

# Crewkerne East STW

## upgrading to meet tighter standards & added storm capacity

**T**ighter consent standards and the need for additional storm water capacity at Wessex Water's Crewkerne Sewage Treatment Plant have necessitated additional treatment processes and construction of new extensions, plus associated improvements to bring the works up to latest standards.



Upgrade works at Crewkerne East STW (courtesy Ondeo Degremont).

Catchment area for the Crewkerne works is a population equivalent of 12,000. Although the population has not increased in recent years and is expected to remain stable, discharge consent standards have changed, with more exacting limits on BOD, SS and in particular reduced ammonia levels. The new works have been designed to meet the design horizon for the period to 2020.

Process design and the design of mechanical, electrical and control systems were undertaken by *Ondeo Degremont*, under a £1.5 million contract on which work began in August 2001. Civil works were constructed by *North Midland Construction Ltd*, while the electrical subcontract was carried out by *Fabricom*.

### Tertiary plant - the main improvement

The main improvement has been the installation of a tertiary treatment process, downstream of the existing plant, using the *Degremont Biofor* system. This is a modular version of the BAAF (biological air filtration) process designed specifically for the removal of ammonia. It utilises a special medium, *Biolite*, which has a large specific surface area designed to promote the growth of nitrifying bacteria. The system uses an innovative circular stainless steel design particularly suitable for the limited space available.

The contract work required interception of existing treated effluent from the humus tanks outlet, construction of the feed pumping station and rising mains, and the design and installation of the

*Biofor* BAF plant, together with ancillary equipment.

Additional works required in the project included a new storm water storage tank with half bridge scraper and associated pipework. This also uses a *Degremont process, Densadeg*, which combined high clarification with integrated sludge thickening. To operate the new additions to the works the existing power supply has been upgraded, with the provision of a new standby generator.

New MCC and ICA panels and telemetry for the additional works were designed and installed and, as a final improvement fine screens were replaced at the inlet and new fine screens were provided for storm flow.

One of the major problems at the site was that space for additional processes was extremely limited. The compact design of the *Biofor* system was, therefore, an advantage. Also, an exacting delivery programme had to be met. Nevertheless, the work was completed by August 2002.

The new installation has been working for some time and is performing satisfactorily to achieve the required consent standards. ■

**Note:** *The Editor & Publishers thank main contractor Degremont for providing the above article for publication.*