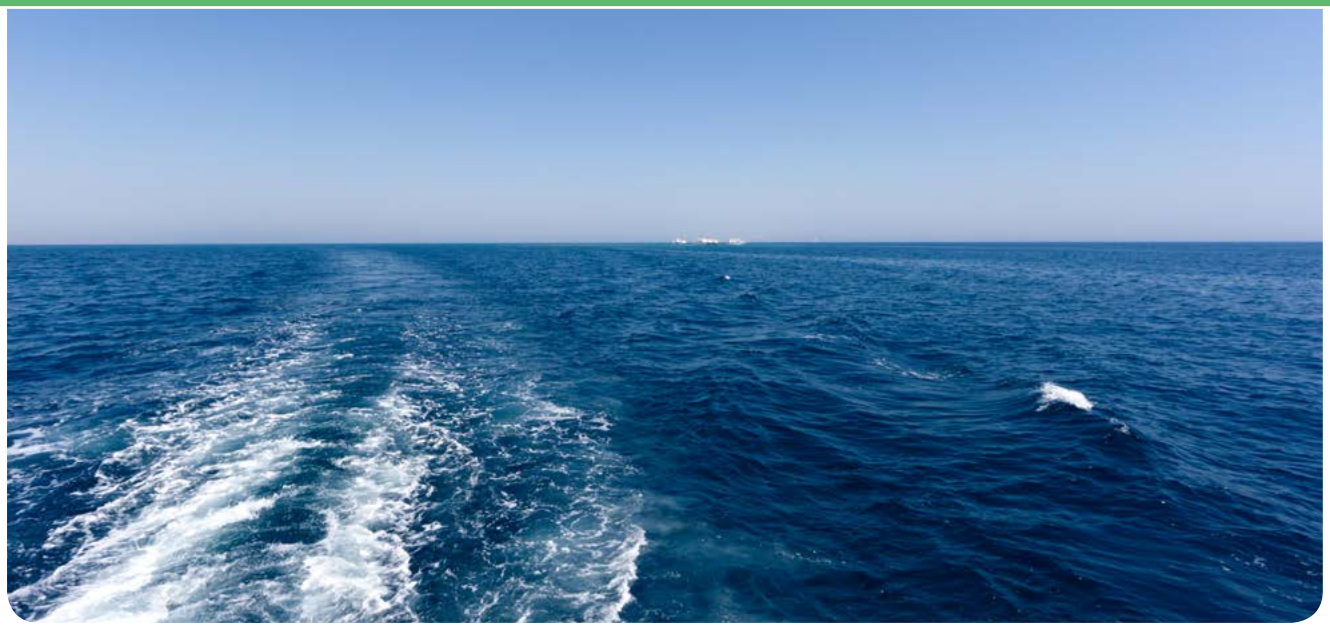
CLEAN
SHIPPING
INDEX

CLEAN SHIPPING INDEX

Verification Guidelines

For seagoing vessels



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About the Clean Shipping Index

The Clean Shipping Index is an independent reporting and labelling system of the environmental performance of ships and shipping companies.

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Clean Shipping Index, 2018. Verification Guidelines 2018. Clean Shipping Index, Gothenburg, Sweden.

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1. INTRODUCTION

The Verification Guidelines are developed by the Clean Shipping Index secretariat in collaboration with its technical committee. The guidelines should be followed when performing a Clean Shipping Index vessel verification in order to issue a Clean Shipping Index certificate.

Third party verification of the submitted data on a vessel's environmental impact is considered important for the users of the Clean Shipping Index, as they may base economic decisions on the environmental performance reported.

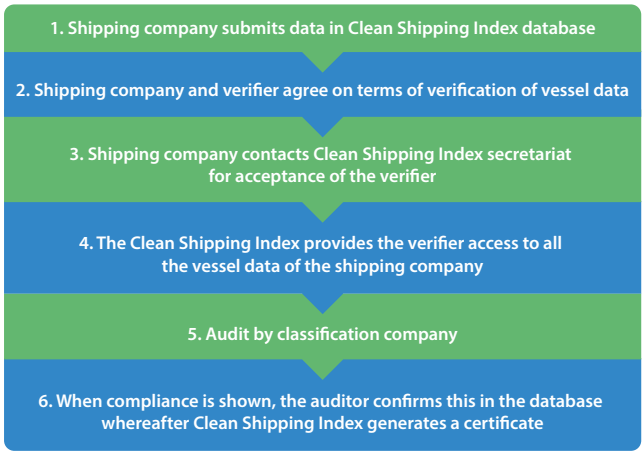
More background and a detailed description of the methodology and scoring of the Clean Shipping Index environmental parameter are given in the Methodology and Reporting Guidelines which can be downloaded from www.cleanshippingindex. com.

2. VESSEL VERIFICATION RULES AND PROCEDURES

2.1 Accreditation of verification companies

The verifier has to be accredited according to ISO/IEC Guide 65 (EN 45011) or under ISO 17065:2012, or a standard equivalent procedure for a verification service such as the ISO 14065:2013. Verification companies that are accredited by an EU Member state to perform verification for the EU regulation on Monitoring, Reporting and Verification of CO_2 emissions from ships (1), and can show relevant knowledge on the other environmental parameters in the Clean Shipping Index are also accepted. The verifier has to be accredited by the Clean Shipping Index secretariat and its technical committee. The verifier needs to show their knowledge of Clean Shipping Index verification procedures when requested by the Clean Shipping Index secretariat.

2.2 Audit procedure



After the shipping company answered the Clean Shipping Index questionnaire about the vessel's environmental performance the shipowner needs to contact a classification company that is accredited to perform Clean Shipping Index audits. In case a verifier is not yet approved the verifier needs to contact the secretariat in order to be considered for accreditation. The clean Shipping Index will open the datalink between the shipowner and the verifier after which the audit can take place. When compliance is shown, Clean Shipping Index issues a certificate indicating the environmental class (1 to 5 star) of the vessel.

How the shipping company and the verifier decide to conduct the actual verification survey is a business between these two parties – as long as all required calculations and inspections are thoroughly performed. Experience has shown that some general patterns may both be time and money saving to follow.

When the verifier has got access to vessel data it is recommended that the required documents for the survey are sent to the verifier for a review in advance. The documents required are listed in the table in Annex 1.

An office audit at the shipping company is required for the verification of CO_2 performance, sulphur content in fuel, PM levels and NO_x performance.

Spot checks on sample values from reported CO_2, SO_x, PM and voyage data will be carried out together with supporting evidence with respect to the chemicals and water & waste sections.

The verifier needs to archive all data related to the received Clean Shipping Index scoring for at least one year after the verification has expired.

2.3 Non-compliance

If non-compliance is revealed during the audit, the shipping company must adjust the scoring or adjust the performance followed by an additional survey for that item. Any non-concluded disputes between the verifier and the shipping company shall be submitted to the Clean Shipping Index secretariat for judgement.

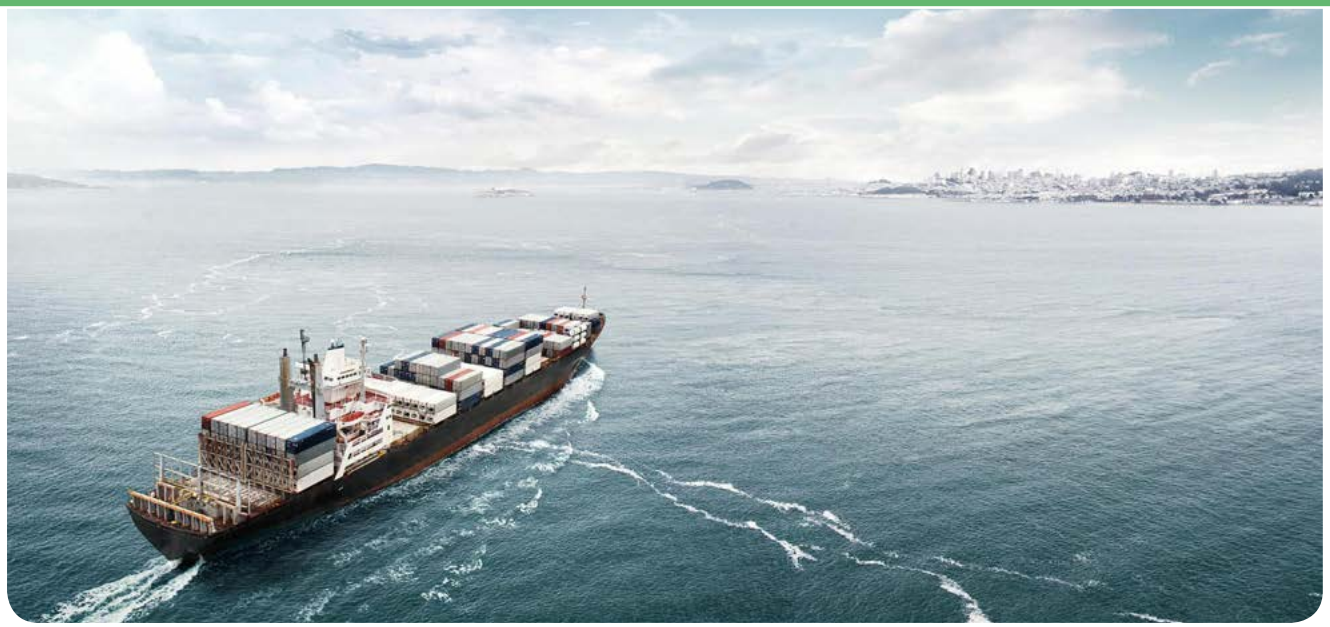
At any time, the Clean Shipping Index secretariat can ask to review the background documentation of the verifier and the shipping company to ensure that the received scoring and calculations are accurate. If either verifier or shipping company cannot show the background documentation, either a re-verification process must start or verification will be lost. If verification is not performed in line with these verification guidelines, the verifier will lose the accreditation for one year and need to be accepted again by the Clean Shipping Index secretariat.

2.4 Validity of the Clean Shipping Index certificate

The certificate is valid for 3 years.

It is possible to have a verification performed on specific parameters. This may be beneficial when a vessel's environmental performance increases due to maintenance or replacement of equipment.

Emissions of CO_2, SO_x and Particulate Matter need to be verified annually by an office audit.



An onboard + office audit needs to be performed on all parameters every 3 years. In these guidelines under chapter three, the 3 year audit is referred to as the 'full audit'.

Verification of CO_2 and SO_x emission data for container carriers according to the Clean Cargo Working Group is accepted if third party documents are shown to and documented by the CSI verifier.

Graphical representation of the classification scheme.

Data is considered over a 12 month running period, the start and end period are up to the ship operator to decide. A certificate expires one month after the 12 month period has passed. This means ship operators have one month to update the annual air emission verification. The validity follows the 12 month running period of the initial verification.

2.5 Clean Shipping Index environmental classes

The Clean Shipping Index environmental classes range from one to five stars, depending on the number of points obtained. The environmental classes are defined in the methodology and verification guidelines which can be downloaded from www.cleanshippingindex.com.

2.6 Costs of verification

The costs for the verification are a matter between the shipping company and the verifier. The full audit (office + onboard, every 3 year) normally takes 1 to 2 days, depending on the availability of the data and experience of the auditor.

The Clean Shipping Index secretariat charges an administrative fee of EUR 500,- for issuing the certificate when the full audit has been performed. This is a fixed fee and will be invoiced to the verification company on monthly basis. The administrative fee does not apply for Shipowners who are members of the Clean Shipping Index for a maximum of 10 certificates per year.

3. CLEAN SHIPPING INDEX VERIFICATION OF SCORING PARAMETERS

3.1 SO_x and PM

A summary of all bunker deliveries for all types applicable (HFO, MDO, MGO, LNG etc.) including quantity and sulphur content should be presented. The summary should cover a 12 month running period.

Documentation of bunker use at berth, including boilers, and within ECAs, if applicable, should be presented per voyage.

Documentation on external methods of reducing SO_x and PM emissions, if applicable, should be presented.

Review the IAPP certificate and bunker records for one bunkering per month over the 12 month running period. For new vessels, the calculation should be based on any fuel order basis available.

Sulphur testing should follow the Revised MARPOL Annex VI (2).

Sulphur analysis protocols should be found on board during the full audit.

Measurement report with PM emission factors proving that PM measurements were made following ISO 8178.

If shore power connection is used, a review of the policy and usage should be done both in office and on board.

If plug-in battery power is claimed, a review of the usage should be done both at office and onboard.

Required documents: Bunkering documents (Bunker Delivering Notes, BDN summaries), Oil Record book, International Air Pollution Prevention certificate), Measurement report with PM emission factors.

NO_x

For engines installed after 1st Jan 2000, the data on NO_x emissions is stated in the EIAPP certificate (1).

If the engine is pre 2000, or if NO_x abatement technology is installed, NO_x measurements could have been done according to the NO_x Technical Code 2008 (1). A 75% load factor is approved on installations done before 2018.

Measurements done by accredited institutions are accepted.

Measurements could also have been done according to the Regulations of the Swedish Maritime Administration (3). Note: last certificates were issued 2017-11-14.

The NO_x emissions may also be calculated according to the Norwegian NO_x emission tax system (4). An example of these calculations is given in the Methodology and Reporting Guidelines of Clean Shipping Index.

On-board inspection of EIAPP for all engines and, if applicable, NO_x abatement technology documentation and verified usage should take place during the full audit.

If shore power connection is used, a review of the policy and usage should take place both in office and on board (same as for SO_x & PM).

If plug-in battery power is claimed, a review of the usage should be done both at office and onboard (same as for SO_x & PM).

Required documents: Engine International Air Pollution Prevention certificate for all engines – if applicable, Other approved NO_x measurements or calculations – if applicable

CO_2

Office and onboard verification should take place. Calculations should cover a 12 month running period and should follow the methodology and reporting guidelines. In case it concerns a new build vessel without a 12 operational month history, the Energy Efficiency Design Index (EEDI) serves as the reference for scoring.

For example, this means that a summary of the ship itinerary for the entire period that is to be verified including: departure port, arrival port, distance travelled and cargo carried, should be presented.

A summary of type of main engine, auxiliary engine, boiler and other consumer fuel delivered during the total period should be presented (see SO_x)

The mass of consumed main engine, auxiliary engine, boiler and other consumed fuel for the total period, should be presented.

The onboard verification should cover check on ship´s log and records of loading conditions, printouts from load computer, departure and arrivals and bills of laden for period covered.

Required documents: Overview of each voyage, split on ballast and laden legs if applicable, with sailed distance, port calls, cargo transported, type and mass of fuel consumed for main engine, auxiliary engines, boilers and other consumption.

Data should be available over a 12 month running period. Documentation explaining methodology and calculation used for establishing CO2 emissions.

ANTIFOULING
Onboard verification should take place.

Verify content of biocides and type of binder of the coating.

Acceptable biocides are presented in the methodology and reporting guidelines.

Required documents: Anti-Fouling System certificate, Materials Safety Data Sheet, Technical Data Sheet.

STERN TUBE OILS
Onboard verification should take place.

Confirm the stern tube arrangement – if applicable. If biodegradable fluid is claimed, documentation should be presented to show that each main component of the product (>5% by weight) should have a biodegradation >60% within 28 days. Testing should be according to ISO 9439 (5) or ISO 10708 (6). ISO 9408 (7) may be accepted if the theoretical oxygen demand (ThOD) and a time period of maximum 28 days are chosen in the method.

Required documents: Materials Safety Data Sheet, Technical Data Sheet.

EXTERNAL HYDRAULIC FLUIDS
Onboard verification should take place.

Confirm the external hydraulic fluid arrangement. If a capped external hydraulic system is claimed, no fluid should possibly be able to reach the sea in case of leakage. If biodegradable fluid is claimed, biodegradation data should be presented in accordance with criteria for stern tube oils.

Required documents: Materials Safety Data Sheet, Technical Data Sheet.

GEAR OILS FOR THRUSTERS/ PITCH PROPELLERS
Onboard verification should take place.

Confirm gear oil arrangement for thrusters and/or pitch propellers – if applicable. If biodegradable fluid is claimed, biodegradation data should be presented in accordance with criteria for stern tube oils.

Required documents: Materials Safety Data Sheet, Technical Data Sheet.

BOILER/COOLING WATER TREATMENT
Onboard verification should take place.

If claimed, verify that the vessel avoids the usage of chemical products, or components in the products, classified as carcinogenic, mutagenic, toxic to reproduction (CMR substances), sensitizing, toxic or dangerous to the environment according to the EU Dangerous Substance Directive (8). Nitrite is excluded. In addition, organic solvents classified with risk phrases on health and environmental danger should be avoided.

Required documents: Materials Safety Data Sheet, Technical Data Sheet.

CLEANING AGENTS
Onboard verification should take place.

If claimed, verify that the vessel avoids use of chemical products, or components in the products, classified as carcinogenic, mutagenic, toxic to reproduction (CMR substances) or dangerous for the environment according the Dangerous Substances Directive (10).

Detergents classified as dangerous to the environment according to the Dangerous Substances Directive or with limits in the EU Regulation on detergents (9), should be avoided. Also organic solvents classified with risk phrases regarding health and environmental danger should be avoided.

Detergents, surfactants or other components that disturb the installed bilge water treatment should be avoided. Information on approved surfactants is usually found on the website of the bilge water cleaning equipment manufacturer.

The demands above are applicable for chemical products in normal regular use. Exceptions may be accepted for extraordinary situations, force majeure or accidents.

Required documents: Materials Safety Data Sheet, Technical Data Sheet.

REFRIGERANTS
Onboard verification should take place.

Confirm what refrigerant systems are installed onboard. All refrigerants have to comply with criteria to get scoring. Reefer refri-

gerants are excluded. The ozone layer depletion potential (ODP) and the global warming potential (GWP) as defined by the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (10), should be verified for all refrigerants.

Verify if the refrigerants are natural (NH3, CO_2) or hydrofluorocarbon (HFC) with ODP number = 0 and GWP number < 3500. Additional points are achieved if the GWP is below 1850.

Required documents: Material Safety Data Sheet, International Air Pollution Prevention certificate, Refrigerant Record Book.

SEWAGE/ BLACK WATER

Onboard verification should be done.

Confirm sewage/black water treatment policy. Verify sewage water handling in Particularly Sensitive Sea Areas (PSSAs). See Annex 2.

Either approved sewage treatment plant according to MEPC (11) verified by usage and function through maintenance record or verification of no sewage discharge in PSSAs through operation manuals.

Required documents: Certificate of Type Approval for Sewage Treatment Plant (if applicable), International Sewage Prevention Pollution certificate (if in place), Plan Maintenance Scheme documentation (if in place), Sewage handling manuals.

GREY WATER

Onboard verification should be done.

Confirm grey water treatment policy. Verify grey water handling in Particularly Sensitive Sea Areas (PSSAs)

The options that score are either treating the grey water with the black water in an approved sewage treatment plant according to MEPC (20) – Certificate of Type Approval for Sewage Treatment Plant – and a control of its usage and function through a maintenance record. An alternative option is that no grey water discharge in PSSAs can be shown through operation manuals.

Required documents: Certificate of Type Approval for Sewage Treatment Plant (if applicable), International Sewage Prevention Pollution certificate (if in place), Plan Maintenance Scheme documentation (if in place), Sewage handling manuals.

GARBAGE HANDLING

Onboard verification should take place.
Confirm policy for garbage handling. If claimed, verify no incineration of garbage, no waste overboard (food waste excluded) and separate garbage handling for reuse, recycling and discharge. Information should be presented according to Annex V in MARPOL 73/78 (12).

Required documents: Garbage Record Book, Garbage Management Plan

SLUDGE HANDLING

Onboard verification should take place.

Confirm policy for sludge handling.

Verify handling of sludge, incineration of sludge oil, documentation of sludge oil disposal according to oil record book. Verify sample reading in oil record book and verify according to the International Oil Pollution Prevention certificate following the MARPOL Annex I (13).

Required documents: International Oil Pollution Prevention certificate, Oil Record Book.

BILGE WATER TREATMENT

Onboard verification should take place.

Confirm policy for bilge water treatment. If claimed, verify that active treatment equipment is installed, calibrated and a documented emission of < 5ppm oil in the disposed bilge water. Verify if emission control box is installed and register position and time. Verify if bilge water is discharged to an onshore treatment facility.

Required documents: International Oil Pollution Prevention certificate, Oil Record Book, Proposal Management System documentation (if in place).

CREW AWARENESS

Onboard verification should take place.

Confirm policy for crew awareness training. Judge result by asking the following questions to at least (but not limited to) Master, Chief Engineer, 2nd Engineer, 1st Officer, engine room personnel, galley personnel and electrician:

1. What are the environmental aspects of your daily operations, and the impact these may cause?
2. What kind of knowledge and tools to limit the environmental impact of your daily operations do you have?
3. Do you feel that environmental issues are prioritized to the necessary level within your company, and that you are well prepared for new and stricter regulations?
4. What do you believe is the main challenge for your company with regards to an emerging greener economy?

Written answers to these crew awareness questions will be filed by verifier together with verification documents.

No required documents.

4. VERIFICATION OF SHIPPING COMPANIES

In addition to individual vessel verifications, shipping companies are offered a "company verification" which leads to highlighted exposure in the Clean Shipping Index database. Such exposure is intended to function as a stamp of an overall quality of the company, and might be considered so by the Clean Shipping Index members.

The requirement for a "company verification" status is having a certain number of vessels from the fleet verified, based on the square root of total fleet (fractions rounded up), see below table.

Fleet size	Number of ships to verify	Fleet size	Number of ships to verify
1	1	**82-100**	10
4	2	**101-121**	11
9	3	**122-144**	12
16	4	**145-169**	13
25	5	**170-196**	14
36	6	**197-225**	15
49	7	**226-256**	16
64	8	**257-289**	17
65-81	9	**290-324**	18

NOTE: fleet size number should be based on owned and chartered vessels (time (6 months contract or more) -and bareboat charter). The database will automatically base the required number of vessels on total number of vessels reported

REFERENCES

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19. MARPOL. 2007. Annex I; Prevention of Pollution by Oil www.imo.org
20. www.sea-web.com

ANNEX 1. REQUIRED DOCUMENTATION FOR CLEAN SHIPPING INDEX VESSEL VERIFICATION.

1. Bunkering documents, SO_x
2. Type and mass of fuel consumed within ECA-SO_x –over a 12 month running period one calendar year, SO_x
3. Oil record book, SO_x
4. Measurement report with PM emission factors proving that PM measurements were made following ISO 8178
5. IAPP certificate, SO_x
6. EIAPP certificates for all engines, if applicable, NO_x
7. Other approved NO_x measurements, if applicable, NO_x
8. Overview of each voyage, split on ballast and laden legs if applicable, with sailed distance, port calls, cargo transported, type and mass of fuel consumed for main engine, auxiliary engines, boilers and other consumption. Data preferably available over one calendar year, CO_2
9. Documentation explaining methodology and calculation used for establishing CO_2 footprint, CO_2
10. TDS (Technical Data Sheet), Antifouling
11. AFS certificate, Antifouling
12. MSDS (Materials Safety Data Sheet), Antifouling
13. TDS (Technical Data Sheet), Stern tube oil
14. MSDS (Materials Safety Data Sheet), Stern tube oil
15. TDS (Technical Data Sheet), External hydraulic fluids
16. MSDS (Materials Safety Data Sheet), External hydraulic fluids
17. TDS (Technical Data Sheet), Gear oils for thrusters and controllable pitch (CP) propellers
18. MSDS (Materials Safety Data Sheet), Gear oils for thrusters and controllable pitch (CP) propellers
19. TDS (Technical data Sheet), Boiler/ Cooling water treatment
20. MSDS (Material Safety Data Sheets), Boiler/ cooling water treatment
21. TDS (Technical Data Sheet), Cleaning agents
22. MSDS (Material Safety Data Sheets), Cleaning agents
23. MSDS (Material Safety Data Sheets) Refrigerants
24. TDS (Technical Data Sheet), Refrigerants
25. Refrigerant Record Book, Refrigerants
26. Ballast Water Record Book, Ballast water treatment
27. Ballast water operating manual, Ballast water treatment
28. Certificate of Type approval of ballast water treatment systems, if applicable, Ballast water treatment
29. Certificate of Type Approval for Sewage Treatment Plant, if applicable, Sewage
30. ISPP certificate, if in place, Sewage
31. PMS documentation of tests, if in place, Sewage
32. Sewage handling manuals, Sewage
33. Garbage Record Book, Garbage handling
34. Garbage Management Plan, Garbage handling
35. IOPP Certificate, Sludge handling
36. Oil record book documentation, Sludge handling
37. IOPP Certificate, Bilge water treatment
38. PMS documentation of tests, if in place, Bilge water treatment

ANNEX 2. PARTICULARLY SENSITIVE SEA AREAS

The Great Barrier Reef, Australia (designated a PSSA in 1990)
The Sabana-Camagüey Archipelago in Cuba (1997)
Malpelo Island, Colombia (2002)
The sea around the Florida Keys, United States (2002)
The Wadden Sea, Denmark, Germany, Netherlands (2002)
Paracas National Reserve, Peru (2003)
Western European Waters (2004)
Extension of the existing Great Barrier Reef PSSA to include the Torres Strait (proposed by Australiaand Papua New Guinea) (2005)
Canary Islands, Spain (2005)
The Galapagos Archipelago, Ecuador (2005)
The Baltic Sea area, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden(2005)
The Papahānaumokuākea Marine National Monument, United States(2007)