

Program

Australian Groundwater School – Adelaide
 Flinders Uni, Victoria Square Campus
 Monday 16 April 2018 - Room 2.1 (Level 2)



NATIONAL CENTRE FOR
GROUNDWATER
 RESEARCH AND TRAINING

TIME		THEME/TOPIC	PRESENTERS
8.30am		Registrations and Coffee	
8.45am		Welcome and Introduction	
9.00am	1	The Importance of Groundwater In Australia <ul style="list-style-type: none"> • 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 • GDE's 	Dr Saskia Noorduijn <i>Postdoctoral Fellow, College of Science and Engineering, Flinders University</i>
10.00am	2	Introduction to Hydrogeology <ul style="list-style-type: none"> • Factors affecting groundwater • Introduction and examples of aquifer types • Water table and capillary zone • Aquifers & aquitards 	Dr Saskia Noorduijn <i>Postdoctoral Fellow, College of Science and Engineering, Flinders University</i>
11.45am		Morning Tea	
11.45am	3	Introduction to Groundwater Hydraulics <ul style="list-style-type: none"> • Groundwater flow systems • Storage in aquifers • Hydraulic Head • Physical & hydraulic parameters 	Dr Dylan Irvine <i>Lecturer, College of Science and Engineering, Flinders University</i>
12.45pm		Lunch	
1.45pm	4	Surface Water – Groundwater Interactions <ul style="list-style-type: none"> • 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 Dylan Irvine <i>Lecturer, College of Science and Engineering, Flinders University</i>
2.45pm		Afternoon Tea	
3.00pm	5	Practical session	Dr Dylan Irvine <i>Lecturer, College of Science and Engineering, Flinders University</i>
5.15pm		Networking Drinks – Treasury: 2 Flinders St, Adelaide SA 5000	
6.15pm		End Day 1	

Australian Groundwater School – Adelaide (Flinders Uni Vic Square)
 Tuesday 17 April 2018 - Room 2.1 (Level 2)

TIME		THEME/TOPIC	PRESENTERS
9.00am	6	Groundwater Hydraulics <ul style="list-style-type: none"> • Groundwater flow equations • Borehole pumping tests • Single borehole test • Lab measurements of hydraulic conductivity 	Dr Michael Teubner, <i>Consultant,</i> <i>MD Teubner Consulting</i>
11.00am		Morning Tea	
11.15am	7	Tutorial <ul style="list-style-type: none"> • Pumping to test an aquifer- a simple example • Groundwater Budget 	Dr Michael Teubner, <i>Consultant,</i> <i>MD Teubner Consulting</i>
1.15am		Lunch	
1.45pm	7	Tutorial <ul style="list-style-type: none"> • Unconfined groundwater contours 	Dr Michael Teubner, <i>Consultant,</i> <i>MD Teubner Consulting</i>
3.00pm		Afternoon Tea	
3.15pm	8	Fractured Rock Aquifers <ul style="list-style-type: none"> • Fractured rock provinces in Australia • Classification • Basic Characteristics • Groundwater flow • Locating and mapping fractures 	Prof Peter Cook <i>Professional Research</i> <i>Fellow, College of</i> <i>Science and</i> <i>Engineering,</i> <i>Flinders University</i>
4.15pm	9	Mining Hydrogeology <ul style="list-style-type: none"> • Mine Dewatering • Dewatering Methods • Impacts of dewatering • Design of dewatering system 	Mr Don Armstrong <i>Consultant, Wallbridge</i> <i>Gilbert Aztec</i>
5.15pm		End Day 2	

Australian Groundwater School – Adelaide
 Wednesday 18 April 2018 - Room 2.1 (Level 2)

FIELD TRIP

TIME	THEME/TOPIC	PRESENTERS
8.45am	Depart from 182 Victoria Square, Adelaide Field trip location - Brukunga Mine Office	Dr Saskia Noorduijn <i>Postdoctoral Fellow, College of Science and Engineering, Flinders University</i>
10:00 am	Sign in at Brukunga Mine Office (Nairne)	
10:00 am	Short presentation by Department of Sate Development: <ul style="list-style-type: none"> • History, • Current Acid WTP operation, AMD & WQ monitoring, • Water diversion & Rehabilitation, • Site map & handouts 	Department of Sate Development
11.00am	Site tour: <ul style="list-style-type: none"> • Acid WTP, Tailings Storage Facility, acid & clarifying ponds, • North & South open pits & Waste Rock Dumps, • Retention dam, Diversion channel/pipe, Creeks & Water monitoring wells 	Department of Sate Development
12.30pm	Sign out & departure	
12:45pm	Lunch – Millie’s bakery (Nairne)	
1.45pm	Field site in the Adelaide Hills	Dr Saskia Noorduijn <i>Postdoctoral Fellow, College of Science and Engineering, Flinders University</i>
3.15pm	Bus departs back to Flinders University Victoria Square	
4.30pm	Bus to arrive back in Adelaide	

Australian Groundwater School – Adelaide (Flinders Uni Vic Square)
 Thursday 19 April 2018 - Room 2.1 (Level 2)

TIME		THEME/TOPIC	PRESENTERS
9.00am	10	Groundwater Modelling <ul style="list-style-type: none"> • What is a model and what is its purpose? • Modelling groundwater flow • Modelling process • Groundwater modeling codes 	Dr. Michael Teubner, <i>Consultant, MD Teubner Consulting</i>
10.00am	10	Groundwater Modelling Application <ul style="list-style-type: none"> • Modelling guidelines • Limitations and pitfalls in modelling • Modelling case study • Management, regulatory issues 	Dr. Michael Teubner, <i>Consultant, MD Teubner Consulting</i>
11.00am		Morning Tea	
11.15am	11	Groundwater Chemistry <ul style="list-style-type: none"> • Why study groundwater chemistry? • Physical and chemical composition of GW • Origin of solutes, evolution in groundwater • Field parameters 	Dr Ilka Wallis, <i>Lecturer, College of Science and Engineering, Flinders University</i>
12.15pm	12	Environmental Isotopes in Groundwater <ul style="list-style-type: none"> • What are isotopes and their use? • Types of isotopes • Australian examples 	Dr Ilka Wallis, <i>Lecturer, College of Science and Engineering, Flinders University</i>
1.15pm		Lunch	
2.00pm	13	Groundwater Chemistry / Isotopes <ul style="list-style-type: none"> • Practical session 	Dr Ilka Wallis, <i>Lecturer, College of Science and Engineering, Flinders University</i>
3.00pm		Afternoon Tea	
3.15pm	14	Groundwater Microbiology <ul style="list-style-type: none"> • Introduction to microbiology • Pathogens in groundwater • Microbial metabolism in groundwater • Bioremediation 	Prof Howard Fallowfield, <i>Professor Flinders University</i>
4.15pm	15	Groundwater Contamination and Remediation <ul style="list-style-type: none"> • Introduction and definitions • Sources of contamination • Fate of contaminants in the sub surface • Groundwater remediation 	Prof Howard Fallowfield, <i>Professor Flinders University</i>
5.00pm		End Day 3	

Australian Groundwater School – Adelaide (Flinders Uni Vic Square)
 Friday 20 April 2018 - Room 2.1 (Level 2)

TIME		THEME/TOPIC	PRESENTERS
9.00am	16	Drilling Methods and Bore Design <ul style="list-style-type: none"> Types and purposes of various bores Drilling methods Databases in Australia Methods, variability & limitations of data collection 	Mr Adrian Costar <i>Hydrogeologist/Geophysicist</i> <i>Department of Environment, Water and Natural Resources</i>
10.00am	17	Managed Aquifer Recharge <ul style="list-style-type: none"> What is MAR and what is it for? MAR structure types Water sources to MAR 	Dr Declan Page <i>Group Leader – Environmental Contaminant Mitigation and Biotechnology</i> <i>CSIRO</i>
11.00am		Morning Tea	
11.15am	18	Managed Aquifer Recharge <ul style="list-style-type: none"> The Australian Guidelines for Water Recycling: Managed Aquifer Recharge Risk-based water quality assessment of MAR schemes Managing human health and Environmental risks Worked examples and practical session 	Dr Declan Page <i>Group Leader – Environmental Contaminant Mitigation and Biotechnology</i> <i>CSIRO</i>
12.15pm	19	Groundwater Governance – Water Law <ul style="list-style-type: none"> Development of water resources law in Australia Essential aspects of the current legal framework Groundwater and water trading 	Mr Steve Barnett <i>Principal Hydrogeologist,</i> <i>The Department of Environment, Water and Natural Resources</i>
1.15pm		Lunch	
2.00pm	19	Groundwater Governance – Water Law <ul style="list-style-type: none"> Case studies / practical session 	Mr Steve Barnett <i>Principal Hydrogeologist,</i> <i>The Department of Environment, Water and Natural Resources</i>
3.00pm		Afternoon Tea	
4.15pm	20	Groundwater Management <ul style="list-style-type: none"> What, why, when and how we manage GW? Principles Tools for groundwater management Management issues Climate change Salinity issues 	Mr Steve Barnett <i>Principal Hydrogeologist,</i> <i>The Department of Environment, Water and Natural Resources</i>
4.20pm		Wrap-up	
4.30pm		End Day 4	