



## M/T ESTIA – Final Audit Carried Out from the 21<sup>st</sup> of May, 2011 to 25<sup>th</sup> of May, 2011

- 1) **Section 5.16 of the EMM states that the OCM sampling line must be painted orange. Some of this piping was not painted orange. See photos.**

A hidden section of the pipe that was not easily accessible had been omitted to be painted in orange.

The vessel was instructed to paint the said piping. The CCM confirmed that the OCM sampling line has been painted in orange in its full length prior to his leaving the vessel.

The part of the piping that was not painted orange was hidden and as such the internal auditor did not observe that the piping had not been painted in orange in its entire length.

Attachment A Photo of sampling line

- 2) **Section 5.17 of the EMM has a very thorough explanation of how the OWS is to be tested on a monthly basis. There have been entries in the ORB stating these tests have been conducted on a monthly basis. While onboard the vessel it was identified that the engineers cannot do the test as described in the EMM. It is recommended the EMM be modified to describe how this test can be successfully accomplished on this vessel. This vessel does not have the proper piping arrangement to allow for in port testing. See photos.**

The arrangement's design does not allow for the in port testing of the vessel's OWS. The vessel has been provided with instructions in order to modify the relevant piping to allow for the in port testing of the OWS.

It was established that a full test of the OWS was not carried out during the internal audit. Upon review of the company's internal audit procedure, it was established that there is no requirement for a full operational test of the OWS to be carried out in the presence of the company's auditor.

Attachment B Instruction to vessel regarding modification

- 3) **The ongoing audit found that "all the staff on board did not go through the pre-joining training in Environmental Awareness. It is recommended that the management develop specific training programs for the manning centers in Philippines with copies of training material on board and copies of certificates for the crew trained prior joining the vessel." During this audit the pre joining Environmental Awareness training stated it covered ISO 14001. It did not state that training was conducted specific to Ionia's EMM. It is recommended that such training specifically state it addresses Ionia's EMM. See attachment.**

All crewmembers attend an in – house pre – joining familiarization program that includes the company's Environmental Management Plan. Upon completion of the pre – joining familiarization program, a generic certificate is issued certifying the participant's attendance.



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The company has developed a checklist that lists all items that are covered during the pre – joining familiarization. The checklist shall be included in the seafarer's documentation when signing – on the vessel, which includes verification that the seafarer underwent training specific to Ionia's Environmental Management Plan.

This issue was not within the scope of the internal audit.

Attachment C Pre – joining familiarization checklist

- 4) **SWOMS data for tank soundings was compared against manual tank soundings which I observed while I was on board the vessel. Please note that the F.O. Purifier Sludge tank had a difference between the SWOMS and manual soundings of between 10-11%. It is recommended this be investigated. The following table shows the results:**

| Tank             | Cap (m <sup>3</sup> ) | Manual (cm) | Manual (m <sup>3</sup> ) | SWOMS (cm) | SWOMS (m <sup>3</sup> ) | % Diff (m <sup>3</sup> ) |
|------------------|-----------------------|-------------|--------------------------|------------|-------------------------|--------------------------|
| Clean Bilge      | 32.21                 | 95          | 10.22                    | 91         | 9.81                    | 1.27                     |
| Dirty Bilge      | 32.49                 | 103         | 12.17                    | 97         | 11.41                   | 2.34                     |
| Bilge Oil        | 11.89                 | 5           | 0.035                    | 8          | 0.05                    | 0.13                     |
| Incinerator      | 2.14                  | 144         | 1.91                     | 143        | 1.94                    | 1.40                     |
| FO Sludge        | 11.89                 | 37          | 0.68                     | 25         | 0.36                    | 2.69                     |
| LO Purif. Sludge | 4.56                  | 6           | 0.38                     | 9          | 0.55                    | 3.73                     |
| FO Purif. Sludge | 7.98                  | 18          | 1.76                     | 9          | 0.97                    | 9.90                     |

| Tank             | Cap (m <sup>3</sup> ) | Manual (cm) | Manual (m <sup>3</sup> ) | SWOMS (cm) | SWOMS (m <sup>3</sup> ) | % Diff (m <sup>3</sup> ) |
|------------------|-----------------------|-------------|--------------------------|------------|-------------------------|--------------------------|
| Clean Bilge      | 32.21                 | 106         | 12.13                    | 113        | 12.92                   | 2.45                     |
| Dirty Bilge      | 32.49                 | 104         | 12.33                    | 96         | 11.23                   | 3.39                     |
| Bilge Oil        | 11.89                 | 6           | 0.04                     | 8          | 0.05                    | 0.08                     |
| Incinerator      | 2.14                  | 101         | 1.38                     | 114        | 1.49                    | 5.12                     |
| FO Sludge        | 11.89                 | 36          | 0.65                     | 24         | 0.34                    | 3.11                     |
| LO Purif. Sludge | 4.56                  | 5           | 0.33                     | 9          | 0.55                    | 4.82                     |
| FO Purif. Sludge | 7.98                  | 19          | 1.85                     | 9          | 0.96                    | 11.15                    |

| Tank             | Cap (m <sup>3</sup> ) | Manual (cm) | Manual (m <sup>3</sup> ) | SWOMS (cm) | SWOMS (m <sup>3</sup> ) | % Diff (m <sup>3</sup> ) |
|------------------|-----------------------|-------------|--------------------------|------------|-------------------------|--------------------------|
| Clean Bilge      | 32.21                 | 76          | 7.64                     | 78         | 7.71                    | 0.22                     |
| Dirty Bilge      | 32.49                 | 105         | 12.49                    | 98         | 11.60                   | 2.74                     |
| Bilge Oil        | 11.89                 | 7           | 0.045                    | 9          | 0.05                    | 0.04                     |
| Incinerator      | 2.14                  | 107         | 1.40                     | 115        | 1.52                    | 5.59                     |
| FO Sludge        | 11.89                 | 124         | 4.53                     | 114        | 4.09                    | 3.70                     |
| LO Purif. Sludge | 4.56                  | 5           | 0.33                     | 9          | 0.55                    | 4.82                     |
| FO Purif. Sludge | 7.98                  | 20          | 1.93                     | 10         | 1.05                    | 11.03                    |



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| Tank             | Cap. (m <sup>3</sup> ) | Manual (cm) | Manual (m <sup>3</sup> ) | SWOM S (cm) | SWOMS (m <sup>3</sup> ) | % Diff. (m <sup>3</sup> ) |
|------------------|------------------------|-------------|--------------------------|-------------|-------------------------|---------------------------|
| Clean Bilge      | 32.21                  | 75          | 7.50                     | 78          | 7.63                    | 0.40                      |
| Dirty Bilge      | 32.49                  | 106         | 12.65                    | 99          | 11.67                   | 3.02%                     |
| Bilge Oil        | 11.89                  | 7           | 0.045                    | 8           | 0.05                    | 0.04                      |
| Incinerator      | 2.14                   | 107         | 1.40                     | 116         | 1.52                    | 5.59                      |
| FO Sludge        | 11.89                  | 126         | 4.65                     | 114         | 4.10                    | 4.63                      |
| LO Purif. Sludge | 4.56                   | 6           | 0.38                     | 9           | 0.55                    | 3.73                      |
| FO Purif. Sludge | 7.98                   | 20          | 1.93                     | 11          | 1.10                    | 10.40                     |

| Tank             | Cap. (m <sup>3</sup> ) | Manual (cm) | Manual (m <sup>3</sup> ) | SWOM S (cm) | SWOMS (m <sup>3</sup> ) | % Diff. (m <sup>3</sup> ) |
|------------------|------------------------|-------------|--------------------------|-------------|-------------------------|---------------------------|
| Clean Bilge      | 32.21                  | 74          | 7.37                     | 78          | 7.69                    | 0.99                      |
| Dirty Bilge      | 32.49                  | 106         | 12.65                    | 99          | 11.64                   | 3.11                      |
| Bilge Oil        | 11.89                  | 6           | 0.04                     | 8           | 0.05                    | 0.08                      |
| Incinerator      | 2.14                   | 112         | 1.47                     | 119         | 1.58                    | 5.12                      |
| FO Sludge        | 11.89                  | 123         | 4.47                     | 114         | 4.11                    | 3.11                      |
| LO Purif. Sludge | 4.56                   | 6           | 0.43                     | 9           | 0.55                    | 2.63                      |
| FO Purif. Sludge | 7.98                   | 19          | 1.84                     | 9           | 0.98                    | 10.78                     |

It was established that the sensors of the SWOMS installed in the mentioned tank require calibration. An authorized technician shall be arranged to board the vessel in order to calibrate the sensors at the next convenient port, most probably at Malta in mid September.

This issue did not occur at the time of the internal audit.

- 5) The previous ongoing audit suggested that for form ENV 023 since information is available daily, *“consideration should be given to amending the form to require daily comparisons and if discrepancies found are large, Ionia Management should be informed. (The daily sounding book forms are sent to management on a monthly basis).”* This recommendation does not appear to have been enacted by this vessel. Furthermore, this form is being filled out daily; however, all of the tanks being recorded by the enviro-logger are not being entered into the form. There are a total of seven tanks and three bilge wells being recorded in the SWOMS. Only four tanks and three bilge wells are being recorded on this form. It is recommended the C/E include all seven tanks being recorded in the SWOMS be placed on the form. See attached.

In reference to the notification required to be made to the company in the event that significant discrepancies are identified, a reminder has been sent to all vessels regarding the issue.

Attachment D Reminder to the vessels



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Form ENV 023 has been amended in order to include all tanks and bilge wells monitored by the SWOMS.

This item was not within the scope of the internal audit.

Attachment E ENV023

- 6) **The Master's Handover Notes (ENV 23 A) did not have an inventory of the spare seals on board the vessel. Item A4 of the form requires such an inventory. It is recommended this be done.**

The spare seals available onboard the vessels are inventoried in the Spare Seals log book.

The Master's Handover note shall be revised in order to make reference to the Spare Seals log and not a spare seals inventory.

The issue was not within the scope of the internal audit.

Attachment F Master's Handover Note

- 7) **Section 5.21 of the EMM states that "Seals with unique identification numbers shall be placed on the flanges on the vessel's ODME sample lines and flow connections." Only one seal was placed on one flange. All of the other flanges did not have seals. This was resolved before I left the vessel. See photos.**

The requirement for seals to be placed on the flanges of the ODME sample line was recently included in the company's Environmental Management Plan. Upon investigation of the issue, it was established that the vessel's personnel had not adequately understood the instructions provided regarding the issue.

The CCM attending the vessel at the time of the audit explained the issue to the relevant shipboard personnel in order to ensure their clear understanding. The issue was resolved prior to the auditor's disembarkation of the vessel.

During the internal audit, it had been identified that no seals had been placed on the ODME sample line as per company requirements. In order to correct the issue, shipboard personnel had placed the mentioned seal as described by the IEC.

- 8) ~~The EMM states that the OWS source tank be cleaned every six months and logged in the Oil Record Book. The latest entry in the ORB related to cleaning of the BHT was on October 19, 2010. There is no entry in the ORB for March, April or May 2010 related to the cleaning of the ORB.~~

Upon review of the issue it was established that the latest entry in the Oil Record Book Part I regarding the cleaning of the OWS source tank is dated 11<sup>th</sup> May, 2011.

We consider that the requirement is being properly implemented onboard.

Attachment G ORB Entry



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- 9) **The Fleet Engineering Surveys (form ENV 015) were reviewed. Most of them said the exact same thing with very little change. It is highly recommended the engineers be reminded and encouraged to submit thoughtful and original ideas, which provide helpful and constructive information to the company management.**

The Fleet Engineering Surveys are submitted to the company's CCM for review. The specific Fleet Engineering Surveys had been reviewed by the CCM and the mentioned issue had been identified. The CCM sent a reminder to the vessel regarding the purpose of the Fleet Engineering Survey and encouraging shipboard personnel to use the survey as an innovative tool for the continuous improvement of the company's environmental performance.

The issue was not within the scope of the internal audit.

- 10) **Section 5.4 of the EMM states that "A brightly colored sign with three inch letters shall be permanently fixed nearby. The sign shall read: "Bilge System Piping Crossover – Emergency Use Only" There is such a sign but the letters are not three inches in height. They are about 1 to 1.5 inches in height. It is recommended a sign be installed near the valves with the proper size letters. See photos.**

Letters of 1.5 inches in height were used on the mentioned sign due to a lack of space at the location where it is posted.

The Chief Engineer was instructed to prepare a sign with the correctly sized letters and post it at the said location.

The incorrect size of the letters on the sign was not observed by the company's internal auditor.

Attachment H Photo of sign

- 11) **One flexible hoses larger than 40 mm in diameter without labels were found above the chemical store in the steering gear room. The hose was added to the flexible hose inventory. A flexible hose inventory is kept, with hoses stored in the mid-ship house and forecastle. There are labels to identify each hose. The flexible hose inventory was last done on May 18, 2011. It was signed by the C/O and Master, but was not signed by the C/E. Section 5.15 of the EMM requires both the C/O and C/E to maintain the inventory. It is recommended all flexible hoses over 40 mm in diameter on board the vessel be entered into this inventory and signed by both the C/O and C/E, as required by the EMM. See attached and photos.**

Upon investigation of the issue, it was established that the flexible hose found above the chemical store was under consumables such as rags that had been stored there. Nobody was aware of the hose's presence when the flexible hose inventory was prepared.

The hose has been included in the inventory and the Chief Engineer has been instructed to ensure and confirm that there are no other flexible hoses of over 40mm that have not been included in the Flexible Hose inventory.

Furthermore, the vessel's Chief Engineer has been instructed to sign the Flexible Hose Inventory once it has been verified as updated.



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- 12) On the inlet line to the OWS and on the discharge side of the OWS there were several pipe unions which did not have seals on them. Also, there was a blank flange after the OWS, but before the three way valve. This did not have a seal on it. Before I departed the vessel all of above had seals installed on them, as required by Section 5.6 of the EMM. See photos.

Upon investigation of the issue it was established that the company's instructions did not require seals to be placed at the specific locations. The instructions have been amended in accordance with the auditor's recommendations.

The Chief Engineer placed the seals at the required locations as verified by the attending auditor prior to his departure from the vessel.

- 13) I observed various engine room pumps and machinery in operation during the period of time the vessel was underway. The engine room was noted to have several leaks on pumps and on the main engine. Some oil or oily residue was noted in the bilges or bilge wells. The bilge wells contained a decent quantity of water. Although it appeared the engineers were trying to keep the engine room clean, it was obvious there were many leaks throughout the engine room. I observed a leak on the #2 Main SW Pump packing gland. I also saw a fuel leak on the fuel oil transfer pump. For such a new vessel the condition of the engine room suggested it was an older vessel. See photos.

It should be pointed out that the attending auditor identified only two leaks during his stay onboard the vessel, as mentioned in his observation. The CCM, onboard the vessel at the time of the audit, carried out an investigation and identified the source of the leaks, as follows:

#2 Main SW Pump: The waters of the area where the vessel was sailing at the time of the audit were shallow and extremely muddy. The muddy contents of the sea water resulted in the leakage on the pump. The leak was eliminated immediately upon her sailing from Estonia.

Fuel Oil Transfer Pump: The vessel had switched to MGO due to local requirements. As MGO is a much lighter fuel, the change over resulted in a minor leak from the packing gland of the pump.

The issue did not occur at the time of the internal audit.



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- 14) While inspecting the sewage treatment plant (STP) it was determined the vessel only had enough chlorine tablets (Cloro 90) for less than a month, which would not get the vessel to the next port in West Africa. According to the CCM the vessel was to receive more such tablets at Skagen, Denmark. It is recommended the vessel have the necessary quantity of chemicals for the STP at all times.**

The vessel was supplied with adequate chlorine tablets for a period of three months at Skagen, Denmark.

However, it should be noted that Marpol regulations do not require sewage discharged into the sea to be treated while the vessel is underway. Furthermore, the vessel is provided with a sewage holding tank with adequate capacity to retain sewage onboard for the period while the vessel is in port. As such, the vessel is not required to treat sewage generated.

The issue was not within the scope of the internal audit.

- 15) According to documentation on board the vessel the SWOMS had a broken data card and was unable to do automatic transmissions from Jan 2011 to 25 Mar 2011 when it was repaired. See attached.**

The issue had been reported to all parties during the hearing held in January, 2011.

- 16) On 19 May 2011 the manufacturer of the SWOMS came on board the vessel and updated software and fixed some issues onboard. In his report he states "Attended to troubleshoot the problem with the overboard valve function, which was said to position the valve in the open/overboard position when above 15-ppm." When I asked the CCM about this he told me the technician did not understand and put the wrong information in the report. The CCM sent an email to resolve this and the technician resent a new message which still had similar meaning/statements in the message. Print outs of the SWOMS before 19 May 2011 were reviewed and the printouts shows the OCM going above 15ppm and the OWS valves closing as required. Recommend this issue be further investigated and the proper operation of the three-way valve be verified. See attached.**

The Technical Manager initiated an investigation of the issue in order to verify the proper operation of the three – way valve.

The SWOMS print outs for the period from the 5<sup>th</sup> of April, 2011 until the 10<sup>th</sup> of May, 2011 were reviewed and compared to the relevant entries in the Oil Record Book Part I, the daily tank sounding log and the data of the oil content meter's memory card. No anomalies were identified and it was verified that the three – way valve is operating normally.

The issue was not within the scope of the internal audit.



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17) The capacity of the OWS is 5 m3/hour, which appears more than adequate for the currently generated machinery space effluents. According to the ORB, the last three operations of the OWS were as follows:

05/18/11 1.26 m3 processed 1146- 1156 7.59 m3/hr  
05/13/11 1.5 m3 processed 0809- 0924 1.2 m3/hr  
04/22/11 13.35 m3 processed 0745- 1532 1.72 m3/hr

When asked why the OWS operated above its 5.0 m3/hr rating the C/E and CCM stated it was related to the draft of the vessel. This did not seem to make sense to me. The vessel is equipped with a means to transfer E/R bilge water and sludge to cargo slop tanks. Section 3.2.4 of the Supplement to the IOPP Certificate allows this. See attached ORB excerpts. Recommend the disparity in thru-put and the low thru-put be further investigated to ensure the OWS is properly functioning.

The calculation of the design capacity of the vessel's oily water separator is carried out assuming that the vessel will be in fully loaded condition and at a draft of 14.5m. Under such conditions, the oily water separator pump has a back pressure of 1.5 bars. At the mentioned times, the vessel was in ballast condition with a draft of 7.5m, corresponding to a back pressure of only 0.8bars being exerted on the pump of the oily water separator.

The reduced back pressure allows for an increase in the oily water separator's capacity.

Please note that the vessel is not equipped with a means to transfer the E/R bilge water and sludge to the cargo slop tanks.

The said dates occurred after the internal audit was carried out onboard the vessel.

Prepared By:

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For and On Behalf Of

Ionia Management S.A.



## M/T FIDIAS – Final Audit Carried Out from the 21<sup>st</sup> of May, 2011 to 25<sup>th</sup> of May, 2011

- 1) **Attachment B of the Scope of Work and EMM 5.4 and 5.5 details the labeling of the cross over valves and the emergency bilge suction. The labels are not correct. The port forward emergency bilge suction is labeled as a crossover valve. Recommend that the crossover valves and the emergency bilge suction be labeled in accordance with the order and the EMM. Prior to the completion of the audit, the valve was relabeled.**

As stated by the auditor, the labels were corrected prior to the completion of the audit.

The issue had been overlooked by the internal auditor.

- 2) **Section 13.3 of the EMM requires that a copy of the Special Master's Appointment and Scope of Work shall be maintained onboard the vessel at the following locations: Master's Office, Chief Engineer's Office, Engine Control Room and Bridge. Section X of the Scope of Work includes the quarters of the Master and Chief Engineer, as well as in the engine control room and on the bridge. The Special Master's Appointment and Scope of Work was not on the Bridge, however a copy for the Bridge was provided prior to my departure. Section 1.3 of the EMS requires that the company policies shall be clearly posted at the Master's Office, Chief Engineer's Office, Bridge, CCR, ECR, Officer Mess room and Crew mess room. The CCM name and contact details were neither in the officers mess nor the crews mess however were posted prior to my departure.**

Although a copy of the Scope of Work had been available in the bridge, it had been misplaced. As mentioned by the auditor, a copy of the Scope of Work was made available in the bridge prior to the completion of the audit.

Upon review of the relevant instructions in the EMP, it was observed that specific instructions have not been provided regarding the locations where the poster of the CCM's details should be available.

The relevant instructions shall be revised in order to provide specific guidance as to where the posters should be available.

Attachment A Amended procedure

The issue did not arise at the time of the internal audit.

- 3) **Oil Record Books Part I (ORB) from the vessel delivery in 2007 until present were reviewed. Some entries in the Oil Record Book (ORB) are heavily overwritten and not properly corrected. Recommend that corrections be made with a single line through the mistaken entry so that it can still be read, the correct entry made and accompanied with the signature of the person making the correction.**

The Chief Engineer has been instructed to ensure that corrections are made as per the guidelines provided in the EMP.



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The Technical department shall ensure that corrections are made in accordance with requirements.

The entries that were overwritten are dated 22<sup>nd</sup> May, 2011, after the date of the internal audit.

- 4) The Master's handover report Form ENV 023As dated 29 November 2010 lists in block 19 that the Oil Content Meter has not been calibrated and in block 20 that the ODME has not been calibrated. That is not correct, the OCM and ODME were in calibration at the time of the handover. Looking back at previous Masters records, I noted that the entries are identical and it is likely that a previous error was copied forward at relief.

EMS 4.2 requires that the C/E's handover notes include an environmental component and description of the former and current status of operation, maintenance, and repair, for the Incinerator, OWS and other pollution prevention procedures or equipment, the status of spare parts for this equipment, and an accurate estimation of the day-to-day bilge loads and accumulations. Paragraph nine of the most recent Chief Engineer Hand Over Reports "List available instruction manuals related to pollution prevention equipment" is blank; however, the instruction manuals are onboard. There are no spare parts listed in paragraph 10 for the sewage plant or the ODME; however the spare parts for both those systems are on board. Additionally there is no estimation of the day-to-day bilge loads and accumulations.

To provide the crewmember's successor with key knowledge and information regarding their position so that the transition period is as short and smooth as possible recommend that the hand over notes be completed in accordance with the EMS.

The Master and the Chief Engineer that completed the said forms neglected to complete the forms with the required accuracy.

Furthermore, the inaccuracies were not identified by the responsible shore – based departments that review the submitted hand over reports.

The issue shall be distributed throughout the fleet in order to remind shipboard personnel of the significance of the hand over procedure. Furthermore, the shore – based departments that are responsible for the review of the hand over reports shall be instructed to ensure that all hand over reports have been completed accurately.

The Master's Hand Over reports were not reviewed during the internal audit.

- 5) Lubricant bunker volume in the Oil Record Book Part I is recorded in liters vice metric tons as required by MARPOL and by the EMM 9.5. Recommend that lubricants bunkers be recorded in metric tons vice liters. Prior to my departure, the C/E corrected the units with a late entry.

Upon investigation of the issue, it was established that the Chief Engineer had accidentally recorded the data with the incorrect units.

The Chief Engineer made the necessary corrections as mentioned by the auditor.



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The Chief Engineer shall be instructed to ensure that all entries are made using the correct units.

The incorrect entry was made on the 22<sup>nd</sup> of May, 2011 after the internal audit had been carried out.

- 6) **Samples were taken in accordance with the Scope of Work during the ongoing audit and forwarded to NAIAS Scientific. Test results from NAIAS were onboard; however, verification from the oily water separator manufacturer that the oily water separator is capable of processing fluids having this content was not available.**

The company's Technical department had received the results of the laboratory tests and verified that the effluents onboard are compatible with the oily water separator.

The company's Technical department arranges for the results of the laboratory tests to be provided to the makers for analysis. The feedback received from the makers is reviewed by the Technical department in order to identify whether any actions are necessary. All feedback received from the makers is maintained by the Technical department.

Taking into consideration the auditor's recommendation, the company's Technical department has forwarded the test results to the vessel for her records.

#### Attachment B Manufacturers Verification

The item is not relevant to the scope of the internal audit.

- 7) **The incinerator capacity listed on the Supplement to the IOPP Certificate is 49.9 Kg/hour. Review of the technical data contained in the manufacturer's manual indicates this value is 38 Kg/hour. Recommend that the accuracy of the Supplement to the IOPP Certificate be verified by Class during the next occasion of their visit to the vessel. This was noted as a deficiency during another audit.**

The company's Technical department shall ensure that the accuracy of the supplement is verified by the vessel's Classification Society during their next attendance scheduled for April, 2012.

The item was not reviewed during the internal audit.



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- 8) The Master maintains a Spare Seal Inventory Logs, and an Engine Room Seal Log<sup>10</sup> is maintained by the C/E. As with other records, some entries are heavily overwritten and whiteout correction fluid was used to make corrections. Both logs are bound with sequentially number pages. Locations of seals are generally identified by a coded system (see attached "Vessel Seal Allocation<sup>11</sup>"). In addition, a piping system diagram identifies locations where seals are placed.

I spot checked the installed seals against the logs and found that the installation and the logs do not match. In the Master's spare seal log, seal 009252 is listed as having been replaced by 009258. In the C/E's seal log, seal 009252 is listed as having been replaced by seal 009258. Those entries are not correct. Installed on the Port Sludge discharge connection is seal 009258 and installed on the Starboard discharge connection is seal 009252. Listed in the Master's log is seal 009254 replaced seal 009025, however in the C/E's log the seal numbers have been transposed indicating that the 009025 is still installed. Other transposed seal numbers in both logs were also noted. As mentioned in another audit, some seal locations are difficult locate because the precise location, port or starboard for example, is not listed. It is the opinion of this auditor that the seal discrepancies are the result of administrative error. Regardless I recommend that the seal installation be verified for accuracy against the seal logs and corrected as needed. Additionally, as recommended in another audit, recommend the specific location of the seal be identified in the Engine Room Seal Log in the column labeled and that the use of whiteout correction fluid be discontinued. I also recommend that the accuracy of the seal management program be periodically verified.

Upon investigation of the issue, it was established that the discrepancies identified are due to administrative errors as suggested by the auditor.

The Chief Engineer has been instructed to carry out a detailed inspection of all of the seals in place in order to verify the accuracy of the records. Upon his completion of the inspection, he shall provide verification that the records are accurate.

Furthermore, the Chief Engineer has been instructed to ensure that white out fluid is not used on any of the vessel's documentation.

Finally, it should be noted that the company requires a spot check of the seals installed onboard to be carried out during the annual environmental audit carried out onboard.

~~Attachment C Chief Engineer's Verification~~

Attachment D Environmental Audit Checklist

A random check of the seals was carried out during the internal audit and no issues were identified.



# IONIA MANAGEMENT S.A.

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- 9) An operational test of the OWS was scheduled for 13:00 on 24 May 2011 while the vessel was underway. The initial test failed, reportedly due to low level in the bilge tank. Subsequent tests also failed after there was adequate fluid in the tank, likely due to air in the OWS second stage tank. Finally, at about 20:00, after seven hours of troubleshooting, a successful test was carried out, drawing from the BHT and processing through the OWS. The 15-ppm alarm was tested, activating the 3-way valve to the recirculation mode. The oil purge valve was also tested upon start-up. Since the OWS is not frequently used, regular testing in the full operational mode is important. As noted elsewhere in this report, the required monthly test of the OWS is not completed as per the instructions. Completing the test monthly should ensure that the equipment is operating properly and provide OWS operations training and experience.

The filters of the vessel's oily water separator had been cleaned a few days prior to the audit. As a result, air had collected in the system, preventing its proper operation. The process of removing the air from the system needs time. Once the air had been removed from the system, the operational test of the OWS was carried out successfully, as verified by the auditor.

The Chief Engineer shall be reminded that a full operational test in accordance with the relevant instructions in the EMP must be carried out on a monthly basis.

The responsible Superintendent boarded the vessel during her call at Agioi Theodoroi on the 6<sup>th</sup> of September, 2011 in order to carry out a training session with the Chief Engineer and the rest of the Engine Officers in order to ensure that they are fully familiar with the full operational test of the oily water separator.

Attachment E Engine log book entry

The issue did not arise at the time of the internal audit.

- 10) The ORB Part 1 indicates monthly testing of the OWS, as required by the Scope of Work and the EMM Section 5.17 is being carried out. The engineers were unfamiliar with review of the memory card for the OMD 2005 Oil Content Meter (OCM) and consequently comparison between the memory card and the oil record book was not carried out. Recommend that training be completed on memory card review. Review of the Vigilant Enviro-Logger indicated only a limited monthly test is being performed and not a full operational test. During interview with the C/E and 2/E, I learned that the complete test specified in 5.17 is not carried out and the test is limited to the OCM alarm point and operation of the three-way valve. Recommend that the monthly test of the OCM and OWS be completed in accordance with 5.17.

Recommend Ionia Management revise the EMM procedures contained in Section 5.17 and provide additional guidance as necessary to ensure a full operational test is carried out, including testing of the oil purge valves. Failure to complete the monthly test was noted as a deficiency on another vessel.

The company does not require that the engine officers review the OCM memory card. The purpose of the unit's memory card is to provide the necessary data to the company's Technical department in the event that any discrepancies are identified.



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In reference to the full operational test of the OWS, as mentioned above, the Chief Engineer shall be reminded that a full operational test in accordance with the relevant instructions in the EMP, must be carried out on a monthly basis.

Furthermore, the responsible Superintendent shall board the vessel at the next convenient opportunity in order to carry out a training session with the Chief Engineer and the rest of the Engine Officers in order to ensure that they are fully familiar with the full operational test of the oily water separator.

The Technical department has reviewed the instructions provided in the EMP regarding the process required for the full operational test of the OWS and it is considered that the guidelines provided therein are of adequate detail.

The item is not within the scope of the internal audit.

- 11) The 2/E is the sole operator of the Oily Water Separator; however, the designation in the Engine Room log book required by 5.16.1.v. has not been completed. Recommend that the designation be completed after the requirements of i-iv have been completed prior to the 2/E operating the OWS. Similarly, the 4/E operates the incinerator however; the designation required by EMM 5.19 has not been completed.**

The Chief Engineer has been instructed to ensure that the declarations of designation are logged in the engine log book in accordance with the requirements of the EMP.

Furthermore, the issue shall be distributed throughout the fleet and vessels shall be requested to verify that the declarations of designation have been properly recorded.

The item was overlooked by the internal auditor.

Attachment F Copies of declaration of designation



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12) SWOMS data for tank soundings was compared against manual tank soundings.  
The following table shows the results:

|                  | Manual      | Manual                   | SWOMS       | SWOMS                    | Tank Cap.      | % diff.  |
|------------------|-------------|--------------------------|-------------|--------------------------|----------------|----------|
|                  | Level in cm | Volume in m <sup>3</sup> | Level in cm | Volume in m <sup>3</sup> | m <sup>3</sup> |          |
| <b>20-May-11</b> |             |                          |             |                          |                |          |
| BHT              | 46          | 3.105                    | 47          | 3.2                      | 22.7           | 0.4%     |
| SBOT             | 42          | 1.354                    | 46          | 1.53                     | 13.9           | 1.3%     |
| Sludge           | 12          | 2.264                    | 0.11        | 2.08                     | 14.6           | 1.3%     |
| WOT              | 90          | 1.26                     | 90          | 1.22                     | 1.79           | 2.2%     |
| <b>21-May-11</b> |             |                          |             |                          |                |          |
| BHT              | 46          | 3.105                    | 47          | 3.24                     | 22.7           | 0.6%     |
| SBOT             | 42          | 1.354                    | 46          | 1.53                     | 13.9           | 1.3%     |
| Sludge           | 13          | 2.41                     | 11          | 2.16                     | 14.6           | 1.7%     |
| WOT              | 96          | 1.35                     | 95          | 1.28                     | 1.79           | 3.9%     |
| <b>22-May-11</b> |             |                          |             |                          |                |          |
| BHT              | 46          | 3.105                    | 47          | 3.26                     | 22.7           | 0.7%     |
| SBOT             | 41          | 1.354                    | 46          | 1.53                     | 13.9           | 1.3%     |
| Sludge           | 15          | 2.702                    | 15          | 2.71                     | 14.6           | 0.1%     |
| WOT              | 69          | 0.97                     | 1.47        | 99.99                    | 1.79           | 5531.8%* |
| <b>23-May-11</b> |             |                          |             |                          |                |          |
| BHT              | 48          | 3.321                    | 50          | 3.49                     | 22.7           | 0.7%     |
| SBOT             | 42          | 1.354                    | 46          | 1.54                     | 13.9           | 1.3%     |
| Sludge           | 17          | 2.994                    | 14          | 2.54                     | 14.6           | 3.1%     |
| WOT              | 70          | 0.99                     | 1.47        | 99.99                    | 1.79           | 5530.7%* |
| <b>24-May-11</b> |             |                          |             |                          |                |          |
| BHT              | 30          | 1.612                    | 29          | 1.52                     | 22.7           | 0.4%     |
| SBOT             | 42          | 1.354                    | 46          | 1.53                     | 13.9           | 1.3%     |
| Sludge           | 18          | 3.14                     | 15          | 2.74                     | 14.6           | 2.7%     |
| WOT              | 32          | 0.45                     | 9           | 0.13                     | 1.79           | 17.9%    |
| <b>25-May-11</b> |             |                          |             |                          |                |          |
| BHT              | 35          | 2.03                     | 36          | 2.1                      | 22.7           | 0.3%     |
| SBOT             | 42          | 1.353                    | 46          | 1.53                     | 13.9           | 1.3%     |
| Sludge           | 19          | 3.286                    | 15          | 2.73                     | 14.6           | 3.8%     |
| WOT              | 28          | 0.2                      | 9           | 13                       | 1.79           | 715.1%*  |