

## Microbiological condition of sediments and bottom water in the area of Gdańsk Deep in Gulf of Gdańsk

The aim of the study was to:

1. determine the number of selected bacteria in samples of sediments and bottom water
2. measure the temperature, salinity and concentration of dissolved oxygen and hydrogen sulphide in bottom water.

### Test material and methods

The tested samples (sediments and bottom water) were collected at 5 sites on 15th of December 2007 from Gdańsk Deep – an area of Gulf of Gdańsk.

5 samples of bottom water and 10 samples of sediments were collected for microbiological testing. Each of these samples were analysed for 12 microbiological markers. Additionally, there were 7 samples of bottom water collected for physicochemical testing. These samples were analysed for 2 physical properties (water temperature and salinity) and 2 chemical properties (concentration of dissolved oxygen and hydrogen sulphide).

Samples of bottom water and sediments were analysed for the following:

- general number of psychrophilic bacteria on Zo-Bella 2216E medium,
- general number of mesophilic bacteria on Zo-Bella 2216E medium,
- most probable number of *Enterobacteriaceae* genus bacteria,
- most probable number of *Escherichia coli* bacteria
- number of intestinal *Enterococci*, by filtration method, using Slanetz-Bartley medium,
- most probable number of *Clostridium perfringens* bacteria, using liquid DRCM medium in anaerobic conditions,
- number of *Vibrio* genus bacteria, by filtration method, using TCBS medium,
- presence of *Salmonella* genus bacteria, using selective – multiplying SF medium, and subsequently Wilson-Blair mediums and Salmonella-Shigella agar; typing of bacteria species was conducted basing on biochemical and serological tests (diagnostic serum),
- number of amylolytic bacteria, on starch agar, after 96 hours of incubation, at 22°C,
- number of proteolytic bacteria, on gelatin agar, after 96 hours of incubation, at 27°C,
- most probable number of ammonifying bacteria in peptone water, after 7 days of incubation, at 27°C,
- most probable number of denitrifying bacteria on Giltay medium, after 7 days of incubation, at 27°C

Samples of bottom water were analysed for physicochemical properties: temperature, salinity and concentration of dissolved oxygen and hydrogen sulphide, using methods recommended for sea water analysis by HELCOM.

