

**ONLINE WATER MONITORING SYSTEMS:
MERİÇ-ERGENE RIVER BASIN STUDY**

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EXPERTISE THESIS ABSTRACT

The scope of this thesis is to give information about online monitoring systems and 5 online monitoring stations established in Meriç-Ergene River Basin.

In this study, general information about the online monitoring systems has been presented and also installation stages, measurement parameters, analysis methods, measurement ranges and approximate cost of the systems have been explained in detail. In addition, physical and technical infrastructure requirements for the design of central monitoring room have been mentioned. Short history about the online monitoring systems in our country and implementation examples from abroad have been given. Also, standard features about the measurement devices, collection, storage and transfer of the data have been handled.

As a case study, 5 online monitoring stations located in Meriç-Ergene river basin have been handled and sampling line and sampling pump, measurement devices, data software and calibration process of the devices have been explained. Also the aim of confirmation, the station measurement results is compared with accredited laboratory measurements results. The maximum deviation value is determined as 20% for TOC (Yenicegözüce Station) and as 11% for the color (Evrensekiz Station). For other parameters like pH, temperature, electrical conductivity, dissolved oxygen, measurements are conducted in the stations with portable measurement device and it is seen that the results approximately same as with the results obtained from online measurement devices. The measurement results obtained from data software for a period of one week have been reported and commented by the way of graphics. It is find out that the highest TOC value at Inanlı Station (171,9 mg/l), the highest electrical conductivity value and the lowest dissolved oxygen at Aksa Station (5521 μ S/cm, 0,08 mg/l), the highest temperature and pH values at Yulaflı Station (23,8 oC ve 8,4). The results are evaluated according to Regulation of Surface Water Quality Management and according to this

evaluation, it is seen that all measurement results in the stations are classified as IV.level water quality due to dissolved oxygen and electrical conductivity. Also, for 5 stations, graphics of temperature, electrical conductivity and TOC are obtained daily and with the aid of these, instant discharges are detected. At Yulaflı Station between hours of 03.00-06.00, at Inanlı Station between hours of 00.00-01.00, at Evrensekiz Station at 03.00, 08.00, 13.00, 18.00, at Aksa Sation between hours of 08.00-15.00, instant discharges are detected. On the other hand, at Yenicegözüce station, any instant discharges is not seen.

This study is aimed to be a useful guidance document for the related institutions because it involves detailed and directive information about the online monitoring systems of water quality.

Key Words: Online monitoring, station, water quality, pollution, discharge.