

FATE AND REMEDIATION OF SUBSURFACE ORGANIC CONTAMINANTS

Starting January 21st, 2013

on line only



You will take part in the most famous organic contaminants course in the world, based on the graduate course offered by the University of Waterloo. Lectures can be attended live, in real time (webinar) or recorded to best suit your personal schedule. Participation will be facilitated through the use of forums for discussion of specific topics and homework exercises to be answered on line. All participants that fulfill 75% of the proposed tasks will receive a course certificate from ABAS, the Brazilian Association of Groundwater Professionals.

INTRODUCTION

This course presents the chemical, biological, and hydrogeological principles required to understand and remediate organic contaminants in the subsurface. In situ remedial technologies are discussed, emphasizing principles and field applications.

SCHEDULE

Lectures every Monday, beginning on **January 21** and finishing **April 22** (break on Feb 18). The course will be offered via webinar conferencing with the support of a *Moodle platform* for tutorial and evaluation. A detailed lecture & tutorial schedule will be made available soon.

MAIN LECTURERS

Jim Barker: Jim Barker will be the chief organizer of the course. He holds a PhD from the University of Waterloo where he has been a faculty member in the Department of Earth and Environmental Sciences since 1979. Jim's research has concentrated on the migration, fate, and remediation of organic contaminants in groundwater and he uses field studies at contaminated sites and at the research aquifer site at Canadian Forces Base Borden. Current research is focused on the critical evaluation of monitored natural attenuation and in situ groundwater remedial technologies.

Everton de Oliveira: Everton de Oliveira is a geologist, and holds a PhD from the University of Waterloo. He is a past president of ABAS (Brazilian Groundwater Association), adjunct professor of UNESP – Universidade Estadual Paulista and is a partner in the Hidroplan, a consulting company. He participates as an adjunct professor in the University of Waterloo and in courses offered by the Brazilian Petroleum Institute and CETESB (São Paulo State Environmental Agency). Everton has more than 20 years of experience in the assessment and remediation of contaminated sites.

Neil Thomson: Neil R. Thomson is a Professor and Chairman in the Department of Civil and Environmental Engineering at the University of Waterloo. Neil has over 20 years of research experience and expertise in the use of field investigations, laboratory experiments and numerical models to explore subsurface contaminant fate and remediation issues. Neil's current research interests are focused on: the environmental fate of contaminants in subsurface systems including immiscible liquids, vapours, and pathogens; the development and application of simulation tools; and the development and assessment of soil and ground water remediation technologies.

John Molson: John Molson is an Associate Professor at Université Laval, Department of Geology and Geological Engineering, where he holds a Canada Research Chair in Quantitative Hydrogeology of Fractured Porous Media. John has a Ph D from the University of Waterloo (1990). His interests include development and application of computer simulation models, such as BIONAPL, for interpreting physical and reactive transport processes in groundwater. His expertise includes modelling multi-phase flow, transport and remediation of organic contaminants, fractured systems, and 3D capture zones for water supply and groundwater protection.

Guest Lecturers: Special topics are planned as a bonus for participants. The schedule for special lectures will be available shortly.

COURSE TOPICS

- Fundamental processes governing the fate of organic contaminants in soil and aquifer systems. Emphasis on partitioning of organic chemicals between phases (dissolution, sorption and volatilization) within the hydrogeological context and with applications.
- The behaviour and remediation of Non-Aqueous-Phase-Liquids (both LNAPLs and DNAPLs) in the subsurface.
- Chemical transformations, including hydrolysis, redox reactions and kinetics.
- Biological processes and contaminant biotransformations. Field evidences of biotransformation.
- Bioaugmentation, (bio)sparging, (bio)venting, in-situ chemical oxidation, and permeable reactive barriers as remedial techniques. Novel technologies such as STAR (a smoldering technique) will also be presented.
- Isotopes applications in field studies of organic contaminants.
- Modeling of organic contaminant migration, fate and remediation.

PRICES

	Before December 10, 2012	After December 10, 2012
Independent	US\$1,100	US\$1,250
Members(*)	US\$1,000	US\$1,150
Students (**)	US\$900	US\$900

(*) members of ABAS, IAH, NGWA, AHLSUD

(**) stamped letter from your university proving your registration required

HOW TO REGISTER

1. Access the system through the link www.acquacon.com.br/intranet
2. At the top of the page, select your language of preference.
3. If you are already registered in the system, enter login (address) and password. If you are not registered, CLICK ON REGISTER.
4. Go to COURSE: FATE AND REMEDIATION OF SUBSURFACE ORGANIC CONTAMINANTS and click Registration. Follow the instructions.

PAYMENT

All registrations will be done according to the above instructions and payment must be done online using AMEX, MASTERCARD or VISA. No deposits, money transfer or other payment form will be accepted.