



VICTORIAN WATER  
INDUSTRY ASSOCIATION INC.

*"Innovation, Cooperation and Sustainability"*

# Victorian Biosolids Task Group

## NEWSLETTER No.4

October 2009

### Purpose of the Task Group

"To serve as a task group on all biosolids related issues, including (but not limited to) working with government on the development and implementation of biosolids related management frameworks, providing advice to industry on current practices and purposed initiatives, and co-ordinating comments from the water industry."

### The Latest from the Australasian Biosolids Partnership – Stephen Lansdell (EPA) & Michael Naughton (Barwon Water)

The Australasian Biosolids Partnership (ANZBP) Advisory Board met in Auckland, New Zealand, on October 7. One new member of the Advisory Board was welcomed - Michael Naughton from Barwon Water (another VicWater BTG member!!).

#### New Zealand Seminar

The ANZBP held a successful New Zealand seminar at WaterCare's Mangere Wastewater Treatment Plant in Auckland, on October 6. 27 people attended from across New Zealand, with biosolids practitioners, treatment plant operators, producers, suppliers, users, consultants, research institutions and regulators all represented.

Jim Bradley (MWH) provided an engaging snapshot of 'biosolids management in New Zealand' and in particular some of the challenges they currently face to sustainable management. Andrew Speers welcomed guests before Nancy Penney (Chair of the ANZBP Advisory Board) provided an introduction and overview of the ANZBP, its mission, objectives and highlighted some of the key projects being undertaken. Allen Gale then gave a

presentation on the Community Attitudinal Survey being conducted, and Paul Darvoldesky presented on the Regulatory Review project and some of the initial findings.

#### Future Australian seminars

With the success of the New Zealand seminar, the Advisory Board has decided to hold similar seminars for our members and potential members throughout Australia in the coming months. These sessions will be a valuable chance to communicate outcomes from our projects to members, as well as gain feedback about the key priority areas ANZBP can add value on (e.g. emerging research needs). The Advisory Board will organise and time these seminars to coincide with the relevant AWA Branch meetings. The Victorian session will aim for February, however watch this space and AWA updates for further information.

#### Regulatory Review

The Advisory Board have provided comments on a draft report and associated documents, which is currently being considered and incorporated where appropriate by PSD Pty Ltd and their consulting consortium. Prior to finalising the report and making it available to ANZBP members, the Advisory Board will engage a consultant to develop a list of suggested next steps and advice to ANZBP members and regulators, on how best to use the information contained in the Regulatory Review.

#### Community Attitudinal Survey

The Community Attitudinal Survey is currently being undertaken by Urbis Pty Ltd. Results and a final report is expected towards the end of January 2010. Thank you to those of our readers who have kindly provided assistance and contacts to this survey, and thank you in advance to any readers for participating in the survey should you be contacted.

For further information on the ANZBP or any of the above please visit [www.biosolids.com.au](http://www.biosolids.com.au) or contact the ANZBP Program Manager, Andrew

Task Group Members	
Member	Organisation
Michelle Carsen	South East Water
Karen Campisano	Melbourne Water
Luke Richards	DSE Office of Water
Hieu Dang	Yarra Valley Water
Doug Gardner	Wannon Water
Bruce Hammond	Goulburn Valley Water
Stephen Lansdell	EPA Victoria
Michael Naughton	Barwon Water
Steve Shinnors (Chair)	Gippsland Water
Sam Wilkinson	VicWater

## The 5 Key Issues – Current Status

- 1) **Sustainability Template** – Members are encouraged to utilise the Water Environment Research Foundation (WERF) tool, *An Economic Framework for Evaluating the Benefits and Costs of Biosolids Management Options* as a template to determine the sustainability of biosolids management options under consideration. The tool is freely available to WSAA members as part of their WERF subscriber privileges. Alternatively, it can be purchased from the WERF website ([www.werf.org](http://www.werf.org)) for USD\$50 (electronic version) or USD\$165 (hard copy).
- 2) **Regulations & Reporting** – the aim is to establish consistent reporting requirements and measures across regulators. The task group has developed a reporting template, and is in the process of consulting with regulators about reporting needs and current KPI's to establish the base from which to develop improvements. Preliminary discussions with representatives of regulatory agencies have highlighted differences in what constitutes "biosolids" for monitoring and reporting purposes.
- 3) **Strategies/Policies** – the aim is to raise the need for clear directions for biosolids management with government. The Australian and New Zealand Biosolids Partnership (ANZBP) are currently

undertaking a review of Australian and New Zealand regulations relating to biosolids management. The outcomes of this review, along with key outcomes of the National Biosolids Research Program, will inform the review of Victorian strategies and policies.

- 4) **Quality of Product/Risk** – the aim is to establish the risks with biosolids management and the appropriate quality to ensure satisfactory management of these risks. A scope of work for this project is currently under development. The ANZBP review of biosolids regulations in Australia and New Zealand is considering the quality of product to be achieved to manage risks associated with biosolids management. A gap analysis will be undertaken by the Biosolids Task Group when the report is issued, to determine if additional quality issues need to be considered in Victoria.
- 5) **Communications** – the aim is to develop communications guidelines to assist the biosolids management industry in Victoria to establish protocols that facilitate the beneficial reuse of biosolids in a safe and sustainable manner. The ANZBP has commenced a Community Attitudinal Survey, with the Biosolids Task Group contributing contributing information and contact details relating to biosolids management in Victoria.

### Key Tasks for BTG

The key tasks for the BTG are:

- ◆ development and implementation of strategic advice on biosolids management for the Victorian water industry;
- ◆ identification and co-ordination of biosolids research activity in Victoria and input to national biosolids research programs;
- ◆ provision of links to the Australasian Biosolids Partnership;
- ◆ provision of links with regulators; and
- ◆ consider the implications of the findings of the National Biosolids Research Project and implications on EPA's Guidelines for Environmental Management-Biosolids Land Applications (Publication 943).

## The Risk of Stockpiling Biosolids – Doug Gardner

Under the climatic conditions of Southern Australia, storing biosolids carries with it the risk of internal combustion. Although the risk is low, the potential for internal combustion raises concerns for Wannon Water regarding fire, loss of nutrients and odour, and the careful management of biosolids stockpiles is crucial to our operations. Following several trials and observations a procedure is now in place to address this from a physical and environmental perspective and to maintain value for the product.

Even at moisture levels of 75 per cent, monitoring of the temperature of stockpiles in the past has shown that readings can reach 50°C in parts of the stockpile. Considerable composting can take place with these temperatures maintained throughout the first winter.

Our experience has shown the volume of stockpiles should not be more than 25-30 cubic metres per metre of stockpile length. This is an interim figure and may be revised, but if the material is not able to be dried because of the lateness of the season or early rain, then a long smaller windrow is the preferred storage option. To obtain a guide to the impact and wetting of the stockpile, rainfall and evaporation are logged weekly and temperature is recorded every fortnight.

Our observations suggest that the risk of combustion occurring is greatly reduced if the following procedures are followed:

- Before any of the dried material is stockpiled, the test results of the batch need to be within specification for moisture and volatile solids reduction;
- If the results have not been received and rain is imminent, then the biosolids is windrowed whilst awaiting results;
- If rain is heavy enough to impact the stockpile and has penetrated more than 40-50mm, that layer is removed from the stockpile and redried;
- No dry material is stacked on the wet surface of a stockpile until the surface layer is again dried to greater than 70 %.

Combustion of a stockpile, however, is still a very real risk and may lead to the spreading of fire or injury to operators walking on a stockpile undergoing combustion. When combustion takes

place the biosolids become unstable and will not support a person walking on the surface. Odour is also a risk and the acrid smoke from combustion, whilst posing no health risk, will invite complaints.



Combustion line

If the hot area of the stockpile is localised then the mechanical removal of the material is appropriate. If the entire stockpile has overheated then the material that is of least danger can be removed first, as it may still have some nutrient value. The material to be cooled can then be better accessed and spread out in thin layers to air. Communication with the local fire authority and community is very important to reduce concerns from what is a manageable event. Having the wind blowing away from sensitive areas during control measures limits the impact on neighbours.

Managing the cooling process requires extreme care and the expertise of an experienced operator. When the biosolids are opened to the air, a pyroclastic cloud can form that is very hot and potentially dangerous to equipment and operators.



The effect of pyroclastic flow



Fire suppression equipment is required if the controls are undertaken during the summer fire danger period. The size of the stockpile will dictate the appropriate equipment. This may involve having the fire brigade on hand. Do not use water directly on the biosolids. Water could be used, however, for the control of a breakout onto nearby grass, for creating a wet fire-break around the site, or as a water mist for the protection of the operator or equipment.

The temperature will drop rapidly after the initial exposure to air. This can occur in less than 15 minutes. Spreading the resulting heap over as large an area as possible and not more than a metre deep will help to speed up cooling. It is also easier to assess the success of the temperature reduction at this depth. Hot patches will still occur and these can be re-aerated over the following few days. Again wind direction and sensitive areas will need to be considered.

For proactive control the monitoring of the stockpile over the late winter and early spring is one measure that will highlight any temperature spikes.

## **Gisborne biosolids build growing fields at Woodend**

A thousand tonnes of biosolids — a nutrient-rich, organic soil conditioner and alternative fertiliser produced from Western Water’s Gisborne recycled water plant — has been bedded down across Woodend farmer Mr Gavin Lester-Smith’s carefully tilled fields

Under a special environmental improvement plan devised according to Victoria’s Environment Protection Authority protocols, Mr Lester-Smith is using biosolids from Western Water as part of his annual rotational cropping strategies.

It’s the fourth year of this partnership and Western Water’s fifth year working with specialist biosolids management consultants LV Rawlinson & Associates. These are the experts who oversee the fine details of how much tonnage of the nutrient-rich natural fertiliser is needed, based on soil profile testing and past performance of paddocks.



**Gavin Lester-Smith and Stephanie Gillespie**

This year, the performance of the actual plants grown, along with soil performance, will go under the microscope.

Western Water’s renewable resources manager Stephanie Gillespie said there had been accelerating demand for biosolids for diverse farm enterprises in recent years.

“Western Water works closely with many different farmers around the region to build up enterprises that become sustainable, long term anchors in local economies and local environments,” Ms Gillespie said.

“Supporting and developing a committed and knowledgeable customer base, helping growers work with the science, then sharing results — these have been the keys to successful biosolids programs and recycled water schemes around the region.”

Ms Gillespie said local partnerships were also building an important body of information about the performance of biosolids over the longer term.

“This information is feeding into the greater challenge of building health, and thereby resilience, we need in our prime farming land to adapt and remain viable in changing economic and climatic times,” she said.

Contact the Renewable Resources team at Western Water on 9218 5400.

## VicWater Biosolids Webpage

### Reporting Relationships

- ◆ The task group will report to the VicWater Board through the VicWater CEO.
- ◆ The task group will make recommendations on policy matters to the VicWater Board.
- ◆ The task group will report to the VicWater Council on activities considered an undertaking as appropriate.

The Biosolids Task Group webpage on the VicWater website ([www.vicwater.org.au](http://www.vicwater.org.au)) has recently been upgraded to better serve the biosolids working community. The purpose of the new webpage is to provide information regarding the Biosolids Task Group and its members, provide a list of biosolids contacts across water businesses and to serve as central reference repository for key biosolids documents.

To access the Biosolids Task Group, select 'Biosolids Working Group' under the 'Task and Working Groups' drop down menu on the VicWater homepage. Alternatively, click on the following link:

[VicWater Biosolids Task Group Webpage](#)

## Key Contacts

The following are key biosolids contacts for utilities and regulators across the Victorian water industry. If you have a query regarding biosolids these people should be your first point of contact.

Organisation	Contact	Organisation	Contact
Barwon Water	Michael Naughton	Lower Murray Water	Keith Neaves
Central Highlands Water	Jason McGregor	Melbourne Water	Karen Campisano
City West Water	Martin Thurlow	North East Water	Tim Clune
Coliban Water	Ross Johnson	South East Water	Terry Anderson
Dept Primary Industries	David Nash	South East Water	Michelle Carsen
DSE	Luke Richards	South Gippsland Water	Lale Rogeon
East Gippsland Water	Gary Pini	VicWater	Sam Wilkinson
EPA Victoria	Stephen Lansdell	Wannon Water	Doug Gardner
Gippsland Water	Steve Shidders	Western Water	William Rajendran
Goulburn Valley Water	Bruce Hammond	Westernport Water	Geoff Harris
Goulburn Valley Water	Stuart Harris	Yarra Valley Water	Chris Brace
GWMWater	Debra Watson		