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June 13, 2016

BIO-UV SAS

Attn: Ms. Charlène Cerosola
850 Avenue Louis Médard
34400 Lunel
France

ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE

The Coast Guard has completed its review of materials submitted in addition to the Alternate Management System (AMS) application received from BIO-UV SAS for the BIO-SEA® ballast water treatment system (BWTS). This letter grants continued AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for the following BIO-SEA® models: BIO-SEA®100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, and 2000 with treatment rated capacities (TRC) of 87 to 2,000 cubic meters per hour (m³/hr). These BIO-SEA® models are type approved by the Bureau Veritas on behalf of the French Ministry of Ecology, Energy, Sustainable Development and Town and Country Planning, as detailed in type approval certificate No. 34153/AO BV issued on June 6, 2013, and certificate No. 34154/AO BV issued on June 5, 2013. Type approval certificate No. 34154/A2 MMF, dated March 9, 2016, provides an updated certification for these models, with additional information on the BWTS operating requirements, conditions, and ranges. *This revised AMS acceptance letter recognizes the updated requirements and ranges for the BIO-SEA®100 through 2000 models.*

This revised AMS acceptance letter also recognizes the type approval of the following models: BIO-SEA® 30-55, 30-87, 60-55, 60-87, and 90-87. The BIO-SEA® 30-55 is derived from downscaling the BIO-SEA® 100, as approved under type approval certificate 34154/A1 MMF, dated March 10, 2014. The downscaled 30-, 60-, and 90- models were type approved by the French Ministry as detailed in type approval certificate No. 43175/A1 MMF, dated March 9, 2016. The maximum TRC for these models ranges from 30 to 87 m³/hr.

To reflect the revised operating conditions and ranges, the BIO-UV BIO-SEA® BWTS will operate under a new AMS identification number:

AMS-2016-BIO-UV BIO-SEA-001

Coast Guard acceptance of the BIO-SEA® BWTS as an AMS does not accord or imply conformance to or compliance with any other Federal, state, or local water discharge effluent limitations that may apply to the vessel on which the AMS operates or the regulatory regimes and locations within which it operates. The owner and operator of the vessel must comply with

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all applicable laws, regulations, and treaties, including the Clean Water Act and associated provisions of the Vessel General Permit (VGP); the Federal Insecticide, Fungicide, and Rodenticide Act of 1972, as amended (FIFRA); other Coast Guard safety regulations and requirements; and other applicable laws and regulations.

In accordance with 33 CFR 151.2026 (a)(5), the AMS application required the submittal of a type approval application for the BWTS. The type approval information submitted with the AMS application does not have any bearing on the type approval status of the BWTS, nor does Coast Guard acceptance of the BIO-UV BIO-SEA® BWTS system as an AMS indicate that the BWTS meets requirements for Coast Guard type approval.

The following conditions apply for the operation of the BIO-SEA® BWTS in U.S. waters:

1. The AMS manufacturer must comply with all general conditions of certification stipulated in the type approval certificate issued by Bureau Veritas on behalf of the French Ministry of Ecology, Energy, Sustainable Development and Town and Country Planning, as referenced above. Revocation of type approval by the approving authority will result in revocation of this AMS acceptance. Copies of all reports required under the stated conditions of use must be submitted to the Office of Environmental Standards (OES-3) at the following address or email:

COMMANDANT (CG-OES-3)
 United States Coast Guard Stop 7509
 2703 Martin Luther King Jr. Ave SE
 Washington DC 20593-7509
 Tel: 202-372-1402
 e-mail: environmental_standards@uscg.mil

2. Installation and repairs of the AMS must be performed in accordance with the manufacturer's instructions and approved by the flag administration or its representative.
3. Operation and maintenance must be conducted in accordance with all specifications and limiting conditions stipulated on the certificate of type approval and with the manufacturer's instructions, including any limitations posed by environment (for example, water quality, temperature, salinity, or other parameters) or vessel operations (for example, voyage duration, pumping rates, or other constraints). The following specific conditions apply:
 - a. **Flow rates:** For BWTS models 100 through 2000, the maximum flow rate per UV reactor is 100 m³/hr, and minimum is 5 m³/hr. For greater TRC, multiple UV reactors may be installed in parallel in multiples of 100 m³/hr, as indicated in the type approval certificate. For the downscaled 30-, 60-, and 90- models, the maximum flow rate is 30 m³/hr, and the minimum is 3 m³/hr. For greater TRC, two or three UV reactors can be installed in parallel depending on the flow to be treated and the rated value of the ballast pumps. The TRC of the BWTS must not be less than the rated flow rate of the ballast pump.

- b. **UV intensity:** For BWTS models 100 through 2000, a minimum UV intensity of 700 W/m² per reactor must be maintained to achieve the designed biological efficacy. For the downscaled 30-, 60-, and 90- models, a minimum UV intensity of 1,000 W/m² per reactor must be maintained.
- c. **Operating Pressure:** The maximum operating pressure is 6 to 10 bar depending on the model. For BWTS models 100 through 2000, the minimum operating pressure in the system is 1 bar. For the downscaled 30-, 60-, and 90- models, the minimum operating pressure in the system is 0.5 to 1.5 bar.
- d. **Water Temperature and Ambient Temperature Operating Range:** The system is designed to operate in water temperatures ranging from -2 to 35 °C, with ambient air temperatures ranging from 0 to 55 °C.
- e. **Differential pressure across the filter:** Two types of automatic backwash filters can be used with BWTS models 100 through 2000; both may be supplied with or without a backwash pump. Under normal operating conditions, the 40-micron (µm) *BS Filtersafe* models listed in the type approval certificate have a maximum working pressure of 6 to 10 bar (depending on the filter model), a maximum pressure drop 0.5 bar, and a minimum back pressure of 1 bar with a backwash pump and 2 bars without a backwash pump. Under normal operating conditions, the 20- to 40-µm *ACB Filtrex* models listed in the type approval certificate have a maximum working pressure of 6 to 10 bar, a maximum pressure drop of 0.3 bar, and a minimum operating pressure of 0.5 bar with a backwash pump and 1.5 bars without a backwash pump. For the downscaled 30-, 60-, and 90- models, the 20-µm *ACB Filtrex* models also have a maximum working pressure of 6 to 10 bar, a maximum pressure drop of 0.3 bar, and a minimum operating pressure is 0.5 bar with a backwash pump and 1.5 bars without a backwash pump.

A historical record documenting that the system has been operated within these criteria, including a record of any alarm conditions, any deviations from the manufacturer's operating instructions, or any conditions and requirements noted above, shall be available for review onboard the vessel.

- 4. Because the AMS has not been adequately tested in freshwater, its use as an AMS is limited to the treatment of marine and brackish water with a practical salinity unit (PSU) concentration greater than 1.
- 5. If installed on a U.S. flag vessel, it must be shown that the system and installation comply with or provide an equivalent level of safety to the requirements of 46 CFR Subchapter F (Marine Engineering) and Subchapter J (Electrical Engineering). All electrical equipment located within hazardous areas must be explosion proof or intrinsically safe as certified by an independent laboratory recognized by USCG per 46 CFR 111.105-7.
- 6. Use of the AMS is specified in the ship's ballast water management plan (BW plan), required by 33CFR 151.2050(g). The BW plan must identify the following: (1) the

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ballast water management practices to be used in the event the AMS cannot be used, and (2) the personnel responsible for the operation, maintenance, and repair of the BWTS. An up-to-date record of the operation, maintenance, and repair of the BWTS must be maintained onboard the ship.

7. Any change in design, materials, manufacturing, or intended operational conditions of this BWTS without prior notification to, and acceptance by, the U. S. Coast Guard will automatically invalidate this AMS acceptance. Prior to any such change, the manufacturer of an AMS must notify the Commanding Officer, U. S. Coast Guard Marine Safety Center (MSC), at the following address or e-mail:

Commanding Officer (MSC)
Attn: Marine Safety Center
U.S. Coast Guard Headquarters
2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7509
e-mail: msc@uscg.mil

The notification must include the following: (1) a description of the change, the reason it is required, and its intended advantages; (2) an explanation of any effect of the change on installation, operation, maintenance, or repair requirements; and (3) an indication of whether or not the original configuration of the BWTS will be discontinued.

8. If the installed AMS does not operate properly when treating ballast water intended for discharge in U.S. waters, the person directing the movement of the vessel must ensure that the problem is reported to the nearest Coast Guard Captain of the Port (COTP) or District Commander as soon as practicable. The Coast Guard shall be notified of any treatment system or component failures, any irreparable or recurring damage to components of the AMS, frequent process upsets or out-of-bounds operating conditions, or other situations or process-related conditions that may reduce treatment effectiveness. The vessel may continue to the next U.S. port of call, subject to the directions of the COTP or District Commander, as provided by 33 CFR 160.
9. All transport and handling of chemicals required for proper operation of the AMS must be conducted in accordance with 46 CFR 147 (Hazardous Ships' Stores), 49 CFR 171-180 (Hazardous Materials Regulations), and 46 CFR 98.30 (portable tanks), as appropriate.

Use of the AMS must be reported in the ship's ballast water management reports submitted to the National Ballast Information Clearinghouse, as required by 33CFR 151.2060, as follows:

- a. In Section 4, report the number of tanks treated by the AMS in the space labeled "Underwent Alternative Management." In Section 4, write the AMS identification number (AMS-2016-BIO-UV BIO-SEA-001) in the space labeled "Please specify alternative method(s) used, if any," and;

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- b. In Section 5, in the middle section titled “BW MANAGEMENT PRACTICES” identify the management method as “ALT” under the heading “Method (ER/FT/ALT)” for each tank for which the AMS was used.

The Coast Guard may suspend, withdraw or terminate the acceptance of this BWTS as an AMS in accordance with 46 CFR 2.75-40, 2.75-50(a) and 2.75-50(b), respectively.

A copy of this letter shall be provided to each vessel with this installed AMS and shall be available for review when the vessel is operating in U.S. waters.

I thank you for your dedicated efforts to seek out AMS acceptance, and we look forward to working with you throughout the type approval process. If you have any questions concerning this letter, you may contact Ms. Regina Bergner of my staff at (202) 372-1431 or Regina.R.Bergner@uscg.mil.

Sincerely,



S.J. Kelly

Captain, U.S. Coast Guard

Office of Operating and Environmental Standards