



Australian Water and Wastewater Operator's Association inc.

Victoria Australia **A12314**

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January 2001 Edition

Editorial

Just a brief editorial to this edition of 'Operator'. Welcome to the new century and all the best for the New Year.

Included in this edition is the regular 'Secretary's Scrawl' along with the results of the Charity Golf Day. There are also articles from Brendan Holt and Paul Keating of Gippsland Water along with a letter to the editor from Ray James (Gippsland Water).

For those of you into crosswords we have 'Russell's Crossword' no correspondence to the editor regarding this.

The Annual Weekend Seminar is coming up soon and a rego form is included in this edition.

All articles for 'Operator' can be faxed to 52269262 or via e-mail to richardg@barwonwater.vic.gov.au

Editor

Runner/ up - Barry Waddell from East Gippy
93 - 18 - 75 net

The actual scores recorded by some of the other players resembled a few innings put together by Don Bradman:

Best Callaway & Tradies Cup: Simon Jaski from By-Jas
123 - 71 net

Runner/ up - Cynthia Lim from Selbys
2,000,000 - 73 net

Tradies George Mcleod from Aluminates
88 - 15 - 73

NAGA Jill Busch from Gippsland Water

Nearest the pins Barry Waddell, Bob Barton, Ken
Turner, Russell Mack & Peter
Robinson

Longest Drive Danny Irish

Next year we will look at moving the event to somewhere down south possibly in the Gippsland region and hopefully the day will continue to grow.

Contributed by G.Wall

Charity Golf Day

The second (of what we hope will become an annual event) Water Industry Golf Day was staged at Broadford Golf Club on Sunday October 22nd 2000. The aim of the day was to get together in a social environment and to raise some much needed dollars for charity. The proceeds raised from the day will be presented to a charity, as nominated by Coliban Water, at next years conference.

The response from the Trade Organisations was again strong, and we thank them for their support and generosity. The companies who sponsored the event this year by supplying cash and/or prizes included :

Australian Pollution Engineering	Merck
Aluminates	Prominent
Bell Environmental	AWA
	By-jas Engineering

To the players who made the trek to Broadford (some with a drive of over 4 hours each way mind you), congratulations and thank you for your support.

The weather was superb and the course was in really good condition especially that green bit between the trees – some called it the fairway.

To the results –

Handicap Winner - Bob Barton from G.V. Water
90 - 19 - 71 net

OPERATIONAL CHANGES TO WILLOW GROVE HIGH LEVEL TANKS.

The Willow Grove Water Treatment Plant was built and erected toward the end of 1999. Commissioning of the new plant began around mid November 1999. The Willow Grove plant draws water from Blue Rock reservoir. The raw water is pumped by one of two raw water pumps, then treated and stored in a 0.5 ML Clearwater tank. This water is then pumped through the town and up to the High Level tanks on demand. There are three tanks situated about 3 kilometers out of town. Only 2 tanks are in operation with the third being shut off. The two tanks have a total capacity of 180KL.

The way the system is set up; there is only one dedicated line to and from the tanks, meaning the inlet and outlet to the tanks feed the same pipe. This is what caused us some problems.

At Willow Grove for the disinfections we use chloramination, which is achieved by adding ammonia to chlorine. The advantage of chloramination over normal chlorination is a much more persistent residual, which was needed due to the low demands of the Willow Grove Township. When chlorine and ammonia are added to water they react to form products called "chloramines", the

chloramine that we try to achieve is monochloramine, and this is what we test for when we do our residuals. The reason we aim for monochloramine and not the other chloramines is because the others create taste and odour problems. Chloramines are known as the combined chlorine residual whereas in chlorination the formation of hypochlorous acid is known as the free chlorine residual.

During the summer months when the demand was approximately double of what it is in winter, the disinfection was working perfectly. The residual leaving the plant was 1.2 ppm, this was similar or marginally lower in town and the High Level tanks had an average residual of around 0.3 ppm.

At this stage the operating level of the High Level tanks was 1.0m (pump start) and 1.9m (pump stop). It should be noted that the volume of water in the pipe between the town and the tanks is about 50KL and because of the single dedicated line to the tanks when the pump starts the tanks are never replenished with freshly chloraminated water.

During the end of March 2000 and the beginning of April 2000 it was noticed that the residual in the tanks was diminishing. This was attributed to lower water demand and got to a point when there was no residual whatsoever. For approximately 2 weeks chlorine tablets were added to the tanks to give some kind of disinfection but this was not desirable in the long term as it affects the chloramination process, which leads to undesirable taste and odours in the water. It was agreed to hold a meeting on the 20th April 2000 to discuss these issues and try and come up with an alternative way to keep the disinfection in these troublesome tanks.

It had been proposed to lower the operating level of the tanks to get more turnover of the water when it was pumped. An issue that arose with this was that the residents just below the tanks might not have sufficient water pressure. Through investigation, it was realised that the drop in pressure would be very little and it would only be for a short period of time before the pumps cut in, also that the residents are supplied by agreement.

As Gippsland Water did not have good reliable data on the decay rate of a chloramination residual, Darren Wallace Using flow modeling, conducted an investigation on using straight chlorination, with this new operating level. Darren ran the model with good results. He advised that the residual in the tanks approaches 0.45 ppm. So, it was decided to change the operating level of the tanks to 0.3m (pump start) and 1.9m (pump stop).

To first fill the tanks with freshly chloraminated water the scour valves were opened and the tanks drained. With the High Lift pump on the pipe in between the town and the tanks was scoured until a residual of 1.00 ppm as reached then the scours were turned off and the tanks allowed to fill.

Chloramination residuals were taken at the tanks every day for 2 weeks and given to Darren so he could get data for Gippsland Water on chloramination decay.

Chloramination residuals are still taken often and I am pleased to write that the tanks still maintain a healthy

monochloramine residual of about 0.2 → 0.3 ppm and a total residual of about 0.4 → 0.5 ppm.



Brendan Holt.
Water Treatment Plant Operator (Trainee)
Gippsland Water.

Secretary's Scrawl

Conference 2001

Arrangements are progressing well for the next Conference to be hosted by Coliban Water in Bendigo.

It is not too early to think about 2002. If you know of a suitable venue, or if you think your Authority would be interested in Hosting the Conference, please give me a ring.

NSW Operators Conference 2000

Being fortunate enough to win the Actizyme prize for the best Operator Paper at our conference in September, meant an automatic trip for me to the NSW conference to repeat the paper.

The NSW conference has continued to grow each year and this year had about 15 Trade Exhibitors and around 80 delegates. They arranged some interesting competitions for the delegates promoting interaction with the Tradies – some ideas we might steal and implement at our conference next year. The standard of the papers was excellent and the judges decision on the prize winners would have been very difficult.

New Members

Welcome to the following people who have recently joined our Association either as Full or Associate members.

Tung Nguyen
Darren Dwight
Kathryn Harries
Murray Clayton
Michael Willis.

New Corporate Members include

Danfoss
Siemens Ltd
Wika Australia
Unimin Australia.

George Wall
AWWOA Secretary

Letter to the Editor

AWWOA

Dear Sir or Madam:

It was brought to my attention today by the Vice president of the AWWOA Mr. R. Mack that some of our members may be interested in hearing of the innovative approach to training that Gippsland Water have embraced.

We at Gippsland Water have an ageing work force that is no different to most other Water Authorities. It was decided to introduce young blood into our work force through a trainee program and in 1999 three (3) trainees were put on as Multi-skilled Operators (MSOs). These trainees were trained in the field of Distribution and Collection systems and they also received some water treatment training as well.

To obtain a certificate II in Water Operations we sought the assistance of the Water Training Centre and through their guidance a training program was put in place to enable the trainees to reach their goals.

The trainees were given the task of constructing a Water Distribution Training Simulator and this was built at Gippsland Water's depot in Morwell along side the Confined Space Entry assessment simulator. This training rig was then used to deliver short courses to Gippsland Water staff. We also had the privilege of providing some awareness training to five (5) Mount Hotham Resort staff.

We are able to provide internal refresher training for;

- Backhoe / Front end loaders
- Fork lift trucks
- Location of other services
- Confined Space Entry as well as formal training with the assistance of the WTC
- Chlorine cylinder and Drum change over procedures – Theory and Practical assessment
- Distribution construction and Maintenance

Since those early days Gippsland Water has realised the enormous benefits to the business by providing internal refresher training courses and instigating competency based assessments. To accommodate this extra demand Gippsland Water has moved the training facilities from Morwell to the Warragul Depot in Albert Road.

We have employed another 5 trainees with 3 to be trained in Certificate II Water Operations in Distribution and Collection systems.

Sincerely,

Ray James
Training and Safety Officer

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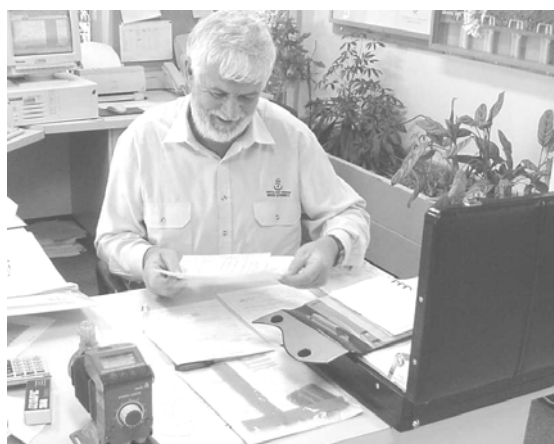
Around the Traps

North East Water - Wangaratta

On a recent visit to Wangaratta, my annual pilgrimage to the Festival of Jazz I ventured to the works depot at the Water Treatment Plant for morning tea prior to an enjoyable day at Brown Brothers Millawa.

Employees number 8 'outdoor' and 3 'indoor' for the area. Of the outdoor employees 2 are involved with Water and Wastewater Treatment and 6 are on the maintenance side.

Rex Humphreys Treatment Coordinator for Western Region has 7 operators under his control both Water and Wastewater.



Rex Humphreys at his desk at the Wangaratta WTP

The Wangaratta WTP is located immediately downstream of the junction of the King and Ovens Rivers with the majority of the water being treated coming from the King River.

Flood conditions and winter flows can lower the Ph to 6. Liquid Alum is dosed as a coagulant and can further lower the Ph to less than 5. With soda ash used for Ph correction at the end of the treatment process this sometimes causes alum to floc in the clearwater storage. At the time of my visit a soda ash pre-dosing plant was being installed to alleviate this problem.



Brian Scobie at the microscope

The plant process involves sedimentation and clarification with pressure sand filters. In addition to cope with high summer consumption a direct filtration plant is used which copes with a maximum turbidity of 30 N.T.U. plant maximum capacity is 57 ML/day – winter flow 10 ML/day and summer flow varies between 30 – 40 ML/day.



Bruce Tyler hard at it

I thank the employees at the Wang WTP for their hospitality. Over the next year I will endeavor to visit other locations around the state to catch up on our members in their work environment.

Richard Greenhough

Propeller Blades at the Moe STP????

Paul Keating

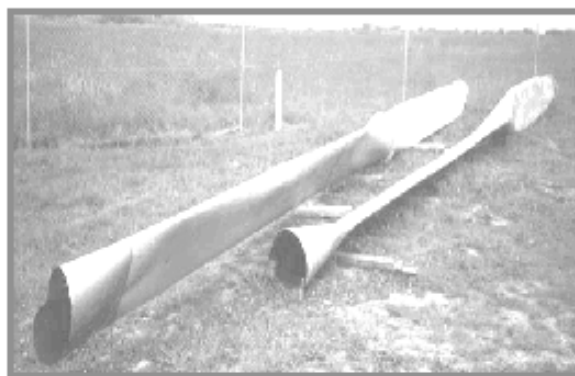
Treatment Plant Operator Gippsland Water



No, not propeller blades but two stainless steel pipes that are now crushed flat, and all it took was 2.7 metres of head pressure.

Moe STP has three treatment cells (5m x 4m x 4m), each holding on average four million litres. The raw sewage is introduced into each cell by its own manifold which is a 370mm stainless steel pipe with four 370mm droppers. Cell No3's manifold is fed by a 370mm stainless steel pipe

which runs through Cell No1, at 1.6 metres above the floor of the cell.



Cell No3 was the first cell to be drained for modifications to be carried out. After draining and cleaning, inspection took place. When we looked up the inside of the empty pipe we didn't like what we thought we saw; and poked a torch up and had a better look.

What we first thought was that the top of the pipe roof had collapsed to half way & the rest was sludge.....Out with the hose and another look revealed that the top had collapsed 50% but also the bottom had collapsed 50% as well..... A completely blocked pipe.

After a few expletives (#\$%^&0) the questions flew quick and fast. First thought was to determine how much of the pipe was squashed and how badly.

A camera inspection from either end was a possible option, but we located a piece of 50mm pvc and probed the damaged pipe from the surface. It felt like 13 metres out of 20 metres with problems, forget the camera!!

This raised a lot of questions and a lot of possible answers. Thinking vacuum was the cause of our problem, we decided to fabricate a new pipe (to original specifications, which turned out to be all custom made,) and then get divers to remove the damaged pipe and install the new pipe.

We allowed two weeks for the delivery of parts and to organise every thing we thought we needed, and then we were into it.

The work took 12hrs but every thing went to plan and we were back in action. This was a Thursday. Friday every thing was still OK –BUT Monday the cell that was supposed to be empty was now ¾ full.

The pipe had failed again,..... Bugger!

This time concerned phone calls to frantic engineers confirmed that an empty 270mm stainless steel pipe with 1.5mm wall thickness can only withstand 2.7metres of head pressure.

A lot more questions and possible answers flew everywhere, and this time we decided to stay with 270mm stainless steel but with a wall thickness of 2.5mm (5.2 metres head pressure).



Two and a half weeks wait for parts, eight hours this time to replace the damaged pipe (getting good at this) and so far no problems with stainless steel pipes reducing in diameter.

So if some one can explain to the engineers (they are the ones scratching their heads) and the rest of us, why a 13 metre length of pipe would completely collapse flat one way for 6metres and then the rest of its length collapse at 90° to the first half please feel free to enlighten us.

2002 Weekend Seminar

With the 2001 Weekend Seminar well in hand it is now time to start the planning process for the 2002 weekend.

I would appreciate feedback on the present format, is the format OK, suggestions for improvement, suggestion of trade presenters, contacts re this, locations etc.

In regard to the 2002 weekend I am at present looking at either Swan Hill or in the Gippsland region.

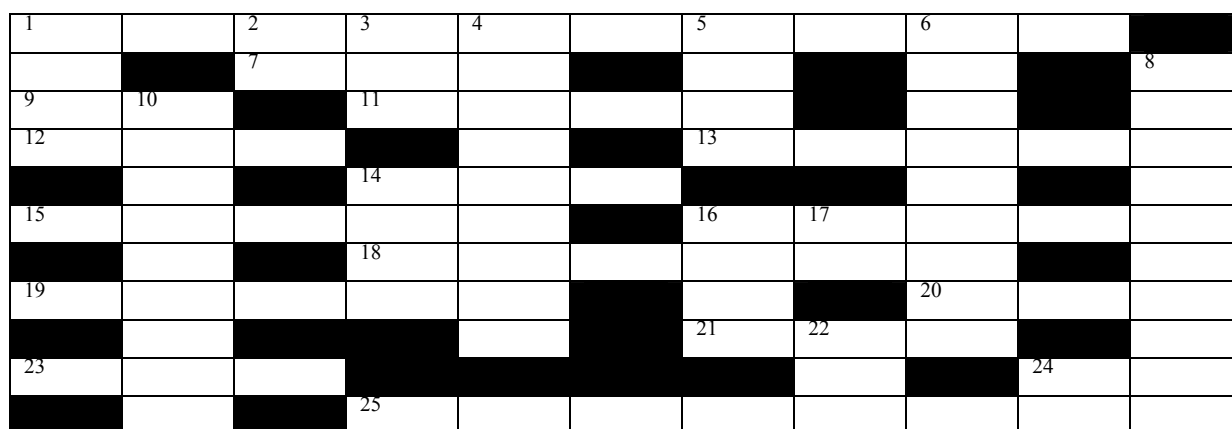
You can contact me on Fax 03 52269262 or e-mail me at richardg@barwonwater.vic.gov.au

Any comments would be appreciated

Thanks

Richard Greenhough
Weekend Seminar Organiser

RUSSELL'S CROSSWORD



ACROSS

- 1 Next step after 4 down
- 7 Excrement
- 9 This helps the pay packet
- 11 Mode of water treatment at Warragul
- 12 Water is _ _ _
- 13 Brekky food
- 14 Important for brew
- 15 Flat
- 16 Copy
- 18 Salty
- 19 Not the most
- 20 Nothing
- 21 Do this to your l's
- 23 Have a go
- 24 Information technology (init)
- 25 Used at Maffra and Drouin for dental health

DOWN

- 1 The movement of liquid through a pipe
- 2 Short for operator
- 3 Chemical version of B.O.D.
- 4 Change the surface charge of colloidal particles
- 5 High _ _ _ pump
- 6 What the water and wastewater plant are used for
- 8 To move water through a system of pipework
- 10 A method used to send and receive information and control items of plant
- 14 Place where armed forces eat
- 16 Look after
- 17 Put _ _ , To work hard
- 22 Used to propel a boat
- 24 Identification (init)

Weekend Seminar 2001

The trade organisations below as those that will be in attendance at this years Weekend Seminar:



BRAN+LUEBBE

ITT FLYGT



MERCK

METAVAL

DRAGER

With the above trade presenters along with a session from the Water Training Centre the weekend is shaping up to be very successful.

To ensure the success of the weekend the other ingredient required is a large attendance.

Enclosed with this edition of 'Operator' is the registration form for the weekend.

Please forward these as indicated on the form by February 16,

Saturday March 31 and Sunday April 1, 2001

Venue: Mount Buffalo Chalet

Remember the weekend is **free** to members, all you have to do is transport yourself there.