OTT Hydromet Application Notes / Success Stories

Large parts of a fen in Bavaria are re-wetted

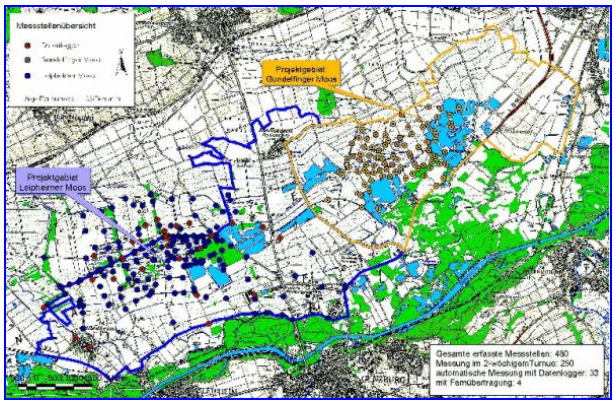
OTT Orpheus Mini with intelligent top cap ITC for the continuous monitoring of groundwater levels

Background

The fen called „Leipheimer Moos" forms part of one of the largest fen areas in the Danube plains. 180 hectare are a nature protection area as the fen is extremely important for the protection of species and as habitat.

The water shortage in the whole of the Danube valley is a great risk for the fen. In order to improve the water situation in the nature protection area, water from the river Nau is funneled through a water pipeline of 3.7 km length into the fen. The main drainage ditch is now being dammed to slow down the water outlflow from the area.

To prevent unanticipated side-effects, the process is constantly monitored by hydrologic measurements.



Hydrological measurement network of the ARGE Danube valley

Task

To monitor the progress of the re-wetting and for the preservation of evidence the waterlevel data in the area are continuously collected at 33 groundwater monitoring sites. Four control stations have to telecommunicate the data to the control centre of the measurment network e.g. for daily internet publication. All measurment sites (more than 200 in total) are administered in a local database.

The dataloggers should be reliable, easy to install and should not need a lot of maintenance. The data transmission system should not incur high telecommunication cost and should be extremely energy saving. The whole system must be compatible with the existing IT-structure of the purchaser.

Monitoring Solution

- In the beginning of 2006, 33 measurement sites were equipped with the groundwater datalogger OTT OrpheusMini
- Besides, 4 control stations were equipped with the intelligent top cap OTT ITC for the daily transmission of the waterlevel data via the mobile communications network. For cost reasons the data is transmitted via SMS.
- OTT Hydras 3 Rx receives the SMS containing the data and passes it on to the evaluation software OTT Hydras 3.

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- An upgrade of Hydras 3 (Plugin) creates the hydrographs of the 4 control sites and updates them on a daily basis. Thus, the waterlevels can be published on the homepage of the customer – always up-to-date.

- Hydras 3 does not only manage the 4 online-stations and the other 30 dataloggers, but also approx. 200 measurement sites in the project area, which are read-out manually every two weeks. This enables the comprehensive analysis of the water levels in the whole project area.

The Advantages:

- The dataloggers for the monitoring of the water levels are easy to install, robust and provide high-precision data.

- Easy upgrade of the measurement sites with remote data transmission via the radio network (SMS, GPRS or data recall) with alarm function – simple, energy-saving and cost-efficient

- Comprehensive software package for the management of the complete measurement network and for the internet publication of data

- Open IT-interfaces for the smooth integration into existing structures

- The components of the system are perfectly aligned and everything comes from one source → one contact person for every concern

Summary

- The monitoring of the re-wetting process of the „Leipheimer Moos“ is performed by 34 groundwater measurement sites, equipped with automatic dataloggers and in part remote data transmission facilities.

- 34 groundwater measurement sites have been equipped with OTT OrpheusMini, 4 of them with the intelligent top cap OTT ITC.

- The measurement instruments are in use since 2006 without failures.

- OTT Hydras 3 manages the 4 online-sites, the dataloggers and about 200 sites where data is measured manually.

- The hydrographs of the 4 control sites are published in the internet and are updated daily.

More information on OTT solutions and products on www.ott.com

Technology

GW-datalogger **OTT Orpheus Mini** powered by lithium or alkaline batteries with ceramic-capacitive measuring cell and IrDA interface for data read-out
For wells ≥ 1“

Data transmission unit **OTT ITC**
GSM / SMS /GPRRS or data recall.
Active data transmission (SMS / GPRS) or passiv transmission (data recall from a control center)
For wells ≥ 2“