

Transport Canada Fact Sheet: Ballast Water Treatment Systems

What could be in ballast water coming from other areas?

Ballast water is used by ships to create balance and safety when a ship has no cargo, or a smaller amount of cargo. The ballast water can have sediments and aquatic species like bacteria and other microbes, micro-algae, and various life stages of aquatic plant and animal species.

Transport Canada rules require ships to manage their ballast water so that the risk of introducing invasive species is reduced. There are options on how a ship manages its ballast water. One way is to exchange its ballast water in a location that is very deep. The high salinity of this deep water, brought on board is expected to kill organisms that are in the ballast water tanks.

Is all the water removed when exchanging ballast water?

One method of exchange, called salt water flushing, is when a ship will remove or discharge ballast from the bottom of the tank, while at the same time bring water on board at the top of the tank. This method is often used when the ship has a small amount of ballast on board.

The second method is when all of the ballast on board the ship is released or discharged in a location far from the coast (mid-ocean) and then new ballast is pumped into the tank.

There may be an amount of residual ballast water that is not exchanged, however it is expected that the temperature and high salinity of the new water will kill any remaining organisms.

What does treatment mean? With treatment, are there chemicals used? What concentrations and how do they affect the environment?

Ballast can also be managed by treating it using an approved ballast water treatment system. A ballast water treatment system does not exchange water but treats it on board the ship in a variety of ways.

Treatment is a process that either kills organisms in the water, or causes them not to be viable so they will not reproduce or take hold in the environment, thereby reducing risk of introductions of new species.

Treatment can be done by physical means, such as using an ultraviolet light. Or it can be done by adding a substance or chemical. There can be a variety of substances but for example: chlorine or ozone.

After treatment, what happens to the water?

After treatment, if a substance/chemical was added, like chlorine, a neutralizing substance is added to the ballast water. The neutralizing substance is intended to reduce risk to the environment.

Once the chemical in the water has been neutralized, or cleaned, it is discharged by the ship in the surrounding environment.

There are different systems each designed with their own technology. Every treatment system must be approved. If a substance or chemical is used for treatment, the approval for the treatment system is given by a special International group that have experts in marine environmental protection. The assessment of the treatment system includes examining all byproducts of the treatment process. Modelling is conducted to confirm that the treatment process will not result in harm to the environment.

Transport Canada acknowledges that ballast water treatment systems are a new technology and we are continuing to work with our partners at the department of Fisheries and Oceans, as well as with the International Maritime Organization during this experience building phase and as real life data becomes available.

Does this apply to the large ore carriers only, or to sealift, as well? What do ships/boats not part of the MRP have to do when moving through the area?

All ships making a trans-continental voyage and carrying ballast water must follow the rules about ballast water management, regardless of whether the ballast water will be discharged or not. This means that ships that are going to the Mary River project, as well as those not related to the project, must follow the rules.

When a ship travels only within Canada, or Canadian waters it does not need to exchange or treat its ballast water.

For ships coming into Canada, the requirement to use ballast water treatment systems is being phased in overtime, where all ships will be required to have a ballast water treatment system by 2024. Once a ship is using an approved treatment system, it does not have to do an exchange in deep water.

Baffinland has made a commitment that all vessels, including those transiting only in Canadian waters, will also exchange ballast water when a treatment system is used for additional protection.

While Transport Canada requires that the ballast water treatment system on board a ship be approved, we do not say what type of system must be used. This is up to the ship operators to determine and may change as research and development of treatment technologies grows.

How do we know if they are following the rules? What happens if Baffinland ships do not follow the rules?

Transport Canada requires all ships to report to us before they enter Canadian waters. As part of this reporting, they must explain how they have managed their ballast water and show us that they have done it correctly.

Transport Canada inspectors can board a ship and conduct an inspection. If we do not believe that the ballast water was managed the right way, we can require them to keep the ballast water on board the ship, or in some cases require them to go out to sea and exchange the ballast water.

In the case of the Mary River Phase 2 project, Baffinland has committed to sampling ballast water on ships before it is released. The sampling program will be developed in consultation with the Department of Fisheries and Oceans as well as Transport Canada. The sampling program will be designed to identify where there is a high risk of the ballast water not being managed the right way, or where the ballast management may not have worked as intended.

Baffinland has also committed to sampling one random ballast water tank for salinity and temperature (to evaluate if exchange has been carried out) on all vessels calling to Milne Port.