

SECTOR: WATER RESOURCE MANAGEMENT

SPECIALISATION: MINE WATER MANAGEMENT

SHORT COURSE: EXTRACTING MEANING FROM GROUNDWATER QUALITY ANALYSES

SERVICE PROVIDER: DELTA-H & WATER BUSINESS ACADEMY

COURSE DURATION: 1 DAY

CPD ACCREDITATION (ECSA & SACNASP): 1 CPD Point

BACKGROUND

Mine water management is a broad topic covering a range of specialist sub-disciplines. In general, mine water management focus on groundwater, surface water and process water management within the mining environment, on the water management aspects associated with the varied mine residue deposits as well as on the regulations that govern the use, storage, management, etc. of the water resources.

OBJECTIVES

The main objective of the varied short courses on Mine Water Management is to improve 'water resource management across the mining environment' and to apply knowledge as well as implement preventative and mitigation programmes in an integrated manner.

The specific objectives of this short course are;

- To characterise, quantify and report the potential impacts of mine infrastructure on the groundwater quality on the mine site and in the vicinity of a mine.
- Optimising the management (incl. protection, monitoring and reporting thereof, etc.) of mining activities that impact on the groundwater quality on the mine site and in the vicinity of a mine.

SHORT COURSE CONTENT (with a specific focus on groundwater)

- What is mine water and what are the sources of mine water? Present conceptual models of typical sources (waste rock, pit backfill, tailings, ore stockpiles, etc.). Emphasise time-variant nature of water quality.
- What is required to characterise and predict mine water quality. Discuss mine project phases and appropriate levels of sampling and monitoring required for each phase.
- How does one obtain representative samples of mine water and mine material? Discuss how water from these sources is monitored and sampled, with case studies of common errors made. Introduce generally-accepted methods of sampling of solid material.
- How is mine water analysed? Follow a typical mine water sample through methods of analysis for common parameters. Conclude with real examples of laboratory reports of mine water samples and mine material samples.
- What is the acid generation potential of a material? Explain acid base accounting and interpretation of laboratory data
- How does one decide whether water is contaminated? Discuss comparison to guidelines and background quality. Develop source-pathway-receptor conceptual model. Use of Piper diagrams to identify geochemical facies.

TARGET AUDIENCE

This short course is intended for practitioners (i.e. professionals) with minimum 3 years' experience including;

- Water Resource Practitioners & Managers (eg. Engineering and Environmental staff that are associated with the mining and related consulting industries).
- Staff of Governmental Departments (eg. Department of Water and Sanitation, Department of Environmental Affairs etc.).
- Practitioners that are qualified in associated / related disciplines.

DELIVERY MODE

- Presentations (i.e. Lectures); Discussion of Case Studies and Group Discussions

ENTRY REQUIREMENTS

A recognised Bachelor's Degree at NQF Level 7 or above in an appropriate / relevant physical scientific discipline.

RECOGNITION of PRIOR LEARNING (RPL):

The provider recognises and will meet the national requirements for RPL. RPL applications will be assessed for the following:

- An applicant's informal learning or non-accredited formal studies are assessed as being equivalent to the prerequisite qualification.
- Work experience; a minimum of 3 years' experience within the industry in conjunction with the academic record of the candidate.
- The implementation of advanced standing in instances where the candidate does not meet the minimum entry requirements.
- Relevant modules / short courses that have been successfully completed at other accredited Higher Education Institutions where the modules / short courses are equivalent in content and standard.

CONTACT DETAILS

Short Course Facilitators:

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