



Technical Improvement in the Clarification Plant at the Jakusevec Waste Dump in Zagreb

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HST Hydro-Systemtechnik completed a period of technical modernisation at the SBR clarification plant at the Jakusevic central waste dump in Zagreb which lasted more than a year. Through partial replacement of the automation and process-control technology as well as adjustments in operating procedures, it was possible to comply with the statutory discharge limit of CSB < 700 mg per litre after years of infringement.

HST Hydro-Systemtechnik won an important order from ZGOS, the operators of the Jakusevic refuse dump in Zagreb, to modernise and improve the efficiency of operations there. The most important reasons for obtaining the order were the technical concept submitted by HST, as well as its extensive experience with SBR treatment plants. Although the SBR clarification plant was only installed in 2002, it was proving impossible for the operators to comply with the discharge limits of 700 mg/litre for CSB. Before submitting their quotation, a team of experts from HST Hydro-Systemtechnik carried out a careful analysis of the site and the technology in use there. It quickly became clear that the process of biological decomposition was not functioning correctly. This was at least partly due to incorrect settings at the automation level and an operating process which was unsuitable for use in a waste dump. There were also considerable deficiencies in the electrical technology. On the

basis of these observations, a quotation was submitted involving a period of analysis and assessment lasting several weeks.

Cooperation with Croatian Partners Essential

Thanks to existing contacts in Croatia, it was possible to tackle this very demanding project successfully right from the start. Since the mentality of the people in northern Croatia is very similar to that of western Europeans, there were no serious problems in communication. Although one of the employees working for HST's Croatian partners spoke good German and the HST project engineers had no difficulties with the contract language of English, it took a few weeks until a form of communication had been found which was acceptable to all parties. However, this experience is typical of almost all projects carried out by German engineers abroad and was no real surprise for those taking part. The high degree of acceptance of German

technology and know-how on the part of the Croatians also helped considerably - a phenomenon which is often encountered in eastern European countries.

Fast Results with HST Automation Technology

An HST project engineer was sent to Zagreb for about four weeks to assess the state of the treatment plant. Since the existing automation system had no facilities for long-term archiving of data, it was not possible to make a well-founded analysis of the process using historical data. The first action taken by HST was therefore to install the HydroDat® V8 process-control system in the existing automation. A detailed assessment of the existing situation was also carried out. A German-speaking Croatian technician was engaged to assist the project engineers, thereby facilitating communication with the customer, the authorities and the main contractor.

After about 6 weeks, sufficient data were available to evaluate the technical status of the plant. The modification of the automation system to HST standard produced a substantial reduction in the CSB discharge value within only a few weeks, and the limit value of 700 mg/l within the first six months of operation of the plant by HST. It was also observed that one of the three ventilator units was in danger of failing within only a few weeks or months. Since the overhauling or replacement of the ventilator was not included in the order, it was necessary to convince the customer and the main contractor that it would be more economical to purchase a new ventilator unit than to repair the old one. Since the purchase of three ventilators would have meant an increase in cost of 20 %, the customer understandably preferred to have the necessary repairs carried out. After only a few days of operation, the predictions of the HST engineers unfortunately proved correct and the first ventilator failed. It was therefore decided to install three new ventilators. This improved aeration led to a further reduction in the CSB value.

Delays due to bad weather, delivery problems and long decision-making processes further prolonged the project. HST won much acclaim for its services throughout the country, and it is hoped that the Croatian project will provide a favourable reference for further work in Croatia and Eastern Europe.



Storage tank



SBR-reactor