U.S. Department of Homeland Security

United States Coast Guard

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ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by Elite Marine Corp. for the Seascape ballast water treatment system (BWTS), as well as additional materials submitted with new type approval certificates issued by the China Classification Society (CCS) on behalf of the People's Republic of China. The original AMS acceptance letter, dated October 3, 2014, lists one model, the Seascape 250 BWTS. This revised letter grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for Seascape models, as detailed in new CCS type approval certificate No. NJ17T00288_01 issued on May 4, 2018.

The following Elite Marine Seascape models are accepted for use as an AMS in U.S. waters:

- Seascape-150 with a treatment rated capacity (TRC) of 150 cubic meters/hour (m^3/ h);
- Seascape-250 with a treatment rated capacity (TRC) of 250 m^3/h;
- Seascape-300 with a treatment rated capacity (TRC) of 300 m^3/h;
- Seascape-500 with a treatment rated capacity (TRC) of 500 m^3/h;
- Seascape-600 with a treatment rated capacity (TRC) of 600 m^3/h;
- Seascape-800 with a treatment rated capacity (TRC) of 800 m^3/h;
- Seascape-1000 with a treatment rated capacity (TRC) of 1,000 m^3/h;
- Seascape-1200 with a treatment rated capacity (TRC) of 1,200 m^3/h;
- Seascape-1600 with a treatment rated capacity (TRC) of 1,600 m^3/h;
- Seascape-1800 with a treatment rated capacity (TRC) of 1,800 m^3/h;
- Seascape-2000 with a treatment rated capacity (TRC) of 2,000 m^3/h;
- Seascape-2400 with a treatment rated capacity (TRC) of 2,400 m^3/h;
- Seascape-3000 with a treatment rated capacity (TRC) of 3,000 m^3/h;
- Seascape-3200 with a treatment rated capacity (TRC) of 3,200 m^3/h;
- Seascape-4000 with a treatment rated capacity (TRC) of 4,000 m^3/h; and
- Seascape-5000 with a treatment rated capacity (TRC) of 5,000 m^3/h.

The Elite Marine Seascape BWTS is assigned the following AMS identification number:

AMS-2019-Elite Marine Seascape-001

Coast Guard acceptance of the Elite Marine Seascape 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 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 Elite Marine Seascape BWTS as an AMS indicate that the BWTS meets requirements for Coast Guard type approval.

The following conditions apply for the operation of the Elite Marine Seascape AMS in U.S. waters:

1. The AMS manufacturer must comply with all the general conditions of certification stipulated in the type approval certificate issued by CCS under the authority of the government of China, 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 U.S. Coast Guard Environmental Standards Division (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 type approval certificate and with the manufacturer's instructions, including any limitations posed by the 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. **UV intensity/dose**: This BWTS employs UV light as a disinfecting agent during ballasting and de-ballasting. During ballasting, ultrasonic vibrations are used as a supplementary treatment measure to physically damage organisms. The ultrasonic vibrations simultaneously clean the quartz housings of the UV lamps. The UV reaction chamber and the ultrasound units are housed together in the Enhanced Physical Treatment (EPT) module. Before ballasting or deballasting, the EPT unit should be started to preheat UV lamps for 3 minutes.

   The CCS type approval certificate states that the UV dose for the Seascape BWTS has a permissible operating range of 200 to 270 millijoules per square entimeter ($mJ/cm^{2)}$. The system can start ballasting or de-ballasting only when the UV dose equals or exceeds 200 mJ/cm^2. During ballasting and deballasting operations, the UV dose must be maintained between 200 and 270 mJ/cm^2. This dose range corresponds to a UV light intensity range of 0.45 to 0.80 W/cm^2. As stated in the CCS type approval certificate, the minimum UV light transmission for the Seascape models is 70%. If the UV dose is not maintained within the 200 to 270 mJ/cm^2 permissible operating range, alarms will sound at the control panel and remote panels.

   A sensor determines UV intensity in the medium-pressure UV reaction chamber. Based on input from the UV sensor, the Seascape programmable logic control (PLC) maintains the UV dose within the acceptable operating range. The system will automatically shut down if the dose is less than the minimum or exceeds the maximum permissible dose operating level. UV dose can be read via data readouts from the human machine interface (HMI) screen on the PLC.

b. **Flow rates:** The flow rate of ballast water through the Seascape BWTS should not exceed the treatment rated capacity (TRC) for the model as specified in the CCS type approval certificate. The operations manual for the Seascape system specifies a maximum and minimum permissible ballast water flow rate of 5% greater than or less than the TRC of the specific model. A historical record of flow rate is available via readouts from the HMI screen on the PLC.

c. **Differential pressure across the filter:** The Seascape BWTS employs a self-cleaning filter with a 40-µm screen and a maximum design pressure of 1.0 megapascal (MPa). The filter is designed to remove sediments and organisms greater than 50-µm in diameter. The filter will automatically back flush when an in-line sensor detects a pressure differential across the filter equal of 0.04 MPa or 0.40 bar. An alarm at the control panel will alert the user if the differential pressure across the filter is equal to or greater than 0.060 MPa (0.60 bar), which is the maximum differential pressure for the system. The Seascape BWTS will shut down automatically if this high differential pressure condition persists for a pre-determined time period. A historical record of filter pressure differentials can be obtained from readouts from the HMI on the control panel of the PLC.

d. **Ballast water temperature considerations:** As specified in the CCS type approval certificate, the system may operate between -5 and 65 °C. A sensor in the UV reaction chamber monitors the temperature of ballast water. The temperature sensor transmits data to the PLC to maintain water temperature at or below 65 °C. If this temperature is exceeded, alarms will actuate at the main control panel and remote control locations, and the BWTS will shut down.

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. As stipulated in the CCs type approval certificate, the Seascape BWTS is not approved for use in (a) hazardous areas, (b) exposed areas on deck, and (c) enclosed spaces without environmental control.

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 must be specified in the ship's ballast water management plan (BW plan), required by 33 CFR 151.2050(g). The BW plan must identify the following: (1) the 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.

10. 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 33 CFR 151.2060, as follows:

    a. Report the number of tanks treated by the AMS in the space labeled "Underwent Alternative Management";

    b. Report the AMS identification number (AMS-2019-Elite Marine Seascape-001) in the space labeled "Please specify alternative method(s) used, if any," and;

    c. 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. Debbie Duckworth of my staff at Debbie.Duckworth@uscg.mil.

Sincerely,

S.T. BRADY
Captain, U.S. Coast Guard
Operating and Environmental Standards