Near the Gnalić islet at the southeast entrance of the Pašman Channel, Croatian Eastern Adriatic there is one of the most important "post-medieval shipwreck known". In November 1583 during sailing popular sea route from Venice (Italy) to Constantinople (Istanbul, Turkey) Venetian merchantman “Gagliana Grossa” with capacity of 1200 Venetian barrels (700 tonnes) and length of 40 meters sank at this site, two nautical miles of the town of Biograd na Moru. A very varied ship’s cargo consisted of large quantities of semi finished and finished products manufactured in various part of Europe. However, the ship also carried raw materials such as tin, brass, white lead and especially mercury in various forms: elemental mercury, ore cinnabar (HgS), and vermillion powder (HgS opaque red pigment). Elemental sulfur found in the cargo also indicates possibility of its use in the production of vermillion by chemical coupling of Hg and S. It is assumed that the mercury was meant for medical (elemental Hg), cosmetic and painting (vermillion) purposes. The ship with the full cargo sank at twenty-five meters of depth and wreck was discovered in 1967, while first detailed and systematic sampling and measurements of mercury at a sinking site and its vicinity began in 2013. Seawater sampling was performed eight times in six years (2013-2019). Individual samples were taken by scuba diving at eight positions 1 to 1.5 m above excavating area (60x20 m) as well as in vicinity and on the sea surface above the site. Measurements of mercury species (total, reactive and dissolved gaseous) were performed 24 hours after sampling using CVAAS method.

The Gnalić shipwreck is located in the Middle Adriatic coastal waters. According to the "A long-term survey (1984-2017) of the spatial and temporal trends of the total mercury in seawater of the Adriatic Sea" (Kwokal and Cuculić, in preparation) the mean concentration of total mercury based on over 600 samples is 1.4 ng L\(^{-1}\) for the Middle Adriatic and 1.6 ng L\(^{-1}\) for the coastal water.

During archaeological activities on the excavation site all three measured mercury species, total, reactive and dissolved gaseous appeared in concentrations up to three orders of magnitude higher in comparison with the averages found in the Middle Adriatic seawater.

There is a difference between the results obtained during recovering of the artefacts, cleaning of the hull at the shipwreck site and during the idle state when workspace is conserved. Nevertheless, with no activity on the site, concentrations of mercury species are more than one order of magnitude higher compared to surrounding pristine environment. Data indicates the
need of removal of all forms of mercury, especially elemental (roughly estimated 500-1000 kg) from the seabed in order to stop damaging impact on seawater and sediment, consequently on marine life.