



M/V Green Bay

Ecochlor Ballast Water Treatment System located in a new deck house with a 500 m³/hr capacity installed by riding crews

System	Ecochlor 500m ³ /hr
Technology	Chlorine Dioxide with filtration
Filter	FilterSafe
Client	LMS Shipmanagement
Timeline	2013-2014
Status	Operational and in use

1st Chemical BWTS on US Flag PCTC

HEC cooperated closely with LMS Shipmanagement, Inc. on concept design of the BWTS retrofit, based on drawings, vessels operating profile, ballasting rates and water quality. The Ecochlor system was chosen due to the ship owner's belief that it would obtain USCG approval. Laser scans were carried out in the engine room and on the boat deck. HEC designed system and piping modifications, as well as the on deck enclosure for the BWTS itself. This allowed sufficient space for operations, maintenance and chemical storage. As the design progressed, cooperation extended to ABS, USCG and numerous vendors and installers.

Project Challenges

- 1. BWTS enclosure** had to be designed for transportation in two halves with all stiffening and foundations in place and to allow the Ecochlor system and filter to be lifted in place in one day.
- 2. Chemical systems** require specific piping materials to be used to minimize the chance of corrosion failure. Class did not allow GRE piping, so a cost effective alternative was required. HEC decided on a CPVC material over alternatives such as Teflon line steel to meet requirements.
- 3. System skid** weight escalated beyond manufacturer's specification and was not discovered until after the foundations and enclosures were built. The structural design was however based on HEC weight estimates resulting in no delays or modifications needed.
- 4. Installation** of the Ecochlor system above a RoRo deck led to safety concerns regarding fire risk. HEC carried out a fire risk assessment which resulted in a sprinkler system being installed.

