SEVERN TRENT SERVICES

Severn Trent Services Wastewater Solutions

End-to-End Wastewater Treatment Solutions

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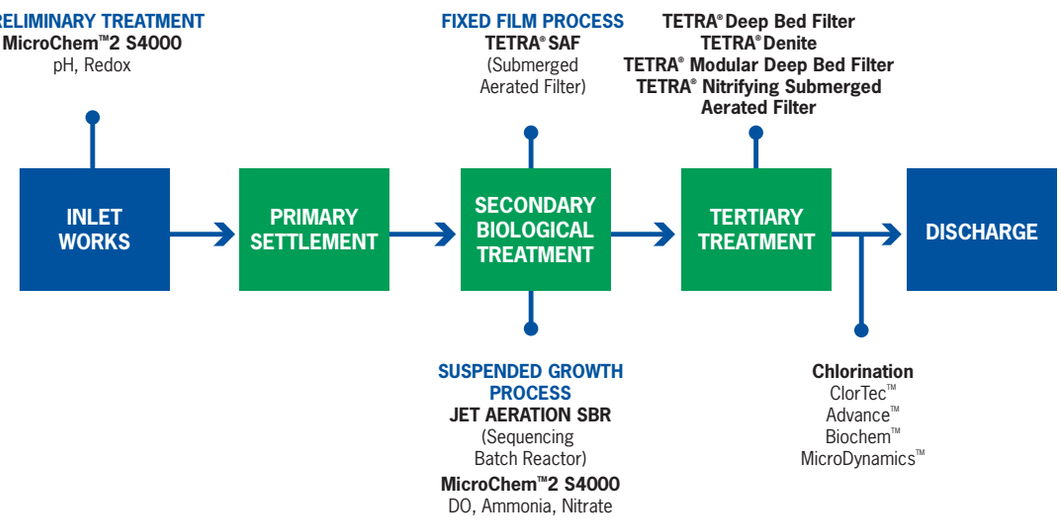
Complete Solutions for Wastewater Treatment

Severn Trent Services, one of the UK's leading suppliers of wastewater solutions, provides state-of-the-art disinfection and filtration solutions. The company has extensive expertise and experience to enable water companies to meet wastewater legislation as required by the European Union.

With world-recognised brands such as TETRA®, MicroChem™ and MicroDynamics™, Severn Trent Services is able to assist you at all stages of the wastewater treatment process.

Our Solutions Include:



TETRA® Nitrifying Submerged Aerated Filter (NSAF)

The TETRA® NSAF is a submerged aerated media process for the tertiary removal of Ammonia (nitrification) from municipal and industrial wastewaters. The TETRA® NSAF is available in a range of sizes from small modular units for above ground construction, through to large bespoke design plants. All sizes of NSAF are capable of achieving low Ammonia standards.

The process uses proven TETRA T-Block™ filter floors and blast furnace slag media.

TETRA® SAF (Submerged Aerated Filter) technology is also available for BOD (Biological Oxygen Demand) or BOD and Ammonia removal.

- :: Tertiary removal of Ammonia
- :: Removal of BOD and Ammonia
- :: Storm SAF – Tertiary Ammonia removal and storm water treatment
- :: New NSAF+ process offers significantly reduced operating costs compared to other technologies
- :: Extensive experience gained by more than 10 years experience in the UK
- :: Proven technology in Ammonia removal

Sequencing Batch Reactors (SBR)

The Jet Aeration Sequencing Batch Reactor (SBR) available from Severn Trent Services is an aeration process for the complete treatment of sewage and industrial wastewaters. In a single tank, a Jet Aeration SBR plant can remove BOD, Ammonia and Suspended Solids.

Severn Trent Services Jet Aeration
Sequencing Batch Reactors

Jet Aeration SAM

The SAM (Surge Anoxic Mix) version of the SBR promotes dentrification of sewage, eliminates odour problems and produces a highly settleable sludge. A surge tank is placed ahead of the main SBR reactor and is filled under anoxic conditions with influent.

:: Effective removal of scum and suppression of odours

:: Accelerated denitrification

:: Optimal settling

:: Aeration and energy requirements are reduced

Jet Aeration ISAM

The ISAM Sequencing Batch Reactor incorporates an anaerobic selector chamber with the SAM SBR. Anaerobic sludge digestion results in reduced solid waste production by up to 65% for the entire secondary process. Storage of sludge in the anaerobic chamber leads to solids concentrations of 4 to 5% dry solids.

:: Consistent phosphorus removal

:: Reduced sludge production

:: Sludge storage and consolidation

:: No need for sludge holding or thickening plant

TETRA® Deep Bed Filters

The TETRA® Deep Bed Filter from Severn Trent Services is a down flow sand filter for the filtration of effluent from municipal wastewater treatment plants.

Filter Structure

The TETRA® Deep Bed Filter technology is built on the TETRA® T-Block™ floor. As well as offering excellent distribution of backwash air and water, it also supports the weight of 450mm of reverse graded gravels and 1.2 or 1.8m of filter media.

There are no nozzles or moving parts in the filter cell. The air header and laterals are constructed from stainless steel and are located out of contact with the media and gravel layers.

Media Specification

:: Effective Size: 2–3 mm

:: Sphericity Factor: 0.8–0.9

:: Specific Gravity: 2.65

:: MOH Scale Hardness: 6–7

:: Uniformity Coefficient: 1.3

Process Flexibility

:: Treats infinitely variable flows up the peak hydraulic flow of the filter plant. No requirement for recirculation at low flows

:: The filter is always able to meet performance criteria regardless of backwash cycle

:: Very high solids loading capacity and the ability to accommodate upstream works upsets in an emergency

:: No works downtime while the filter plant is maintained

:: Upgrade to TETRA® Denite for denitrification applications

Key Features and Benefits

:: High efficiency backwash process removes 100% solids after a single operation with virtually no media loss

:: No surface blinding – filter design and special sand media enable solids to penetrate deep into the sand bed

:: Fully automatic process, with variations on timing to suit all requirements

:: User interface screen enables continuous monitoring for alarms and manual control of backwash

:: Easy retrofit of outdated filters provides savings in capital costs in addition to operational savings offered by TETRA® processes

Applications

:: Lower TSS consent value/requirement

:: Lower BOD consent value

:: Achieve metal consent associated with chemical dosing for phosphate removal

:: Improve effluent clarity for UV disinfection

:: Protection for works at risk of consent failure

:: Filtration of storm flows

TETRA® Modular Deep Bed Filter

TETRA® T-Block™

TETRA® Deep Bed Filters

TETRA® Modular Deep Bed Filters

The TETRA® Modular Deep Bed Filter plant from Severn Trent Services is designed as a competitive tertiary filtration plant for treating secondary effluent from medium to small-size sewage works. The Modular Deep Bed Filter utilises the technology that has made the TETRA® filter such a successful tertiary treatment process over many years in Europe and the United States.

:: No effluent strainer/screen required on the input to the filter

:: Factory built standard modular build on steel skids can easily be connected when on site

:: Filters are pre-wired, piped and commissioned prior to delivery, thereby only requiring connections to power and site pipeworks

:: Upgradeable to TETRA® Denite™ system

TETRA® Denite™ – Tertiary Treatment for Suspended Solids, Nitrate and Nitrogen Removal

The TETRA® Denite™ system from Severn Trent Services is a proven success for the removal of nitrate-nitrogen and suspended solids in a single step. It is used as a tertiary process on effluent plants from wastewater treatment plants.

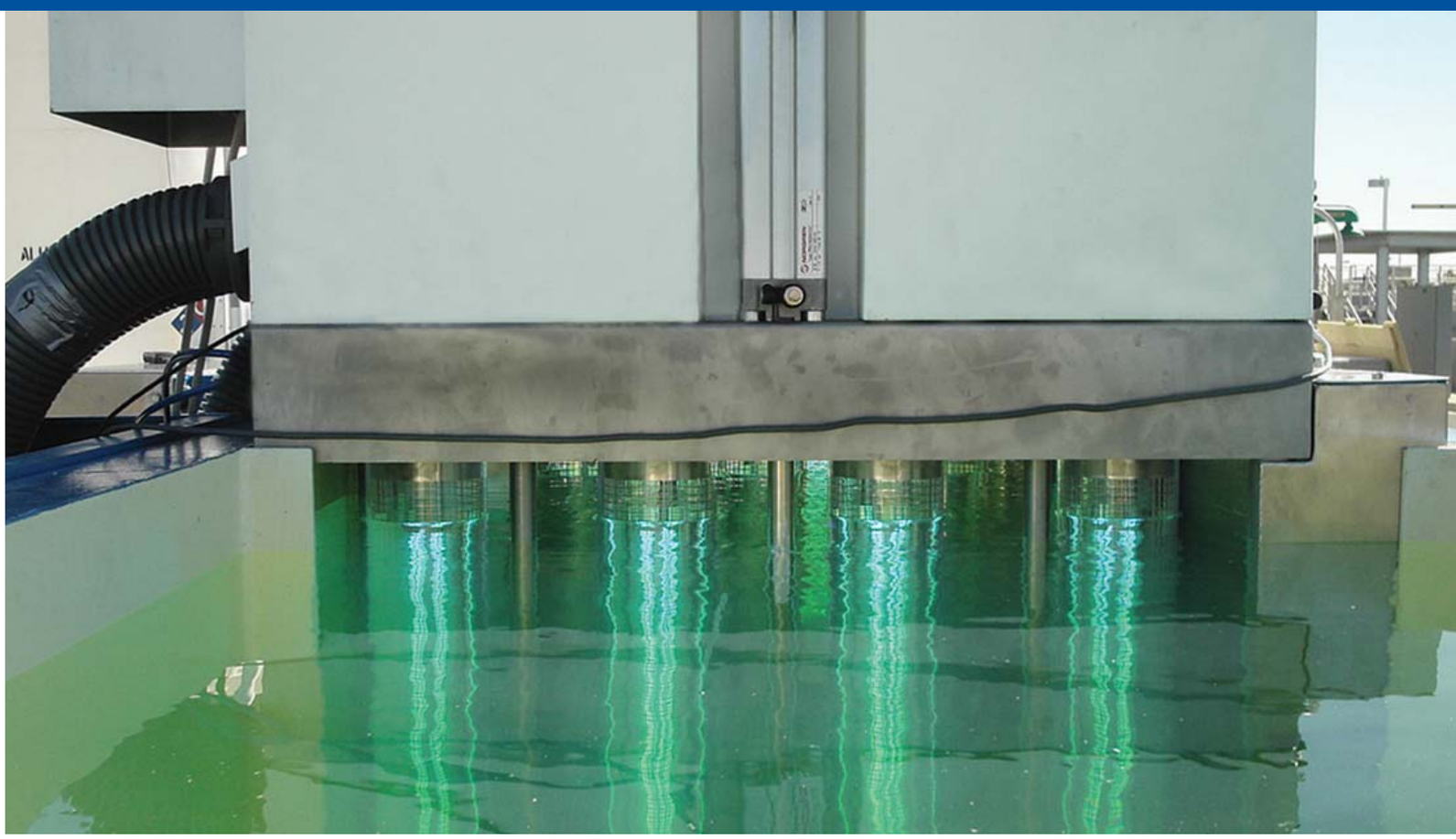
The technology is based on the highly successful TETRA® Deep Bed Filter and so maintains all the solids removal advantages of the Deep Bed filtration process. To convert the process to Denite usually requires the dosing of a carbon source, such as Methanol, to the influent plus modifications to the control system. SpeedBump™ helps to improve filter run times by removing gas bubbles that increase head loss.

TETRAPace™ Control system optimises Methanol usage based upon flow and stabilises Nitrate levels in wastewater effluent.

Applications

:: Revised TSS consent value/requirement

:: Total Nitrogen consent



Disinfection Solutions

Electroded vs Electrodeless Lamps

Severn Trent Services supplies a complete range of disinfection solutions for water and wastewater applications. From Capital Controls™ gas feed chlorination and chlorine dioxide technology to ClorTec® electrochlorinators and MicroDynamics™ microwave UV systems, we supply efficient, effective and low cost solutions for wastewater disinfection.

MicroDynamics™ Microwave UV

MicroDynamics™
Open Channel Microwave UV System

MicroDynamics™ microwave UV represents the latest generation of ultra-violet disinfection technology. The unique patented electrodeless design ensures longer bulb life, easy maintenance and effective treatment of wastewater for a range of parameters.

Advantages

:: Three-year lamp warranty

:: Easy maintenance

:: Low whole life operating costs

:: Unlimited on/off capability

:: Open channel or closed vessel designs available

Instrumentation Solutions

Severn Trent Services offers state-of-the-art measurement solutions to provide accurate measurement of a variety of parameters.

MicroChem™2

The Series DO4000 sensor, in conjunction with the MicroChem™2 Series 4000 transmitter, is a simple and reliable Dissolved Oxygen measuring system. The immersion probes are designed for direct insertion into tanks, open channels and basins. A flow-through cell version allows measurements in continuous non-pressurised sampling systems.

The transmitter contains specifically dedicated aeration control software to compute averages from up to three sensors as well as verification and functionality testing.

MicroChem™2 Analyser

Parameters

- :: pH
- :: ORP
- :: Ammonium
- :: Turbidity
- :: Dissolved Oxygen
- :: Nitrate

Key Features

- :: Multiple measurement capability with a single electronic unit
- :: Integrated control capability
- :: Field expandable
- :: Excellent reliability
- :: Cleaning sequence as standard
- :: Multiple languages / Password protected menus

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www.severntrentservices.com

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Severn Trent Services
Arley Drive
Birch Coppice Business Park
Dordon, Tamworth B78 1SA
Tel +44 (0) 182 726 6000
Fax +44 (0) 182 726 6099

salesenq@severntrentservices.co.uk
www.severntrentservices.com

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