Eijkelkamp installs 86 measuring points for Rijnland District Water

In May 2008 Eijkelkamp Agrisearch Equipment BV obtained the commission through a tendering process for the installation of 86 surface water level measuring points. The project was carried out by order of the Rijnland District Water Control Board and was called 'Water Level Measurement Network Polder Monitoring Areas'.

Chris van Vliet (team leader of Sample Taking at HHRS of Rijnland) explains why this project was carried out: "The most important aim of the project was to provide more insight into the polder levels. Up-to-date information on basic levels was already available from the existing 'bosbo' system, which is necessary in order to be able to regulate the water system management in case of rain or drought. The possibilities for regulating have been increased considerably now, which is of particular importance for short, heavy, often very local rainfall. The Rijnland District Water Control Board is now better able to satisfy its 'dry feet' objective, which is very important in a densely populated area like the Randstad conurbation."

Besides the supply of the necessary e+ WATER L® (surface water) sensors and e-SENSE ® (telemetry) modems, Eijkelkamp also took care of the other tasks in the field. These tasks consisted of, among others, dredging and surveying all the level reference points and the complete installation of the equipment. The project was handed over, fully operational, in June 2009.

In combination with the e-SENSE telemetry system, measurement data and any alarm signals are sent directly to the central Rijnland database using the GSM network. Thus it is possible to monitor and manage water levels from a distance and over a longer period of time. Alarms warn the water level controllers at an early stage for impending inundations or water levels that are too low. Trends are also revealed and, in part as a result of this information, it is possible to estimate the fluctuation of surface water in the future.

According to Chris van Vliet, high demands were made of the equipment: "In addition to a warning system in case of theft, low energy consumption and low maintenance were also important. It was possible to satisfy all these requirements, and as a result a low-maintenance system was installed that is very frugal in its energy requirement. This was important, not only in view of 'business security', but also in order to keep the costs low. Many measuring points are located in out-of-the-way polders, where regular visits would involve a heavy financial burden for this system. Now just a single annual visit will suffice."

Eijkelkamp has recently been awarded a follow-up commission from Rijnland for installation at even more locations.

The intelligent and accurate Eijkelkamp e+ WATER L sensors are used for measuring and registering levels and temperatures of surface water. The sensors can be configured and read out in various ways:
- Using the e+ CONTROL®, this is used whenever the e+ WATER L cannot be brought within the proximity of a PC (laptop).
- A universal readout unit, this is used in combination with a PC (laptop).
- Using a Direct Data Cable (DDC) available in various lengths up to a maximum of 200 metres.
- Using an e-SENSE modem (telemetry).

e+ WATER L® specifications

Diameter:	22 mm
Length:	type dependent (from 85 to 235 cm)
Weight:	type dependent (from 1.0 to 2.2 kg)
Working area temperature:	-20/+80°C
Working area humidity:	0/100%
Casing:	ss 316L
Measuring level range:	0-200 cm water column
Accuracy level:	3 mm
Resolution level:	0.1 cm
Temperature measuring range:	-20/+80°C
Temperature accuracy:	0.5°C
Temperature resolution:	0.01°C
Battery:	3.6 V / 2.3 Ah Lithium (replaceable)

ProductInfo

09.02 Laboratory permeameters for water permeability measurements

Water engineering and land management projects are often preceded by a geohydrological study, as the water permeability of soil depends to a large extent on how efficiently an irrigation or a drainage system works. Determination of the saturated water permeability, both horizontally and vertically, can be carried out on location in the field or in the laboratory with a laboratory permeameter.

It is possible to make laboratory permeameters in any desired size. This size depends on the number of soil samples of which one would like to determine the saturated water permeability at any one time. Versions can be supplied with series of 5 to a maximum of 25 samples. The permeameters are suitable for soil sample rings with an internal diameter of 50 or 56 mm. An open or closed system can be used. A storage container, a water pump and a filter are supplied with the closed system.

New: 09.03 Hauben Water Permeameter

Eijkelkamp developed the Hauben Water Permeameter in cooperation with Prof. Dr. Rainer Horn, of the Christian Albrechts University in Kiel (Germany). This permeameter measures water permeability in an undisturbed saturated soil sample.

The measuring method is based on the 'falling-head method'. In this a diminutive water column is placed over the saturated soil sample (in order to create slight pressure) and then the speed with which the water flows through the soil sample per unit of time is observed.

Standard, the Hauben Water Permeameter is suitable for soil samples with a diameter of 50 and 56 mm (sample rings with a diameter of 53x50 mm and 60x56 mm).