



# Company Profile

July 2009

*making water and wastewater management easy*

# Taylor Environmental

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# COMPANY PROFILE

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Taylor Environmental is an environmental engineering consultancy based in South East Queensland, specialising in water and wastewater engineering, including:

**Water and Waste Water Treatment Services**

**Industrial Water/ Trade Waste**

**Water Efficiency Management**

**Compliance and Sustainability Auditing**

Taylor Environmental brings together a core team of highly experienced engineers and scientists with a wealth of experience in the water, wastewater and environmental management fields.

Sustainable water management is high on everybody's agendas. We work closely with our clients to support and enhance their own water and wastewater capabilities, delivering efficient and effective water and wastewater management outcomes which integrate seamlessly into both their immediate and long term business requirements. Our long term relationships allow us to support our clients through to the successful implementation of our recommendations.

Taylor Environmental have always had a focus on resource efficiency with a view towards optimizing business operations before water efficiency became a critical outcome in its own right. Since the introduction of water restrictions, aimed at reducing non-residential water use in SEQ, Taylor Environmental have been significantly involved in water efficiency and reuse projects, including WEMPs, and have seen our clients return combined water savings of over 150 ML/year. In addition, we have helped clients to realise reduced trade waste volumes, enhanced process efficiencies with reduced ongoing maintenance costs, and significant reuse of treated effluent.



Our clients include Queensland Government facilities (correctional centres, hospitals, and educational facilities), local councils, water service providers, and various private industries including power supply, food processing and general manufacturing.



***"You could write the story of man's growth in terms of his epic concerns with water."***

Bernard Frank

## **Values**

Taylor Environmental was established in 2007 by Chris Taylor, a highly experienced water professional with over 20 years experience in the water/ wastewater / environmental management industry. Chris's motivation was to create a successful consultancy which delivered real work life balance and reward for employees, operated with a reduced environmental footprint while maintaining high levels of customer service and engineering expertise. Taylor Environmental Pty Ltd is the realisation of that motivation.

Taylor Environmental has grown into a core team of highly experienced professionals who all aspire to live by the same values that have come to represent Taylor Environmental;

- To rise to professional challenges through approaching all projects with a sense of pride in our work and determination to deliver engineering excellence
- To embrace any opportunity to reduce our environmental footprint through living and working with a sustainability consciousness
- To enjoy and be rewarded by our professional careers while still having the flexibility to live life to the fullest

## **Social Responsibility**

Taylor Environmental is committed to contributing towards an ethical and sustainable future through our business operations, our dealings with clients and staff and our daily habits. Our professional services are directed towards delivering valuable outcomes within realistic budgets and resulting in highly satisfied clients. Our business operations include rewarding working conditions for staff, seeking suppliers who offer sustainable options, reducing the environmental footprint of our daily work operations and a commitment to donate 1% of our turnover to charity each year.

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## SERVICES

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Our approach is to provide clients with holistic water and wastewater support, therefore our services are always evolving in-line with client requirements. Our extensive experience and detailed knowledge of all aspects of water and wastewater management and engineering allow us to continually adapt our services to ensure the clients receive our full support with all aspects of their water and wastewater projects.

The services delivered by Taylor Environmental include:

### Water and Wastewater Treatment Services

- Potable water, domestic and commercial black and grey water and industrial trade waste solutions
- Treatment plant performance auditing and optimisation
- Treatment plant design, specification, commissioning and process validation
- Effluent reuse investigations
- Senior technical support relating to operation and management
- Site Based Management Plans and environmental compliance management
- Operator training
- Irrigation Management Plans
- Chemical dosing services
- Odour management
- Sampling

### Industrial Water / Trade Waste

- Treatment plant operations and management
- Waste minimisation and reuse, recycling or disposal options
- Water demand management
- Process efficiency services

- Risk assessment using HACCP
- Contaminated site management
- Odour management
- Chemical dosing systems

## **Water Efficiency Management**

- Water use auditing
- Water Efficiency Management Plans (WEMPs)
- Water demand management
- Water recycling and reuse options
- Recycled Water Management Plans and risk assessments using HACCP
- Stormwater management and reuse
- Sub-metering and data logging
- Policy and procedure development

## **Compliance and Sustainability Auditing**

- Water Efficiency Management Plans (WEMPs)
- WEMP compliance reporting
- EPA licensing and environmental compliance reporting
- Accredited Green Star Professionals
- Ecobiz Facilitator
- Water Efficiency Assessor (WEA)

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## PROJECT HIGHLIGHTS

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### Numinbah Correctional Centre Water Treatment Plant

Taylor Environmental have undertaken the design, controls philosophy, documentation and preliminary pricing for a new water treatment plant at Numinbah Correctional Centre. A major goal of the new plant is to maximise the use of existing plant and equipment and significantly minimise the potential for water supply disruptions within the Correctional Centre.

This replacement 100kL/d plant will incorporate sand filtration, UV and Chlorine disinfection. Monitoring will be installed to ensure water meets strict quality guidelines,

and minimise backwashing losses and operational and maintenance costs.



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### 80 George Street Brisbane Grey Water Treatment Plant

The collection of greywater from showers, washing machines and sinks across the 7 storey site, treating it and using the recycled water for toilet flushing will save up to 2.5kL of potable water every day in this government building. This installation, designed and project managed by Taylor Environmental is believed to be a first for a commercial government building in Queensland. Design Manager James Foster says: "Taylor Environmental are providing design and technical expertise together with project management skills to deliver this project on time and on budget". Being a novel project, there are however, extra hoops to jump through. "Crossing the t and dotting the i's is all part of the day job when it comes to implementing a project which hasn't been undertaken before in Queensland. We hope that the

success of this demonstration project will pave the way for greywater treatment to be rolled out into government and private sector buildings across the state".



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### Priestley's Gourmet Delights Trade Waste Compliance

With regulators becoming increasingly aware of out of licence trade waste discharges, careful design and management of trade wastes is required. Taylor Environmental were commissioned by Priestley's Gourmet Delights (manufacturers of a range of gourmet foods)

to provide technical capability in designing and installing a new trade waste neutralisation skid to ensure trade waste discharge quality remained consistently within license limits. The improvements managed by Taylor Environmental reduced the amount of

chemical required to neutralise trade waste discharges while improving the occupational health and safety of the dosing system.

Taylor Environmental have also recommended a review of the potential for neutralisation of acid and caustic Clean In Place (CIP) washes along with a review of chemicals used.



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### Moore Park State School Sewage Treatment Plant Rectification

Taylor Environmental worked with a project team including Project Services, Q Build and GHD to rectify a sewerage treatment plant which has been exceeding EPA license limits for nitrates and pH for some time. Due to the location of the STP next to a protected wetland, and the lack of a full time operator, it was important to deliver robust and long term solutions. Taylor Environmental have been able to identify a solution where previous consultants have withdrawn from the project without success.

Through installation of a new DO probe and aeration system, together with carbon dosing and modification of alum dosing, the treatment plant has been shown to consistently meet performance requirements. The project has operated as a trial for the design and implementation of methanol dosing in small (<100 EP) treatment plants. The success of this project has resulted in Taylor Environmental being engaged by Project Services to resolve performance problems on a number of other treatment plants in schools around Queensland.



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### Industrial Water Audits

Taylor Environmental provided the technical support for Ipswich Water with a program to audit high water use businesses in the Ipswich region. This program was additional to the scope of the WEMP compliance audits (which Taylor Environmental also provided support for) and was designed to assist Ipswich Water to better understand the nature of water use in Ipswich businesses and the risks to those businesses should water supply disruptions occur. Through this program TE audited and reported on water use in numerous Ipswich businesses including schools, concrete batching plants, manufacturing (including

paper, plastics, pipes and other), rail facilities and food processing facilities.



## Recycled Water Management Plan, Swanbank Power Station (CS Energy)



Taylor Environmental was commissioned by CS Energy with the preparation of an internal RWMP. The power station was to receive recycled water from the Western Corridor Recycled Water Project pipeline.

Taylor Environmental prepared a RWMP which identified and managed any risks associated with using recycled water in the power station operations (cooling tower make up water). The RWMP allowed the power station to ultimately substitute 20 ML/ day of mains supply water with recycled water.

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## WEMP Administration

Supporting Ipswich Water on the technical information provided by the significant water in their WEMP and procedural support to assist in the management the WEMP administrative process.

## Water Efficiency Management, Queensland Department of Corrective Services

Chris Taylor commissioned as the WEA (Water Efficiency Assessor) for 9 SEQ Correctional Centres by the Project Services, a business unit of the Department Of Works. The combined water savings for the correctional centres was over 400ML / yr.

## Water Efficiency Management Plan, Cook Australia

Taylor Environmental prepared the WEMP for Cook Australia, a manufacturer of medical equipment including IVF needles, media and stents for blood vessel repair. The result is a significant water saving of 48% per item produced, allowing production at the manufacturing facility to increase by over 80% while using a total of 6.5% less water annually.



Taylor Environmental have also produced WEMPs for numerous other industries including numerous TAFEs, Correctional Centres, Gold Coast Hospitals, Visy Board, Brisbane Childrens Court and others.

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## Sub-metering, Queensland Department of Correctional Services

Through Project Services, Taylor Environmental were engaged to manage the sub-metering of water lines within 6 SEQ correctional Centres. All water meters were connected to data loggers. Almost 100 water meters were installed in total in the correctional centres.



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## KEY STAFF

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Our core team are all highly experienced professionals with unique areas of expertise. By working as a closely knit team, we are able to provide diverse technical expertise ensuring clients receive engineering and environmental excellence when working with Taylor Environmental.

Our core team consists of:

**Chris Taylor** MEnvMan BAppSc(Chem) ADCivEng, Director

**James Foster** BEng (Chem/ Env), Senior Process Engineer

**Donna Sanders** BAppSc(Micro/BioChem) DipSc (Micro), Senior Consultant

**Kate Pattingale** BSc (Env Biol), Business Development Manager and Environmental Consultant

**Donna Madsen** CPA BCommerce, Business Manager

Full professional CV's for our consulting staff are available on our website:

[www.taylorenviro.com.au](http://www.taylorenviro.com.au)

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### Chris Taylor

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#### Director

Chris Taylor has 20 years experience as a professional in the water, waste water, infrastructure planning and construction sectors.

Chris has extensive knowledge of water and wastewater treatment processes having designed, operated, managed, trained plant operators (Council and private industry), and provided senior technical support to water and wastewater treatment plants for government facilities, private industry, local communities, resorts and municipalities.

This experience includes commissioning and managing a wastewater plant treating 1.5ML/ day of high strength organic wastewater, developed groundwater water treatment options and designing water and wastewater treatment plants for resorts, communities and industry. As a Water Efficiency Assessor, Chris has been involved in preparing Water Efficiency Management Plans (WEMPs) for private industry and government facilities.

Chris also has extensive experience in working with contaminated sites, acid sulphate soils, environmental impact management, stormwater, water reuse and air quality particularly in relation to major road projects.

Chris established Taylor Environmental Pty Ltd in 2007. Chris' primary focus within Taylor Environmental is water and wastewater treatment including plant design, rectification, process troubleshooting and technical support, water reuse and water demand management.

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#### **Key areas of Expertise:**

- Wastewater Treatment Plant Operation and Management
  - Wastewater Treatment Plant Design
  - Water Treatment
  - Water Efficiency Management Plans
  - Wastewater and Water Treatment Plant Training
  - Water Reuse
  - Waste Management
  - Stormwater Quality Treatment
  - Air Quality
  - Environmental Impact Studies
  - Environmental Management Systems and EMS Auditing
  - Community Consultation
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#### **Additional Accreditations:**

- Certificate IV in Domestic Wastewater Management
  - Environmental Management System Auditor (NCSI)
  - Workplace Trainer and Assessor (Certificate IV in Assessment and Workplace Training)
  - Registered Water Efficiency Assessor (W010030)
  - Green Star Accredited Professional
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#### **Presentations:**

- 2009 AWA National Conference – Water Efficiencies achieved at SEQ Correctional Centres
- 2007 Facilities Manager Workshop – Water Efficiency Management Plans.
- 2001 International Erosion and Sediment Control Association Conference – Learning's from the commissioning of the stormwater quality control devices for the Pacific Motorway Project (Logan to Nerang).
- 1999 Water Industry Operations Conference - Wastewater quality and blue –green algae.

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## James Foster

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### Senior Process Engineer

James Foster is an experienced environmental and chemical engineer with 10 years experience in the water, wastewater and industrial sectors.

James has a thorough knowledge of water treatment process and water management on a wide-ranging scale. He has significant and diverse experience in all aspects of water and wastewater treatment but is also experienced in hydraulics, water re-use, coastal engineering, cooling tower management, industrial fire systems and risk assessment. James has worked extensively in a variety of industries including municipal water supply, mining, refineries and general industry. His experience includes providing technical expertise in optimising the operation of the effluent treatment plants at Ineos / BP Refinery at Grangemouth, Scotland and at refineries throughout the UK. During this time he was instrumental in designing an upgrade of the plant from 20.4 – 32.4ML/day, and increasing stormwater storage to 20ML.

James has also a background in Hydraulics and Hydrology, including development proposals for Amberley RAAF base, Rivergate Marine Precinct, Park Hill Village for MIRVAC, University of Queensland and Tennyson Tennis Centre. These projects involved flooding assessments, storage and attenuation of stormwater and stormwater quality improvement. He has experience in coastal engineering with hands on projects for Cairns Port Authority, Great Barrier Reef Marine Park Authority, Raz Az Zawr - Saudi Arabia, Rivergate Marina and Ballina Shire Council / NSW Department of Lands.

James' primary focus within Taylor Environmental is water and wastewater treatment process design and Project Management including plant design, rectification, process troubleshooting and technical support, water reuse and water demand management.

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### Key areas of Expertise:

- Water / Wastewater Treatment Plant Design/Operation
- Water Treatment
- Water Reuse
- Hydraulics and Hydrology
- Mining
- Cooling Towers
- Steam Generation and Boilers
- Industrial Fire Systems and Drainage Design
- Referable Dam Safety Audits and Dam Break Analysis
- Coastal and Marine Engineering
- Risk Assessment

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### **Presentations:**

- Evans Head Effluent Disposal Option Community Consultation (Evans Head, 2005)
- Ballina Recreational Boating Study (Ballina Shire Council, 2005)
- PPS25 Seminars (Flood risk legislation) (Bristol and Plymouth, 2006)
- Flood Risk and Climate Change Lecture for MSc Students (University of West London – CAT - Wales, UK 2006)
- Suez Technical Congress ONSET (Ondeo Site Effluent Tracker) (Paris, 2007)

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## **Donna Sanders**

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### **Environmental Consultant**

Donna Sanders is an experienced environmental scientist with over 15 years experience working in the waste treatment, food processing and water management industries. Donna's recent work with Taylor Environmental has focused on WEMPs, in particular in assessing and auditing WEMPs on behalf of Water Service Providers, where her extensive experience in food processing facilities has been invaluable. Donna has a very detailed understanding of trade waste treatment, analytical processes and production processes. Her experience in this field includes the commissioning and operation of a 1.5ML/ day wastewater treatment plant handling high strength organic waste, including process adjustment to manage loading on the plant. Donna also has extensive experience with quality control, risk management and environmental management systems, including HACCP and ISO 9000. This knowledge has been gained through working in roles which required detailed process understanding in order to troubleshoot production processes in relation to managing trade waste loading for discharge or treatment, risk management and operation of trade waste treatment plants. Donna undertook industrial process validation for a Greenfield milk production facility which included detailed assessment of production processes as well as stringent quality control to ensure product safety.

Donna's primary focus within Taylor Environmental is water efficiency management at all levels including policy and planning, WEMP development, reporting and auditing. Donna's role also extends to industrial auditing including risk management, process validation, sustainability auditing and water efficiency management.

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### **Key areas of Expertise:**

- Water Efficiency Management Plans (WEMPs), Industrial Water Auditing
  - Waste Water Management
  - Industrial Process Validation
  - Industrial Quality and Risk Management
  - Laboratory
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#### **Additional Accreditations:**

- Certificate IV in Training and Assessing (2007)
- EcoBiz Facilitator
- Workplace Health and Safety Officer Level I, All industries, NSCA (2001)
- HACCP
  - 3 day HACCP systems, National On Site Training (1999)
  - Introduction to HACCP Quality Assurance Systems, SGS International Certification Systems (1998)
  - Internal auditing Techniques for ISO9001 and HACCP systems, SGS International Certification Systems (1997)

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## **Kate Patingale**

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### **Business Development Manager / Environmental Consultant**

Kate Patingale has divided her career between science and business development and in particular has gained significant experience in Business Development within the water industry.

As a scientist Kate developed the Environmental Impact Management Plan for the construction of transmission lines to the Ernest Henry mine in North Qld, and has also been involved in the preparation of environmental management plans and review of environmental factors for various other projects including the Steve Irwin Way road duplication and the Northern Interconnector pipeline. Kate also has experience in the development of WEMPs and WEMP reporting in SEQ.

Kate has over 10 years experience as a Business Development Manager in a variety of industries as diverse as international catering equipment, music school franchises and children's yoga, in addition to having significant experience as a BDM in the water industry.

Kate has a dual role in Taylor Environmental. As Business Development Manager she works closely with the Company Director and Business Manager to develop and implement business planning, company marketing, staff management and policy development. As an Environmental Consultant, Kate is involved in water efficiency management projects.

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#### **Key areas of Expertise:**

- Water Efficiency Management Plans (WEMPs),
- Environmental Management Plans,
- Environmental reporting
- Business planning and management
- Sales and marketing
- HR management
- Fiscal planning and management

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#### **Additional Accreditations:**

- Green Star Accredited Professional

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