

# Monitoring groundwater on Cyprus

On Cyprus, the Geological Survey Department (GSD) uses the e-SENSE telemetry system in combination with CeraDivers to monitor the Cypriot groundwater. The third largest island in the Mediterranean Sea is battling the subterranean penetration of salt water and long periods of drought, which cause water shortages.

## Water management in jeopardy

The semi-arid climate on Cyprus makes great demands upon existing groundwater sources. These sources play a very important role in the water management of the island of this moment. But as much as 70% of the water (around 250 million m<sup>3</sup>) for daily use originates from aquifers that stem from the Pleistocene (period from 2.588 million to 11.56 thousand years ago). Nevertheless, water from the aquifers and the Troodos Mountains is used for both domestic and irrigation purposes.

However, problems arise if little or no rain falls in the winter. The Cypriot government has already tried to come up with various solutions. For example, in 2008 a measure was put in place whereby households could only use their taps for 8 hours over a 48-hour period. Another idea was the construction of an extra desalination plant. This is a factory that can extract salt from seawater and make freshwater. However, its realisation will take years and be very expensive. The same applies to

the alternative: having ships carrying freshwater to come in from Greece. There is no infrastructure for this, meaning that the water would be very expensive.

## More insight via e-SENSE and Divers

The GSD has been charged with the performance of hydro-geological research into new groundwater bodies. Thorough monitoring is of great importance to GSD staff in this context because it gives them greater insight into the management of water sources and other complex natural processes. The results can ultimately be used to draw up a suitable protection and management plan.

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For the monitoring of the quality and fluctuation of the groundwater, and the penetration of salt water, the GSD has called upon the assistance of Eijkelkamp Agrisearch Equipment and Eijkelkamp's distributor on Cyprus, MilliQuest Ltd. Using an e-SENSE telemetry system in combination with several CeraDivers, the GSD quickly has the desired data every day, which is delivered online.

## What is the Geological Survey Department?

The Geological Survey Department is the technical advisor to the Cypriot government for all geological subjects. It conducts research and gives advice in the field of geological, hydrological, geotechnical, geophysical, seismological and geo-environmental issues.

## Productinfo

The CeraDiver of Schlumberger Water Services is extremely well suited for use in semi-arid areas because it has a non-corrosive, hermetically sealed ceramic housing so is resistant to brackish water, seawater or other harsh environments.

