1 INFORMATION ON WORK PROGRESS

1.1 Summary and aims for the period

Work Package 1 : The aim of the project task is to collect preliminary water quality data from the water bodies feeding the river bank filtraited aquifers under study. Based on the data obtained, the scope of the additional data to be obtained will be assessed and the method of obtaining the data will be determined. It will be achieved either by sampling campaign or by obtaining the results of the drinking water supply company's own measurements in the area of operation through a request for data.

Work Package 2 : Processing, collating and evaluating the long-term operational data from the wells and associated engineering systems producing from the bank filtered aquifer and the data from water quality monitoring of the water produced by the wells. The aim of the evaluation is to identify potential sources of pollution of the water extracted from the bank-filtered aquifer in the area of operation of the Metropolitan Waterworks and to establish a correlation between water flow and water quality and between water flow and the energy demand for water extraction. These data series will be used to lay the foundation for the development or selection of a suitable training methodology for the programming of artificial intelligence-based predictive software to optimise the yield of water production during remediation processes in subsequent phases of work, and to optimise energy use during operational operation. These data sets must therefore be suitable for teaching AI, as the software can only be taught on real data.

1.2 Initially planned Milestones/Deliverables/Budget and the impact on the project

Work Package 1 : The result of the project task is the presentation and organisation of the data obtained in advance, as an expert document, on the basis of which the scope of further data to be obtained and the way of obtaining them will be planned. As a result, it was concluded that there is no need to design and implement a monitoring campaign, the obvious solution to fulfil the project tasks is to use the results recorded by the company supplying drinking water from a bank filtered aquifer in the area with its own monitoring system.

Work Package 2, Work Package 4 : The next milestone of the project is the expert report prepared by our company, which includes the results of the long-term analysis of water quality changes in the wells operating in the Budapest bank filtered water base and the resulting studies to identify the risks that could potentially threaten the stability of the bank filtered water supply, as well as the expert documentation containing the water production data. The documentation shall include the basic data used for the analysis in a structured and processed form, with details of the methodology and statistical procedures used for the analysis of the data. It shall also include the results of the evaluation of the data sets and the conclusions that can be drawn from them, and an expert report containing the monitoring plan suitable for measuring the water quality and water balance characteristics of the selected sample area and the water production efficiency of the pilot wells, as well as monitoring results.

1.3 Current status (completed/ongoing/started) of the work packages, as well as status (achieved/on track/delayed) of tasks, deliverables and milestones

A methodology for processing long-term data series was developed based on the test data set received from the Budapest Waterworks. In consultation with the specialists of Budapest Waterworks, additional data series have been requested and the preparation of their processing has been made. In parallel, a further literature review has been carried out and the data obtained will be used to help identify long-term trends in water quality.

The Serbian project partner has provided us with its own water quality measurement results, which are being processed.

2 FUTURE EXPECTATIONS OF THE PROJECT

2.1 Information about the intermediate results obtained or any successes

A methodology has been developed to efficiently retrieve data from data tables, allowing the large amount of recorded operational data to be filtered and compiled according to user needs to facilitate further analysis.

2.2 Indication whether the expectation of the project is still valid or whether there could be any deviation of the project in the medium term which can affect the financing, the planning and expected results

Based on the data provided so far, the data reviewers have initiated that if no water quality problem can be identified in the operational area of the project partners where a pilot abstraction well or wells can be identified and where measurements can be taken under real conditions during the application of remediation methods that could provide a basis for optimizing water extraction during the remediation process, the focus of the water quality studies should be shifted to the energy optimization of the standard operation of the abstraction wells.