OPT | WELLS Optimisation of drinking water well operation - energy savings and quality control (Phase 1)

Context

With rising energy prices and global climate change, the question of the energy efficiency of drinking water production becomes more and more present. While well field optimization is seldom being used for the sake of energy savings in groundwater abstraction, it has been shown that by optimizing pump design and operation in drinking water wells energy savings of up to 20% could be achieved.
Many factors influence the energy consumption in a well field. The large number of involved decision parameters adds to the complexity of an optimizing approach, requiring adequate assessment and modelling tools for addressing this issue.
In this context, this project will address the relative importance of the different parameters impacting energy demand, investigate possibilities for improvement of the technical equipment and finally propose and test a tool combining groundwater, well and operation characteristics.
To support this energy-efficiency study, a case study will be considered, audited and suggestions for an Improved energy management will be issued.

Aim

- determine the key drivers of energy demand during well field operation,
- evaluate the possibilities for the use of improved pumping technology,
- develop a steady-state scenario modelling for the case study.

Work packages

1) Influence of operation and well design for a given hydrogeological context
2) Influence of pump and motor efficiency
3) Scenario modelling and feasibility study

These findings will prepare a second phase, which shall include an optimization tool to be tested and implemented on well fields, and which may also comprise aspects such as water quality issues.

Well field

Water outlet from the well pipe at the water works

Duration (Phase 1): 01.04.2011-30.05.2012 | Project Volume (Phase 1): 161,566 €

Contact

MATTHIAS STAUB
Kompetenzzentrum Wasser Berlin gGmbH
matthias.staub@kompetenz-wasser.de

➔ www.kompetenz-wasser.de

Project Partners

KOMPETENZZENTRUM WasserBerlin

TU berlin

Sponsoring

VEOLIA EAU