

STAFF RESUME: EN012

Career Summary

A hydrogeologist with more than 20 years of professional experience on environmental consulting projects conducted within both Australia and the United States. This experience includes: the assessment and remediation of soil and groundwater impacts (inc. PFAS) at commercial, defence, industrial, residential and mining properties; the design, installation, development and testing of groundwater bore networks; the evaluation of potable water supplies in remote, indigenous communities; dye tracing of groundwater in mature, karst aquifers; landfill closure and assessment activities; environmental impact assessments; environmental audits, and; the development of numerical, geochemical and water balance models. In addition, William has been involved in teaching and research at academic institutions in both Australia and the United States.

Recently completed a PhD within the School of Earth, Atmosphere and Environment (EAE) at Monash University in Clayton, Victoria researching stable and radioactive isotopes in combination with aqueous geochemistry to understand the residence times of groundwater, surface water and solutes in the Barwon and Gellibrand River catchments of western Victoria.

Key Areas of Expertise

- Hydrogeological investigation design, planning and execution
- Design and installation of groundwater monitoring and production bores
- Aquifer testing, design and analysis
- Conceptual hydrogeological model development
- Groundwater impact assessments
- Development and execution of sampling plans
- Isotope hydrology and aqueous geochemistry
- Geographic Information Systems (GIS, ArcGIS)
- Karst hydrology
- Contractor supervision
- Project management
- Data analysis
- Technical report writing (analytical and interpretative)
- Phase I and II environmental site assessments
- 53V environmental audit support

Professional History

Out-Task Environmental (Feb 2018 – to date)

Senior Associate Hydrogeologist

CH2M (Jun 2017 – Dec 2017)

Lead Hydrogeologist

- Investigating per- and poly-fluoroalkyl substances (PFAS) impacts to groundwater, surface water, soil and sediment at Department of Defence (DoD) facilities in Queensland and New South Wales. Responsibilities included developing Sampling, Analysis and Quality Plans (SAQPs), assessing on- and off-property impacts, designing and overseeing the installation of groundwater monitoring networks, well development and sampling activities, assessing groundwater/surface water interaction, mentoring junior field staff, and participating in community engagement sessions

Out-Task Environmental (2014 – Jun 2017)

Senior Associate Hydrogeologist

- Expert support team member for an EPA Appointed Environmental Auditor for Loy Yang landfill 53V environmental audit, AGL Energy Ltd
- Expert support team member for an EPA Appointed Environmental Auditor verification of Landfill Monitoring Program - Soil Organic Recycling Facility (SORF), Gippsland Water
- Project hydrogeologist

URS Australia Pty Ltd, Darwin (2009-2013)

Senior Associate Hydrogeologist

- Managed groundwater monitoring program associated with the Ichthys LNG Plant
- Designed grout curtain trial for mine site in Western Australia
- Managed water resource investigations for remote indigenous communities
- Served as project manager and technical lead on mining and contaminated land investigations
- Supervised field teams and mentored junior staff
- Prepared reports, budgets and proposals, and interfaced with clients and regulators

McGinley and Associates, Inc., Reno NV USA (2000-2009)

Hydrogeologist

- Managed Phase I and Phase II ESAs of petroleum, industrial and commercial properties
- Prepared reports and proposals
- Interfaced with clients and regulators
- Performed remediation monitoring
- Oversaw drilling programs and conducted soil and groundwater sampling

Desert Research Institute, Inc., Reno NV USA (1996-2000)

Graduate Research Institute

- *Designed, conducted and evaluated laboratory experiments to measure diffusion coefficients and tortuosity values in low permeability bedrock*
- *Conducted batch and laboratory tracer experiments to quantify retardation of carbon-14 with carbonate bedrock*
- *Conducted geochemical and mathematical modelling*

Feather River College, Quincy CA USA (1999)

Instructor of Environmental Geology

- *Designed curriculum for class of eight students*
- *Assigned and graded library exercises, homework problems and examinations*
- *Assisted students with academic and career choices*

Washoe County Department of Water Resources, Reno NV USA (1995-1996)

Student Intern

- *Assisted in the maintenance, operation and monitoring of artificial groundwater recharge projects in northern Nevada*
- *Aided in the development of municipal water and wastewater transmission databases using Arc/Info Geographic Information System (GIS)*

Tighe and Bond, Inc., Westfield MA USA (1993-1995)

Hydrogeologist

- Managed environmental site assessments
- Assisted in environmental assessment activities associated with the closure of Massachusetts' largest municipal landfill
- Oversaw the installation of monitoring bore networks
- Performed and analysed aquifer tests

- Conducted soil and groundwater sampling

Golder Associates, Inc., Atlanta GA USA (1992)

Hydrogeologist

- Supervised the design, installation and development of groundwater monitoring bores
- Performed and analysed aquifer tests
- Performed statistical analysis of groundwater quality data
- Assisted in the preparation of technical reports and proposals

Mammoth Cave National Park, Mammoth Cave KY, USA (1990-1991)

Student Intern

- Monitored and oversaw operation of park air quality station
- Assisted in radon monitoring program, including collecting and analysis of air samples from within the cave and assessment of employee exposure levels

Center for Cave and Karst Studies, Bowling Green KY, USA (1989-1991)

Graduate Research Assistant

- Assisted in countrywide evaluation of karst groundwater pollution vulnerability
- Assisted with qualitative and quantitative dye traces
- Evaluated sites for land-farming of municipal sludge

Corporate Environmental Advisors, Inc., Ludlow MA USA (1988-1989)

Hydrogeologist

- Assisted in the performance of environmental assessments
- Oversaw the installation of groundwater monitoring bores

Education

- PhD, Hydrogeology, Monash University, Australia. Research Focus: Use of Radiogenic Tracers to Constrain Groundwater-Surface Water Interaction, Solute Transport and Mean Transit Times in the Barwon River, Corangamite and Otway Basins, Victoria
- M.Sc., Geography (emphasising karst hydrology), Western Kentucky University, USA, 1992
- B.Sc., Geology. University of Massachusetts, USA, 1985

Accreditations and Certifications

- International Association of Hydrogeologists
- European Geological Union (EGU)
- Australian Contaminated Land Consultants Association (ACLCA)
- URS Project Manager Certification
- Australian Postgraduate Award (APA) Scholarship, 2014
- Staff Recognition Award – “Satisfying Our Client Expectations”, URS Australia, 2011
- Outstanding Student, University and Community College System of Nevada, 1999
- George Burke Maxey Hydrology/Hydrogeology Fellowship, 1998
- Ralph W. Stone Award, National Speleological Society, 1997
- Nevada Medal Fellowship, 1997
- WAIIIME Scholarship, Society of Mining Engineers, 1996, 1997
- Vestel Couture Scholarship, Mackay School of Mines, University of Nevada, Reno, 1996

Training

- 24-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Occupational Health & Safety and 8-hour refresher courses
- TLIC2507B – Operate Four Wheel Drive Vehicle
- ASTM, Phase I and Phase II Environmental Site Assessments (USA)
- Senior Emergency First Aid
- ARTC, Track Safety Awareness Training
- Fire Extinguisher Training
- White (Construction) Card

Publications

Mean Transit Times in Headwater Catchments: Insights from the Otway Ranges, Australia. 2018. Howcroft, W., Cartwright, I. and U. Morgenstern, 2018. *Hydrol. Earth Syst. Sci*, doi: 10.5194/hess-2017-219.

Differences in Groundwater and Chloride Residence Times in Saline Groundwater: The Barwon River Catchment of Southeast Australia, 2017. Howcroft, W., Cartwright, I., Fifield, L.K. and D. Cendon, *Chemical Geology*, Vol. 451, pp. 154-168.

Laboratory Experiments to Evaluation Diffusion of ¹⁴C into Nevada Test Site Carbonate Aquifer Matrix. R.L. Hershey, W.D. Howcroft and P.W. Reimus, 2003. Publication No. 41580. U.S. Department of Energy, Las Vegas, Nevada. March 2003

Chemical Erosion of the Lilburn Cave System, Kings Canyon National Park, California. 2001. Abu-Jaber, N., Hess, J.W. and W.D. Howcroft. *Groundwater*. Mar-Apr 2001, Vol 39(2), pp 223-9

Ground Water Flow and Water Resources Investigation of the Auburn, Summers, and Shakertown Springs Karst Ground Water Basins, Logan and Simpson Counties, Kentucky. Master's Thesis, 1992