

PUBLICATIONS – GROUNDWATER RELATED

UNSW Connected Waters Initiative
and
UNSW Water Research Laboratory

December 2008

2008.....	2
Journal Articles.....	2
Book Chapters	2
Technical Reports.....	2
Conference Papers	3
General Articles	3
Technical Posters	3
2007	4
Journal Articles.....	4
Technical Reports.....	4
Research Reports.....	4
Conference Papers	4
Technical Posters	5
2006.....	6
Journal articles	6
Technical Reports.....	6
Conference Papers	6
General Articles	7
2005.....	8
Journal Articles.....	8
Technical Reports.....	8
Research Reports.....	8
Conference Papers	8
2004.....	10
Journal Articles.....	10
Technical Reports.....	10
Conference Papers	10
General Articles	11
2003.....	12
Journal Articles.....	12
Technical Reports.....	12
Conference Papers	12
Technical Posters	13
2002.....	14
Journal Articles.....	14
Technical Reports.....	14
Research Reports.....	14
Conference Papers	14
Technical Posters	14
2001	15
Journal Articles.....	15

Book Chapters	15
Technical Reports.....	15
Conference Papers	15
Technical Posters	16
2000	17
Technical Reports.....	17
Conference Papers	17
1999	18
Journal Articles.....	18
Technical Reports.....	18
Research Reports.....	18
Conference Papers	18
1998	19
Journal Papers	19
Book Chapters	19
Technical Reports.....	19
Research Reports.....	20
Conference Papers	20
1997	22
Journal Articles.....	22
Technical Reports.....	22
Conference Papers	22
1996	24
Journal Articles.....	24
Research Reports.....	24
1995	25
Technical Reports.....	25
1994	26
Journal Articles.....	26
Technical Reports.....	26
Conference Papers	26
1993	27
Journal Articles.....	27
Technical Reports.....	27
Conference Papers	27

*Selected examples of commissioned WRL Technical Reports are listed. WRL does not release these reports without permission of our clients in government and industry. Commissioned projects are completed by professional personnel and are managed in accordance with WRL certification for ISO9001:2000

2008

Journal Articles

- Acworth, I. and Timms, W (in press), Evidence for connected water processes through smectite-dominated clays at Breeza, New South Wales. *Australian Journal of Earth Sciences* 56:71-86.
- Acworth RI & T. Brain (2008) Calculation of barometric efficiency in shallow piezometers using water levels, atmospheric and earth tide data. *Hydrogeology Journal*, 16:1469-1481. Published on-line 9 July 2008 DOI 10.1007/s10040-008-0333-y
- Anderson DJ, Timms WA, Glamore WC (in press). Optimising subsurface well design for coastal desalination water harvesting. *Australian Journal of Earth Sciences*, 56:53-60.
- Antonellini M, Mollema P, Giambastiani BMS, Bishop K, Caruso L, Minchio A, Pellegrini L, Sabia M., Ulazzi E., Gabbianelli G (2008). Salt water intrusion in the coastal aquifer of the Southern Po Plain, Italy. *Hydrogeology Journal*, 16(8):1541-1556. Published on-line 21 June 2008, DOI 10.1007/s10040-008-0319-9.
- Jørgensen N.O., Andersen M.S., & Engesgaard P. (2008): Investigation of a dynamic seawater intrusion event using strontium isotopes ($^{87}\text{Sr}/^{86}\text{Sr}$). *Journal of Hydrology*, 348:257-269 doi:10.1016/j.jhydrol.2007.10.001.
- Timms, W.A., Hendry, M.J. (2008). Long term reactive solute transport in an aquitard using a centrifuge model. *Ground Water*, 46(4):616-628. Published article online: 2-Apr-2008, doi: 10.1111/j.1745-6584.2008.00441.x
- Timms, W.A., Hendry, M.J., Muise, J., Kerrich, R. (Accepted Dec08). Coupling centrifuge modelling and laser ablation ICP-MS to determine contaminant migration in clays. *Environmental Science & Technology*.

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- Giambastiani, BMS, Pauline M, Antoneelini M. (2008) Groundwater Management in the Northern Adriatic Coast (Ravenna, Italy): new strategies to protect the coastal aquifer from saltwater intrusion. In: 'Groundwater: Modelling, Management and Contamination; NOVA Publishers Ed. https://www.novapublishers.com/catalog/product_info.php?products_id=7528
- Postma D, Kjølter C., Andersen MS, de Melo T. & Gauss I., (2008): Geochemical modelling of processes controlling baseline compositions of groundwater. in: Natural Groundwater Quality Eds.: Edmunds W.M. & Shand P., Blackwell Publ. ISBN: 9781405156752

Technical Reports

- Carley JT, M J Blacka,WA Timms, A Mariani and R J Cox (2008). Coastal Processes, Coastal Hazards, Climate Change And Adaptive Responses For Preparation Of a Coastal Management Strategy For Clarence City, Tasmania. UNSW Water Research Laboratory Technical Report 2008/04.
- Cunningham, I., Timms, W., (2008). Hat Head effluent disposal scheme – ongoing groundwater monitoring results. UNSW Water Research Laboratory Technical Report 2008/07.
- Timms, W., Anderson, D., Schwarz, M, Wasko, C. (2008). WRL Technical Report 2008/26.
- Timms, W., Badenhop, A, Cunningham I., Wasko, C. (2008). Groundwater monitoring for Lake Conjola STP discharge – Baseline report. UNSW Water Research Laboratory Technical Report 2008/15
- Timms, W., Anderson, D., Wasko, C (2008). Groundwater notes for Cotton Growing Regions. UNSW Water Research Laboratory Report 232. Includes CD-ROM.
- Timms, W., Anderson, D (2008). Groundwater Education Workshop Series – Workshop Materials. Includes CD-ROM. Published October 2008 by Sydney Coastal Councils Group and the UNSW Water Research Laboratory.
- Timms, WA, Cunningham, IL, Schwarz, M, Wasko, C. (2008). Hydrogeological investigation of the fate of salt mobilised under dryland cropping on the Cryon Plain, North Western NSW- Final Report. UNSW Water Research Laboratory Technical Report 2008/10. Interim Report to Department of

*Selected examples of commissioned WRL Technical Reports are listed. WRL does not release these reports without permission of our clients in government and industry. Commissioned projects are completed by professional personnel and are managed in accordance with WRL certification for ISO9001:2000

Primary Industries (Agriculture) "National Action Plan Project – Mobilisation of 100 tons/ha of salt under dryland cropping".

Conference Papers

- Andersen M.S., Meredith K., Timms W. & Acworth R.I. (2008): Investigation of $\delta^{18}\text{O}$ and $\delta^2\text{H}$ in the Namoi River catchment – elucidating recharge sources and the extent of surface water/groundwater interaction. Invited paper to the *Annual IAH conference in Toyama, Japan 2008*.
- Greve, A.K., Acworth, R.I., Kelly, B.F.J, Monitoring Soil Moisture Changes with 3D Resistivity Tomography, AGU, 89(23), *Western Pacific AGU meeting, Cairns 28th of July – 1st of August 2008*, Abstract H43A-04.
- Greve, A.K., Acworth, R.I., Monitoring depth of soil cracking in irrigated fields based on directional dependence of electrical current flow, XXXVI IAH Congress 2008 Toyama.
- Patterson J., Andersen M.S. & Acworth R.I. (2008): Development of an integrated conceptual model of a connected surface water-groundwater system using a hydrochemical approach at Maules Creek, NSW, Australia. Submitted to the *Annual IAH conference in Toyama, Japan 2008*.
AWARDED IAH-NSW CONGRESS SPONSORSHIP
- Rančići, A., Acworth, R.I., (2008). The relationship between the 1947 shift in climate and the expansion of dryland salinity on the western slopes of the Great Dividing Range in NSW'. In "*Salinity, water, society – global issues, local action*". Proceedings of the 2nd International Salinity forum, 31 March-3 April 2008, Adelaide.
- Rau, G., Andersen, M.S., McCallum, A., Acworth, R.I., Field and Numerical Investigation of Surface Water Groundwater Exchange Using Natural Heat as a Tracer - Deviation From the 1-D Flow Assumption, AGU, 89(23), *Western Pacific AGU meeting, Cairns 28th of July – 1st of August 2008*, Abstract H25B-03.
- Timms, W; Andersen, M.S. and Carley, J (2008). Fresh-saline groundwater boundaries below coastlines – potential impacts of climate change. Coast To Coast Crossing Boundaries Conference, 18-22 August, 2008, Darwin. Abstract only.

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- Greve, A.K, R.I. Acworth and B.F.J Kelly (2008). Design, Construction and Testing of 3D Borehole Resistivity Tomography Equipment to Measure Deep Drainage and Soil Moisture Changes. Report of UNSW CWI, March 2008. Available at
http://www.connectedwaters.unsw.edu.au/downloads/CWI_Flagship_Project_4_3d_tomography.pdf
- Kelly, B., I. Acworth, B. Giambastiani, M.S. Andersen, A. Greve and A. McCallum (2008). 3D modelling. Australian Landcare Magazine Edition 320, March 2008.
- Timms, W (2008). Uncertainty and groundwater sustainable yield. *Irrigation Australia Journal*, Autumn 2008, 24(3): 10-11.
- Rau G., A. McCallum, M.S. Andersen and R.I. Acworth (2008). The Use of Natural Heat as a Tracer to Quantify Surface Water and Groundwater Interactions: Maules Creek, New South Wales, Australia. University of New South Wales Connected Waters Initiative, March 2008. Available at
http://www.connectedwaters.unsw.edu.au/downloads/CWI_Flagship_Project_1.pdf

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- Greve, A, R.I Acworth, B.F.J Kelly (2008). Monitoring water movement in cracking clay soils. University of NSW, Water Research Laboratory.

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- Acworth, RI (2007). Measurements of vertical environmental-head profiles in unconfined sand aquifers using a multi-channel manometer board. *Hydrogeology Journal*. DOI 10.1007/s10040-007-0178-09.
- Acworth RI, Hughes, CE and Turner, IL (2007). A radioisotope tracer investigation to determine the direction of groundwater movement adjacent to a tidal creek during spring and neap tides. *Hydrogeology Journal*, Vol. 15, Number 2: 281 - 296.
- Andersen M.S., Baron L., Gudbjerg J., Chapellier D., Jakobsen R., Gregersen J. & Postma D. (2007): Discharge of nitrate-containing groundwater into a coastal marine environment. *Journal of Hydrology* (doi.10.1016/j.jhydrol.2006.12.023). 336, p 98-114.

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- Timms, WA, Cunningham, IL, Schwarz, M (2007). NAP Project - Mobilization of 100 tonnes /hectare of salt under cropping in North-West NSW, Interim Report. UNSW Water Research Laboratory Technical Report 2007/38. Report to Department of Primary Industries (Agriculture).
- Timms, WA, Cunningham, I and Carley, J 2007. Yamba Hill Groundwater Level Monitoring Assessment to May-2007. UNSW Water Research Laboratory Technical Report 2007/32. Report to Clarence Valley Council, September, 2007.
- Timms, WA, Cunningham, I , and Badenhop, A. 2007. Feasibility assessment for Managed Aquifer Recharge - Joynton Avenue Re-Development Site - Stages 1 and 2. UNSW Water Research Laboratory Technical Report 2007/25. Report to City of Sydney, August, 2007.
- Timms, WA, Cunningham, I , Glamore, W and Schwarz, M. 2007. Stormwater harvesting for irrigation and ornamental ponds. UNSW Water Research Laboratory Technical Report 2007/31. Report to Rockdale City Council, October, 2007.
- Timms, WA, Cunningham, IL, Badenhop AM (2007). Assessment of groundwater supply feasibility for Strathfield Park. UNSW Water Research Laboratory Technical Report 2007/10. Report to Strathfield City Council.
- Timms, WA (2007). Independent Expert Review of Proposed Groundwater Investigations and monitoring, Regional Exploration Phase of Caroon Coal Project. UNSW Water Research Laboratory Technical Report 2007/07. Report to Caroon Coal Consultative Committee, February, 2007.

Research Reports

- Andersen M.S. & Acworth R.I. (2007): Geochemical and geophysical sampling campaign, Maules Creek – Data Report for 2006. UNSW Research Report 229 prepared for the Cotton-CRC. Issued July, 2007.

Conference Papers

- Andersen M.S. & Acworth R.I. (2007): Surface water groundwater interactions in the Maules Creek catchment. Namoi Valley, NSW, Australia - hydrogeological and hydrochemical investigations. Presentation at the annual Cotton Science Conference, Narrabri, August, 2007.
- Andersen M.S. & Acworth R.I. (2007): Surface water groundwater interactions in an ephemeral creek in the Namoi Valley, NSW, Australia - Controls by geology and groundwater abstraction. Proceedings of the XXXV IAH Congress "Groundwater and Ecosystems", Lisbon. September, 2007.

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- Andersen M.S. & Acworth R.I. (2007): Hydrochemical investigations of surface water groundwater interactions in a sub-catchment in the Namoi Valley, NSW, Australia. Proceedings of the XXXV IAH Congress "Groundwater and Ecosystems", Lisbon. September, 2007.
- Andersen M.S. & Jakobsen R. (2007): From the aquifer to the sea - mapping and quantifying groundwater discharge and nitrate flux and transformations - a review of methods. GQ07: Securing Groundwater Quality in Urban and Industrial Environments, Proc. 6th International Groundwater Quality Conference, Fremantle, Western Australia, 2-7 December 2007.
- Andersen M.S., Jakobsen R., Nyvang V., Christensen F.D., Engesgaard P. & Postma D. (2007): Density driven seawater plumes in a shallow aquifer caused by a flooding event - Field observations, consequences for geochemical reactions and potentials for remediation schemes. GQ07: Securing Groundwater Quality in Urban and Industrial Environments, Proc. 6th International Groundwater Quality Conference, Fremantle, Western Australia, 2-7 December 2007.
- Cunningham, IL, Timms, WA, Badenhop, AM (2007). Optimising desalination feed water quality using subsurface intakes. GQ07: Securing Groundwater Quality in Urban and Industrial Environments (Proc. 6th International Groundwater Quality Conference held in Fremantle, Western Australia, 2-7 December 2007). IAHS Publ. no. XXX, 2008.
- Postma D., Andersen M.S. & Jakobsen R. (2007): The fate of groundwater nitrate in the coastal zone. Proceedings of the XXXV IAH Congress "Groundwater and Ecosystems", Lisbon. September, 2007.
- Spencer, J., Timms, W., Carley, J., Speechley, L., Walker, B. (2007). Living on the edge- investigating landslide risk in a coastal community. In: The Tide is High. Proceedings of 16th NSW Coastal Conference, 7-9 November, 2007, Yamba. CD sponsored by Clarence Valley Council.
- Timms, W. (2007). Reactive contaminant transport in clay aquitards. Presentation to UTS-UNSW Hydrogeology Over the Years Symposium. 20 July, 2007.
- Timms, W., Acworth, I., Turner, I (2007). Interactions between groundwater and artificial ponds in the northern Botany aquifer, Sydney, Australia. In: Riberio, L, Chambel, A., Condesso de Melo MT (Eds). Groundwater and Ecosystems. Proceedings of International Association of Hydrogeologists XXXV Congress, Groundwater and Ecosystems, 17-21 September, 2007, Lisbon, Portugal. ISBN 978-989-95297-3-1
- Timms, W., Acworth, I (2007). Groundwater resources and potential for managed aquifer recharge, North-Eastern Botany sands, Sydney, Sydney. In: Proceedings of OzWater07, 4-7 March 2007, Sydney. CD published by Australian Water Association, ISBN 987-0-908255-67-2.
- Timms W, Acworth I, Badenhop A (2007). Managed aquifer recharge in the Botany sand aquifer - part of the treatment train for water reuse?. In: Khan S, Stuetz R, Anderson J (Eds) Water Reuse and Recycling 2007. Proceedings of the 3rd AWA Water Reuse and Recycling Conference (REUSE07), Sydney, Australia, 16-18 July 2007, Published by UNSW, ISBN 978 0 7334 2517 2, pp476-485.
- Timms, W., Anderson, D., Badenhop, A., Cunningham, I (2007). Nitrate sources, sinks & significance in aquifers. Invited presentation to AWA Water and Health workshop, 24 May 2007, Sydney.
- Timms, W., Miller, B. (2007). Seawater intakes through aquifers. Invited presentation to AWA DEBOOT Desalination Workshops. 13-14 September in Adelaide, 16-17 September in Sydney.

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- Conroy, A., Timms, W and Acworth, RI, (2007). Managed Aquifer Recharge in the Botany Aquifer. Cunningham, I, W Timms and A Badenhop (2007). Optimising desalination feed water quality using subsurface intakes. University of NSW, Water Research Laboratory. Poster for GQ07 in Perth, December, 2007.
- Greve, A (2007). Shrinkage Cracks and Salt Leaching in Swelling Soils Coleambally Irrigation Area, NSW. University of NSW, Water Research Laboratory. Poster dated July, 2007.

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Timms, W., Hendry, M.J. (2006). Quantifying the impact of ion exchange on long term reactive solute transport in clay till using centrifugation and geochemical modelling. *Journal of Hydrology*- online doi 10.1006/j.hydrol.2006.06.25.

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Allen, D., and Kelly, B. (2006) A Scoping Study on River Flow Measurements for the Cotton Catchment Communities CRC: Part B River Flow Measurement Technical Methods, University of Technology, Sydney - National Center for Groundwater Management Report, NCGM 2006/5A, 37 pages.

Kelly, B., Merrick, N.P., Dent, B., Milne-Home, W. and Yates, D. (2006) A Scoping Study on Groundwater Knowledge and Gaps in the Namoi Catchment Management Area for the Cotton Catchment Communities CRC, University of Technology, Sydney - National Center for Groundwater Management Report, NCGM 2006/6, 77 pages.

Kelly, B., Allen, D., and Ball, J. (2006) A Scoping Study on River Flow Measurements for the Cotton Catchment Communities CRC: Part A Overview and Research Priorities, University of Technology, Sydney - National Center for Groundwater Management Report, NCGM 2006/5A, 23 pages.

Timms, W., Acworth, I., Badenhop, A., Merrick, N. (2006). Pre-feasibility assessment of managed aquifer recharge in the Botany aquifer., UNSW Water Research Laboratory Technical Report 2006/33.

Timms, W., Miller B, Wyllie S, Badenhop A, (2006). Detailed concept design for beach bore intakes and brine discharge to ocean, Temporary Desalination Plants, Wyong Area, UNSW Water Research Laboratory Technical Report 2006/19.

Timms, W. (2006). Groundwater monitoring program design - Lake Conjola Regional Sewerage Scheme, UNSW Water Research Laboratory Technical Report 2006/12.

Timms, W. and Badenhop, A., (2006). Bungendore Regional Groundwater Flow Model - Historic Rainfall Variability and Uncertainty Analysis, UNSW Water Research Laboratory 2006/02.

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Andersen, M.S., Postma, D., Jakobsen, R., Baron, L., Chapellier, D. & Gregersen, J. (2006). Mapping groundwater discharge and assessing the attenuation of groundwater nitrate at a site in the Wadden Sea. In: *Monitoring and Assessment in the Wadden Sea. Proceedings from the 11. Scientific Wadden Sea Symposium, Esbjerg, Denmark, 4 - 8 April, 2005* (Laursen, K. Ed.). NERI Technical Report No. 573, pp. 73-81.

Andersen M.S., Christensen F.D., Engesgaard P., & Jakobsen R. (2006). Density driven seawater plumes in a shallow aquifer caused by a flooding event - Field observations and numerical modeling. 1st SWIM-SWICA, 19th Salt Water Intrusion Meeting & 3rd Salt Water Intrusion in Coastal Aquifers Meeting - Cagliari, Chia Laguna, Italy, September 24-29, 2006.

Andersen M.S., Acworth R.I. (2006). Preliminary investigations of surface-water groundwater interactions in the Maules Creek catchment, Namoi Valley, NSW, Australia. Joint Congress of: 9th Australasian Environmental Isotope Conference and 2nd Australasian Hydrogeology Research Conference Adelaide, South Australia, Australia 13-15, December 2006.

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- Badenhop, A. and Timms, W., (2006). Developing sustainable groundwater supplies for irrigating parks, 1st Australian Young Water Professionals Conference, UNSW, Sydney, February 15-17, Paper 3.13, Online at <http://www.ywp.org.au/proceedings.html>.
- Rančići, A., Acworth, R.I., Kathuria, A., Salas, G., Johnston, B. (2006). Effect of rainfall on groundwater trends over the past century in fractured rocks of the New England Fold Belt in the Namoi catchment, NSW. In *"Does the Science Hold Water?"*. Proceedings of the 10th Murray-Darling Basin Groundwater Workshop, 18-20 September, 2006, Canberra.
- Timms, W. and Acworth, R., (2006). Rethinking a conceptual model: advective versus diffusive chloride flux in a low permeability clay sequence., International Association of Hydrogeologists, Congress, Dijon, France Aquifer Systems Management, 30 May - 1 June, 2006.
- Timms, W., Hendry, J. (2006). Chromatographic separation of solutes in a clay-rich aquitard due to cation exchange during salinization. 2nd Australasian Hydrogeology Research Conference, Adelaide, 13-15th December 2006.
- Timms, W. and Acworth, I., (2006). Aquifers and aquitards below the Liverpool Plains, In: Coal Mining and the Liverpool Plains, Plains Talk, Number 33, June 2006, Published by The Liverpool Plains Land Management Committee, pp 6-7.

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- Timms, W. (2006). Desalination plant supply matched to coastal geological conditions. *Engineers Australia*, February: 46-47.

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- Acworth, R. I., Young, R. & Bernardi, T. (2005). Monitoring soil moisture status in a black Vertosol on the Liverpool Plains, NSW, using a combination of neutron scattering and electrical imaging methods. *Australian Journal of Soil Research* 43, 105-117. DOI 10.1071/SRO4064.
- Timms, W. & Acworth, R. (2005). Propagation of porewater pressure change through thick clay sequences: An example from the Yarramanbah site, Liverpool Plains, New South Wales. *Hydrogeology Journal*, published on-line 14/6/05. DOI: 10.1007/s10040-005-0436-7.

Technical Reports

- Anderson D, Glamore W & Frazer A (2005). Three-Dimensional Modelling of Groundwater Extraction via Lateral Wells at Lakes Beach NSW. UNSW Water Research Laboratory Technical Report 2005/01.
- Frazer, A., Timms, W. and Ball, J.E., (2005). Stormwater pollution hotspots along major roads, Upper Parramatta River Catchment - Summary and Recommendations, UNSW Water Research Laboratory Technical Report 2005/18.
- Glamore, W., Anderson, D., Timms, W., Pells, S. and Badenhop, A., (2005). Iluka Sewerage Scheme - Detailed Concept Design of an Aquifer Injection Scheme. UNSW Water Research Laboratory Technical Report 2005/27.
- Glamore, W., Timms, W. and Anderson, D., (2005). Iluka Aquifer Injection Scheme - Plan of Management. UNSW Water Research Laboratory Technical Report 2005/31.
- Miller B, Pells S & Timms W (2005). Physical Modelling of Desalination Brine Outlet, Perth. UNSW Water Research Laboratory Technical Report 2005/20
- Timms W & Badenhop A (2005). Bungendore Regional Groundwater Flow Model. UNSW Water Research Laboratory Technical Report 2005/15.
- Timms, W. and Badenhop, A., (2005). Darling Point Groundwater Supply Development, UNSW Water Research Laboratory Technical Report 2005/30.
- Timms, W. and Pells, S.,(2005). Yamba Hill Groundwater Level Monitoring, UNSW Water Research Laboratory 2005/34.

Research Reports

- Smithson A. & Acworth R.I. (2005). An investigation of unconsolidated sedimentary units and their role in the development of salinity in the Snake Gully Catchment, Central New South Wales. *Water Research Laboratory Research Report No. 214.*

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- Acworth RI & Kelly BFJ (2005) Time lapse electrical resistivity imaging to detect water movement beneath irrigated crops. In Acworth RI, Macky G and Merrick N (Editors) *Where Waters Meet: Proceedings of the NZHS-IAH-NZSSS 2005 Conference*, Auckland, 29 November - 1 December 2005. Publisher: New Zealand Hydrological Society, PO Box 12300, Wellington, NZ. ISBN: 0-473-10627-2
- Anderson, D. J, Timms, W.A. and Glamore, W.C. Optimising Subsurface Well Design for Coastal Desalination Water Harvesting. NZHS-IAH-NZSSS Auckland 2005 Conference, November 29th - December 1st 2005, Auckland, New Zealand. Published by the New Zealand Hydrological Society, ISBN 0-473-10627-2.

- Anderson, D., Timms, W. and Glamore, W., 2005. Design of subsurface well intakes for coastal desalination, IAH05 Where waters meet, 28 November-2nd December, Auckland, New Zealand. Published by the New Zealand Hydrological Society, ISBN 0-473-10627-2.
- Butt, T., Russell, P., Turner, I.L., Miles, J. and Masselink, G., 2005. The variation under different conditions of the influence of in-exfiltration on swash-zone sediment transport. Coastal Engineering 2004, Proceedings of the 29th International Conference, Vol. 3, 2377-2389, World Scientific Publishing Co, New Jersey. ISBN:981-256-995-2.
- Glamore, W. and Indraratna, B. (2005) Tidal Forcing Groundwater Dynamics in a Restored Coastal Wetland: Implications of Saline Intrusion. Proceedings of the NZHS-IAH-NZSSS 2005 Conference, Auckland, 29 November - 1 December 2005. Where waters meet, Eds. (Acworth I, Macky G, Merrick N). CD Published by the New Zealand Hydrological Society, ISBN 0-473-10627-2.
- Glamore, W. and Indraratna, B. (2005) A Multi-Stage Management Strategy for Restoring Tidal Flushing. Proceeding of the 17th Coasts and Ports Conference, September 21-24 2005, Adelaide, Australia. Published by the Institute of Engineers Australia, ISBN 0-646-45130-8.
- Glamore, W. (2005) Restoring tidal wetlands in Australia; Developing multi-stage methods for acid sulphate soil terrains. Proceedings of the 2005 Estuarine Research Federation Conference. September 15-22 2005, Norfolk, Va USA.
- Timms, W. and Acworth, I., 2005. Induced leakage and hydrochemical changes in a deep alluvial aquifer, Lower Murrumbidgee, IAH05 Where waters meet, 28 November-2nd December, Auckland, New Zealand. CD Published by the New Zealand Hydrological Society, ISBN 0-473-10627-2.
- Timms, W., Glamore, W. and Pells, S., 2005. Groundwater quality impacts of on-site disposal, OnSite05 Performance assessment for On-site systems: regulation, operation and monitoring. 26-30 September, Armidale. Pp. 367-374. ISBN 0-9579438-2-2.

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- Timms, W. & Hendry, M. J. (2004). Real Time analyses of low volume samples using ion-selective microelectrodes. *Ground Water Monitoring and Remediation*, 24(4): 67-72.
- Jorstad, LB Jankowski J, Acworth RI (2004) Analysis of the distribution of inorganic constituents in a landfill leachate-contaminated aquifer: Astrolabe Park, Sydney, Australia. *Environmental Geology*, v95.2, pp263-272. DOI 10.1007/s00254-004-0978-3.
- Glamore, W.C., (2004). A two-stage decision support tool for restoring tidal flows to flood mitigation drains affected by Acid Sulphate soil. *Australian Journal of Soil Research*. 42: 639 - 648. DOI 10.1071/SR03166.
- Glamore, W.C., (2004). Evaluation and Analysis of Acid Sulphate Soils' Impacts via Tidal Restoration. DOI 10.1144/1470-9236/04-053.
- Turner IL, and Acworth RI (2004) Field measurements of Beachface Salinity Structure using Cross-Borehole Resistivity Imaging. *Journal of Coastal Research*, 20.3, 739-752. DOI 10.2112/1551-5036(2004)20[753:FMOBSS]2.0.CO;2.

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- Anderson, D., Glanmore, W., Pells, S. & Timms, W. (2004). Harvesting Seawater for a Desalination Plant Using Lateral Collector Wells at Lakes Beach, NSW: Preliminary Concept and Feasibility Assessment. UNSW Water Research Laboratory Technical Report 2004/34.
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- Timms, W. & Acworth, R. I. (2004). 2D and 3D Resistivity Imaging at a Remediation Site. UNSW water Research laboratory Technical Report 2004/26.
- Timms, W. & Badenhop, A. (2004). Groundwater Quality Sampling at Redlands – Updated Baseline Results. UNSW Water Research Laboratory Technical Report 2004/23.
- Timms, W. & Frazer, A. (2004). Feasibility of Groundwater Supplies for Irrigation of Waverly Council Parks, UNSW Water Research Laboratory Technical Report 2004/03.
- Timms, W. & Hudson, R. (2004). Analysis of Sediment Cores, Prospect Reservoir. UNSW Water Research Laboratory Technical Report 2004/18.
- Timms, W., Acworth, R. I. & Anderson, D. (2004). Downhole Geophysical Logging Near Appin and Helensburgh. UNSW Water Research Laboratory Technical Report 2004/24.
- Timms, W., Badenhop, A., Glanmore, W. & Pells, S. (2004). Groundwater Feasibility for Marrickville Council Parks. UNSW Water Research Laboratory Technical Report 2004/33.
- Timms, W., Pells, S. & Badenhop, A. (2004). Site Investigations - Lakes Beach. UNSW Water Research Laboratory Technical Report 2004/32.
- Timms, W., Pells, S. & Groskops, M. (2004). Multi-piezometer Installations at Newnes Junction. UNSW Water Research Laboratory Technical Report 2004/40.
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