



# Marielyst Water Works

Water Works using new recovery strategy

Denmark

## Plant Description

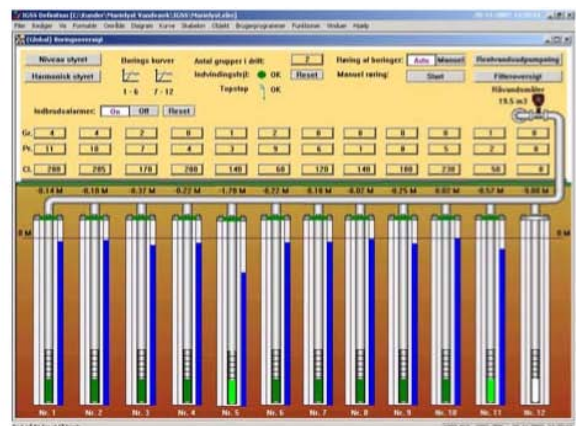
The Marielyst Water Works is located in the southeastern part of Denmark. It provides potable water for some 4,700 summer cottages located near the coast of the western Baltic Sea.

Due to the special nature of underground conditions here, where both the danger of salt water infiltration as well as ground water pollution due to the use of agricultural pesticides are real threats, a new water recovery strategy has been implemented. Formerly, the large water chamber at the works was allowed to reach a relatively low level before the centrifugal well pumps were started up for replenishment. However, this frequent starting and stopping of pumps resulted in a downward vertical suction effect, which would hasten the contamination of ground water reserves.

To avoid this condition, a new schedule for well pumping has been put into practice. The old routine was to run the pumps at maximum capacity over a two or three hour period. Now, pumps are activated at lower capacity and do the pumping of fresh water into the water chamber over a 24-hour period. The aim here is to match the amount of fresh water pumped up with the amount consumed over a 24-hour period to achieve a well-balanced and evenly distributed pumping operation.



Pumps at the water works



IGSS mimic of the overview of wells

## CUSTOMER CASE

### **Process Control Characteristics**

To be able to accomplish this, water consumption through a 24-hour period has to be predicted. This is done with a specially developed piece of software, which does calculations that are fed into the IGSS SCADA system. On this basis, plant personnel control frequency converters on the well pumps to adapt to the consumption forecast.

The IGSS application controls the pumps on the 12 different wells. Some of these have a high salt content. However, by mixing the incoming water from these with water from wells with pure ground water, an acceptable level of purity is ensured. This mixing operation from several sources is one of the primary control functions, which the IGSS system performs.

### **Owner**

Marielyst Water Works is a cooperatively owned facility, whose members are the summer cottage owners serviced by the water works.

### **IGSS Application**

The application was designed and installed by the Danish industrial automation firm, Contech. The IGSS system includes 1,000 objects and is controlled by one operator station, which is a laptop PC equipped with a Nokia GSM modem.