ONSITE
WASTEWATER NEWS
ONTARIO ON-SITE WASTEWATER ASSOCIATION NEWSLETTER

InSide

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Volume 4
Issue 3

OnSite is published three times a year by Ontario On-Site Wastewater Association. To submit an article or place an advertisement, contact the LandOwner Resource Centre at (613) 692-2390 ext. 1137

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Ten Billion Dollars Needed to Clean Up Sewage Treatment Effluents Across Canada

by Don Stoneman

This article is reprinted from *Better Farming* October 2003

The federal government is proposing tougher standards for chlorine and ammonia in effluent from sewage treatment plants. Municipalities that run these plants face huge bills for the upgrades and are resisting strongly. And farmers are getting caught in the crossfire, with the association for plant operators claiming they cause far more grief with their fertilizer spreading than they actually do.

A couple of years ago, chlorine, ammonia and the substances that result when those two chemicals combine were declared toxic substances by Environment Canada. "We are trying to manage the risks related to these substances," says James Arnott, section head with the wastewater effluent division of Environment Canada's environmental protection service. A target has been set for reducing chlorine. More controversial is the ammonia reduction plan. The stated goal of the program is "to reduce to the fullest extent the amount of ammonia in effluent released to surface water within 48 months," Arnott says.

Provincial governments govern municipal treatment plants by issuing certificates of approval. Arnott says there are inconsistent rules across the country for the use of chlorine for treating released water.

For chlorine, the new federal guideline is 0.02 mg of total residual chlorine per litre of effluent. Wastewater plant operators use chlorine to reduce pathogens before water is released. "There's still a need to reduce pathogens," says Arnott, but there are other ways of doing that.

One method is to chlorinate the effluent and then add a de-chlorinating process before putting the effluent back into a river or lake. The alternative is to switch to another technology, probably ultraviolet light that is the second most popular treatment. Both methods are expensive.

"Tolerances for ammonia are a different story," Arnott says. The harm from ammonia depends on the type of environment into which the effluent is being released. "Temperature and pH have a strong effect on the toxicity of ammonia. No acceptable limit has been set," Arnott says, and he asserts that there is definitely harm to fish from ammonia.

This is what makes the Canadian Water and Wastewater Association (CWWA) furious. If this proposal passes, some time in December 2004 municipalities must produce a plan valid over five years, during which they will announce the necessary investments.

These requirements will cost more than $10 billion across the country, says Duncan Ellison, executive director of the CWWA, which disputes Environment Canada over this proposal at many levels. Ellison says the total revenue taken in to run wastewater plants is only $4 billion a year in revenues, so municipal taxes must be raised to pay for it. "Environment Canada expects this rule will affect 150 municipalities. We say it is several times that."

CWWA disputes Environment Canada's way of testing for toxicity. The two tests that are used involve trapping fish in an environment where they cannot get escape a concentration of ammonia or chlorine that is introduced. In the wild, fish will simply move to an area where there is a lower concentration, until it dissipates.

Continued on page 3

Letter to the Editor Submitted by Dennis Dick

Since I challenged the industry to come up with solutions to field spreading of septage at our last conference, a couple of events have happened which may help our industry. As background, the Ontario government plans to phase out the practice of spreading untreated septage on farm fields over a five year period, so municipalities will have to find ways of treating this waste before disposing of it.

Grey County has offered to conduct a pilot project that could develop guidelines for the management of septage with the Ministry of Environment paying half the cost of the pilot project, up to a maximum of $ 50,000. Information would include the type of waste being produced, its content, soil composition across the county, as well as areas where spreading waste is inadvisable such as wetlands, hazard lands and near sources of drinking water. A consultant hired to head the study would look at whether existing sewage disposal plants would be capable of handling the septage and if not, what it would cost to upgrade them and the possibility of public/private partnerships. The study would also seek out entrepreneurs interested in developing freestanding facilities to handle county-wide septage. This project is expected to take about nine months to complete.

In York Region, the municipality has built a new sewage treatment plant and added a septage receiving station to handle all hauled waste. The new plant is equipped with the JWC environmental "muffin monster" for hauled septage pretreatment. This new JWC unit will take anything dumped by truck including rocks, plastics, trash and metals, and process it with a combination of grinding, washing and dewatering. It then separates the solids and discharges the waste water into a holding tank, which is then pumped into the plant for final treatment.

The MOE has mandated all municipalities to come up with a plan to deal with septage and the time frame is one year. OASIS is now receiving calls from consultants hired by municipalities for information in regards to facilities which would aid septage haulers to discharge their loads at receiving stations. Hopefully, septage receiving stations can be built across Ontario in order to meet the five year phaseout period the MOE has put in place.

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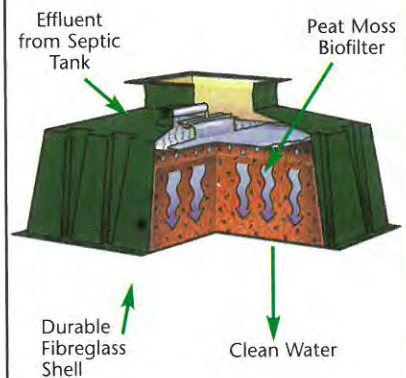

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Ten Billion Dollars Needed to Clean Up Sewage Treatment Effluents Across Canada

But Environment Canada's Arnott says fish don't have to die to be harmed by chlorine and ammonia. New scientific evidence shows that, in areas where there is wastewater effluent, smaller organisms are affected. Fish show reduced growth rates and reduced reproduction.

Now CWWA is challenging Environment Canada on the question of jurisdiction, since it is the provinces that regulate wastewater discharges under certificates of approval related to the receiving bodies of water.

"Only five per cent of the ammonia in rivers is coming from wastewater plants," Ellison, says. "The rest is coming from you guys (agriculture)."

Environment Canada's Arnott disputes this. "These plants are definitely a bigger concern than agriculture," he says. Furthermore, agriculture's contribution to similar pollution is going to be covered off under some aspects of the Agricultural Policy Framework.

He says the Grand River in southern Ontario is probably at high risk from chlorine and ammonia because of the large population putting effluent into the river. Also, the river water is warm and the flow is low in the summer. Ammonia can reduce the oxygen in the water.

The Association of Municipalities of Ontario is also fighting the federal proposals, says senior policy advisor Nicola Crawhall. Toronto, for example, claims it faces a capital expense of $500 million to build de-nitrification systems at their sewage treatment plants to reduce ammonia. Running these systems requires a lot of electricity and that bill hasn't been calculated yet. She thinks the benefits to water quality will be minimal.

"We don't think there is much impact at the end of the pipe. We don't see any fish kills in Lake Ontario." Plants where a lot chlorine is dumped into the small stream and fish die are another story. "Those are inexcusable," she says. "We don't object to those systems being upgraded."

Vitek Wilewski, manager responsible fore pollution control at waste water plants in Toronto, says the city discharges 20 tonnes of ammonia nitrogen per day into the Humber River, Don River and Lake Ontario, at an average concentration of 17 mg/litre.

Ellison says the provincial ministries of environment should be concerned because the federal government is invading their jurisdiction. However, spokesman John Steele says the Ontario environment ministry isn't concerned about jurisdiction and is proceeding with its own agenda by implementing the recommendations of Chief Justice Dennis O'Connor from Walkerton Inquiry.

Justice O'Connor did not mention chlorine and ammonia in wastewater, but did target "heavy metals and priority organics" such as endocrine disruptors that "disrupt human reproductive systems," Steele says. "It's more of an issue of priorities," he told *Better Farming.*

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S-Files — *Unexplainable or inexplicable septic sightings*

FIRE SALE: One tertiary treatment unit, marshmallows not included.

From the Editor

Welcome to 2004, also recognized, at least around here as the 5th year since the inception of the Ontario Onsite Wastewater Association. The next ONSITE newsletter will be the start of Volume 5, a publication that OOWA's membership should be very proud of. This province-wide source of current information and discussion forum is not just being picked up by local industry, it is being read and circulated by everyone from homeowners across the province to other organizations and publications through Canada and in the United States. Just as we reprint articles, ours are also being reprinted in other newsletters and trade magazines. As we start another year, please consider contributing your thoughts or some information to the newsletter, everything you read is found or written by members... perhaps it is your turn! As usual, some OOWA gear goes out to our contributors, this issue Doug Norton of Lorne Montgomery receives a t-shirt and a cap goes out to Dennis Dick.

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Feature Installation

How to Make a Bathtub!

The below picture was recently taken of a Class 4 Absorption Trench Bed being installed for a new home. The photographer noticed that the existing native soil was clay which he questions why is the leaching bed excavated into this material? The picture shows that crushed stone layer is approximately at existing grade and there is imported sand fill under the crushed stone layer. The photographer was aware that other installers had bid on this job for a fully raised system. So why does this problem exist today when inspectors have to take training courses and write/pass an exam to be licensed by the province of Ontario. Also, this begs the question, is the Ministry of Municipal Affairs and Housing not concerned about consistent delivery of the code across the province of Ontario. There has been considerable effort put forth by the Building Material Evaluation Committee to put up road blocks for alternative technology in Ontario, but this picture is evidence that the Province should clean up the exist approval process for conventional Class 4 Absorption Trenches first!

Additional Comment ...

We thought it would be nice to print a letter showing appreciation and a contextual correction for the much maligned Rob Passmore of Rob's world:

Please let ROB and the TECHNICAL EDITOR know that the glossy binder (see Vol. 4, Issue 2) was provided to ROB'S parents by a home inspector, not a building inspector.

I thank you very much for the great articles. Our industries will always have to struggle to make a difference. We must be consistent, persistent and vigilant in our efforts. The hardest part of our job will always be not to be discouraged. We will make a difference. Never give up! Good luck and best wishes.

Ernie Van Koughnett DCBO, Seguin Township

Installer's Comment

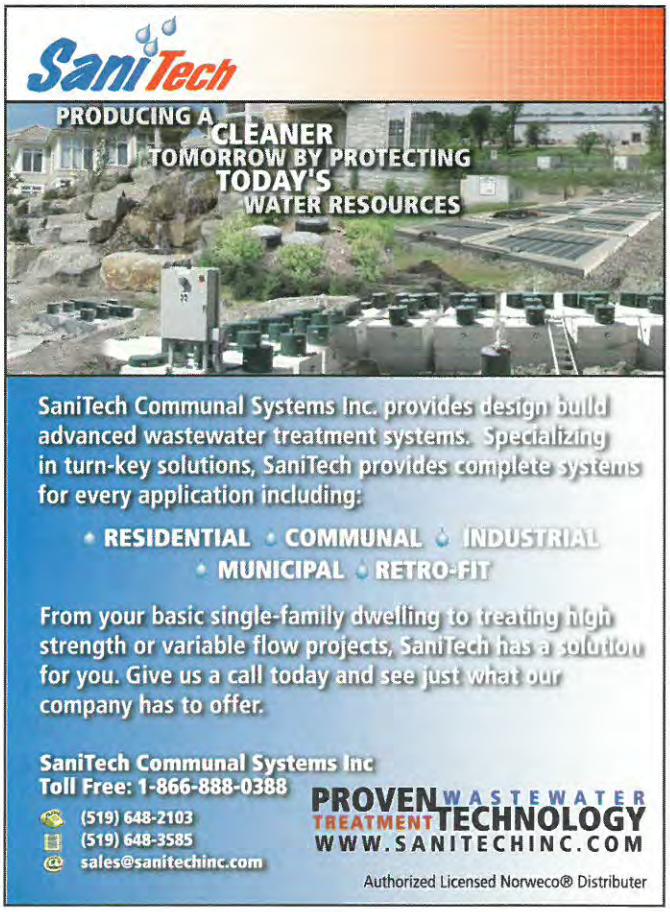
Submitted by Doug Norton, Lorne Montgomery Equipment Rentals Ltd., Carp, Ontario

Have you ever not been paid by a client? Right, I am sure most of you have experienced this scenario. I have recently experienced this situation with one of our septic system installations in 2002. I had given a client a price for a partially raised Class 4 Absorption Trench Bed and a fully raised Class 4 Absorption Trench Bed before I had the system approved by the local regulatory agency. Due to site conditions (i.e., clay soils) we had to import 0.9 metres of sand fill for below the trenches. However, due to the topography of the lot, the bed could be cut into the hill, and still have a free draining mantel. This, the client considered a partially raised tile bed because of discussion he had with other installers afterwards. When I invoiced the client for a fully raised system because of the extra imported sand, they refused to pay and we ended up in small claims court which took a lot of time and effort on my behalf. I was successful in court and was awarded 65 percent of my invoice. However, my message to our industry is that we have to get together and agree on some common terms being used by our industry to prevent our clients from being confused by different installers using different terms when bidding on the same job.

In this scenario, the court agreed that the term partially raised system applies when you can use some depth of native soil in the construction of the system, such is the case when you have a layer of unsaturated native sand. The court agreed that a fully raised system does not only apply to a system that has a finished grade approximately 1.5 metres above existing grade due to the fact that the bed could be lowered if cut into a side hill, but still requires the same amount of imported sand fill.

We would like to thank the local regulatory office for their support in this situation and encourage other installers to make use of the experts available in their area.

It seems to me that the Ministry of Municipal Affairs and Housing needs to revisit the code and definitions, and working with the Ontario Onsite Wastewater Association to agree on some terms that will help standardize our industry. Wasn't that the purpose of having installers trained and licensed under the *Ontario Building Code*?



Rob's World

By Robert A. Passmore, B.Eng.

Does Membership Really Have Its Privileges?

I recently had an opportunity to review the membership numbers for the Ontario Onsite Wastewater Association (OOWA) from its inception in 1999 through to the end of 2003. Unfortunately as February 2004, membership numbers have not increased as significantly as the Association has aspired to. This should not only be alarming to me, but should concern all members.

OOWA was formed based on the principles of improving the on-site wastewater industry through self improvement, knowledge and good workmanship. OOWA quickly became a common thread to many of our industry's practitioners who shared a common vision for the industry, and as a result, a network of professionalism began to grow. This begs the question: How can our membership be stagnating around the year 2001 numbers when there are over 5,000 licensed installers and over 1,000 regulators, specialized design engineers and academics in the on-site wastewater industry?

Looking closely at this issue, two likely scenarios for this overall situation emerge: either the bulk of the on-site industry simply doesn't agree with what OOWA stands for, or the on-site community is completely unaware of OOWA's existence. If the bulk of the industry doesn't agree with what OOWA stands for, then let us openly debate the issues. By becoming a member of OOWA, it does not mean that you need to completely agree with the organizations current direct. In fact, the opposite is true; becoming a member of OOWA allows you to participate in the direction of the organization. If one hopes for change without becoming involved in the process, one cannot expect change to occur.

If the bulk of the industry is unaware of OOWA then we can rectify this. Each and every member must actively promote OOWA in their respective areas to make their clients aware of the organization. It has been demonstrated in several instances that installers who promoted their membership in OOWA , had clients utilize their services over non membership competitors. The reason for this was made quite clear to the installers: the clients clearly understood that the installer, by being part of OOWA , were working to better themselves and their trade and that is more important than the same or lower price by a non-member. This particular scenario, while factual, is the exception not the norm. It is up to the OOWA members to promote their organization.

What this all boils down to is this: becoming a member of OOWA must be seen as being more than just paying a membership fee and getting some newsletters and discounts on various conferences. Members have to begin to see that belonging to OOWA is an opportunity; an opportunity to help promote their industry, raising the standard of acceptance and good workmanship to new levels. By becoming actively involved in their organization in whatever way they can, members will feel more connected to OOWA. This connection will inevitably yield substantial benefits over their competition and will attract like minded people, be it colleagues or clients.

As participation grows and standards are raised, OOWA will be seen as a legitimate stakeholder in the on-site sewage system industry and gain lobbying power. This power will allow us to affect real changes to the current regulation and make this industry truly great. This is how the National Onsite Wastewater and Recycling Association (NOWRA) has achieved its success. NOWRA only acted as the instrument for which those in the on-site industry could focus their efforts to gain lobbying power. As a result they are seeing positive change in their industry.

So to answer my original question: Does membership really have its privileges? Yes, it most certainly does. The power for positive change in this industry lies with the people. The only thing standing in the way of OOWA realizing its' full potential is YOU.

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Frequently Asked Questions

By John Garrah, Inspector, OSSO
Technical review: Terry K. Davidson, P.Eng.

Q ▶ Who is responsible for providing complete printed literature with instructions regarding the operation, servicing and maintenance requirements of a treatment unit?

A ▶ Every Manufacturer or distributor of a treatment unit shall provide, for each model sold, printed literature that describes complete instructions regarding the operation, servicing, and maintenance requirements of the unit and its related components necessary to ensure the continued proper operation in accordance with the original design and specifications. (OBC 8.6.2.2.[6])

Q ▶ At what intervals should an effluent sample be produced for shallow buried trenches?

A ▶ The sampling required by clause 8.9.2.4.(1)(a) of the *Ontario Building Code* shall be conducted: (a) initially, once during the first 12 months after the sewage system was put into use, and (b) thereafter, once during every 12 month period, at least 10 months and not more than 18 months after the previous sampling has been completed. (OBC 8.9.2.4.[2]).

Q ▶ When a maintenance contract expires on a treatment unit, who is responsible for renewing the contract?

A ▶ The homeowner.

OOWA Profile

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The mission of the ORWC is to promote environmentally sustainable development of rural and unsewered areas through the effective use of on-site wastewater disposal technologies. The ORWC provides training, research and technology evaluation services for the on-site wastewater industry.

A wide variety of on-site wastewater courses which provide a hands-on learning experience are offered by the Centre at demonstration sites in Central Ontario at the University of Guelph and paired sites in Eastern Ontario at Collège d'Alfred and at the Baxter Conservation Area. The centre also works with companies to develop, improve and evaluate on-site wastewater treatment technologies for the North American market. Assisting companies in bringing new technologies to market is another one of the ways the ORWC is helping to advance on-site wastewater treatment in Canada and improve our rural environment.

Doug is the Director of the ORWC and a faculty member of the School of Engineering. His technical expertise is in the area of water and environmental resources with an emphasis on on-site systems. He has over 20 years of experience developing and delivering courses for adults in the engineering and on-site wastewater fields.

Ontario Rural Wastewater Centre Upcoming course listings:

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1. On-Site Water and Wastewater Systems for Real Estate Professionals (Wednesday April 7, 2004)
2. Advanced Design of On-Site Sewage Systems (Wednesday April 14, 2004)
3. Part 8 OBC On-Site Sewage System Installer/Inspector Course (April 19 – 23 2004).
4. Alternative On-Site Wastewater Treatment Systems (Tuesday April 27, 2004)
5. Water in the Developing World (Winter 2004)
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7. Advanced Design of On-Site Wastewater Treatment Systems (Spring 2004)
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