

Water Solutions for the Municipal Industry



Reliable Municipal Expertise

MAK Water is a technology supplier into the Municipal water treatment sector.

MAK Water has strategically partnered with established US and European Original Equipment Manufacturers (OEM's) who have a strong installations track record within the Municipal sector, and who meet MAK Water's quality and performance requirements.

MAK Water is continually investigating opportunities to expand our technologies. At this stage we offer technologies in the following water & wastewater treatment areas:

PRIMARY TREATMENT

- ◆ Screening & Grit Handling
- ◆ Rotating Belt Filter System - *Salsnes* Filter

AERATION & MIXING

- ◆ Low Speed Aerators
- ◆ Floating Brush Aerators
- ◆ Compressed Gas Mixing - *BioMix* system

EFFLUENT/SUPERNATANT DECANTING

(for Intermittent Biological & Aerobic Digestion processes)

CLOTH MEDIA FILTRATION

SLUDGE HANDLING

- ◆ Sludge Dewatering - Dewatering Screw Press
- ◆ Solar Sludge Drying - *WendeWolf* technology
- ◆ Thermal Sludge Drying

UV DISINFECTION - Drinking Water & Wastewater

- ◆ UV Reactors
- ◆ In-channel UV systems
- ◆ Advanced Oxidation (H₂O₂/UV or Cl₂/UV)

CHEMICAL DOSING

- ◆ Vacuum Chemical Feeding - Liquids and Gases

As the exclusive representative for these OEM's in our region, MAK Water provides full design, costing and technical support for these technologies, from concept design stage through to final project delivery. MAK Water can deliver municipal projects as primary contractor, an alliance partner, sub-contractor and technology provider. We can tailor our scope to suit any project delivery method or owner requirement.

MAK Water provides full technical support, including spare parts and servicing, to all our installed equipment and systems. We also offer Service & Maintenance Agreements for our installed equipment and systems, which can be tailored to meet owner requirements.



HEALTH, SAFETY AND THE ENVIRONMENT

MAK Water places the Health and Safety of our people, clients and contractors, and care of the Environment as our highest priority.



Planning & Design

We understand that municipal project delivery cycles can be very long, and there are many stakeholders involved.

Engaging with MAK Water during the early planning phase of a project, allows us to understand customer requirements and project constraints, and enables us to develop the best possible solutions.

MAK Water works collaboratively with designers and engineers and asset owners through every project stage, from concept, to functional design and detailed design, to meet project objectives.

The services we provide to support the investigation and planning stage of the project include:

- ◆ Technology selection
- ◆ Expert process advice
- ◆ Budgeting and value engineering
- ◆ Supply of trial plants and piloting equipment

Project Delivery

MAK Water operates an ISO 9001 certified Quality Management System.

Our experienced project delivery team ensures that MAK Water meets all deliverables in a timely manner, for any project delivery method.

Depending on the selected project scope and technology, we typically offer:

- ◆ Design & documentation
- ◆ Procurement & manufacturing
- ◆ Factory acceptance testing
- ◆ M&E installation
- ◆ Start-up & commissioning
- ◆ Operation
- ◆ Technical support during defects liability period

Technical Support

MAK Water provides full technical support for all installed equipment & systems, long after completion of the project.

We offer Service & Maintenance Agreements tailored to meet owner requirements for our installed equipment and systems, which offer customers the surety that their asset is being maintained cost effectively for long service.

Our technical support includes:

- ◆ Routine or special servicing of equipment
- ◆ Troubleshooting and optimising of equipment performance
- ◆ Supply and installation of spare parts
- ◆ 24h/d helpline for technical support

Technology

The technologies that MAK Water offer, have been selected deliberately to meet some or all the following requirements that the municipal market demands:

- ◆ High efficiency i.e. low power consumption for low operating costs
- ◆ Low maintenance requirements
- ◆ Operator-friendly operational flexibility
- ◆ Robust design for trouble-free operation and long life
- ◆ Demonstrated installation base

Solutions

SCREENING & GRIT HANDLING

Full range of coarse and fine screens and grit removal, handling & classification systems are available for treatment of raw sewage or industrial wastewater, or for septage receival facilities. Systems are offered for installation into concrete channels or as package units, with or without integrated washing & compaction. Screen elements offered as perforated holes or wedge wire.



PRIMARY SCREENING/ FILTRATION

The Salsnes fine screen filter can completely replace conventional primary solids separation (for primary wastewater, storm water & industrial wastewater), or augment existing primary treatment. For municipal WWTPs typical TSS removal is 30-60% and up to 80% with polymer addition. Salsnes filters are available as package units, or can be configured for installation into a concrete structure.



FLOATING BRUSH AERATORS

Floating Brush Aerators are ideally suited for operation in shallow lagoon applications where vertical shaft-type aerators cannot be employed.

With Standard Aeration Efficiency of 1.8 kgO₂/kWh and high horizontal mixing efficiency, robust design, low and simple maintenance, these units are also suitable for aeration in oxidation ditches, SBRs, equalization basins and aerobic digesters.



LOW SPEED AERATORS

Our Low Speed Aerators are available as bridge mounted units or as floating aerators. With high Standard Aeration Efficiency of greater than 2 kgO₂/kWh our aerators are suited for all types and configurations of bioreactors, sludge stabilisation reactors, balance tanks and lagoon-based systems. Drive assemblies have robust design offering bearing life >100,000 hours and service factor >2 for long operating life and low service requirements.



COMPRESSED GAS MIXING

BioMix Compressed Gas Mixing provides effective mixing at a fraction of the energy cost of diffused aeration or mechanical mixers in bioreactors. Advantages of BioMix over other mixing technologies include: >50% lower power cost, no moving parts located inside the tank, low & simple maintenance, PLC control allowing for adjustable mixing, adaptable to any basin geometry.



CLOTH MEDIA FILTRATION

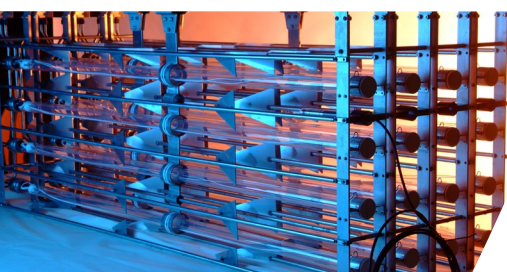
Cloth Media Filters provide tertiary filtration of wastewater effluent. These gravity filters have low head loss, and are available for installation in concrete tanks, or as packages in stainless steel tanks. Filters are configured with hollow disks fitted onto a hollow shaft, and disks covered with cloth media. Fitted with either 10 micron or 5 micron pile cloth media, typical effluent TSS is <5 to 10 mg/L.



UV DISINFECTION

Calgon Carbon UV Technologies equipment. USEPA validated UV medium pressure Sentinel reactors for drinking water and recycled effluent, offering treatment from 1 to 196 ML/d per reactor.

The C3- 500D in-channel UV systems with low pressure high-output lamps for wastewater and reuse applications, are modular and bioassay tested from 35% to 80% UVT.



SLUDGE DEWATERING

The Dewatering Screw Press offers single-step sludge dewatering from as low as 0.2% dry solids content to 15-20%DS cake; no pre-thickening is required.

The technology offers operational flexibility with high turndown, low power draw and low wash water consumption. The system is simple to operate, easy to install and has a small footprint. Containerised systems are available.



SOLAR SLUDGE DRYING

WendeWolf technology is proven worldwide to provide drying of dewatered sludge cake from as low as 12%DS to granulated product with >85%DS, thus providing >75% reduction in wet sludge mass. The system utilises solar radiation for evaporation of moisture from dewatered sludge in a controlled greenhouse environment. Very low power consumption & operating cost.





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Client Services

MAK Water are packaged plant specialists, providing industrial waste water, sewage and water treatment solutions in Australia and overseas.

For more than 20 years, we have been helping clients with solutions that are both cost-effective and regulatory compliant.

MAK Water offers customised water management systems, owns a substantial hire fleet, and provides service and maintenance for all types of water and wastewater treatment systems. A wide variety of consumables and chemicals for ongoing system performance and a complete range of standard products are also available.

MAK Water has built a reputation for delivering superior service and high performing systems, enabling clients to reduce operating costs and extend equipment life-cycles.

- ◆ Design
- ◆ Project Management
- ◆ Procurement
- ◆ Manufacturing
- ◆ Installation
- ◆ Start-up & Commissioning
- ◆ Operation
- ◆ Service and Maintenance
- ◆ Consumables
- ◆ Spare Parts
- ◆ Equipment Hire