



Engineering Consultancy

Simmonds & Bristow's extensive experience with water and wastewater treatment plants has enabled the development of a full range of services to meet the increasing demands of industry, government and remote communities.

Our engineering consultancy team has successfully designed and commissioned a variety of treatment plants in Queensland, including municipal water treatment plants, sewage treatment plants, trade waste treatment plants, reverse osmosis plants and pool treatment systems. Our engineers are competent in all facets of water and wastewater treatment, and work closely with our scientific staff to develop cost-effective solutions utilising the most proven yet up-to-date technology available.

- Treatment Plant Process Design
- Treatment Plant Optimisation & Validation Studies
- Treatment Plant Performance Evaluation and Audits
- Routine Operations & Servicing
 - Operator Support & Troubleshooting Advice
- Water Efficiency Assessor (WEA) Qualification



Engineering expertise covers:

Treatment Plant Process Design

In-house capabilities means Simmonds & Bristow offer complete and effective treatment plant design services to its clients. Process designs are developed with the operator in mind at all times, ensuring the plant is easy to operate and maintain. We have developed a wide range of processes for organisations such as:

- **Erup Island Community (Torres Strait):** Green field design of sewage treatment plant with ocean outfall, 160 m³/day capacity.
- **Wujal Wujal Community:** Green field design of sewage treatment plant, incorporating flow balancing, primary and secondary sedimentation, fixed film oxidation and nitrogen removal, chemical phosphorus removal and dual disinfection.
- **Australian Federal Police Training Centre:** sewage treatment plant upgrade to enable biological nitrogen removal, advanced filtration and dual disinfection with effluent irrigation and non-potable reuse.
- **Richmond Waste Grease Trap:** treatment plant upgrade to optimise treatment and reduce environmental emissions.

Treatment Plant Optimisation & Validation Studies

Treatment systems must be tested and studied to ensure they will work according to plan, and once built, the system must be validated depending on the technologies used. Simmonds & Bristow have expertise in pilot studies, flocculation, coagulation, settlement, dissolved air flotation and filtration trials, chlorine breakpoint and decay testing, mixer systems, oxygen transfer alpha factor testing trials, and silt density index trials. Recent key projects include:

- **Mid-Coast Water (NSW) pilot study** for pre-treatment optimisation of the Tea Gardens water treatment plant
- **Western Corridor Recycled Water Project:** coagulation testing for phosphorus removal
- **Warwick Water Reclamation Plant:** Oxygen Transfer Testing (SOTR & SOTE) validation studies



Treatment Plant Commissioning

Treatment plants must be commissioned to meet specifications. By commissioning your new plant we find and remedy many of the faults inherent in any new plant before handover to your operations personnel.

Our comprehensive commissioning report gives you a detailed insight into limitations of the new plant, while confirming that the plant is capable of achieving the desired performance.

Our engineers work closely with our water industry trainers to ensure the plant is commissioned optimally and operations staff are fully trained in routine maintenance procedures. Our comprehensive commissioning programmes include:

- **Queensland Nickel:** activated sludge sewage treatment plant
- **Erup Island Community** sewage treatment plant
- **Wujal Wujal Community** sewage treatment plant

DATAMINE

See your results immediately with historical trends compiled for you!

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Treatment Plant Performance Evaluation and Audits

Part of the effective operation of any water or wastewater treatment plant is a regular performance evaluation or audit of the plant and its operators. This is increasingly important under the Environmental Protection Act, so that CEOs have documented proof that their plants are running efficiently and effectively. Our audit programme is comprehensive and involves:

- Site visit for information gathering, including plant inspection, equipment performance and condition
- Collection and analysis of samples of the influent and effluent
- Statistical analysis of operator logsheets and historical laboratory data to evaluate plant performance
- Interpretation of results and comprehensive recommendations for plant and process improvements
- Early notification to operations personnel and management of problems.

Frequency and extent of each component is tailored to your business. Recent clients to choose S&B for plant audits include:

- **Dalrymple Bay Coal Terminal** (STP Audit)
- **Amcor Beverage Cans** (Chemical Stores Audit)
- **Goro Nickel New Caledonia** (STP Audit)
- **Peak Downs Shire Council** (WTP & STP Audits for Tieri and Capella)
- **Moranbah North Coal Mine** (STP & WTP Audits)



Routine Operations & Servicing

Treatment plants require dedicated operations staff well trained in the particular processes on site. Many organisations find it easier to engage Simmonds & Bristow staff for routine operation and servicing for water and wastewater treatment plants of all sizes, rather than to source appropriately trained staff externally. We can recommend operation & servicing on either a full-time or part-time basis, depending on plant size and the specific requirements of the organisation.

We currently provide this service to organisations including:

- **Bradken Industrial steel foundry**
- **Aquatic Gardens Caravan Park**
- **Sheldon College**
- **Queensland Baptist Care Retirement Village**

Operator Support & Troubleshooting Advice

All operators need professional assistance when problems arise. Our Help Line service allows operators in all areas to get immediate answers to operational queries relating to water and wastewater treatment. Our process engineers provide troubleshooting advice and support to the following clients:

- **Voyages Hotels & Resorts** (8 resorts)
- **Kentish Council** (Tasmania)
- **Couran Point Resort**



Water Efficiency Assessor (WEA) Qualification

With the drought continuing in Southeast Queensland and water restrictions becoming tighter and tighter, the Queensland Water Commission (QWC) is requiring most businesses to implement a Water Efficiency Management Plan (WEMP), which must be prepared or certified by a registered Water Efficiency Assessor (WEA). Simmonds & Bristow now have a qualified WEA on staff to assist you with writing and implementing your WEMP, enabling you to apply for funding through the Business Water Efficiency Programme (BWEP). We've recently assisted with WEMPs for the following clients:

- **Redcliffe City Council**: community pool WEMP
- **Sheldon College campus WEMP**
- **Hawkins Fuels Truck Wash WEMP**

Simmonds & Bristow's range of engineering services are designed to protect you, your people, your assets and the environment. Contact us for more information.

WaterRMS

Water Resource Management System

A holistic support solution
in one service package

S&B's WaterRMS is a complete service package designed for regional resorts, utilities & industry. WaterRMS combines:

- State-of-the-art laboratories
- Integrated environmental & engineering consultancies
- Registered water industry training
- The DataMine: Online access to historical and current results, reporting tools, incident management and email notification of non-compliances

Whatever your environmental compliance needs may be, our WaterRMS will deliver the best, most cost-effective service solution for your requirements, minimising non-compliance and saving you time and money.

 **Simmonds & Bristow**
Established 1965 ACN 010 252 418 Pty Ltd

WATER AND WASTE MANAGEMENT SOLUTIONS FOR • MINING • HOSPITALITY • COMMUNITIES • DEVELOPMENT
SIMMONDS & BRISTOW 40 Reginald Street Rocklea QLD 4106 | tel: (+61 7) 3710 9100 | freecall: 1800 620 690