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NEW DIRECTION IN TERMS OF WATER QUALITY MONITORING APPLICATION

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Abstract

The worst and the largest environmental disaster occurred on October 4, 2010 in Hungary, when the wall of a waste reservoir disrupted and a hazardous spill of red sludge burst outside of the territory MAL Hungarian Aluminium Production and Trade Company Limited by Shares (MAL Co. Ltd.).
The red mud sludge is a solid waste byproduct of the Bayer bauxite processing and it is highly alkaline with a pH of about 12-13. The polluted surface waters (Stream Torna, River Marcal, River Rába) influenced by the red mud catastrophe are part of the catchments area of the River Danube.
Unfortunately the red mud disaster offered an opportunity to use the AVITAR [Accredited Water Quality Telemetry System] System. The AVITAR System is a result of a Hungarian development project. The system is equipped with sophisticated instruments to carry out measurements, displaying data, transmitting the collected data and providing alarm signal in case of emergency. In October 2010 the AVITAR System was installed in the direct vicinity of Stream Torna in Devecser.
The aim of the research was to continuously monitor the quality of the surface water and to provide information on the change of the water quality parameters during the study period. The data obtained show how the water quality regains its original ecological condition in the Stream Torna.

Key words: ecological catastrophe, red mud sludge, Stream Torna, water monitoring

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