

## Graphene oxide in the multi-barrier system provided by the Water Safety Plans

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Water Safety Plans are recognized in the new directive on drinking water as the first tool to guarantee the quality of water to the consumer through a preventive approach.

The deployment of a Water Safety Plan consists in an holistic risk assessment activity, in which are identified the dangerous events that can occur in the different parts of the supply chain.

If the measures implemented reduce the risk to an adequate level, no improvement actions are necessary.

If the risk analysis leads to a medium-high residual risk, improvement actions will be activated.

Among the Water Safety Plans that the Hera Group has already completed there is the one related to the Pontelagoscuro plant near Ferrara, that serves 9 municipalities and distributes over 14 million cubic meters per year.

The plant treats water from both groundwater and surface sources, as it draws water from the Po river.

The Hera - CNR collaboration was born for the study of innovative methods for the removal of some molecules such as those of PFAS.

The current agreement Hera-CNR will use for these purposes the reduced graphene oxide (RGO) applied to the unused material of the filters used in the biomedical field (scaffold), pursuing objectives of circular economy in the materials used in the experimentation



**Figure 1:** Pontelagoscuro Plant: near Ferrara, it treats Po river water on which there will be applied the innovative technology on emerging pollutants using graphene oxide