel is complying with the ballast water management regulations.

4. BALLAST WATER SAMPLING

- a. When performing a ballast water inspection, the inspecting personnel will measure ballast water salinity when:
- (1) Ballast water is being discharged into U.S. waters; or
 - (2) Records show that ballast water has been exchanged on the voyage, whether the vessel is discharging ballast water or not.
- b. The following guidelines will be used when testing ballast water salinity.

- (1) The salinity of at least 10%, but no less than ***two*** of the vessel's ballast water tanks will be tested in order to confirm compliance.
- (2) Ballast water is typically found in wing tanks, double bottoms, peak tanks, and cargo holds. Access to these tanks is normally gained through vents, manholes, hatches, and sounding tubes.
- (3) The manufacturer's stated accuracy of the salinity refractometers is +/- 1.0 ppt. Recognizing the limitations of the instrument, readings above 29.0 ppt will be considered to meet the 30 ppt requirement. (TAB 8 details the care and use of the refractometer.)
- (4) TAB 9 details the various important health and safety measures, which should be followed. There is a very real risk of health problems associated with the handling of contaminated ballast water. These are easily minimized through the proper use of personal protective equipment (PPE). The proper use of this equipment cannot be over emphasized.

TAB 10 is a suggested Ballast Water Management Inspection Checklist and is intended to be a job aid for personnel responsible for conducting ballast water inspections.

5. EVALUATION OF COMPLIANCE / NON-COMPLIANCE

- a. The vessel is not in compliance with the ***mandatory*** requirements if either of the following occurs:
 - (1) The master failed to provide the Ballast Water Reporting Form to the NBIC within the required timeframe (normally before vessel departs first port of call in U.S.); or
 - (2) The master failed to keep the necessary ballast water management records onboard the vessel.
- b. While the failure to provide or maintain the above documentation is a "violation" of the regulations, there are no provisions for penalties at this time.
- c. Upon completion of the inspection, the inspection personnel will inform the Master as to whether or not the vessel appears to meet the voluntary guidelines and mandatory reporting requirements. If the vessel is determined to be out of compliance, a full explanation as to the reasons for this finding should be given to the Master. A Vessel Boarding Report (CG-5437) should be completed, noting all ballast water management deficiencies. If the vessel is fully compliant with the operational guidelines and reporting requirements, a statement to that effect should be noted on the form. The Master shall be provided with a copy of the completed Boarding Report.

BALLAST WATER MANAGEMENT SURVEY

1. The Coast Guard must report to Congress no later than 30 months after voluntary guidelines are implemented as to whether these guidelines are effective in controlling the introduction and spread on nonindigenous species. To substantiate the findings of this report, the Coast Guard will conduct a random survey of vessels entering the waters of the United States after operating beyond the Exclusive Economic Zone (EEZ). To do this in a scientifically and statistically defensible method, the Coast Guard developed such a survey method with the cooperation of the Smithsonian Environmental Research Center (SERC), which also houses the National Ballast Information Clearinghouse. A random sampling protocol is the key to this survey. While it will add to the workload of Coast Guard field personnel, it has the overriding value of providing data that can be used in powerful statistical analyses. This high-resolution data will provide valuable information on ballast water management patterns for all U.S. coastal areas.
2. The survey employs a stratified sampling design, which provides data for the statistical analysis of ballast water delivery by vessel type, geographic region, season, and year. Sampling efforts will be allocated across COTP zones. This will help ensure that each coastal region is represented by vessel traffic that is typical of its major ports.
3. The East Coast will be divided into two regions: (1) Northeast Region (NE), which will encompass COTP zones from Hampton Roads, VA north to Portland, ME; and (2) Southeast Region (SE) which will include COTP Zones from Wilmington, NC south to Miami, FL and including San Juan, PR. This division was chosen to account for potential differences in vessel traffic types between the NE and SE coastal regions. It also divides the East Coast into two well-recognized biogeographical zones. The Gulf Coast Region includes COTP Zones from Tampa, FL to Corpus Christi, TX. The West Coast Region is comprised of COTPs San Diego, Los Angeles/Long Beach, San Francisco, Portland, and Puget Sound. The three Alaskan COTP zones will make up the Alaska Region, while the COTPs Honolulu and Guam will make up the Pacific Region.
4. For statistical purposes, the sampling plan requires 15 to 30 boardings / COTP Zone / quarter. This range is based on the minimum number of ship boardings required to validate vessel traffic along the West Coast, which maintains 5 COTP zones and requires, at minimum, 75 boardings/quarter. Every attempt should be made to spread these boardings equally across each of the five vessel classes (Tanker, Bulk Carrier, Container, General Cargo, Other) at a rate of 3 to 6 boardings/vessel class/COTP zone/quarter).
5. In some instances, randomly chosen vessels will be the same ships targeted by the Coast Guard for other inspection activities. However, random ballast water surveys outside of the Port State Control and Flag State inspection programs will need to be conducted in order to achieve the target levels described above. At an average sampling rate of 2-3 vessels per week, a COTP Zone would conduct 26-39 vessel boardings per quarter and provide data well within the necessary range.
6. The sampling schedule was developed jointly by the Coast Guard and SERC and will be

distributed to each COTP Zone through the District Ballast Water Management Coordinator. The schedule is designed to obtain data from a sufficient number of vessels in each vessel class, geographic region, and season. As a result, for each region, data will be obtained from a pre-determined minimum number of ships for each major vessel class in each season (as above).

7. The key aspects of this sampling program involve how the temporal (when) and spatial (where) patterns of ballast delivery are measured. The key considerations in the program are described below.
 - a. Working with SERC, Coast Guard Headquarters will provide a randomized boarding schedule to the District Coordinator and COTP Zone;
 - b. The boarding schedule will be randomly selected for each vessel class. The days selected for sampling, as well as the vessel classes assigned to each day, will be selected at random. Sampling efforts will be spread evenly across and within seasons (e.g. a 3-month summer interval);
 - c. The spatial sampling effort within vessel class will provide a representative sample at the COTP zone level.
 - d. In order to obtain the desired number of inspections, a sampling structure was developed to balance ports that may not reach the minimum targeted number of 15 boardings per quarter with ports that may continuously reach the optimum level of 30 boardings per quarter.
 - e. It is accepted that not all units will meet the desired threshold of boardings due to various factors beyond their control, including the lack of vessel traffic in a given port or other operational commitments. Included on the list of target dates and vessel types will be questions as to why the desired boardings were not conducted. These questions are not intended to second-guess field decisions, but to gather data necessary to make program resource decisions and to support our findings when reporting to Congress. These completed forms should be returned to G-MSO-4 on a quarterly basis.
 - f. The targeted random boardings are expected to be performed during normal working hours. Units are not expected to conduct after-hour boardings for the sole purpose of performing a ballast water survey. If a vessel identified for another type of inspection (Port State or Flag State) is scheduled for after-hours boarding and meets the criteria for the random survey, this should be conducted and credit taken for the ballast water management portion.
 - g. Target Data Forms will be provided to District Ballast Water Management coordinators on a quarterly basis. These forms will also be posted on the U.S. Coast Guard Ballast Water website. <http://www.uscg.mil/hq/g-m/mso4/First.htm>
8. Unlike the Ballast Water Management Reports submitted by vessels, the Ballast Water Management Survey will be recorded and transferred primarily in electronic form. The NBIC has developed an electronic interview questionnaire on hand-held computers (Palm Pilots), allowing boarding personnel to record answers to each question directly in to an electronic form. These records can then be downloaded directly to the NBIC for analysis.

The electronic method is recommended as it saves time in the interview process and reduces data entry errors. If the hand-held computer is not available, paper forms may be submitted in lieu of electronic transmission. As the Coast Guard will be testing the use of hand-held computers for electronic completion and transmittal of inspection reports, field unit feedback as to which method is the most efficient for them is desired.



Ballast Water Management Preventing and Controlling the Spread of Aquatic Nuisance Species

A request for vessel operators to follow the U.S. Coast Guard mandatory requirements and the voluntary guidelines for ballast water management in waters of the U.S. under 33 CFR 151 Subpart D

AQUATIC NUISANCE SPECIES

The water bodies of the world are being invaded by non-native aquatic species, also known as aquatic nuisance species. The biological invaders are arriving in ship's ballast water and sediment and are being discharged by unsuspecting mariners to siege native aquatic environments. The problem is that successful invaders usually have detrimental effects on native species, their habitats and human activities dependent on water resources. Once nuisance species establish themselves, eradication becomes impossible without further damaging the environment.

BALLAST WATER-A SOURCE OF INVASION

Biological invasion can occur when ships discharge ballast water in foreign ports or nearshore waters. If the aquatic plant and animal species introduced by ballast water and sediment are compatible with the physical and ecological conditions of the waterbody, they may survive, reproduce and disperse throughout the environment. The large amounts of ballast water carried by ships, their increasing speeds of transit between ports and the improving water quality worldwide all contribute to the success of the invasion process.

SUCCESSFUL INVADERS

Not all aquatic species transported by ballast water and introduced to new environments will

be successful invaders, in fact, most fail. The ones that succeed display common characteristics that make them successful. They are *hardy*; capable of surviving the voyage in ballast water. They are *aggressive*; capable of displacing native species. They are prolific *breeders*; capable of expanding their populations rapidly. And they *disperse rapidly*; capable of affecting new environments.

THE EFFECTS OF INVASION

Successful nuisance species have the infamous ability to *spoil* native habitat, *threaten* native plant and animal species' diversity and abundance, and disrupt human social and economic activities dependent on aquatic resources. These impacts are more likely to be felt in areas where nuisance species have no natural predators or competition, or in areas where there are few native species to compete with or resist its invasion

INVASION MYTH

It is important to note that despite the release of ballast water and sediments in waters of the U.S. for decades, many new species could still invade. The argument that ballast has already provided the opportunity for most or all species from donor areas to invade is contradicted by the continuing flow of new invasions, such as the ruffe and zebra mussel in the Great Lakes.

BALLAST WATER MANAGEMENT

Nearshore and port environments where ships usually take on ballast water support a higher diversity and number of species than open ocean. Most open ocean species are unique to high seas and generally do not and cannot live in the near shore environment. Exchanging near shore ballast in mid-ocean replaces the diverse, abundant, and highly adaptable organisms with fewer and less diverse open ocean organisms intolerant of freshwater. The risk of discharging this exchanged ballast water into coastal and inland water is considered acceptable. The ballast exchange concept was chosen by resource managers, regulatory agencies and the shipping industry because it provides an economical and efficient means of reducing the risk of invasion. The International Maritime Organization (IMO) has determined that ballast exchange is the most effective method now available to control the spread of aquatic nuisance species. The U.S. Coast Guard has promulgated mandatory requirements and voluntary guidelines to be used by vessel operators to control the spread of aquatic nuisance species.

FREQUENTLY ASKED QUESTIONS

How do I know if I should follow ballast water management regulations?

Any vessel equipped with ballast water tanks that enters waters of the U.S. from outside the Exclusive Economic Zone (EEZ) must follow the ballast water regulations.

What are the voluntary precautionary measures I can take to minimize the uptake and the release of harmful aquatic organisms, pathogens, and sediments?

1. Avoid the discharge or uptake of ballast water in areas within or that may directly affect marine sanctuaries, marine preserves, marine parks, or coral reefs.
2. Minimize or avoid uptake of ballast water in the following areas and situations:
 - a. Areas known to have infestations or populations of harmful organisms and pathogens (e.g. toxic algal blooms)
 - b. Areas near sewage outfalls.
 - c. Areas near dredging operations.
 - d. Areas where tidal flushing is known be poor or times when a tidal stream is known to be more turbid.
 - e. In darkness when bottom-dwelling organisms may rise up in the water column.
 - f. Where propellers may stir up sediment.
3. Clean ballast tanks in mid-ocean or under controlled arrangements in port, or at dry dock. Dispose of your sediments in accordance with local, State, and Federal regulations.

4. Discharge only the minimal amount of ballast water essential for operations while in waters of the United States.
5. Rinse anchors and anchor chains when retrieving to remove organisms and sediments at their place of origin.
6. Remove fouling organisms from hull, piping, and tanks on a regular basis and dispose of any removed substances in accordance with local, State, and Federal regulations.
7. Maintain a ballast water management plan that was developed specifically for the vessel.
8. Train the master, operator, person-in-charge, and crew, on the application of ballast water and sediment management and treatment procedures.

How do I manage ballast water under the voluntary guidelines?

There are five solutions for effectively managing ballast water:

1. Carry out an exchange of ballast water in open waters beyond the EEZ within an area no closer than 200 miles from any shore in a depth exceeding 2000 meters, prior to entry into waters of the U.S.
2. Retain the ballast water onboard.

How do I manage ballast water under the voluntary guidelines (cont'd)?

3. Use an alternative method of ballast water management that has been submitted to and approved by the Commandant prior to the vessels voyage. Requests for approval of alternative ballast water management methods must be submitted to the Commandant (G-M), U.S. Coast Guard Headquarters, 2100 Second Street SW., Washington, DC 20593. Contact phone number (202) 267-0500
4. Discharge ballast water to an approved reception facility.
5. Under extraordinary conditions, conduct a ballast water exchange within an area agreed to by the Captain of the Port (COTP) at the time of the request, or after notification to the COTP within an area listed as an Alternate Exchange Zone.

What do I do with sediment from ballast tanks under the mandatory guidelines?

Any sediment from ballast tanks must be discharged ashore at a proper reception facility.

What records should I keep under the mandatory requirements?

Masters of all vessels carrying ballast water into the waters of the U.S. after operating beyond the EEZ, unless specifically exempted, shall keep records including the following for at least two years:

- Vessel's name, type, IMO number, owner, gross tonnage, call sign, flag, agent,

date of arrival, port of arrival, last port, and country of call, and next port and country of call.

- The total amount of ballast water being carried, and total ballast water capacity.
- Whether or not there is a ballast water management plan onboard and in use on the vessel, the total number of ballast tanks onboard, total number of tanks and holds in ballast, total number of tanks and holds that were exchanged, and the total number of tanks and holds that were not exchanged.
- The origin date(s) of uptake, location (s), volumes(s), and temperature(s) of any ballast water (taken on prior to an exchange if exchange conducted).
- The date(s), location(s), volume(s) thoroughness (percentage exchanged) of any ballast water exchanged, and the combined sea height (sea plus swell) in meters (m) at the time of the ballast water exchange.
- The proposed date, location, volume, and salinity of any ballast water to be discharged into territorial waters of the U.S.
- The location for disposal of sediment carried upon entry into the territorial waters of the U.S., if sediment is to be discharged.
- If a vessel normally conducts a ballast water exchange but did not do so under the provisions of 33 CFR 151.2015 state action taken. If ballast water was not exchanged, state other control action(s) taken such as retain onboard; alternate

method of compliance, etc. If no control action taken state reason why.

- Is a copy of the IMO voluntary ballast water management guidelines onboard?
- The master, owner, operator's or responsible officer's printed name, title, and signature attesting to the accuracy of the information provided and certifying compliance with the requirements
- Whether or not this is an amendment to information previously submitted for this voyage.

What information am I required to submit under the mandatory reporting requirements?

Masters of all vessels carrying ballast water into waters of the U.S. after operating beyond the EEZ, unless specifically exempted, must provide the information outlined above in written form to the Commandant, U.S. Coast Guard as follows:

- The master of a vessel of a U.S. or Canadian flagged vessel bound for the Great Lakes must telefax the required information to the COTP Buffalo (315) 764 –3283 at least 24 hours prior to the vessel's arrival in Montreal, Quebec.

(continued next page)

What information am I required to submit under the mandatory reporting requirements (cont'd)?

- The master of a foreign flagged vessel bound for the Great Lakes must:
Telefax required information to the COTP Buffalo (315) 764-3283 at least 24 hours prior to the vessel's arrival in Montreal, Quebec; or
Complete the ballast water information section of the St. Lawrence Seaway required Pre-entry Information From Foreign Flagged Vessels and submit it in accordance with the applicable Seaway notice.
- The master of a vessel bound for the Hudson River north of the George Washington Bridge must telefax the information to the COTP New York at (718) 354-4249 before the vessel enters the waters of the U.S. (12 miles from the baseline).
- The master of all other vessels subject to this regulation must telefax the information to the Commandant, U.S. Coast Guard at (301) 261-4319, transmit it electronically to the National Ballast Water Clearinghouse (NBIC) at www.serc.si.edu/invasions/ballast.htm, or mail it to the U.S. Coast Guard, c/o Smithsonian, P.O. Box 28, Edgewater, MD 21037-0028, before departing the first port of call in the United States.
- If the information submitted varies after it is submitted, an amendment must be submitted using the same procedures prior to vessel departure from waters of the U.S.

FOR FURTHER INFORMATION

For reporting forms, instructions, a complete set of the regulations, and additional education materials, please contact:

Commandant (G-MSO-4)
U.S. Coast Guard
2100 2nd Street, SW
Washington, DC 20593-0001
(202)-267-0500

BALLAST WATER REPORTING FORM

IS THIS AN AMENDED BALLAST REPORTING FORM? YES NO

1. VESSEL INFORMATION

2. VOYAGE INFORMATION

3. BALLAST WATER USAGE AND CAPACITY

Vessel Name:	Arrival Port:	<i>Specify Units Below (m³, MT, LT, ST)</i>	
IMO Number:	Arrival Date:	Total Ballast Water on Board:	
Owner:	Agent:	Volume	Units
Type:	Last Port:	No. of Tanks in Ballast	
GT:	Country of Last Port:		
Call Sign:	Next Port:	Total Ballast Water Capacity:	
Flag:	Country of Next Port:	Volume	Units
		Total No. of Tanks on Ship	

4. BALLAST WATER MANAGEMENT

Total No. Ballast Water Tanks to be discharged:

Of tanks to be discharged, how many: Underwent Exchange: Underwent Alternative Management:

Please specify alternative method(s) used, if any: _____

If no ballast treatment conducted, state reason why not: _____

Ballast management plan on board? YES NO Management plan implemented? YES NO

IMO ballast water guidelines on board [res. A.868(20)]? YES NO

5. BALLAST WATER HISTORY: Record all tanks to be deballasted in port state of arrival; IF NONE, GO TO #6 (Use additional sheets as needed)

Tanks/ Holds	BW SOURCES				BW MANAGEMENT PRACTICES						BW DISCHARGES			
	DATE DD/MM/Y Y	PORT or LAT. LONG.	VOLUME (units)	TEMP (units)	DATE DD/MM/Y Y	ENDPOINT LAT. LONG.	VOLUME (units)	% Exch	METHOD (ER/FT/ ALT)	SEA HT. (m)	DATE DD/MM/Y Y	PORT or LAT. LONG.	VOLUME (units)	SALINIT Y (units)

Ballast Water Tank Codes: Forepeak = FP, Aftpeak = AP, Double Bottom = DB, Wing = WT, Topside = TS, Cargo Hold = CH, Other = O

6. RESPONSIBLE OFFICER'S NAME AND TITLE, PRINTED AND SIGNATURE: _____

Where to send this form

Vessels bound for Great Lakes

United States or Canadian Flag vessel bound for the Great Lakes

Fax the form to the COTP Buffalo **315-764-3283** at least 24 hours before the vessel arrives in Montreal, Quebec.

Any other Flag vessel bound for the Great Lakes

Fax the form to the COTP Buffalo **315-764-3283** at least 24 hours before the vessel arrives in Montreal, Quebec, or;

Complete the ballast water information section of the St. Lawrence Seaway required “Pre-entry Information from Foreign Flagged Vessels Form” and submit it in accordance with the applicable Seaway notice.

Vessels bound for the Hudson River North Of George Washington Bridge

Vessel bound for the Hudson River north of the George Washington Bridge

Fax the form to the COTP New York at **718-354-4249** before the vessel enters the waters of the United States (12 miles from the baseline).

Vessels bound for all other United States Ports

Vessel bound for all ports within the waters of the United States other than the Great Lakes or Hudson River north of the George Washington Bridge

Before the vessel departs from the first port of call in the waters of the United States send the form by one of the three following methods:

- Mail the form to the **U.S. Coast Guard, c/o Smithsonian Environmental Research Center (SERC), P.O. Box 28, Edgewater, MD 21037-0028;**
- Transmit the form electronically to the National Ballast Information Clearinghouse (NBIC) at **www.serc.si.edu/invasions/ballast.htm**; or
- Fax the form to the Commandant, U.S. Coast Guard, c/o the NBIC at **301-261-4319.**

If any information changes, send an amended form before the vessel departs the waters of the United States.

Instructions For Ballast Water Reporting Form

(Please write in English and PRINT legibly.)

Is this an Amended Ballast Reporting Form?: Check Yes or No. Amendments should be submitted if there are any differences between actual ballast discharges and discharge information reported in a prior form. Please mark "Yes" if this form amends a previously submitted ballast reporting form.

SECTION 1. VESSEL INFORMATION

Vessel Name: Print the name of the vessel clearly.

IMO Number: Fill in identification number of the vessel used by the International Maritime Organization.

Owner: Write in the name of the registered owner(s) of the vessel. If under charter, enter Operator name.

Type: List specific vessel type. Use the following abbreviations: bulk (**bc**), roro (**rr**), container (**cs**), tanker (**ts**), passenger (**pa**), oil/bulk ore (**ob**), general cargo (**gc**), reefer (**rf**). Write out any additional vessel types.

GT: What is the Gross Tonnage of the vessel?

Call Sign: Write in the official call sign.

Flag: Fill in the full name of the country under whose authority the ship is operating. No abbreviations please.

SECTION 2. VOYAGE INFORMATION

Arrival Port: Write in the name of your first port of call after entering the U.S. EEZ or St. Lawrence Seaway. No abbreviations.

Arrival Date: Fill in the arrival date to the above port. Please use European date format (DDMMYY).

Agent: List agent used for current port.

Last Port: Fill in the last port at which the vessel called immediately before entering the U.S. EEZ. No abbreviations please.

Country of Last Port: Fill in the last country at which the vessel called immediately before entering the U.S. EEZ. No abbreviations please.

Next Port: Fill in the port at which the vessel will call immediately after departing the current port ("Current Port"="Arrival Port" above). No abbreviations please.

Country of Next Port: Fill in the country of "Next Port" at which the vessel will call immediately after current port. No abbreviations please.

SECTION 3. BALLAST WATER

Total Ballast Water on Board:

Volume: What was the total volume of ballast water on board upon arrival into the waters of U.S. EEZ? Do not count potable water.

Units: Please include volume units (m³, MT, LT, ST).

Number of Tanks in Ballast: Count the number of ballast tanks and holds with ballast as vessel enters waters inside the United States EEZ.

Total Ballast Water Capacity:

Volume: What is the maximum volume of ballast water used when no cargo is on board?

Units: Please include volume units (m³, MT, LT, ST).

Total Number of Tanks on Ship: Count all tanks and holds that can carry ballast water (do not include tanks that carry potable water).

SECTION 4. BALLAST WATER MANAGEMENT

Total No. of tanks to be discharged: Count only tanks and holds with ballast to be discharged into waters inside the United States EEZ or into an approved reception facility. Count all tanks and holds separately (e.g., port and starboard tanks should be counted separately).

Of tanks to be discharged, how many Underwent Exchange: Count all tanks that are to be discharged into waters of the United States or into an approved reception facility.

Of tanks to be discharged, how many Underwent Alternative Management: Count all tanks that are to be discharged into waters of the United States or an approved reception facility.

Please specify alternative method(s) used, if any: Specifically, describe methods used for ballast management.

If no ballast treatment conducted, state reason why not: This applies to all tanks and holds being discharged into waters of the United States or into an approved reception facility.

Ballast Management Plan on board?: Is there a written document on board, specific to your vessel, describing the procedure for ballast management? This should include safety and exchange procedures (usually provided by vessel's owner or operator). Check Yes or No.

Management Plan implemented?: Do you follow the above management plan? Check Yes or No.

IMO Ballast Water Guidelines on board?: Is there a copy of the International Maritime Organization (IMO) Ballast Water Guidelines on board this vessel (i.e. "Guidelines for the Control and Management of Ship's Ballast Water to Minimize the Transfer Aquatic Organisms and Pathogens", [Res. A.868(20)])? Check Yes or No.

SECTION 5. BALLAST WATER HISTORY

(Record all tanks to be deballasted in port state of arrival: If none, go to #6)

Tanks/Holds: Please list all tanks and holds that you have discharged or plan to discharge into waters of the United States or into an approved reception facility (write out, or use codes listed below table). Follow each tank across the page listing all source(s), exchange events, and/or discharge events separately. List each tank on a separate line. Port and starboard tanks with identical ballast water histories may be included on same line. Please use an additional page if necessary, being careful to include ship name, date, and IMO number at the top of each. For tanks with multiple sources: list 3 largest sources from last 30 days on separate lines. If more than 3 sources, include a 4th line for the respective tank(s) that indicated "Multiple" in port column and list the remaining tank volume not included in the 3 largest sources (i.e., total tank volume minus volume of the 3 largest sources). See example #1 on sample ballast reporting form.

-BW SOURCES

Date: Record date of ballast water uptake. Use European format (DDMMYY).

Port or latitude/longitude: Record location of ballast water uptake, no abbreviations for ports.

Volume: Record total volume of ballast water uptake, with volume units.

Temp: Record water temperature at time of ballast water uptake, in degrees Celsius (include units).

-BW MANAGEMENT PRACTICES-

Date: Date of ballast water management practice. If exchanges occurred over multiple days, list the day when exchanges were completed. Use European format (DDMMYY).

Endpoint or latitude/longitude: Report location of ballast water management practice. If an exchange occurred over an extended distance, list the end point latitude and longitude.

Volume: Report total volume of ballast water moved (i.e., gravitated and pumped into tanks, discharged to reception facility) during management practice, with units.

% Exch.: (Note: for effective flow through exchange, this value should be at least 300%).

$$\% \text{ Exchange} = \frac{\text{Total Volume of refill or flowthrough water}}{\text{Original Volume of water}} \times 100\%$$

Method: Indicate management method using code (ER = empty/refill, FT = flow through, ALT = alternative method).

Sea Ht . (m): Estimate the sea height in meters at the time of the ballast water exchange if this method was used. (Note: this is the combined height of the wind-seas and swell, and does not refer to water depth).

-BW DISCHARGES-

Date: Date of ballast water discharge. Use European format (DDMMYY).

Port or latitude/longitude: Report location of ballast water discharge, no abbreviations for ports.

Volume: Report volume of ballast water discharged, with units.

Salinity: Document salinity of ballast water at the time of discharge, with units (i.e., specific gravity (sg) or parts per thousand (ppt)).

SECTION 6. TITLE AND SIGNATURE

Responsible officer's name and title (printed) and signature: Print name and title, include signature.

EXAMPLE BALLAST WATER REPORTING FORM

SPECIAL NOTES ON "SAXATILLIS"

SINGLE BALLAST TANKS WITH WATER FROM A NUMBER OF DIFFERENT LOCATIONS:

Wing Tank 1 (WT 1) contains water from a number of different sources and occupies 4 consecutive lines of Section 5, "Ballast Water History".

- **Source:** As specified in the instructions, information for the most recent 3 sources are listed, with each separate source listed on a separate line. The location for source water older than is designated as "Multiple" on the 4th line.
- **Exchange:** All of WT 1's water was exchanged in the same location, on the same date. This information is contained on line 1, exchange section. (Please note that volume and percent exchange for entire tank is listed only on the first line, exchange section.)
- **Discharge:** All of WT 1's water was discharged in Baltimore on the same date. This information is contained on line 1, discharge section. (Please note that volume of discharged volume for entire tank is listed only on line 1, discharge section.)

BALLAST WATER REPORTING FORM

IS THIS AN AMENDED BALLAST REPORTING FORM? YES NO

1. VESSEL INFORMATION

2. VOYAGE INFORMATION

3. BALLAST WATER USAGE AND CAPACITY

Vessel Name: Saxatillis	Arrival Port: Baltimore	<i>Specify Units Below (m³, MT, LT, ST)</i>		
IMO Number: 8530201	Arrival Date: 10/04/99	Total Ballast Water on Board:		
Owner: United States Coast Guard	Agent: International Host	Volume	Units	No. of Tanks in Ballast
Type: Ro-Ro	Last Port: Liverpool	7655	m3	19
GT: 85923	Liverpool	Total Ballast Water Capacity:		
Call Sign: RX7T	Next Port: Ghent	Volume	Units	Total No. of Tanks on Ship
Flag: United States of America	Ghent	22430	m3	24

4. BALLAST WATER MANAGEMENT

Total No. Ballast Water Tanks to be discharged: 2

Of tanks to be discharged, how many: Underwent Exchange: 2

Underwent Alternative Management: 0

Please specify alternative method(s) used, if any: _____

If no ballast treatment conducted, state reason why not: _____

Ballast management plan on board? YES NO

Management plan implemented? YES NO

IMO ballast water guidelines on board [res. A.868(20)]? YES NO

5. BALLAST WATER HISTORY: Record all tanks to be deballasted in port state of arrival;

IF NONE, GO TO #6 (Use additional sheets as needed)

Tanks/ Holds <small>List multiple sources/tanks separately</small>	BW SOURCES				BW MANAGEMENT PRACTICES						BW DISCHARGES			
	DATE DD/MM/Y Y	PORT or LAT. LONG.	VOLUME (units)	TEMP (units)	DATE DD/MM/Y Y	ENDPOINT LAT. LONG.	VOLUME (units)	% Exch	METHOD (ER/FT/ ALT)	SEA HT. (m)	DATE DD/MM/Y Y	PORT or LAT. LONG.	VOLUME (units)	SALINITY Y (units)
WT 1	25/03/99	Liverpool, United Kingdom	1000 m3	15 C	05/04/99	45 20 N 30 15 W	7865 m3	300	ER	4	10/04/99	Baltimore	2625 m3	35 ppt
WT 1	20/03/99	Brest, France	525 m3	15 C	AS	ABOVE	***** m3	***	ER	**	AS	ABOVE	***** m3	***** sg
WT 1	15/03/99	Cartegena, Spain	700 m3	16 C	AS	ABOVE	***** m3	***	ER	**	AS	ABOVE	***** m3	***** sg
WT 1	24/03/99	Multiple	400 m3	16 C	AS	ABOVE	***** m3	***	ER	**	AS	ABOVE	***** m3	***** sg
WT 2	24/03/99	Liverpool, United Kingdom	2625 m3	15 C	05/06/99	45 0 N 35 0 W	7865 m3	300	FT	4	10/04/99	Baltimore	2625 m3	35 ppt
			m3	C			m3		ER				m3	sg
			m3	C			m3		ER				m3	sg

Ballast Water Tank Codes: Forepeak = FP, Aftpeak = AP, Double Bottom = DB, Wing = WT, Topside = TS, Cargo Hold = CH, Other = O

6. RESPONSIBLE OFFICER'S NAME AND TITLE, PRINTED AND SIGNATURE: John Doe, Captain

BALLAST WATER REPORTING FORM

IS THIS AN AMENDED BALLAST REPORTING FORM? YES NO

1. VESSEL INFORMATION

2. VOYAGE INFORMATION

3. BALLAST WATER USAGE AND CAPACITY

Vessel Name: Blue Crab	Arrival Port: Long Beach	<i>Specify Units Below (m³, MT, LT, ST)</i>		
IMO Number: 7360590	Arrival Date: 16/03/99	Total Ballast Water on Board:		
Owner: United Petroleum	Agent: T. Parker Host	Volume	Units	No. of Tanks in Ballast
Type: Tanker	Last Port: Buenaventura	8000	m3	12
GT: 99523	Country of Last Port: Mexico	Total Ballast Water Capacity:		
Call Sign: JP5L	Next Port: Valdez	Volume	Units	Total No. of Tanks on Ship
Flag: Malta	Country of Next Port: United States of America	25000	m3	31

4. BALLAST WATER MANAGEMENT

Total No. Ballast Water Tanks to be discharged: 6

Of tanks to be discharged, how many: Underwent Exchange: 4

Underwent Alternative Management: 0

Please specify alternative method(s) used, if any: _____

If no ballast treatment conducted, state reason why not: Rough Seas

Ballast management plan on board? YES NO Management plan implemented? YES NO

IMO ballast water guidelines on board [res. A.868(20)]? YES NO

5. BALLAST WATER HISTORY: Record all tanks to be deballasted in port state of arrival;

IF NONE, GO TO #6 (Use additional sheets as needed)

Tanks/ Holds <small>List multiple sources/tanks separately</small>	BW SOURCES				BW MANAGEMENT PRACTICES						BW DISCHARGES			
	DATE DD/MM/Y Y	PORT or LAT. LONG.	VOLUME (units)	TEMP (units)	DATE DD/MM/Y Y	ENDPOINT LAT. LONG.	VOLUME (units)	% Exch	METHOD (ER/FT/ ALT)	SEA HT. (m)	DATE DD/MM/Y Y	PORT or LAT. LONG.	VOLUME (units)	SALINIT Y (units)
WT 1	01/03/99	Buenaventura, Mexico	1500 m3	20 C	05/03/99	10 10 N 110 0 W	3000 m3	200	FT	2	10/03/99	Long Beach	1500 m3	36 ppt
WT 2	01/03/99	Buenaventura, Mexico	1500 m3	20 C	05/03/99	10 10 N 110 0 W	3000 m3	200	ER	2	10/03/99	Long Beach	1500 m3	36 ppt
WT 3	01/03/99	Buenaventura, Mexico	1500 m3	20 C	05/03/99	10 10 N 110 0 W	3000 m3	200	ER	2	10/03/99	Long Beach	1500 m3	36 ppt
FP	01/03/99	Buenaventura, Mexico	900 m3	20 C	05/03/99	10 10 N 110 0 W	1800 m3	200	ER	2	10/03/99	Long Beach	900 m3	36 ppt
AP	01/03/99	Buenaventura, Mexico	500 m3	20 C			m3		ER		10/03/99	Long Beach	500 m3	14 ppt
O	07/03/99	31 05 N 122 20 W	1000 m3	20 C			m3		ER		10/01/99	San Francisco	1000 m3	14 sg
			m3	C			m3		ER				m3	sg

Ballast Water Tank Codes: Forepeak = FP, Aftpeak = AP, Double Bottom = DB, Wing = WT, Topside = TS, Cargo Hold = CH, Other = O

6. RESPONSIBLE OFFICER'S NAME AND TITLE, PRINTED AND SIGNATURE: Bill Smith, Chief Mate

National Ballast Survey: USCG Questionnaire

Coast Guard Boarding Officer: _____
Name

BOARDING/VESSEL INFORMATION

Is this a random boarding? Or, Is this boarding in addition to the random boarding schedule?
 Was this random boarding conducted in conjunction with another scheduled activity for this vessel?

Today's Date	
COTP (Captain Of The Port) Zone	
This Arrival Port	
Vessel Name	
IMO Number or Official Number	
Vessel Owner or Operator	

Vessel Type: Tanker Bulk Carrier Container General Cargo Other

BALLAST WATER INFORMATION

What was your last port of call?

Are you discharging ballast water in this or other U.S. port(s)? Yes No

What volume of ballast water is being discharged in this or other U.S. port(s)?

What are the units of the volume being discharged? (Circle One): m³ MT LT ST

How many ballast water tanks are on this vessel?

How many of these tanks are in ballast?

How many of these tanks will be partially or fully discharged in this or other U.S. ports?

How many of the tanks to be discharged underwent ballast exchange?

What percentage of the discharged water was exchanged?

List ballast tanks that underwent exchange and which will be discharged: _____

What is the salinity (ppt) of an exchanged tank?

If salinity was not measured, name alternative water characteristic measured: _____

What was the value and unit of the alternative water characteristic? Value Unit

INTERNET CAPABILITIES

Can you access the World Wide Web on this vessel? Yes No
 Can you send and receive e-mail on this vessel? Yes No

Palm Pilot Usage

Setting up the Palm Pilot

- A. What's what with the Palm Pilot.
 - 1. Digitizer Screen and other buttons
 - 2. Stylus and its Silo
 - 3. The Graffiti Alphabet
 - a. There is a cheat sheet in with the palm pilot and a sticker to place on the back of the palm pilot for reference.
 - b. Once you practice, you should be able to write as quickly as you can write print on paper (~30 words per minute).
- B. Installing the Palm Pilot Cradle
 - 1. Locate the 9 pin com port on the back of your computer.
 - 2. Insert the connector of the Palm Pilot Cradle to this port
- C. Installing the Palm Pilot Software
 - 1. Insert the Palm Pilot software CD into your CD-rom.
 - 2. The Install program should come up automatically.
 - 3. If not, go to Start ► Run ► {Drive}:\setup.exe
 - 4. Follow instructions of installation
 - 5. Choose "typical" installation

Setting up Pendragon Forms

- A. Installing the software
 - 1. Insert the Pendragon Forms software CD into your CD-rom.
 - 2. The Install program should come up automatically.
 - 3. If not, go to Start ► Run ► {Drive}:\setup.exe
 - 4. Follow instructions of installation
 - 5. Choose "typical" installation
- B. Importing the Boarding Form from the floppy disc
 - 1. Run Pendragon Forms Manager
 - 2. Select import
 - 3. Guide the program to the form design (groundtruth.pff) on the floppy and select "ok."

First using the Palm Pilot

- A. Installing the Batteries
 - 1. The Palm Pilot should come complete with two AAA batteries
 - 2. Insert these batteries into the bottom panel on the back of the Palm Pilot
- B. On/Off (and also Back-Light)
 - 1. The little green button on the bottom left side of the Plam Pilot is the on/off/backlight button.
 - 2. Depress once to turn on
 - 3. Hold for several seconds to turn on the light
 - 4. Push again to turn off
- C. Setting up the Palm Pilot during first use
 - 1. When you first turn the Palm Pilot, it walks you through a few setup steps.
 - 2. Calibrating the digitizer
 - a. This allows you to insure that Palm Pilot knows what you are pointing at.
 - b. Simply point to the center of X's with the stylus
- D. Set the Time and other preferences

- E. Giraffe Game (a good way to learn the Graffiti Alphabet)
 - 1. Point to the Applications icon on the bottom of the screen.
 - 2. Then select the Giraffe icon.
 - 3. This is a game designed to help you learn the Graffiti alphabet
 - 4. The premise of the game is that of the old missile command game, except that you zap the falling letters by writing them.
- F. Hot-Sync (i.e. uploading the data to your desktop)
 - 1. Put Palm Pilot into the Cradle
 - 2. Push the Hot Sync Button

Installing the Boarding Form (Groundtruth) onto the Palm Pilot

- A. Install Pendragon Forms onto the Palm
During your next Hot-Sync, the Pendragon Forms program will be installed onto your palm pilot automatically.
- B. Run Pendragon Forms Manager
- C. Select the Boarding Form from the list of forms
- D. Click on the “Distribute” button on the bottom left of the program.
- E. Hot-Sync again to update the Palm Pilot

Using the Boarding Form

- A. On the Palm Pilot, go to Applications ➤ Forms ➤ Groundtruth
- B. Select “New” to fill out a new survey.
- C. Fill in questions with answers
 - 1. Most fields require a text answer, however some ask for dates and volumes.
 - 2. Some fields use scroll bars and other helpful devices to expedite the entry of data.
 - 3. The signature field requires the signer to write slowly their signature in the box provided with the stylus.
 - 4. To move between fields, use the arrows at the bottom right of the form screen.
- D. To review records on the Palm Pilot, select “Review” and then the record that you want to review.
- E. If a field needs to be edited, select the field from within the review mode and then change that field’s entry

Sending the Data to SERC

- A. On your Desktop computer, go to the Pendragon Forms program and select the Groundtruth form.
- B. Select the “To Ascii” button on the right.
- C. Select a location and name to save the file.
- D. In your e-mail program, send this file as an attachment to SERC (ballast@serc.si.edu).

Note: These instructions are under review and may be updated. Any updates will be distributed as soon as possible to the field.

CARE AND USE OF REFRACTOMETER

For the electronic version of this document the following hyperlink was the most practical way to provide this information.

<http://www.uscg.mil/hq/g-m/mso4/refractometer.pdf>

HEALTH AND SAFETY MEASURES

1. Since ships usually take on ballast water while in port or close to shore, organisms, matter and microorganisms present in the water of that port or shoreline can be introduced into the ballast tanks of the ships. A 1995 Great Lakes regional study performed in the Ports of Toronto and Hamilton, and in the Welland Canal, sampled the ballast water of 71 ships. Of those sampled, 45 percent of the ships carrying ballast water had fecal coliforms and *E. coli*, while 80 percent of the vessels tested positive for enterococci. The potential presence of fecal matter and other harmful organisms in ballast water makes it necessary for inspection personnel to be aware of the hazards and potential risks associated with conducting ballast water sampling. These risks can be minimized greatly by using personal protective equipment (PPE) and following basic hygiene and work practices. All Coast Guard personnel shall observe the following basic safety precautions when sampling ballast water:
 - a. Wear a protective outer garment when taking ballast water samples. Standard issue Coast Guard coveralls or a Tyvek suit are acceptable. The outer garment will be removed upon completion of the inspection and placed in a plastic bag until it can be either washed or properly disposed of.
 - b. Wear protective latex gloves and eye protection when sampling ballast water.
 - c. Wearing a properly fitted respirator with an approved HEPA cartridge is optional.
 - d. As soon as possible upon completion of the inspection, wash your hands and face with anti-bacterial soap. Several different forms of vionex should be available, including towelettes. There should be no eating, drinking or smoking until the hands and face have been washed.
 - e. Should ballast water come into contact with exposed skin -- *especially in the eyes, nose, or mouth* -- the area should be flushed with clean water.

BALLAST WATER MANAGEMENT INSPECTION CHECKLIST

VESSEL NAME: _____

Pre-Inspection Actions

1. _____ Verify zero reading on refractometer with distilled water and rinse.
2. _____ Check Personal Protective Equipment
3. _____ Review vessel history and pre-entry information
4. _____ Ensure adequate supply of forms and pamphlets

Inspection Actions

1. _____ Inform Master of reason for boarding
2. _____ Provide copy of Ballast Water Informational Pamphlet
3. _____ Obtain copy of Ballast Water Reporting Form.
4. _____ Review ballast water management records
5. _____ Complete Coast Guard Survey Form
6. _____ Take salinity sample and record on survey form
7. _____ Explain areas not in compliance and issue CG 5437

Post-Inspection Actions

1. _____ File electronic version of Coast Guard Survey Questionnaire or fax paper copy to NBIC
2. _____ Complete MSIS entries.
3. _____ Clean refractometer with distilled water
4. _____ Complete follow-up paperwork and file Port Safety Boarding Report

BALLAST WATER INSPECTION QUALIFICATIONS

BW-R - REQUIRED RESIDENT TRAINING Date Completed

1. Complete Marine Safety Petty Officer Course (MSPOC) _____

OR

2. Complete Marine Safety Petty Officer Reserve Course (MSOC) _____

BW-U - UNIT TRAINING Date Verified by

1. Demonstrate knowledge of 33 CFR Part 151 _____ _____

2. Demonstrate knowledge of applicable NVIC _____ _____

3. Identify target vessels for ballast water exam using pre-entry info, MSIS, survey info, etc. _____ _____

4. Identify paperwork necessary to conduct a ballast water exam _____ _____

BW-1 - PRE-INSPECTION ACTIVITIES

1. Demonstrate ability to conduct instrument checks and calibration:

a. Calibrate refractometer _____ _____

b. Demonstrate operation of refractometer _____ _____

BW-2 - INSPECTION ACTIVITIES

1. Describe occupational safety and equipment and precautions required to conduct ballast water inspections and demonstrate proper use of equipment. _____ _____

2. Observe the following items as you approach the vessel: _____ _____

- a. Cargo being transferred/waiting to be transferred.
- b. Warning signs, signals, and general vessel conditions.
- c. Suitability of gangways and moorings
- d. Safe/unsafe practices surrounding vessel.
- e. Cargo leakage/pollution.
- f. Vessel draft and loadline.
- g. Hull damage.

3. Locate Master or Chief Officer, make introductions
explain nature of boarding, and identify problems _____
4. Obtain and review the following items: _____
 - a. Ballast Water Reporting Form _____
 - b. Ballast Water records _____
5. Complete Coast Guard Survey Questionnaire _____
6. Determine number and location of ballast tanks to be tested _____
7. Take ballast water sample and analyze using refractometer _____
8. Determine if readings are within allowable parameters _____
9. Complete paperwork, enter results in MSIS, and transmit
data to NBIC _____

BW-3 - NON-COMPLIANCE AND FOLLOW-UP ACTION

1. Demonstrate action required if non-compliance with
mandatory guidelines is found.
 - a. Complete Vessel Boarding Form (CG-5437)
noting discrepancies and provide copy to Master _____
 - b. Evaluate need for LOU/Surety Bond _____
 - c. Make MSIS entries. _____

BW-Q - QUALIFICATION REQUIREMENTS SUMMARY

Date Completed

SATISFACTORILY COMPLETE THE FOLLOWING:

BW-R RESIDENT TRAINING _____

BW-U UNIT TRAINING _____

BW-1 PRE-INSPECTION ACTIVITIES _____

BW-2 BALLAST WATER INSPECTION ACTIVITIES _____

BW-3 NON-COMPLIANCE AND FOLLOW-UP ACTIONS _____

QUALIFICATION REVIEW BY TRAINING BOARD _____

ALL QUALIFICATION REQUIREMENTS HAVE BEEN SATISFACTORILY COMPLETED.

TRAINING OFFICER/COORDINATOR

QUALIFICATION LETTER ISSUED _____