AusIMM Courses

Water Management in Mining

ASSOCIATE CERTIFICATE



Optimise water use. Protect operations. Secure your site's water future.

Course overview

Water is one of the most critical and complex resources in modern mining operations. From understanding the sources and quality of mine-affected water, to selecting the right treatment technologies and managing process residuals, effective water management is essential for environmental compliance, operational performance, and community trust.

Over the duration of the course, you will develop a structured understanding of:

- Site water balance fundamentals
- Surface water and groundwater management
- Dewatering systems and operational integration
- Risk, compliance and governance frameworks
- Climate variability and extreme event planning
- Closure and long-term water stewardship

Designed for mining professionals, this course bridges technical theory with real-world mining application.

Why this course matters

Water scarcity, environmental regulation, and community expectations are reshaping how the mining industry manages one of its most sensitive resources. Yet many mining professionals lack formal training in the principles that underpin effective mine water management.

Poorly managed water can lead to:

- Regulatory non-compliance and costly remediation
- Reputational damage with communities and government agencies
- Operational disruptions and increased costs
- Environmental harm to rivers, groundwater, and ecosystems

This course is designed to:

- Build a strong foundational understanding of mine water — its sources, quality, and impacts
- Equip professionals with the tools to assess, treat, and manage water effectively
- Support compliance with environmental and regulatory requirements
- Prepare participants for more advanced roles in water and environmental

PD hours
25 hours

Delivery
100% online

Duration
5 weeks

Certificate
Digital credential

Pricing

Member $1,885
Non-member $2,300

Prices are in Australian dollars and are inclusive of 10% GST

Discounts available when 3 or more participants book together.

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Who should enrol?

This course is ideal for professionals responsible for water-related decision-making across mining operations, including:

- Engineers and technical specialists working in water, environment, or mining operations
- Early- to mid-career mining professionals seeking to develop water management competency
- Environmental officers and site managers responsible for water-related compliance
- Geologists, metallurgists, and process engineers wanting to understand water's role across the mining value chain
- Graduate program participants in mining companies
- Tailings and geotechnical engineers
- Consultants advising mining operations
- Organisations looking to upskill their workforce in mine water management best practice

What you'll learn

Scope of Mine Water Management

- Understand how mining activities affect water supply, demand, and quality.
- Identify water demand and sources (potable, process, environmental)
- Understand stakeholder and regulatory considerations, including First Nations peoples
- Assess stormwater, diverted water, and mine-affected water management
- Understand conveyance, storage, and cross-contamination prevention

Water Quality: Characterising the Issues

- Understand pH, salinity, turbidity, nutrients, metals, PFAS, and other key parameters
- Apply the hierarchy of water quality from ultra-pure to acid mine drainage
- Understand ecological impacts and environmental discharge requirements
- Gain exposure to drinking water and recycled water guidelines

Background Requirements: Making Water Treatable

- Understand chemical storage, handling, and WHS requirements
- Learn real-time measurement and instrumentation principles
- Distinguish between representative sampling and analytical measurement
- Understand the difference between good and misleading data

Water Treatment: Completing the Solution

- Understand segregation as a primary management strategy
- Gain exposure to physico-chemical treatment: pH adjustment, coagulation, filtration, membranes, RO, and more
- Learn about biological and nature-based treatment processes
- Understand disinfection, and the management of sludges, brines, and special wastes such as PFAS concentrates

Facilitators

See full facilitator profiles on our course page.



Dr. Cherie McCullough
Director/Principal Environmental Scientist, Mine Lakes Consulting



Richard Campbell
Managing Director, HydroTerra

Career outcomes

Participants will be better prepared to:

- Contribute effectively to water management planning and decision-making on-site
- Step into senior operational, environmental, water, or technical advisory roles
- Support regulatory compliance, reduce operational risk exposure and community engagement around water
- Identify and assess water treatment options for different mine water challenges
- Progress toward advanced qualifications in environmental or water management
- Strengthen credibility in regulatory and stakeholder engagement
- Completing this course positions you as a risk-aware, strategic leader trusted to manage one of mining's highest-impact operational and regulatory risks.

Organisational benefits

- A workforce with foundational competency across the full mine water management cycle
- Reduced risk of non-compliance and environmental incidents
- Improved on-site decision-making related to water treatment and management
- Greater team confidence in engaging with regulators and community stakeholders
- Alignment with industry best practice and evolving environmental standards

In today's mining environment, water management cannot be reactive. It must be strategic, integrated and risk informed.

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Water Management in Mining modules

1 Scope of mine water management – framing the problem to address

- Understand the sources and temporal impacts of water supply and demand
- Create awareness of stakeholders and impacts
- Understand what causes a water to be mine-affected.

2 Water quality – how do we characterise the issues to address?

- Understand the important water quality parameters and how they manifest
- Understand the broad considerations of different forms of water use
- Understand the key aspects of water quality requirements for different applications including regulatory requirements.

3 Background requirements – how do we make the water treatable?

- Create awareness of the key aspects pertaining to receival, storage and of handling water treatment chemicals
- Create awareness of real-time monitoring and control options
- Understand the key differences between representative sampling and analytical measurement uncertainty.

4 Water treatment – completing the solution

- Gain an understanding of the different forms of treatment which may include simple segregation
- Gain awareness of the general principles and equipment types used for different treatment objectives.
- Understand that handling of process residuals (waste/reject) is as critical as the water treatment itself.