Program

Australian Groundwater School – Perth
Monday 4 December 2017

NATIONAL CENTRE FOR GROUNDWATER RESEARCH AND TRAINING

TIME		THEME/TOPIC	PRESENTERS
8.30am		**Registrations and Coffee**	
8.45am		**Welcome and Introduction**	
9.00am	**A**	**The Importance of Groundwater In Australia** • What is groundwater • Where is groundwater found? • The hydrologic cycle • What is hydrogeology and its history? • Australian groundwater facts and figures • Australian aquifer map. sedimentary basin/fractured province, inset on map	**Dr Sarah Bourke** *University of Western Australia*
10.00am	**B**	**Introduction to Hydrogeology** • Water table and capillary zone • Aquifers & aquitards	**Dr Sarah Bourke** *University of Western Australia*
11.30am		**Morning Tea**	
11.45am	**C**	**Introduction to Groundwater Hydraulics** • Groundwater flow systems • Storage in aquifers • Hydraulic Head • Physical & hydraulic parameters	**Dr Sarah Bourke** *University of Western Australia*
12.45pm		**Lunch**	
1.30pm	**D**	**Groundwater Hydraulics** • Groundwater flow equations • Borehole pumping test • Single borehole test • Lab measurements of hydraulic conductivity	**Dr Michael Teubner** *Consultant, MD Teubner Consulting*
3.00pm		**Afternoon Tea**	
3.15pm	**E**	**Drilling Methods and Bore Design** • Types and purposes of various bores • Drilling methods • Databases in Australia • Methods, variability & limitations of data collection	**Mr John McAvan** *JMDC*
4.15pm		**Networking Drinks @ Metro Bar (ground floor of Adina Apartments)**	
5:15pm		**End Day 1**	

Australian Groundwater School – Perth
Tuesday 5 December 2017

TIME		THEME/TOPIC	PRESENTERS
9.00am	**F**	**Groundwater Modelling** • What is a model and what is its purpose? • Modelling groundwater flow • Modelling process • Groundwater modeling codes **Groundwater Modelling Application** • Modelling guidelines • Limitations and pitfalls in modelling • Modelling case study • Management, regulatory issues	**Dr Michael Teubner,** *Consultant, MD* *Teubner Consulting*
11.00am		**Morning Tea**	
11.15am	**G** **(1)**	**Tutorial, Part 1** • Interpreting hydrographs • Developing groundwater contours • Borehole test for hydraulic conductivity • Contaminant transport	**Dr Michael Teubner,** *Consultant, MD* *Teubner Consulting*
1pm		**Lunch**	
1.45pm	**G** **(2)**	**Tutorial, Part 2** • Water budgeting • Estimating groundwater flow • Hydrostratigraphic conceptualisation	**Dr Michael Teubner,** *Consultant, MD* *Teubner Consulting*
3.15pm		**Afternoon Tea**	
3:30pm	**H** **(HI tab)**	**Geophysics** • Surface, airborne, borehole • Methods and data processing and interpretation • Hydrologic properties derived from geophysics	**Dr Michael Teubner,** *Consultant, MD* *Teubner Consulting*
4.30pm		**End Day 2**	

Australian Groundwater School – Perth
Wednesday 6 December 2017

TIME		THEME/TOPIC	PRESENTERS
9.00am	**J** (JK tab)	**Surface Water – Groundwater Interactions** • Introduction to surface water hydrology • Locations and modes of interaction between surface water and groundwater • Water balance, Human impacts • Recharge/discharge definitions and estimation	**Dr Sarah Bourke** *University of Western Australia*
10.00am	**L**	**Groundwater Replenishment for Public Water Supply** • Groundwater replenishment trial • Perth Groundwater replenishment stage 1 • Future groundwater replenishment options	**Ms Palenque Blair** *Water Corporation WA*
11.00am		**Morning Tea**	
11.15am	**M**	**Fractured Rock Aquifers** • Fractured rock provinces in Australia • Classification, Basic Characteristics • Groundwater flow • Locating and mapping fractures	**Mr Alan Puhalovich** *Golder Associates*
12.15pm	**N**	**Mining Hydrogeology** • Mine Dewatering • Dewatering Methods • Impacts of dewatering • Design of dewatering system	**Mr Alan Puhalovich** *Golder Associates*
1.15pm		**Lunch**	
2.00pm	**O**	**Groundwater Microbiology** • Introduction to microbiology • Pathogens in groundwater • Microbial metabolism in groundwater • Bioremediation	**Dr Geoffrey Puzon** *CSIRO*
3.00pm		**Afternoon Tea**	
3.15pm	**P** (PQ tab)	**Groundwater Contamination** • Introduction and definitions • Sources of contamination • Fate of contaminants in the sub surface • Groundwater remediation	**Mr John Rayner** *CSIRO*
4.15pm	**R**	**Salinity and Water Logging** • What is salinity and why is it a groundwater issue • Primary and secondary salinity & its sources • Dryland and Irrigation salinity, water logging • Impacts and management of salinity	**Dr Paul Raper** *Department of Agriculture and Food*
5.00pm		**End Day 3**	

Australian Groundwater School – Perth
Thursday 7 December 2017

TIME		THEME/TOPIC	PRESENTERS
9.00am	**S**	**Groundwater Chemistry** • Why study groundwater chemistry? • Physical and chemical composition of groundwater • Origin of solutes, evolution in groundwater • Field parameters	**Dr Shawan Dogramaci** *Rio Tinto*
10.00am	**T**	**Environmental Isotopes in Groundwater** • What are isotopes and their use? • Types of isotopes, Australian examples	**Dr Shawan Dogramaci** *Rio Tinto*
11.00am		**Morning Tea**	
11.15am	**U** (UV tab)	**Groundwater Dependent Ecosystems** • Introduction and definition • Types of GDEs • Hydrogeological framework • Methods and indicators used in the determination of GDEs • Level of dependency	**Mrs Kylie La Spina** *Department for Water*
12.15pm	**W**	**Groundwater Management** • What, why, when and how we manage GW? • Principles • Tools for groundwater management • Management issues • Climate change	**Mr Michael Hammond & Mrs Rebecca Palandri** *Department for Water*
1.15pm		**Lunch**	
2.00pm	**X** (XYZ tab)	**Groundwater Governance – Water Law** • Development of water resources law in Australia • Essential aspects of the current legal framework • Groundwater and water trading	**Professor Alex Gardner & Ms Natalie Brown** *University of Western Australia*
3.00pm		**Afternoon Tea**	
3.15pm	**X** (XYZ tab)	**Groundwater Governance – Case Studies**	**Professor Alex Gardner & Ms Natalie Brown** *University of Western Australia*
4.30pm		**End of course wrap up and evaluation**	
5.00pm		**End Day 4**	