## Compliance Systems, Inc.

# Ongoing Environmental Audit M/T Ploutos 

Conducted September 7-11, 2010
Underway Jebel Ali, UAE to Sitra, Bahrain

In the matter of:

United States of America<br>V.<br>Ionia Management, S.A.<br>Case No. 3:07CR134 (JBA)

## Compliance Systems, Inc.

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September 20, 2010

## M/T PLOUTOS <br> On-going Environnemental Audit <br> Arabian Gulf <br> September 07-12, 2010

## Preliminary

The undersigned conducted an On-going Environmental Audit aboard the M/T Ploutos, IMO No. 9327023, while the vessel was underway and at anchor in the Arabian Gulf. The audit was planned to be carried out when the vessel was in Jebel Ali, Dubai and the next port nominated by charterers. The Auditor joined the vessel on arrival at tanker berth No. 6 in Jebel Ali port.

The vessel arrived from Aqaba partially loaded with a parcel of cargo of unleaded Gasoline via Fujairah (bunkering) for discharge at Jabel Ali, Dubai. On arrival alongside, the vessel was scheduled for a vetting inspection by BP, repairs to Inmarsat Mini M, installation of new Global wireless communication unit and the satellite transmission device and calibration of the SWOMS equipment, the survey of all measuring instruments and supply of ships stores and provisions, etc., and the IT superintendent on board for checking IT equipment and monitoring Global Wireless installation. On arrival with a planned stay alongside of 30 hours the next port of call was not fixed by the charterers. The joining day of the auditor was not fully utilized for the audit due to the activities mentioned above, as all the ship staff was busy. Some available documents were checked after a brief informal meeting with the Master, Chief Engineer and the attending company superintendent. I was later informed by the Master that the vessel was fixed to load her next cargo at the port of Kuwait. It was planned to carry out the audit and testing of WSM equipment during the transit underway to Kuwait. Prior to completion of discharge the Master was informed again of the changes that the vessel was to backload the parcel cargo of unleaded gasoline ( $20 \%$ ) for discharge at Sitra, Bahrain. The vessel completed loading operations at 0700 on September 09, 2010 but the departure was delayed due to various local issues, with Ramadan public holidays and port clearance formalities with various crew and noncrew personnel joining the vessel including the auditor. The vessel finally sailed at 1900 hours on September 09, 2010 for Sitra, Bahrain.

The MT Ploutos is a $42,048 \mathrm{mts}$, GRT, crude oil and product oil carrier, built by New Century Ship Building Co. Ltd., Xin Giang, China and delivered on December 15, 2006. The vessel has a total capacity of $84,534.822 \mathrm{~m}^{3}$ at $98 \%$. The vessel is powered by a HHM-MAN-B\&W 5S60MC-C with a BHP14690 and a service speed of 14.5 knots. Vessel particulars are attached.

The Audit participants included:

| Master | Vestarchis, Stylianos |
| :--- | :--- |
| Chief Engineer | Simoudis, Ilias |
| Chief Officer | Ruiz, Roderick A |
| $2^{\text {nd }}$ Engineer | Defante, Rolly B. |
| $3^{\text {rd }}$ Engineer | Molas, Jonathan V. |
| $4^{\text {th }}$ Engineer | Zolina, Leo O. |
| Chief Cook | Untalan, Florente C. |
| Electrician | Lavin, Lagunas Eduardo Alex |
| Safety Quality Supdt. | Dimou, Aristeidis |

In addition to the above, various crewmembers from all departments were interviewed at different times with regard to their duties related to environmental aspects of ship operation and awareness. (Crew list attached).

The audit was conducted in accordance with Attachment A, Section B of the Special Master Appointment and Scope of Work pursuant to the criminal case, United Sates of America v. Ionia Management S.A., Criminal No.3: CR134 (JBA). The audit process consisted of a review of Safety Management System (SMS) and Environmental Management System (EMS) documents; records and procedures related to environmental matters; MARPOL required logs and records; inspection and testing of vessel waste handling equipment, including the Oily Water Separator (OWS), incinerator, Marine Sanitation Device (MSD); and interviews with vessel personnel.

To implement the EMS, Ionia Management has developed an Environmental Management Manual (EMM), which has been placed aboard. The EMM contains environmental policies and procedures in alignment with the Scope of Work, as well as additional environmental procedures, developed by lonia Management. The manual is continuously revised based on previous audit reports and a substantial number of revisions were made in June 2010. In addition, environmental procedures are also contained in the vessel's SMS Manual. Ionia Management is also certified for ISO 14001/2004, DNV certificate No. 24257-2008-AQ-HRVRvA, issued on April 08, 2008 with expiry on April 08, 2011; however, there were no specific instructions aboard, containing requirements or procedures related to this certification beyond the vessel's SMS and EMM.

It was observed that the environmental procedures and requirements were well implemented. The officers and crew were very cooperative and positive throughout the audit. Senior officers, including the Master, C/E. and C/O were knowledgeable of the Scope of Work requirements and the EMM, and appeared fully committed to the purpose and philosophy of the EMM. This was clearly demonstrated throughout audit and during discussions with the staff.

Page 2 of 11

Following are observations and comments. They are supported by the attached EMS Audit Checklist and the enclosures to this report. The observations are separated into two categories those with recommendations and others without. Many of the recommendations relate to improvement of the existing EMS and do not necessarily reflect deficiencies or non-conformities with the requirements of the Scope of Work. The second category of Observations is primarily included in the audit report to provide an understanding of the functionality of the EMS aboard.

## Observations with Recommendations

1. Section 11 of the EMM details the procedure for crewmembers to report environmental concerns and to remain anonymous if so desired. The conventional anonymous reporting boxes initially installed on other vessels were no longer in use. Crewmembers may report such concerns by calling a toll free telephone number, anonymous reporting email or anonymous reporting letter by post mail. The procedure is also mentioned in the Code of Ethics booklet on board accessible to all crew members at common areas in addition to posters displayed in common areas e.g. mess rooms, CCR, ECR etc. The crew members were aware of the existence of the information, but during interview some of them were not very clear about the intent of the procedure and under what circumstances they may follow the procedure outlined. Recommend that further training be conducted by the management to ensure all crew understand the procedures to report the required information.
2. Included in the recently implement EMM is a Declaration of Environmental Commitment, Form ENV 020 (copy attached). Some completed forms were aboard; however, not for all crew members. Procedures for the implementation of the form are contained in Chapter 10, however, are not very specific with regard to the filing, i.e. copy to be filed on board. In this regard, the instructions for completion and filing of this form, contained in Section 10.4, need to be revised.
3. Noted the OWS discharge sample line was not painted. The Scope of Work requires that the sample line be painted a bright color to distinguish it from other tubing in the area. Recommend the staff should follow the company guidelines using a distinguishing color to paint the sampling lines and lonia Management revise their instructions to the fleet to make it consistent within the fleet.
4. 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 Chief Engineer was not familiar with the review of the memory card to verify the test procedures record. The test records were not made available. It is recommended that the Chief Engineer and his staff be trained in the right procedures to perform fully operational tests and Ionia Management revise the EMM procedures contained in Section 5.17 and provide additional guidance as necessary to ensure that a full operational test is carried out, including testing of the oil purge valves. Also, item 8 of the current procedure requires oily water or an appropriate testing fluid be run through the $15-\mathrm{ppm}$ bilge alarm monitor. The OCM was tested by introducing a mechanical obstruction. Recommend guidance be issued on how to introduce oily water through the OCM, as this would be a more effective test of the unit.
5. The Oil Transfer Procedures, required by 33 CFR 155.720, are not in full alignment with the regulations. Recommend the procedures be amended to include specific citing of these regulatory requirements.
6. A flexible hose inventory is kept, with hoses stored in the forecastle. There are, however, no details on tags or labels to identify each hose except just the numbers allocated painted on them. Recommend the hoses be identified with number, diameter and purpose of use on the label to ensure they are properly controlled and accounted for and the inventory list posted at the location.
7. SWOMS data for tank soundings was compared against manual tank soundings. The following table shows the results. The data was taken from form ENV 024:

Date \& Time: GMT 2100, 07/Sept/2010, Jebel Ali in port

|  | A | B | C | D | E | C-E | C-E/C |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tank | $\begin{array}{\|l} \hline \text { Cap. } \\ \left(\mathrm{m}^{3}\right) \\ \hline \end{array}$ | Manual (cm) | $\begin{aligned} & \text { Manual } \\ & \left(\mathrm{m}^{3}\right) \end{aligned}$ | $\begin{aligned} & \text { SWOMS } \\ & (\mathrm{cm}) \end{aligned}$ | $\begin{aligned} & \text { SWOMS } \\ & \left(\mathrm{m}^{3}\right) \end{aligned}$ | $\begin{aligned} & \text { Diff. } \\ & \left(\mathrm{m}^{3}\right) \end{aligned}$ | $\begin{aligned} & \text { \% Diff. } \\ & \left(\mathrm{m}^{3}\right) \\ & \hline \end{aligned}$ |
| Clean Bilge | 32.21 | 1.16 | 13.45 | 0.94 | 10.03 | 3.42 | 25\% |
| Dirty Bilge | 32.49 | 0.72 | 7.56 | 0.40 | 3.41 | 4.15 | 55\% |
| Bilge Oil | 11.89 | 0.65 | 1.47 | 0.86 | 2.34 | 0.87 | -59\% |
| Incinerator |  | 0.92 | 1.16 | 0.56 | 0.61 | 0.55 | 47\% |
| FO Sludge | 11.89 | 0.98 | 3.25 | 0.10 | 0.09 | 3.16 | 97\% |
| LO Purif. Sludge | 4.56 | 0.29 | 1.52 | 0.17 | 0.92 | 0.6 | 39\% |
| FO Purif. Sludge | 7.98 | 0.14 | 1.48 | 0.10 | 1.04 | 0.44 | 30\% |
| FWD Port Bilge* | ---- | 28 | 0.42 | 4 | 0.06 | 0.56 | 86\% |
| FWD STBD Bilge* | ---- | 14 | 0.35 | 59 | 99.99** | ??? | ??? |
| Aft Bilge well* | ---- | 10 | 0.5 | 8 | 0.61 | 0.11 | -22\% |

Date \& Time: GMT 2100, 08/Sept/20101 Jebel Ali in port

| Tank | Cap. <br> $\left(\mathrm{m}^{3}\right)$ | Manual <br> $(\mathrm{cm})$ | Manual <br> $\left(\mathrm{m}^{3}\right)$ | SWOMS <br> $(\mathrm{cm})$ | SWOMS <br> $\left(\mathrm{m}^{3}\right)$ | Diff. <br> $(\mathrm{m} 3)$ | \% Diff. <br> $\left(\mathrm{m}^{3}\right)$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| Clean Bilge | 32.21 | 1.16 | 13.45 | 118 | 13.85 | 0.40 | $-3 \%$ |
| Dirty Bilge | 32.49 | 0.97 | 11.93 | 40 | 5.65 | 6.28 | $53 \%$ |
| Bilge Oil | 11.89 | 0,65 | 1.47 | 86 | 2.36 | 0.89 | $-61 \%$ |
| Incinerator |  | 0.89 | 1.12 | 1 | 1.29 | 0.17 | $-15 \%$ |
| FO Sludge | 11.89 | 0.98 | 3.25 | 10 | 0.09 | 3.16 | $97 \%$ |
| LO Purif. Sludge | 4.56 | 0.3 | 1.54 | 17 | 0.92 | 0.65 | $40 \%$ |
| FO Purif. Sludge | 7.98 | 0.14 | 1.48 | 10 | 1.07 | 1.41 | $28 \%$ |
| FWD Port Bilge ${ }^{*}$ | --- | 39 | 0.62 | 4 | 0.06 | 0.56 | $90 \%$ |
| FWD STBD Bilge ${ }^{*}$ | --- | 14 | 0.35 | 59 | $99.99^{* *}$ | $? ? ?$ | $? ? ?$ |
| Aft Bilge well* | --- | 20 | 1.01 | 15 | 0.76 | 0.25 | $25 \%$ |

[^0]Page 4 of 11

Incinerator Service tank is not included in IOPP certificate.
Figures in red indicate negative values.
The above soundings were taken by the oiler and the C/E. The vessel was in port, therefore there was no movement of the vessel to affect the soundings. While on a percentage basis the differences between the manual soundings and the SWOMS data appear significant, in some cases compared to total capacity of the tank the percentage amount of difference relative to the size of the tank is not. To ensure manual soundings are as accurate as possible, it is recommended that the procedure for taking soundings include taking more than one manual soundings each time while the vessel is at sea and recording the average or median value. The shore technician for the SWOMS system was on board at Jebel Ali on the September07/08, 2010, for calibration and servicing the unit. (Copy of the report attached). The Dirty LO tank and Dirty FO tank contain mainly leakage collected and are not included on the Supplement to the IOPP Certificate or SWOMS. As per the C/E the accumulated quantities are usually transferred to FO Tank for re-use.
8. The VGP requirements are not fully implemented as yet on the vessel and implementation is in progress. It is recommended that the management expedite implementation and training of the staff prior vessel's arrival US ports.
9. The Fleet Engineering Survey, Form ENV 015 was completed by an engineering officer on March, 18, 2010. The form ENV 015 showed an effective date as 15/10/2010 Revision 1. (Please note that the audit date was September 07-10, 2010.) It is recommended that the discrepancy of survey day prior to effective date should be corrected.
10. There was no objective evidence found on board of pre-joining training for the staff of Environmental Awareness of needs arising out of Scope of Work. 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.
11. The floor plates covering the Emergency Bilge suction and bilge cross-over valves were not painted as recommended in Scope of Work. It is recommended that they should be painted by distinctive orange paint, with $3^{\prime \prime}$ wide lettering and should be consistent with other vessels in the fleet. (Photos attached).

## Observations Without Recommendations

1. I observed various engine room pumps and machinery in operation during the period of time the vessel was alongside, underway, at anchorage. The engine room was observed to be in very clean condition. No leakages were noted from the main engine. No oil or oily residue was noted in the bilges or bilge wells. The bilge well below the main engine fly wheel was dry and free of any oily residues. According to the C/E, if any oil residue accumulates in the mid bilge well below the M.E. flywheel, the oily residue is removed manually and dumped into the Bilge oil tank to avoid contamination of the

Dirty and/or Clean Bilge Tank. The bilge wells contained only small quantities of clean water. The Clean bilge tank was last cleaned on April 05, 2010. No leakages were noted from operating cooling water and general service pumps and there was no evidence of leakages from pumps. The accumulation of fresh water in the bilge wells appeared to be due to condensation on pipes from the main engine air cooler. (Outside temperature $45^{\circ} \mathrm{C}$, sea temperature $37^{\circ} \mathrm{C}$ and relative humidity well over $90 \%$ ). Based on review of the ORB bilge well transfer entries and the Sounding Log, bilge loading is minimal of about 100 liters per day. The purifier room was very clean, with no evidence of leakages from the purifiers. Auxiliary diesel engines on line, and fuel oil and lube oil pumps and valves were also noted to be leak free. Attached are photos showing the condition of the ME and auxiliary engines.
2. Similar to the engine room, both the cargo pump room and steering gear room were noted to be very clean, with no apparent leakages from pumps or pipes.
3. The ODME is tested monthly by the C/O and recorded in an ODME Test log (excerpt attached). During the audit, the ODME was tested by the C/O in my presence with the attending superintendent. Instructions contained in the manufacturer's manual were used to perform the tests, with values for ship speed, PPM, and flow rate manually entered. It should be noted that the vessel does not discharge its slop tanks at sea. All slops from ballast and tank cleaning are sent ashore. The ORB Part II verified this. The ODME was tested as per makers test procedure. The high PPM and 30 liters $/ \mathrm{nm}$ exceeded alarms were tested. The discharge prohibited alarm was also verified, along with the operation of the recirculation valve. The C/O was competent in the ODME operation and assisted by the pump man.
4. The manifold trays on deck on either side to contain any leakages or drips during loading, discharging and disconnection of shore connections are adequate relative to the requirements. The vessel had two portable Wilden Pumps, one for'd and one aft of the cargo areas of the vessel for use in case of an oil spill on deck during cargo operations and one spare. FO vent containment, bunker line containment and sludge discharge containment are adequate and meets the U.S. Pollution Prevention Regulations.
5. A monthly Environmental Performance Report, Form ENV 004, is submitted to the Ionia office on a monthly basis. Included on the form are garbage and hazardous waste disposal quantities.
6. The vessel maintains a Sounding Log as required by Section IV and Attachment $B$ to the Scope of Work. Excerpts of the Log Form ENV 008 for July and August 2010 are attached. The form of the Sounding Log was recently revised to include the initials of the deck officer witnessing the taking of the soundings as required by the Scope of Work.
7. A test of the incinerator burning sludge was carried out on September 09, 2010. 205 liters of sludge from the WOST were incinerated, at a rate of 37.3 liters/hour. Test table attached. Rated capacity as per specifications is 65 L per hour for liquid.
8. Incineration of sludge and evaporation from the WOST are carried out on a regular basis. According to the ORB, the last three sludge incineration operations were as follows:

| No. | Date 2010 | ${\text { Quantity } \mathrm{m}^{3}}{ }^{\text {Time in hrs. }}$ | Rate liters per hr. |  |
| :--- | :--- | :--- | :--- | :--- |
| 1 | Sept 03 | 0.11 | 2.5 | 44.00 |
| 2 | Sept. 03 | 0.64 | 15.0 | 42.66 |
| 3 | Sept. 01 | 0.35 | 11.5 | 30.43 |

The vessel generates about 370 liters of sludge per day. Daily fuel consumption is rated at 38.00 mts per day for a nominal speed of 14.5 kts . Attached Chief Engineer's Weekly Report, Form ENV 009 covering the period from 30/08/2010 - 05/09/2010. Sludge tank capacity, according to the Supplement to the IOPP Certificate, is $48.8 \mathrm{~m}^{3}$. Sludge tank capacities and incinerator capacity appear sufficient to manage the storage and disposal of sludge.
9. The vessel is fitted with a sewage treatment plant (STP) made by Hamworthy type ST3A Super Trident with a rated capacity for BOD 3.0 kg per day. The capacity of sewage holding tank is $6.3 \mathrm{~m}^{3}$ All black water is treated with the recommended chemical dosage for discharge overboard. According to the C/E, the STP is in continuous operation, both in port and at sea, with the direct overboard valve kept chained and locked in closed position, except during short periods of maintenance, while at sea, and only treated sewage is discharged. According to the C/E the system is adequate for the complement of the vessel, though the model type does not indicate capacity in terms of number of persons on board. The present complement during the audit was 27 persons.
10. An operational test of the OWS was carried on September 09, 2010. Prior to OWS test all the bilge alarms were tested. A section of the pipe adjacent to Overboard discharge valve was opened for inspection. The valve end and pipe ends were found clean and free of oil. A certificate signed by the Auditor and the Chief Engineer was posted on the pipe for future reference. Copies of the certificates were attached to ORB and E/R log book. The re-circulation test was carried out for a period of 15 minutes. During the test the OCM was tested for over 15ppm alarm and the function of three-way valve. All were found functioning satisfactorily. Subsequently the test of OWS was carried out with over board Discharge valve (skin valve) open for a period of one hour. The source tank soundings were monitored by the Auditor. Samples were taken every 15 minutes of incoming and outgoing effluents (photos attached). The outgoing samples were found to be clean and free of oil. The OCM readings were monitored during the test and the reading showed zero ppm throughout the test.

| Time10/Sept/10 | Sounding | Quantity in $\mathrm{m}^{3}$ |
| :--- | :--- | :--- |
| 0955 | 115 | 13.25 |
| 1010 | 111 | 12.25 |
| 1025 | 107 | 11.80 |
| 1040 | 103 | 11.35 |
| 1055 | 100.5 | 10.90 |

Rate given was $2.35 \mathrm{~m}^{3}$ per hour in comparison to $5.0 \mathrm{~m}^{3}$ per hour in the specification.
11. The rated capacity of the OWS is $5 \mathrm{~m}^{3}$ per hour, which appears to be more than adequate for the currently generated machinery space effluents. According to the ORB, the last three operations of the OWS were as follows:

| No. | Date 2010 | Quantity in $\mathrm{m}^{3}$ | Time in hrs | Rate $\mathrm{m}^{3} / \mathrm{hr}$ |
| :--- | :--- | :--- | :--- | :--- |
| 1 | Sep. 01 | 1.23 | 2.00 | 0.615 |
| 2 | Jun. 25 | 11.75 | 4.50 | 2.61 |
| 3 | Feb. 26 | 7.98 | 3.60 | 2.21 |

The rates obtained in the past were well below the rated capacity of $5.0 \mathrm{~m}^{3}$ per hour. C/E was requested to investigate the capacity of the pump and any other probable causes for low rate.
12. As per the Scope of Work requirements, samples of the following were taken during the test for content analysis by management nominated laboratory in Greece.
a. Bilge Well Aft
b. Clean Bilge Tank
c. BW Fwd Starboard
d. OWS Discharge

All samples taken were appropriately packed and dispatched to the laboratory in Greece for analysis from Sitra, Bahrain. No seals were posted at the time as the samples were stored in special freeze bottles given by the lab. A copy of the landing certificate is attached.
13. A log of incinerator and OWS operations is maintained. All alarms are recorded on the ECR console print out.
14. The vessel has a Deckma OCM, model OMD 2005, which conforms to requirements of MEPC 107(49). The OCM was last calibrated on May 01, 2010. The copies were sighted in the Master's certificate file and with C/E. The Scope of Work requires recalibration at least annually, with copies of the certificates maintained on board.
15. With the installation of the SWOMS, the flushing and sample lines to the OCM have been re-routed through the OWS LockBox, disabling the OMD 2005 manual flushing valve. The OWS LockBox's main function is to provide secured permissive functions that will only allow the 3-way overboard/recirculation valve to be moved to the overboard position once all the permissive functions are met. It will not allow for the mixing of the fresh and sample waters and must sense that enough sample water is flowing to the OCM for at least the last 20 seconds before it will allow control of the 3way overboard/recirculation valve by the OCM.
16. Daily checks of the Enviro Logger are being carried out and recorded on Form ENV 024. See attached samples.
17. The present engineering staff comprised of $C / E, 2 / E, 3 / E, 4 / E$, two oilers, one engine cadet and an electrician, and appeared adequate to handle the operational, maintenance and repairs workloads for the systems, equipment and components on board. All the staff appeared to be professional and knowledgeable with relevant experience for the job allocated. They are fully aware of the effort needed to minimize the waste streams development. The vessel is certified for UMS operation and manned as per company guidelines. In port and during cargo operations the Engine room is continuously manned as and when required.
18. Weekly shipboard training, which includes safety, security and environment protection, is carried out as per the six-month training schedule. Attached is a copy of the schedules for 2010. The dates when training is conducted are noted. In addition, environmental training is also carried out during monthly Safety Committee Meetings. Currently CBT training by VIDEOTEL has been introduced on board. The CBTs are of general nature and not necessarily specific to the environmental awareness related to the violations of US environmental rules.
19. The vessel had all the manuals of equipment related to waste stream and type tested certificates. Schematic diagrams and pipeline diagrams were on board. Attached are copies of the sanitary and bilge piping diagrams.
20. A new Garbage Management Plan was received with revisions to storage, segregation of Hazardous waste management was received at Jebel Ali and implementation is in progress to meet the requirements of the new manual.
21. Ionia Management has an effective internal environmental auditing procedure in place. Attached is a copy of the Internal Environmental Audit Report, Form ENV 011, for the audit conducted on March 26, 2010. The audit report is very detailed and comprehensive. Five non-conformities were identified and were in the process of being corrected at the time of this audit. The non-conformities were as follows: Quote"
I. According to the company's requirements a spare starter for OWS pump, rotor bearing and sealing and filtering should be available onboard. However the relevant spares were not available.
II. There was no record onboard indicating that the OWS was being maintained to the manufacturer's instructions.
III. During the audit with the Chief Engineer and the Master it was established that the vessel's Seal log book and spare Seal log book were not available onboard and therefore were not implemented eventually. It was also observed that although a tag system had been established satisfactorily, the new seals as required by the company were not yet available on board.
IV. There was no evidence that visitors boarding the vessel are made aware of the company's environmental policy and requirements upon their arrival onboard. In addition there were three observations. Some of the non-conformities were closed and others are in the process of closing on completion of corrective/preventive actions. "Unquote.

## Conclusion

Overall condition of the vessel and waste management equipment is very good. This vessel has recently come under the Scope of Work as management intends to use the vessel on US route in the future. Some of the issues mentioned above are having early challenges, which will be sorted out as soon as possible through the commitment of the management to the EMM and US requirements as noted previously, despite the number of Observations with Recommendations outlined above. The Scope of Work and EMM requirements are well implemented on board. Having audited two vessels namely $M / T$ Theo $T$ and $M / T$ Fidias previously, it is noteworthy to record that all the recommendations from previous audits have been implemented and the Environmental Management Manual and other relevant documentation have been revised to reflect the same. All the personnel on board cooperated fully during the audit and were sincerely interested and positive in complying with the environmental procedures. The presence of superintendent Captain Dimou, Aristeidis, from Safety and Quality department during the audit was an indication of the commitment of the management to ensure better environmental performance.

Respectfully submitted by:
Subhash Joshi
Compliance Systems Inc.

## Enclosures:

1. Ship's particulars
2. Crew list
3. Chief Engineer's weekly report for a period from 30/08/2010 to 05/09/2010
4. Internal Environmental audit report for on-conformities and observations, 26/03/2010
5. Fleet Engineering Survey, 18 March, 2010
6. Internal Environmental Audit report, 26 march, 2010
7. Enviro logger check list for 06/09 to 08/08, 2010
8. Landing form IM/GSPPLF/02.2004 for samples sent ashore for analysis
9. Piping diagram of Bilge, Fire and GS system
10. Extract from ORB I for 30/08/2010 to 06/09/2010
11. Extract of daily sounding log for months of July and August, 2010
12. List of last six cargoes
13. Inventory of Deck \& Engine room Flexible Hoses Form ENV 010 dated June 30, 2010
14. Drill program for 2010
15. Instruction page from Spare Seal Inventory Log
16. Enviro logger/vigilante service technician's report September 05,2010
17. ODME calibration and test report dated12/05/2009
18. Poster giving details of CCM's Role
19. Poster for Anonymous Reporting Procedure
20. Table 1 - Vessel Movement
21. Table 2 - Personal Timetable
22. Table 3 - Details of WSM Equipment On Board
23. Details of Certificates, Inspections, and Manuals

Environmental Management System (EMS)
Audit Checklist

This document and all of its contents is confidential. It should not be copied, retained, or distributed unless authorized by Compliance Systems, Inc.

Contents:


1. Vessel Details


## 2. Audits

Type of EMS audit:
Initial $\square$ Ongoing $\sqrt{ }$
Final Audit $\square$


## 3. Certificates


4. SOPEP - Shipboard Oil Pollution Emergency Plan / Ref: MARPOL Annex I/26.1, 33 CFR 151.26

5. Vessel Response Plans (VRP) - Ref: 33 CFR 151.26, 29a; 33 CFR 155210, 205, 235, 430


7. Oil Record Book (ORB) - Ref: MARPOL Annex I/20, 33 CFR 151.25

| Are all entries legible and signed by the officer making the entry | $y$ |  |
| :---: | :---: | :---: |
| Each completed page signed by the Master (after page is filled) | $y$ |  |
| Book maintained on board for 3 years, or as required by the ECP | X |  |
| Do all entries contain at least the information required by the category code under which the entry was made | $y$ |  |
| Is the quantity of sludge being incinerated equal to or less than the rated capacity of the incinerator for the time the incinerator was operated | $y$ |  |
| Compare the tank size to the amount transferred with the amount of waste stream treated. Is this consistent with the actual operation of the OWS? | Y |  |
| When bilge water is removed from a holding tank, do the recorded quantities match the quantities previously recorded as being pumped into the tank | 2 |  |
| Do all bilge water movements that are recorded tally correctly? \id | $y$ |  |
| If bilge water has been transferred to a shore-side facility or to a slop barge, does the quantity and date recorded on the receipt match the information in the ORB? | $\gamma$ |  |
| Are receipts for bilge slops transferred ashore or to a slop barge attached to the ORB page where the entry is recorded? | $\chi$ |  |
| Are there identical entries or similar entries for recorded operations of the OWS or incinerator that cause suspicion |  | $\lambda$ |
| Is evaporation or draining of water from the incinerator waste oil tank being recorded in ORB | $y$ |  |
| (-) ${ }^{(0)}$ |  |  |
|  |  |  |
| $9$ |  |  |


| H 27. Date, location, and amount of bunkers taken. D.O. or I,F.O | $\begin{gathered} 28 \text { Junet } 10 \text { Gibraltar } \\ \text { E0 } 1491 \text { mat } \end{gathered}$ |
| :---: | :---: |
| H27. Date, location, andiambunt of bunkers taken | $\begin{gathered} 22 \mathrm{Apr} 10 \\ \mathrm{Av} .800 .00 \mathrm{mby} \end{gathered}$ |
| H 27. Date, location, and amount of bunkers taken | $\begin{aligned} & 28 \text { Mar } 2010 \text { RO Hondum } \\ & \text { f.0 } 1220 \mathrm{me}^{2} \text { DO } 100.5= \end{aligned}$ |


| D 15.1 Date, total time or operation, and quantity of OWS discharged. | $p_{1} \cdot 23 \mathrm{~m}^{3}$ | $2 \mathrm{hms}$ |
| :---: | :---: | :---: |
| D 15.1 Date, total time or operation, and quantity of OWS discharged. | $\begin{aligned} & 25 \text { Thne } 10 \\ & 11.75 \mathrm{~m}^{3} \end{aligned}$ | 4 hss 30 mb |
| D 15.1 Date, total time or operation, and quantity of OWS discharged. | $\begin{array}{r} 26 \text { FAB } 10 \\ 7.98 \mathrm{~m}^{3} \end{array}$ | $3 \text { ho } 36 \mathrm{~m}$ |


| D 15.3 <br> tank. Bilge water transferred to holding | $6 \operatorname{sep} 10$ | $3.34 \mathrm{~m}^{3}$ |  |
| :--- | :--- | :--- | :--- | :--- |
| D 15.3 Bilge water transferred to holding | 29 Auy 10 | 1.01 | $\mathrm{~m}^{3}$ |



Are there any Codes:
F: Condition of Oil Discharge Monitoring and Control System
G: Accidental or other exceptional discharges of Oil
I: Additional Operational Procedures and general Remarks.


Are there any Codes:
Are there any remarks or entries that are not normally identified in the ORB?

| 8. Garbage Management Plan (GMP) -Ref: 33 CFR 151.63; MARPOL Annex V/9, V/3; 7 CFR330.400 |  |  |
| :---: | :---: | :---: |
|  | YES | NO |
| Is there a Garbage Management Plan (GMP) on board? |  |  |
| Who is listed as the GMP Officer? |  |  |
| Are designated crewmembers familiar with Plan? | $y$ |  |
| Is there documented evidence of Garbage Management training? | $y$ |  |
| Is shipboard garbage properly handled IAW Garbage Management Plan? | 7 |  |
| Are plastics segregated from other waste? | \% |  |
| Are waste containers provided and securely covered? |  |  |
| Garbage containers located within the vessel with non-combustible sides and bottom? | $x$ |  |
| Garbage Record Book entries correct: <br> Type, amount, location, date/time $\square$, Errors lined thru, initialed, corrected - no white out used $\square$. Each entry signed by PIC and each page by Mastert. Reports of inadequacy of port reception facilities for garbage on files. 140 | $y$ |  |
| Is the Garbage Record Books maintained onboard for the past 2 years? | $\chi$ |  |
|  | $\pm$ |  |
| Is the incinerator being used to burn garbage? | $y$ |  |
| Is there any evidence that plastics or synthétics hiave been discharged overboard? |  | 1 |
| Is waste sorted to prevent hazardous wáste entéring non-hazardous waste stream or incinerated? Are there separate defined storage areas doe hazardous /non-hazardous - no commingléd waste? | $Y$ |  |
| Signage/placards in working areas of crew in the official working language? | ' |  |
| Incinerator ash if discharged overbbard free of plastic respiduepr free..f unburned food wastes iflanded ashore. <br> Nat dischand o/B |  | 7 |
| Are trash chutes clean free, from oil residue (no oil stains on decks, side of hull adjacent to trash chutes)? | $N / A$ |  |
| Are foreign food wastes hàndled per APHIS regulations? | 7 |  |
| Are medical , Wastes incinerated or manifested as bio-hazardous waste? | 7 |  |
| Garbage discoharged outside special areas. cesper rulo | $y$ |  |
| Incinerator operation observed? | $\infty$ |  |
| Garbage Pollution Placards posted? | 7 |  |
| Procedures to minimize amount of potential garbage in place <br> - Is vessel encouraging ship suppliers to consider alternate means of packing - use of other than plastic <br> - Is vessel reusing packing (examine stockpiles) <br> - Is waste generated in port disposed to shore reception facilities prior to sailing | $\begin{aligned} & N \\ & N \\ & y \end{aligned}$ |  |


| Is there a recycling program onboard? | $\cdots$ |  |
| :---: | :---: | :---: |
| Does the vessel have procedures/policy for recycling? | $\cdots$ |  |
| Is ship's crew following recycling procedures/policy? | $\cdots$ |  |
| Is maintenance being carried out on equipment - e.g. incinerator, grinders | $\chi$ |  |
| Are records maintained and manifests completed for potential hazardous waste streams: ysed solvents $\square$, paints and thinners $\square$; fluorescent/mercury vapor bulbs [: batteries (NiCad, LeadAcid, Lithium, Alkaline) $\square$; pharmaceuticals/narcotics $\square$; aerosol cans $\square$, expired pyrotechnics $\square$, incinerator ash if contaminated with toxic/hazardous substances (plastics containing heavy metals) | $y$ |  |
| is there evidence that hazardous wastes are being incinerated, diluted, neutralized, or evaporated as a means of disposal |  | $\lambda$ |
|  | (? |  |

## 9. Oily Water Separator (OWS) - Ref: MARPOL Annex I /16; 33 CFR 155.380(b)

Request the chief engineer to provide a line drawing of the oil waste stream system which includes the OWS, bilge piping, bilge main cross connections and holding tanks. Compare drawing to installation and attach drawing to report.


| No electrical bypasses, jumpers, extra switches on or within unit or Meter control panel |  |  |
| :---: | :---: | :---: |
| If the flushing line is left open position will the OWS continue to o |  |  |
| System back flush or oil purge cycle operates properly |  |  |
| Is the flushing system on the OWS keyed? Yes omL 20 | 7 |  |
| Is the freshwater flushing line to the Oil Content Monitor painted a b |  | $\lambda$ |
| Seal at the end of the flushing line |  |  |
| Is there any evidence of tampering or additional connections to the flushing line? |  |  |
| Is the OWS overboard valve secured by seal or lock? If locked, who has possession of the key? | $y$ |  |
| Are the sufficient supplies OWS coaleser filters? List ROB |  |  |
| Is there a list of approved chemicals approved by the OWS manufacturer for use in the OWS? |  |  |
| Are all OWS alarms documented in the ORB? Only on Datal es |  |  |
| Is there evidence that two (2) non-crew engineers have independently tested the OWS and logged in the ORB? <br> Date of test: <br> Duration of test: |  | $x$ |
| Is the emergency bilge suction valve labeled, numbered and sealed? |  |  |
| Review hand over notes for the chief engineer, second engineerehsuring the installed pollution prevention equipment status is properly addressed. | $y$ |  |
| Review logbooks relating to fuel oil and lube oilmanagement, to the operation of the fuel oil and lube oil purifiers and line or piping failures. <br> Comments: |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| ( ${ }^{(1)}$ |  |  |
| - Visually sample processed water for gross contamination (sheen or visible oil) <br> - Compare ship's operational maintenance routine with actual preventative maintenance conducted $\square$ <br> - Request proof /documentation of maintenance completed (used consumables from OWS, receipts service, technician reports, contractor disposal records <br> - Review meter calibration records <br> - Review strip charts if fitted $\square$ <br> - Examine other machinery pace overboard piping for unusual connections <br> - Review records pertaining to system repairs $\square$ <br> - Consider ppening access cover to first and second stage chamber for inspection in internal condition $\mathcal{J}$ <br> - Consider removing first section of piping upstream of OWS overboard valve - inspect for |  |  |

## oil residue

- Look for piping modifications that are not shown on original vessel drawings that would facilitate discharge of bilge water around Oil Content Meter $\square$ (ine
- Check zero and calibration function \& last dates of service for the OCM or OCD $\varnothing$
- Test operate OCM/OCD $\square$
- Test Oil Detection Probe \& auto/manual drainage of oil in OWS chamber $\square$ Comments:


## 10 Sounding Log

| Are the sounding logs completed daily and initialed by the certifying engineer? |  |  |
| :--- | :--- | :--- |
| Where is the Sounding log maintained? | Are entries written ink, pencil, or both? |  |
| How long is the Sounding long to remain onboard? | Is it documented at what times of day sounding are to betaken? |  |
| Who is designated to take the soundings? |  |  |
| Does the Master sign the Sounding log on a weekly basis? |  |  |

11. Oil Transfer Procedures and Operations - Ref: 33 CFR 154.500, 155.700-.720, 155.750, $155.785,155.790,155.800,155.805,155.820,155.1010,155.1030$, and 156.170

| - | YES | NO |
| :---: | :---: | :---: |
| Oil Transfer Procedures posted and available in crew's language 6 for larlo | $y$ |  |
| Description of transfer system, including a line diagram of piping system (pumps, vents, valves, alarms, shutoffs, etc.) | $y$ |  |
| Person in Charge fluent in English or language mutually agreed upon w/ shore side PIC | $y$ |  |
| Format in CFR order or cross reference index page |  | $\lambda$ |
| List/description of products carried by vessel a-Hached | $y$ |  |
| Declaration of Inspection (DOI) available and retained for at least one month 33 CFR 156.50 |  | $\sqrt{4}$ |
| Number of persons required on duty during transfer | 6 |  |
| Duties listed by title of each person | 2 |  |
| Two-way means of communication available | $x$ |  |
| Procedures to top off tanks and disconnect | $y$ |  |
| Procedures to report oil discharges | $x$ |  |
| Emergency response procedures outlined | $y$ |  |
| Is lighting at each transfer operations work area adequate and properly shielded | $y$ |  |
| Oil Pollution Placard posted (most recent US. placard) 33 CFR 155.450 | $y$ |  |
| Has the pollution prevention equipment prepared in advance and is the portable pump rigged for operation? | $y$ |  |
| Has the bunker line been tested in accordance with 33CFR 156.170(c)(4) | $y$ |  |
| Has a pre loading plan been completed'(Washington) |  | $N / A$ |
| Is condition of oil transfer hases on board satisfactory |  | $N / A$ |
| Are shipboard hoses marked with MAWP, Mfg. Date, test date) |  | M/A |
| Are hoses blankedoff when not in use | $\chi$ |  |
| Is there a record offests and inspections | $\chi$ |  |
| ( $\sqrt{3}$ |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| Comments: |  |  |

12. Standard Discharge Connection - Ref: MARPOL Annex I/19; 33 CFR 155.430


13. Prohibited Oil Spaces \& Oil Accumulation Spaces - Ref: 33 CFR 155.470


## 15. Bilge Water Management - Ref: MARPOL Annex I



- Examine machinery, śpace biges completely
- Check status of jily bilige water tanks - last cleaned, at capacity? $\square$
- Levels of tannks dujring inspection - high or low? $\square$ perth al
- If tanks nearffult; what are the vessel's processing plans $\varnothing$

Comments:

## 16. Seal Management Program

| Is there a seal management program onboard? | $y$ |  |
| :---: | :---: | :---: |
| Who is in possession of the seal log and seals? Mhofer $/ C / L$ |  |  |
| Where seals are used are there more than one seal to secure the valve or flange? |  | $\lambda$ |
| Is there a procedure for documenting how and when the seal is to be renewed or changed? | $\chi$ |  |

## 17. Waste /Sludge Oil Incineration


18. Sewage Waste Stream - Ref: MARPOL Annex IV; 33 CFR 159.57, Ref: 33 CFR 159.65, NVIC 9-82, Ship's Safety Management System

19. Hazardous Waste - Ref: 40 CFR 262 and 264; 49 CFR 176: RCRA; ISM Code; Safety Management System


## 20. SOPEP Gear


21. Ballast Water Management - Ref: 33 CFR 151.2045 and NVIC 7-04 (Change 1)

22. Additional Environmental items

23. General Comments, Observations, Recommendations




[^1]

Exhibit 3

| IONIA MANAGEMENT S.A | Prepared by: DPA | Effective Date: 17/12/2009 |
| :--- | :--- | :--- |
| Environmental Management <br> Manual | Approved by: MD | Revision: 3 |
|  | Section: Operational controls | Form <br> $\vdots$ <br> ENV 009 |

CHIEF ENGINEER WEEKLY REPORT
VESSEL: PLOUTOS
YEAR: 2010
MONTH: SEPTEMBER

WEEK | FROM: | $30 / 08 / 2010$ |
| :--- | :--- |
| TO: | $05 / 09 / 2010$ |




| \|incinerator * RUNNING HOURS | 8.5 | 15 | 11.5 | $15$ |  |  |  | 50.00 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BILGE WATER <br> ROB M3 | 16.7 | 16.7 | 16.7 | 17.05 | 17.05 | 17.41 | 17.41 |  |
| BILGE TKs FREE CAP. M3 | 48.00 | 48.00 | 48.00 | 47.65 | 47.65 | 47.29 | 47.29 |  |
|  |  |  | 1.23 |  |  |  |  |  |
| BILGES DELIVERED TO SHORE/BARGE |  |  |  |  |  |  |  |  |
| OWS RUNNING HOURS |  |  | 12 |  |  |  |  | 2.00 |


| BILGE TANKS CAPACITY (from IOPP): | 64.70 | lm 3 |
| :---: | :---: | :---: |
| SLUDGE TANKS CAPACITY (from IOPP): | 48.18 | m3 |
| TOTAL BURNING,EVAPORATED,DRAINED SLUDGES: | 2.41 | m3 |
| BILGE QUATITY DISPOSED IHROUGH 15 ppm | 1.23 | m3 |
| BILGE GENERATED THIS WEEK | 1.94 | m3 |
| SLUDGE GENERATED THIS WEEK | 2.74 | m3 |


$\because$
*

| LOAD | LOADING | ST/BY | ST/BY |
| :---: | :---: | :---: | :---: |
| DIS | DISCHARGING | SEA | AT SEA |
| ANC | ANCHORAGE |  |  |
| DRI | DRIFTING |  |  |

MAJOR WEEKLY ACTIVITIES - COMMENTS


Exhibit 3

| IONIA MANAGEMENT S.A | Prepared by: DPA | Effective Date:01/07/2009 |
| :---: | :---: | :---: |
| Environmental Management Manual | Approved by: MD | Revision: 0 |
|  | Section: Environmental Planning | Form: ENV 011. |

## NON-CONFORMITY / OBSERVATHON REPORT

(Please delete as appropriate)

## Date: 26/03/2010

Vessel / Dept.: M/T PLOUTOS
Audit Ref.: 01/10

Auditor: Cpt. Aristeidis Dimou
Auditee: Chief Engineer
NCR/Obs No.:01/10

Environmental Management System Audited: Pollution Prevention Equipment
Environmental Management System Ref: 5.14
ISO 14001 Ref.:

Non-conformity Description:
According to the Company's requirements a spare starter for the OWS pump, rotor bearing and sealing and filtering should be available onboard. However the relevant spares were not available.
It was also noticed that a relevant requisition had not been issued by Chief Engineer regarding the matter.

Analysis Results (root cause):
After investigating the issue it was established that the Technical Department failed to identify the needs of the vessel since the implementation of the EMP regarding the minimum spares of the environmental critical equipment that should be available onboard. Furthermore it was established that the Chief Engineer was not adequately aware of the particular matter.

## Corrective Actions

Immediate Actions:

| Corrective Actions to be Taken |  |  |  |
| :--- | :--- | :--- | :--- |
| Description | Responsible Person | Date to be <br> completed | Date closed <br> out |
| A relevant requisition must be issued accordingly. | Chicf Enginecr | $15 / 04 / 2010$ | $8 / 04 / 2010$ |
| The Technical Department shall follow up the issue <br> accordingly. | Tech. Departmenti | $25 / 07 / 2010$ |  | accordingly.

Preventive Actions to be Taken

| Description | Responsible Person | Date to be completed | $\begin{gathered} \hline \text { Date closed } \\ \text { out } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| The issue will be distributed throughout the fleet and relevant confirmation will be requested in order to ensure that the said spare is available onboard the company's managed vessels. | EMR | 31/05/2010 | $\begin{gathered} 31(03) 10 \\ 10 \\ 6 \end{gathered}$ |
| The technical department shall establish a progedure in order to follow up the issue properly | Technical Department | 30/06/2010 |  |
| Auditor's Siqnature: | Auditee's Sianature: |  |  |

Approved by EMR (date/signature):
Closed out by EMR (date/signature):

## Other comments:

| 1ONIA MANAGEMENT S.A |  | Prepared by: DPA | Effective Date: 01/07/2009 |
| :---: | :---: | :---: | :---: |
| Environmental Management Manual |  | Approved by: MD | Revision: 0 |
|  |  | Section: Environmental Planning | Forn: ENV 011 |
| NON-CONFORAITY/OBSERVATION REPORT <br> (Please delele as appropriate) |  |  |  |
| Date: 26/03/2010 Vessel / Dept.: M/T PLOUTOS Audit Ref.: 01/ |  |  |  |
| Auditor: Cpt. Aristeidis Dimou ${ }^{\text {a }}$ Auditee: Master |  |  | NCR/Obs No.:02/10 |
| Environmental Management System Audited: Continuous Evaluation \& Improvement |  |  |  |
| Environmental Management System Ref: 8.4 ISO 14001 Ref.: |  |  |  |
| Non-conformity Description: <br> During the audil with the Master it was established that although the Master's review had been completed by the previous Master on the $15^{\text {TH }}$ October, 2009 company's feedback on Master's comments was not available on board. |  |  |  |

> Analysis Results (root cause):
> The Company's S\&Q department failed to comply with the relevant requirements. Afier investigating the issue it was established that due to interdepartmental changes the issue was not properly followed by the company's responsible officer.

## Corrective Actions <br> Immediate Actions: No immediate action is deemed necessary for the particular issue.

| Corrective Actions to be Taken |  |  |  |
| :---: | :---: | :---: | :---: |
| Description | Responsible Person | Date to be completed | Date closed out |
| The issue will be properly followed up by the Company's relcvant departmént and relevant feedback will be sent accordingly. |  | $\begin{aligned} & k^{31 / 2552010} \\ & \text { Rendend } / 6 / 2010 \end{aligned}$ |  |
|  |  |  |  |
| Preventive Actions to be Taken |  |  |  |
| Description | Responsible Person | Date to be completed | Date closed out |
| No preventive action is deemed necessary for dhe particular issiue. particular issive. |  |  |  |
| - $/$ / |  |  |  |
| $17$ |  |  |  |
| Auditor's Sianature: | Auditee's Siqnature: |  |  |
| Approved by FMR (date/signature): | Closed out by EMR (date/signature): |  |  |

Other comments:


[^0]:    * Bilge total capacities are not known
    ** It appears there is an error

[^1]:    LIFEBOAT WINCH TYPE: JYYW 50

