

Clean Ballast Discharge Summary

Description of Discharge

How is this discharge generated? This discharge is composed of the seawater taken into, and discharged from, dedicated ballast tanks used to maintain the stability of the vessel and to adjust the buoyancy of submarines. Many types of Armed Forces vessels store clean ballast in dedicated tanks in order to adjust a vessel's draft, buoyancy, trim, and list. Clean ballast may consist of seawater taken directly onboard into the ballast tanks or seawater received from the vessel's firemain system. Clean ballast differs from "dirty ballast" and "compensated ballast" discharges (described below) in that clean ballast is not stored in tanks that are also used to hold fuel. Many surface vessels introduce clean ballast into tanks to replace the weight of off-loaded cargo or expended fuel to improve vessel stability while navigating on the high seas. Amphibious ships also flood clean ballast tanks during landing craft operations to lower the ship's stern, allowing the well deck to be accessed. Submarines introduce clean ballast into their main ballast tanks when submerging, and introduce clean ballast into their variable ballast tanks to make minor adjustments to buoyancy, trim, and list while operating submerged or surfaced. The discharge occurs when fuel or cargo is taken on and the ballast is no longer needed, when amphibious operations are concluded and the vessel is returned to its normal operating draft, when submarines surface, or when submarines make some operational adjustments in trim or list while submerged or surfaced.

Which vessels generate this discharge? Most Armed Forces surface vessels and all Navy submarines use clean ballast tank systems.

How often and where is this discharge generated? Clean ballast discharges are intermittent and can occur at any distance from shore, including within 12 n.m.

Analysis

Nature of Discharge: Constituents of clean ballast can include materials from tank coatings (e.g., epoxy), chemical additives (e.g., flocculant chemicals or rust inhibitors), and metals from piping systems and sacrificial anodes used to control corrosion. Based on analytical data for firemain system discharges, metals expected to be present in the discharge include copper, nickel, and zinc. These data indicate that the pollutant concentrations in the discharge may exceed State water quality criteria.

Previous studies have documented the potential of ballasting operations to transfer nonindigenous aquatic species into receiving waters. Ballast water potentially contains living microorganisms, plants, and animals that are native to the location where the water was pumped aboard. When the ballast water is transported to another port or coastal area and discharged, the surviving organisms are released and have the potential to invade and impact the local ecosystem.

Discussion and Discharge Determination

Discussion: The Navy, MSC, and Coast Guard either currently implement or are in the process of approving a ballast water management policy requiring open-ocean ballast water exchange, based on guidelines established by the International Maritime Organization.¹ These management practices demonstrate the availability of controls to mitigate the potential adverse environmental impacts from this discharge.

Determination: A marine pollution control device is required.