LUT
Lappeenranta
University of Technology

iMineWa

Tekes

Workshop on Mine Water Management and Remediation
October 15th to 17th 2014

From Ground Water to Mine Water

Programme

October 15
- Introduction
- Historical Background
- Mining Methods
- Technical Aspects

October 16
- Water in Mines
- Mine Dewatering
- Mine Flooding

October 17
- Mine Water Geochemistry
- Flooding Prediction
- Mine Water Treatment

Costs

Regular	850 €	IMWA/PADRE members 650 €
Students	200 €	IMWA/PADRE members 150 €
iMineWa members		one free participation per partner

Theme

In the last decades, worldwide efforts have been conducted to understand acid mine drainage and its abatement. Yet, passive and active treatment methods as well as enhanced natural attenuation are still not fully understood and need further investigations. This workshop will introduce mine water issues in general and treatment methods for contaminated mine water and waste management within the EU legislative framework.

During the introduction, the participant will learn basic geochemical mechanisms that can be observed in mines and result in ground or surface water contamination. Simple case studies shall exemplify which environmental impacts are caused by mining and how the hydrogeological and ecological surroundings might be altered and can be limited. Usually, hydrogeologists and non-mining engineers are not familiar with the mining terms. This is also true for the situation underground, especially if it comes to historic mining and to acid mine drainage. Therefore, the first part of the workshop aims to provide a general understanding of the terms and conditions in a mining environment.

To work a mine on a medium or long term basis, the mine workings have to be kept dry. The most important mine pump types will be described and which drainage technologies might be necessary.

After mining ceases, the mine workings are usually flooded. To predict or calculate mine flooding, it is necessary to understand the hydrogeological situation on-site. Several theoretical methods and case studies will be described and discussed along with proper sampling technic.

To develop the most advantageous treatment strategy, the temporal and spatial development of mine flooding have to be understood. Similarly, it is necessary to understand the chemical development of mine flooding. Based on that data, a conceptual model and a treatment option can be planned. The last part of the workshop will give an introduction to mine water treatment.

Part of the workshop will focus on the waste characterization within the EU legislative framework.

About the lecturer

Prof. Dr. habil. **Christian Wolkersdorfer** has 24 years of professional experience. He is a mining and geothermal hydrogeologist specialized on mine water tracer tests, mine water geochemistry and remediation. Christian Wolkersdorfer currently holds two research chairs in South Africa and Finland: South African Research Chair for Acid Mine Drainage Treatment at Tshwane University of Technology in Pretoria and Finnish Distinguished Professor for Mine Water Management at Lappeenranta University of Technology in Mikkeli. He has been teaching hydrogeology, mining hydrology, and tracer hydrology at Ludwig-Maximilians-Universität Munich und Bergakademie Freiberg, Germany and within the AEG master course of Tübingen University. He held the Industrial Research Chair in Mine Water Remediation & Management at Cape Breton University, Nova Scotia, Canada. He received his Master's Degree and Ph.D. from Clausthal University, Germany and habilitated at Bergakademie Freiberg, Germany. A world leader in mine water remediation and management projects, Dr. Wolkersdorfer has conducted and initiated several projects related to mine water and hydrogeology in Canada, Germany, Austria, Slovenia, Brazil, the United Kingdom, South Africa, Finland and Turkey. Dr. Wolkersdorfer is also the Technical Editor for the Journal "Mine Water and the Environment" as well as the Secretary General of the International Mine Water Association (IMWA), the Industry-Academia coordinator for the Mine Water Division of WISA (Water Institute of Southern Africa) and he is a member of the Global Alliance.

Recommended Literature

- *Brown, M., Barley, B. & Wood, H.* (2002): Minewater Treatment Technology, Application and Policy. 500 p., London (IWA Publishing).
- *Geller, W., Schultze, M., Kleinmann, R. & Wolkersdorfer, C.* (2013): Acidic Pit Lakes – The Legacy of Coal and Metal Surface Mines. 525 p., Heidelberg (Springer).
- *Jambor, J. L., Blowes, D. W. & Ritchie, A. I. M.* (2003): Environmental Aspects of Mine Wastes. In: Raeside, R.: Short Course Series Volume 31. 430 p., Waterloo, Ontario (Mineralogical Association of Canada).
- *Wolkersdorfer, Ch.* (2008): Water Management at Abandoned Flooded Underground Mines – Fundamentals, Tracer Tests, Modelling, Water Treatment. 466 p., Heidelberg (Springer).
- *Younger, P. L., Banwart, S. A. & Hedin, R. S.* (2002): Mine Water Hydrology, Pollution, Remediation. 464 p., Dordrecht (Kluwer).

Registration

Registration is requested by e-mail until August 14th 2014. With the confirmation of your registration you will receive an invoice and further information.

Participant Cancellation

In the case of participant cancellation, full refund will be provided with written notification prior to August 14th 2014. Cancellation before October 15th will result in a 50% handling charge. There will be no refund after October 15th, 2014.

Venue

The workshop will take place at the Laboratory of Green Chemistry on the Mikkeli/Finland Campus of Lappeenranta University of Technology. Details will be provided after registration.

Accomodation

Accommodation and meals are not provided in this workshop. Both are the responsibility of the participant. We ask the participants to organise their own accommodation reservations.

Course organizer recommends three hotels in Mikkeli for your accommodation:

Sokos Hotel Vaakuna Mikkeli, at city center:
Address: Porrassalmenkatu 9, 50100 Mikkeli
E-mail: reception.vaakuna.mikkeli@sokoshotels.fi
Phone: +358 15 202 01
Website: http://www.sokoshotels.fi/en/

Cumulus Hotel Mikkeli, at city center:
Address: Mikonkatu 9, 50100 Mikkeli
E-mail: Sähköposti:mikkeli.cumulus@restel.fi
mikkeli.cumulus@restel.fi
Phone: +358 15 20 511
Website (in Finnish): http://www.cumulus.fi/hotellit/mikkeli/fi_FI/mikkeli/
Website: http://www.cumulus.fi/cumulus!/en_GB/

Hotel Uusikuu, about 1,5 km from city center:
Address: Raviradantie 13, 50100 Mikkeli
E-mail: hotelliuusikuu@esedu.fi
Phone: +358 15 221 5420
Website: http://www.uusikuu.fi/?q=en

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