

NZWWA SWANS-SIG – Small Wastewater and Natural Systems Special Interest Group

NEWSLETTER No. 6 April 2006

EDITORIAL

Following our last Newsletter (No. 5, August 2005) several members of the Management Committee met up with John Lavery, Technical Manager of the NZ Land Treatment Collective (NZLTC), at the Armidale NSW “On-site ’05” conference where a good representation of NZ delegates was present. This resulted in the NZLTC extending an invitation to SWANS-SIG to join in with the Nelson annual conference of NZLTC as a cooperating partner. Planning went ahead on this basis over the next several months with John Lavery undertaking conference organisation and Rob Potts providing SWANS-SIG liaison.

This arrangement worked exceedingly well. Registrations for conference were up from around 70 last year in Auckland to 120 for this combined event, with attendance by some 28 SWANS-SIG members not affiliated with NZLTC in addition to a significant number already involved with the Collective. A ‘loading’ was set on the registration fees for SWANS-SIG members with the objective of setting up a fund to support Management Committee activities. The relationship with NZWWA does not provide SWAN-SIG with funds other than those that can be generated by SWANS-SIG activities. The NZWWA Board is currently considering a range of options to increase support for SIG activities.

The spread of paper topics in the conference presentations and proceedings demonstrated a significant contribution of SWANS-SIG related material, with 15 on-site wastewater papers, 4 small community wastewater papers and two wetland/natural systems papers. The remainder of the 40 total papers presented during the 4 days in Nelson included 6 on biosolids, 11 on land treatment, and 2 on environmental effects related to land treatment.

A feature of NZLTC conferences is a full day field trip taken in the middle of the conference. This year visits took place to a milk processing plant effluent irrigation scheme (Fonterra, Brightwater), a biosolids forest application scheme (Rabbit Island), a contaminated site cleanup operation (Mapua Fruitgrowers Chemical Company site), community oxidation ponds (Motueka) and a DoC camping ground wastewater packed bed reactor (textile filter) treatment unit and drip irrigation scheme (Totaranui, Golden Bay). The latter visit involved a boat trip from Kaiteriteri up the coast to Totaranui in Able Tasman National Park, with on-board lunch, and evening BBQ following the visit.

SWANS-SIG is very much appreciative of the excellent organisation carried out by John Lavery for the NZLTC. It was a highly successful event both technically and socially. John has since left ENSIS, the home of the Collective, for a position with Glasson Potts Fowler, so he will be missed as the face and voice of NZLTC. However, SWANS-SIG looks forward to dealing with a new Technical Manager for future cooperative events.

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Editor
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SWANS-SIG MANAGEMENT COMMITTEE

The Committee Meeting

The Monday afternoon 13 March prior to the NZLTC conference 14 to 17 March in Nelson provided opportunity for the Management Committee to get together to undertake a review of SWANS-SIG activities and future projects. Some 3 hours were spent together that afternoon, followed by a further lunch time meeting on the Wednesday to update Committee members who could not attend on Monday and welcome new members. Seven of the current nine members were at conference.

Current membership consists of:

- Peter Carroll, Hynds Environmental Ltd, Auckland
- Robyn Floyd, Auckland Regional Council
- Ian Gunn, Auckland UniServices [Chair]
- Tom Headley, NIWA, Hamilton
- Ray Hedgland, Fraser Thomas Ltd, Papatoetoe [Secretary]
- Finlay Mason, Palmerston North City Council
- Dave Miller, Palmerston North,
- Rob Potts, Glasson Potts Fowler, Christchurch
- Chris Shortt, Innoflow Ltd, Auckland

SWANS-SIG invited NZLTC representatives John Lavery (immediate past Technical Manager) and Hamish Lowe (Chair, Technical Committee) to attend the Monday meeting to discuss matters of mutual interest between the two groups. We were also pleased to have Anna Porter present (NZWWA SIG liaison from Wellington) to bring us up to date with NZWWA administrative relationships with SIGs, and to participate in the meeting. Dr Tom Headley from Southern Cross University in Lismore NSW is currently undertaking post-doctoral studies at NIWA, and agreed to come on to the Management Committee and restore the natural systems NIWA link that began some years back with Chris Tanner, then David Ray.

Future Activities

In discussing future activities, the Committee agreed that SWANS-SIG should adopt an advocacy role within the small wastewater flows area, rather than just a membership servicing role, and to that end it would take up the topic of small on-site wastewater treatment plant certification as a major project. This topic had been referred to the Management Committee during the October 2004 AGM.

Rob Potts is to be the lead person in preparing a position paper on this topic. Issues to be addressed re certification procedures include:

- over viewing design, installation and operation and maintenance (O&M) servicing of treatment units available on the market throughout the country;
- extending the current Rotorua performance trials of ex-factory treatment units to other manufacturers (possibly at other venues);
- developing information on treatment unit tolerances to O&M not being followed;
- encouraging regional councils to set performance requirements within regional plans so that manufacturers unable to confirm compliance though independent trials would be excluded from installing their plants regionally; and
- liaising with MfE re the results of the 2005 study into NES (national environmental standards) relating to performance of small treatment plants.

In developing a certification and approval process it is envisaged that there will be four elements to approval related to:

- design;
- installation;

- on-going operation and maintenance;
- effluent quality performance and reliability; and
- role of guarantees and warranties.

Following completion of the position paper, which would be circulated for comment from the Management Committee and other players, it would seem appropriate to hold a special workshop on the topic to advance the certification process further. An important aspect of the workshop would be the presence of system suppliers and manufacturers to assist exploration of options for certification.

THE ROTORUA ON-SITE EFFLUENT TESTING (OSET) TRIALS

A presentation to the Nelson conference of particular interest to the on-site wastewater industry was the paper delivered by Brent Fletcher of Environment Waikato [co-authors Paul Futter of Environment Bay of Plenty (BOP) and Alison Lowe of Rotorua District Council] on the results of testing some five ex-factory aerobic wastewater treatment units at a Rotorua testing site. The units under trial comprise four aerated (activated sludge) systems, and one packed bed reactor (textile filter) system. The trials are being supported by Environment BOP, Environment Waikato and Rotorua City Council with the objective of assessing the nitrogen removal capability of these small single household systems. The standard being set for the Rotorua Lakes area by both Environment BOP and Environment Waikato is a target effluent total nitrogen below 15 g/m³.

Brent presented the results for the first 33 weeks of the trials (without identifying the specific manufacturers or treatment systems). It was found that for most systems some three months was required to establish 'robust' populations of activated sludge bacteria to a point where nitrification and de-nitrification were proceeding satisfactorily. It was then a further two months before most systems appeared to stabilise their performance.

At week 33, three of the five systems were oxidising 95% or more of the total nitrogen to nitrate, with Tot-N effluent concentrations in only one plant below 15 g/m³, one plant just above 15 g/m³, and the third in the range 21 to 25 g/m³. De-nitrification was the limiting process in the three plants. The other two treatment units were having difficulty oxidising TKN (being the sum of ammonia-nitrogen and organic nitrogen) to nitrate, let alone denitrify. Oxidation was thus the limiting step.

The trials are continuing for a further 6 months with opportunity for other manufacturers to join.

WATER ITO to COMMENCE DEVELOPMENT WORK on NATIONAL ON-SITE WASTEWATER MANAGEMENT QUALIFICATIONS

Development work on formalising national training qualifications in the on-site wastewater area is to begin this month. The Water ITO (Industry Training Organisation) through its Manager, Graeme Sawyer, is currently expediting proposals for development of NZ training qualifications in on-site wastewater management. This now has a high priority for the Water ITO, and a scoping group of specialists from the regulatory and implementation side of on-site wastewater management is being assembled to meet at the end of April and lay out the parameters for proposed new qualifications.

The next step will be to put together a development team to set out the detail of the qualifications and the unit standards which make these up. Draft unit standards will be distributed widely for comment, and finalised after evaluation of the resulting feedback. Training credits will be assigned to various qualification levels, and courses already taken will be assessed as to their value to be retrospectively credited toward the on-site wastewater training qualification. Unit standards will also be drawn up involving new courses.

CONFERENCES

Integrated & Decentralised Water Systems – AWA Enviro 06 Conference Stream, Melbourne, Wednesday 10 May 2006

Sarah West, Environmental Scientist with GeoLINK, is the coordinator of this one-day programme to be held in association with the AWA annual conference and exhibition. Full details of the papers and the programme are obtainable at www.enviroaust.net/e6.

Further information available from Sarah at her GeoLINK contact address: sarahwest@geolink.net.au or SarahW@geolink.net.au.

Decentralised Water and Wastewater Systems International Conference, Fremantle WA, 10-12 July 2006

For further details on the conference see:

www.etc.murdoch.edu.au

or contact

K.Mathew@murdoch.edu.au.

On-site '07

The first announcement and call for papers is now available, and for conference details see www.lanfaxlabs.com.au/onsite07. The international Keynote Speakers are to be Professor Robert Siegrist of the Colorado School of Mines who has a distinguished record of research into on-site wastewater systems, and Brent Fletcher of Environment Waikato, who will overview innovation and technology related to NZ on-site wastewater management practice. Submission of abstracts is open until January 2007.
