The aim of this paper is to determinate the patterns of heavy metal concentrations in Danube branches and channels.

The heavy metals concentrations for the second quality class in the Danube Delta lakes are established by the Normative 161/2006.

The sampling sites are: Crisan Caraorman, Litcov, Sontea and Lopatna, Ceatal Chilia, Periprava, Cotul Pisicii and Sulina.

We selected heavy metals: iron, cadmium, lead and manganese. We take into account the heavy metals concentrations between 2004-2007. The samples were digested in the microwave oven and then the heavy metals concentrations are measured with mass spectrometer with inductively coupled plasma, according with ISO standards, in an accredited laboratory.

There is a general increase in the contamination of heavy metals which is reflected most clearly by the metals cadmium and lead.

Cadmium and lead have the same evolution in the channels and branches that means bad water - high levels which exceed the values for the second quality class (1µg/l for cadmium and 10 µg/ l for lead).