

Michael Lawrence

PhD MSc BSc(Hons) CChem
Associate Director, Principal Scientist

Adjunct Professor, The University of Queensland

**BLIGH
TANNER**



Michael is an experienced water quality expert who has worked with over 50 water providers across Australia improving drinking water management for more than 100 separate schemes.

Michael's background is in research science, specialising in low trace analysis both in the natural and in process environments. Michael has experience across research, regulation, and consulting. He has published research covering the environmental fate of micropollutants, and their removal through advanced water treatment barriers. Michael understands the issues faced by water service providers and is a strong industry advocate.

Michael provides expert advice regarding environmental performance, regulatory licences, environmental approvals, and can assist in negotiating outcomes with regulators. Michael has worked for both NSW and Queensland Health on various projects, and is highly regarded for his technical knowledge, holistic approach, and ability to deliver high quality outcomes to his clients.

Key projects include; strategic assessments of treatment effectiveness; water quality risk assessments; developing operational and critical control procedures; developing, reviewing and auditing drinking water management systems; treatment barrier assessment and optimisation; and community consultation to help explain water management decisions.

PROFESSIONAL EXPERTISE

- + Drinking water quality management
- + Recycled water quality management
- + Drinking and Recycled Water audits
- + Water quality investigations
- + Water sampling program design
- + Water quality research
- + Regulatory compliance

QUALIFICATIONS

- + PhD, University of Queensland
- + MSc, University of British Columbia
- + BSc (Hons), University of New England
- + Drinking & Recycled Water Quality Management Systems Lead Auditor (Exemplar Global, formerly RABQSA)
- + Chartered Chemist (CChem)

PROFESSIONAL EXPERIENCE

Assessment of Recreation in Drinking Water Supplies

- + Mount Isa Water Board Health Based Target Assessments
- + Toowoomba Three Dams Recreation Assessment

Strategic Drinking Water Assessments

- + Douglas Shire Council
- + Cook Shire Council Efficiency Review

Audits

- + Regulatory Audits
 - + SA Water
 - + TasWater
 - + Mount Isa Water Board
 - + Torres Shire Council
 - + Banana Shire Council
 - + Rockhampton Regional Council
 - + Port of Townsville
- + Audits
 - + Logan City Council
 - + Douglas Shire Council
 - + Maranoa Regional Council

Science and Research

- + Operational performance of the Fitzgibbon Stormwater Harvesting and Potable Roofwater schemes

Drinking Water Quality Management Plan Reviews

- + Coffs Harbour City Council
- + Clarence Valley Council
- + Brisbane Airport Corporation
- + Charters Towers Regional Council
- + Riverina Water County Council
- + Douglas Shire Council
- + Goondiwindi Regional Council
- + Mid Coast Water
- + Moree Plains Regional Council

Other Water Management Reports

- + NSW Health Drinking Water Risk Management System Implementation Projects (Multiple projects over past 6 years)
- + South Bank - Pool Management Plan
- + Burdekin Shire Council PFAS management
- + South Bank Rain Bank Reclaimed Water Management Plan

AFFILIATIONS

- + Adjunct Professor, Advanced Water Management Centre, University of Queensland
- + Member, Australian Water Association
- + Member, Water New Zealand
- + Member, AWA Rural Regional and Remote Specialist Network
- + Member, Royal Australian Chemical Institute

CAREER PROFILE

2018 - present

- + **Associate Director**
Bligh Tanner, Brisbane

CAREER PROFILE (CONTINUED)**2015 - 2018**

- + **Principal Scientist**
Bligh Tanner, Brisbane

2014 - 2015

- + **Senior Scientist**
Bligh Tanner, Brisbane

2013 - 2014

- + **A/Manager, Drinking Water Regulation**
Queensland Water Supply Regulator,
Department of Energy and Water Supply,
Brisbane

2010 - 2013

- + **Principal Scientist, Drinking Water Quality**
Queensland Water Supply Regulator,
Department of Energy and Water Supply, Brisbane

2008 - 2009

- + **Postdoctoral Research Fellow**
Advanced Water Management Centre,
University of Queensland

2007

- + **Postdoctoral Scientist**
Institute for Marine Sciences, University of California,
Santa Cruz, USA

PUBLICATIONS AND PRESENTATIONS

- + **ORCID id** <https://orcid.org/0000-0001-8186-6970>

- + **Researcher ID** B-6924-2008

Published articles: 28, Total citations: 2073
h-index: 20 (as at 8/9/2021)

Key Publications

Escher B.I., **Lawrence, M.**, Macova, M., Mueller, J.F., Poussade, Y., Robillot, C., Roux, A., Gernjak, W. (2011).

Evaluation of Contaminant Removal of Reverse Osmosis and Advanced Oxidation in Full-Scale Operation by Combining Passive Sampling with Chemical Analysis and Bioanalytical Tools. *Environmental Science and Technology* 45(12), 5387-5395 DOI:10.1021/es201153k.

Ort, C., **Lawrence, M.G.**, Rieckermann, J., Joss, A. (2010) Sampling for Pharmaceuticals and Personal Care Products (PPCPs) and Illicit Drugs in Wastewater Systems: Are Your Conclusions Valid? A Critical Review. *Environmental Science and Technology* 44(16), 6024-6035 DOI: 10.1021/es100779n.

Lawrence, M.G. (2010) Detection of anthropogenic gadolinium in the Brisbane River plume in Moreton Bay, Queensland, Australia. *Marine Pollution Bulletin* 60(7), 1113-1116.

Ort, C., **Lawrence, M.G.**, Reungoat, J., and Mueller, J.F. (2010) Sampling for PPCPs in wastewater systems: A comparison of different sampling modes and optimization strategies. *Environmental Science & Technology* 44(16), 6289-6296. DOI:10.1021/es100778d.

Ort, C., **Lawrence, M.G.**, Reungoat, J., Eaglesham, G., Carter, S., and Keller, J. (2010) Determining the fraction of pharmaceutical residues in wastewater originating from a hospital. *Water Research* 44(2), 605-615. DOI:10.1016/j.watres.2009.08.002.

Lawrence, M.G., Poussade, Y., Keller, J. (2010) Removal of magnetic resonance imaging contrast agents in advanced water treatment plants. *Water Science and Technology* 61(3), 685-692 DOI: 10.2166/wst.2010.885

Lawrence M.G., Kamber B.S. (2006) The behaviour of the Rare Earth Elements during Estuarine Mixing – Revisited. *Marine Chemistry*, 100, 147-161. DOI:10.1016/j.marchem.2005.11.007.

Lawrence M.G., Jupiter, S.D., Kamber, B.S. (2006) Aquatic Geochemistry of the Rare Earth Elements and Yttrium in the Pioneer River Catchment, Australia. *Marine and Freshwater Research*, 57, 725-736.