



Letters to the Editor

'New' algae treatment technology not so new

I receive the *Water Wheel* on a regular basis and really enjoy your articles regarding development and successes pertaining to water treatment.

Some (many?) years ago I worked at the (then) National Institute for Water Research (1980). At the time Dr LRJ van Vuuren was the Head of Department and Dr Cillié was Director.

Reading the article on the Rietvlei Dam and the Rietvlei Water Treatment Works ('The changing face of Rietvlei Dam' in the *Water Wheel* January/February 2012) I noted that the process of dissolved air flotation is used to concentrate and recover the activated sludge produced in the water treatment works.

I noticed some similarities between the introduction of the water circulation machines (SolarBees) to circulate the water to the extent of having an aerobic as well as an anaerobic phase, to optimise algal growth.

My project at the time was to construct an algal pond canal system (similar to the design developed in Israel) and to use the pond to grow and produce algae from raw sewage. This dual purpose pond was intended as a water treatment process as well as a source for animal and fish food.

In place of dissolved air flotation of algae, it was found that dissolved oxygen flotation was as effective, and was also much more cost-effective using solar power. Greater detail can be given should there be interest in this regard. At the time the Zeta potential was established of the algae in order to be able to optimise flocculation and flotation.

After leaving the NIWR for Pelindaba, I lost contact with the process of algae production. Perhaps there is a possibility of some information being exposed that has become redundant.

John Viviers, Laboratory Manager, Kyalami

Water Wheel reaches kids in Limpopo



I would like to thank you for the information we received for our rural water schools project. Your Water Kidz special edition was given to grade seven pupils at Mabje-a-kgoro Primary School, in Limpopo. This project will be taking place every year and we will appreciate any learning information that you can supply us with to encourage learning and reading in rural schools.

Nakampe Modike, Rand Water

International toilet summit comes to SA

South Africa will host the 12th Annual World Toilet Summit at the Durban International Convention Centre in December.

This year's theme is 'African Sanitation: Scaling Up – Dignity for All'. The event, hosted by the South African Toilet Organisation (SATO), is expected to attract more than a 1 000 delegates and exhibitors.

SATO and its international equivalent, the World Toilet Organisation, aim to improve the quality of human life and to ensure dignity through the provision of adequate sanitation solutions to all. It is estimated that up to 2,6 billion people throughout the world do not have access to proper sanitation. This contributes to the spreading of diseases and, in many cases, death, especially children under the age of five years.

"Every 15 seconds a child under the age of five dies from diarrhoea-related illness. In a modern society this would be deemed unacceptable, yet millions of African children face these diseases every day," said Alfie Heeger, SATO founder.

While the World Toilet Summit is being held in South Africa, the summit will focus on the sanitation-related challenges faced by Africa, especially the plight of the 600 million people, mostly women and children, who do not have access to proper toilet facilities.

Among others, the summit organisers have launched an African Toilet Design Competition. The competition criteria have been designed to attract toilet designs that promote safety, reliability, affordability and dignity. The winning designs should be able of mass production and rapid implementation.

For more information about the summit and the competition, Visit: www.satoilet.org or www.world-toilet-summit-2012.co.za

Water by numbers

- **R25-billion** – The funds government is hoping to attract from foreign investors to help revive its ageing water infrastructure, according to Minister of Water & Environmental Affairs, Edna Molewa. A total of R75-billion has been earmarked in the national budget to build new and revamp old water and sanitation infrastructure over the next three years.
- **12** – The number of women who are set to benefit financially from the Adopt-a-River project in Limpopo where they are help to regularly clean two springs in Mphagane and Sheshe villages outside Thohoyandou. Vhembe District Mayor, Florence Dzhombere, announced that the municipality would seek funding for the women, who have been volunteering.
- **179 793** – The number of students studying in the fields of engineering and science at South Africa's universities this year, according to the Department of Higher Education and Training. The figure is up 6,8% from 2011.
- **R2,8-billion** – The funds budgeted for infrastructure projects by the Mpumalanga Provincial Government in the coming financial year. Among others, the provincial government is planning seven new clinics, bulk water infrastructure and the upgrading of roads and classrooms.
- **198** – The estimated number of invasive alien plant species in South Africa, according to the Department of Environmental Affairs. These plants cover about 10% of the country.
- **R1,1-billion** – The estimated annual budget of Working for Water. Since its inception in 1995, the programme has cleared more than 2 million ha of invasive alien plants and provided training for more than 25 000 people a year, mostly women.



Low impact, energy-saving water scheme for PE

An innovative design will minimise the energy needs and bio-physical impact of the low-level water supply scheme from the Nooitgedagt Water Treatment Works to the Motherwell Reservoir in the Nelson Mandela Bay Municipality.

Construction of the pipeline began in May last year, and addresses the growing demand for water by residential developments within the metropolitan area and by the Coega Industrial Development Zone. Consulting engineering firm, SRK Consulting conducted the environmental impact assessment (EIA) and is responsible for monitoring the implementation of the environmental management plan (EMP) on behalf of the municipality.

The project's lead engineering consultant, AfriCoast, identified several alternatives for the pipeline route and narrowed these down to two options, namely a high-level scheme, which would have involved a parallel alignment along the existing pipeline route, over a distance of 32 km and with top water level of 235 m above mean sea level at the Grassridge Reservoir; and a new, low-level scheme pipeline route of 38 km, with a top water level of 156 m

above mean sea level at the Olifantskop Reservoir.

The latter option was chosen, routing the pipeline along contour lines, and as far as possible along existing roads, cut lines and property boundaries. Despite being some six kilometres longer, it had the advantage of using less electricity, according to Robyn Thomson, environmental scientist at SRK's East London office; this saved on costs and reduced the project's carbon footprint.

The EIA also revealed that the low-level route would have less botanical impact, according to Rob Gardiner, principal environmental scientist at SRK's Port Elizabeth office. In particular, it would be better for the species of special concern in the area (aloes and carpobrotums) for the endangered ecosystems and for the many endoreic pans in the area (these have no outlets to rivers or sea). It would also be better for the visual impact that would result from clearing vegetation in the servitude – especially as the pipeline crosses the main route from Port Elizabeth to the Addo Elephant National Park.

The project will be vital in boosting the municipality's current water supply. **Source: SRK Consulting**



Water on the Web

<http://iresearch.worldbank.org/PovcalNet>

PovcalNet is a new interactive Open Data tool from the World Bank for poverty and inequality measurement. Through this tool, users get access to the data and can replicate the bank's estimates or calculate poverty rates using any poverty line or country groupings they like. The World Bank's methodology is based on consumption and income, adjusted for inflation within countries and for purchasing power differences across countries.

<http://www.wrc.org.za/Pages/KnowledgeHub.aspx>

The Water Research Commission has started a process to make electronically available all of its annual reports from the start of the Commission forty years ago. Visit the above website and click

on the 'Annual Report' button on the left-hand side of the page.

http://www.whymap.org/why-map/EN/Downloads/Global_maps/globalmaps_node_en.html

A new map of River and Groundwater Basins has been prepared to help water resource policymakers and planners visualise, at the broad scale and in general terms, the potential interaction between surface water systems and the underlying groundwater resources for their conjunction uses. It aims to promote the fact that groundwater has to play an equal part in the management of water resources, since aquifers are a major source for drinking water supply, agricultural irrigation and industrial production, and are vital for sustaining the natural environment.

National hearings on water and sanitation start – lack of proper services 'startling'

The South African Human Rights Commission has launched the first phase of its national hearings on water and sanitation.

This is after the Commission's recent investigations into two complaints on the right to water and sanitation. Both matters concerned the construction of unenclosed toilets – the first in the Makhaza area, Cape Town, and the second in the Rammolutsi Township, Viljoenskroon. In both cases, the Commission found that the municipalities responsible had violated residents' right to human dignity, privacy and a clean environment by installing toilets without enclosures.

Further investigations into the state of sanitation in South Africa by the Commission found that around 11% of households still have no access to basic safe sanitation, while another 28% of households have sanitation services which do not meet the standards due

to lack of maintenance, inadequate water supply or lack of emptying of pit emptying services. At the current rate of delivery (around 300 000 households units a year) the country will not achieve its target of providing universal access to sanitation services by 2014.

"The startling finding is that, while access to sanitation is increasing (albeit at less than an optimal pace) from a functionality and adequacy point of view, up to 28% of households are at risk of service failure and/or are experience service delivery breakdowns," the Commission said in a report, released in March. The majority of the unserved population is resident in the rural settlements of KwaZulu-Natal, North West and Eastern Cape. The Commission also expressed its concern over the general state of the sanitation bulk infrastructure in the country, for example the general poor state of wastewater treatment plants.

Government recognises importance of aquaculture



Agriculture, Forestry and Fisheries Minister, Tina Joemat-Pettersson, says government recognises the importance of aquaculture and the role it will play in sustaining production of food fish.

"The South African government recognises the importance of aquaculture and the role it will play in sustaining production of food fish, as the natural fish resources become further challenged and [put] wild stocks under pressure," she said. Joemat-Pettersson was speaking at the sixth session of the Food and Agriculture Organisation (FAO) on Fisheries sub-committee in March.

The Minister said adapting to the effects of climate change will be the hallmarks of Smart Aquaculture in the next decades. "Using resources efficiently and adapting to the effects of climatic and other shocks will be the

hallmarks of Smart Aquaculture in the coming decades. We are all aware that aquaculture is the fastest growing food production sector in the world, and as it continues to grow, a decreasing percentage of food fish and other aquatic animals will be provided from the already heavily exploited natural resources."

According to the Minister, the fast growth of aquaculture worldwide is a result of intensification of production methods, and the improvement of the efficiency of breeding and growing fish, lobsters, molluscs, and other highly-valued aquatic food species.

She said the aquaculture sector finds itself confronted with problems similar to those known from the intensive and growing agricultural sector. "As is the case with terrestrial farming, intensification of animal production and specifically fish farming leads to the emergence of different challenges that we have to confront and overcome. It is at platforms like these that such challenges are discussed and solutions shared and adopted by different stakeholders, be it best management practices, new technologies and/or general governance issues."

Source: BuaNews

Kruger hosts world scientists

The Kruger National Park recently hosted 230 delegates representing 75 different institutions from ten countries at the 10th annual Savanna Science Network Meeting.

The programme explored about 111 presentations covering a wide range of topics and research conducted in all Savanna national parks and protected areas. "This meeting has grown from one encouraging scientific dialogue around biological research in the Kruger National Park to one now encouraging a broader social-ecological savanna focus," explained Scientific Services Head of Department, Dr Danie Pienaar.

Many topical issues in ecological science were covered, including tourism

related issues, biodiversity, land use and land use change effects, the human interface with parks, rivers, wetlands, and freshwater management, climate change effects and anticipated ecosystem responses as well as large mammal ecosystem drivers and their mechanisms of change.

According to Dr Pienaar, the meeting provided an opportunity for scientists to share their latest findings conducted in national parks and other conservation areas within the savanna vegetation.

"It is an important forum for dialogue and debate about ecological science and conservation matters as well as a pivotal point for future research collaborations."

Source: SanParks

WISA past president appointed Golder MD and Vice President

Former President of the Water Institute of Southern Africa (WISA) and well known figure in the water sector, Dr Ralph Heath, has been appointed the new MD and Regional Vice-President for Africa of Golder Associates.

This is after former post-holder, Dr Fred Sutherland, was appointed to global Vice-President: Corporate Development, following 12 years of successful leadership in Africa.

Welcoming the appointments, Dr André van Niekerk, a Director of Golder's global board, said that Fred had brought strong leadership to the employee-



owned company which led to significant growth in Africa. "He aggressively pursued the integration of Golder in Africa with the rest of the firm globally. I am confident that Ralph will continue strengthening Golder's record of technical and client service distinction and enable us to continue to attract quality people."

Water diary

ECOTECHNOLOGIES

JUNE 25-27

The IWA Conference on Ecotechnologies for Wastewater Treatment will be held in Santiago de Compostela, Spain. In this conference wastewater treatment will be faced from a global approach meaning that issues about new processes and technologies will be considered along with those related to emissions, economy and environmental analyses in an integrated perspective. Email: ecostp@novedar.com or Visit: www.novedar.com/ecostp

Hydroinformatics, 'Understanding changing climate and environment and finding solutions', will take place in Hamburg, Germany. A special focus of this conference will be the assessment of the impact of climate and environmental changes on our aquatic environment as well as the development of suitable adaptation and mitigation measures. Enquiries: Conference Secretariat; Gerlinde Löbkens; Email: loebkens@tutech.de; Visit: www.hic2012.org/

YOUNG WATER PROFESSIONALS

JULY 7-13

The International Young Water Professionals Conference 2012 will take place in Budapest, Hungary. The conference will provide a forum for young researchers and professionals working in water and wastewater research, technology and management to present their work and meet their peers from all over the world. Email: ywpc2012@iwahq.org or Visit: www.iwa-ywpc.org

FAECAL SLUDGE MANAGEMENT OCTOBER 29-31

The Second International Faecal Sludge Management Conference will take place in Durban. The call is open for papers or workshops dealing with innovations and experiences with all aspects relating to the accumulation, treatment, removal, beneficial usage, transport, pit emptying, new sanitation technologies, management arrangements, economics and disposal of faecal sludge derived from on-site sanitation systems. Expressions of interests and abstracts not exceeding 500 words should be submitted to fsm2@pid.co.za before 31 May, 2012. Enquiries: Jay Bhagwan, Email: jayb@wrc.org.za

HYDROINFORMATICS

JULY 14-18

The International Conference on