WESTERN SYDNEY UNIVERSITY

ARC LINKAGE PROJECT GRANT

PROJECT TITLE: SMART MANAGEMENT OF DISINFECTANT IN CHLORAMINATED WATER-SUPPLY SYSTEMS

INVESTIGATOR(S):
Associate Professor Arumugam Sathasivan; Professor Brajesh Singh; Associate Professor Stuart Khan; Professor Jens Coorssen; Professor Linda Blackall; Professor Bruce Rittmann; Dr Maneesha Ginige; Dr Peter Cox

PARTNER ORGANISATION(S):
Commonwealth Scientific and Industrial Research Organisation; Sydney Water Corporation; Central Seq Distributor-Retailer Authority; South East Queensland Water; Logan City Council; Unitywater

FUNDING:
$710,000 grant from ARC plus $415,000 cash from industry, plus over $1.3 million in-kind from partner Institutions

ADMINISTERING UNIVERSITY:
Western Sydney University, Institute for Infrastructure Engineering

SUMMARY:
This project aims to develop an adaptive, real-time control system for managing disinfectant residuals in chloraminated water supply systems. While chloramine delivers microbiologically safe drinking water in warmer climates and in long distribution systems, it is largely unpredictable, costs water utilities millions of dollars annually, and has uncertain benefits. This project's control system will be guided by quantitative models formulated from multi-pronged, fundamental experiments. The project will quantify microbial chloramine decay and determine mechanisms to increase predictability. The project will develop and demonstrate a real-time control technology which delivers microbiologically safe, cost-efficient drinking water to people in warmer climates, despite warming climate and increasing population. Close to seven million Australians currently consuming chloramine are expected to benefit from the outcomes of the study.