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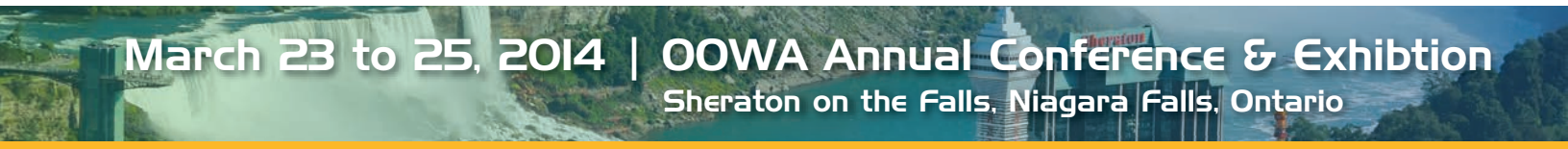
Ontario Onsite Wastewater Association Newsletter



Volume 15/Issue 1
Spring 2014 | Conference Edition

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Onsite
Ontario Onsite Wastewater Association Newsletter

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OntarioOnsite WastewaterAssociation

Septic Systems and Homeowner Insurance

by Doug DeRabbie, IBC

There are about 1.2 million septic systems in Ontario, with billions of litres of waste discharged into the environment each year. Investigators currently estimate that 30 percent of household septic systems in the province are failing to adequately protect the environment, according to the Ontario Onsite Wastewater Association. Recent changes to the *Ontario Building Code* for systems with daily design flows under 10,000 litres (most residential) mean greater maintenance and monitoring requirements, along with new standards for dispersal beds.

For residents with older septic systems or those putting in new or upgraded systems, there is always the risk of septic system back-up or failure. Some assume they are covered for these events under their homeowner insurance policy. That may not be the case. It's important to check your policy and review coverage with your company or broker to see if you're covered for such an event.

Home insurance protects against water damage, but not in all cases. It all depends on the coverage purchased under the policy (endorsements added) and the cause of the loss. The coverage should always be reviewed with your company or broker.

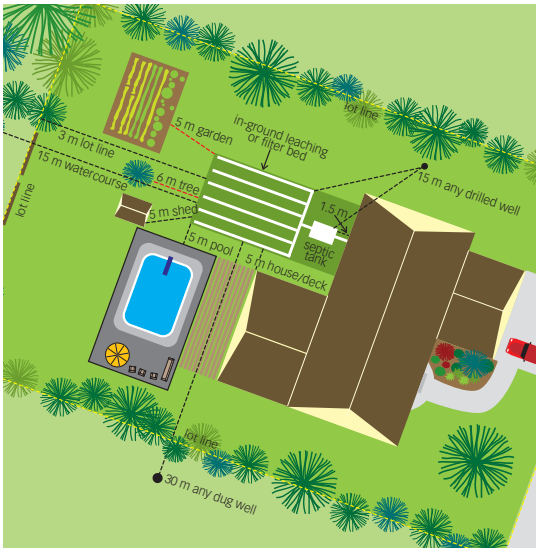
A standard homeowner insurance policy covers damage caused by a sudden, accidental discharge of water in the home. In most cases, this will include frozen pipes, the overflow of water from public water mains or damage caused by overflowing appliance or domestic water containers (i.e., washing machine that overflows, leaking hot water tank).

If a septic system causes damage due to a continuous or repeated leaking, this would not be covered under a standard homeowner insurance policy. A situation that causes slow and continuous leakage is not considered "sudden" or "accidental."

The typical homeowner insurance policy has distinct coverages for the dwelling and for any detached structures or features outside the home. If a septic tank suffered loss or damage by a covered peril (i.e., a house fire that damages the septic line), there would be coverage under the homeowner insurance policy.

Sewer back-up insurance is an optional coverage to the standard homeowner policy. It generally covers damages caused by the back up of sewers, septic tanks or sumps. Typically offered as an "endorsement," this means it must be added on to your existing homeowners policy. Under most sewer back-up endorsement coverage, any back up of sewage into the house from the septic is covered.

Residents experiencing a septic system back-up, maintenance problems or system failure should not assume they have insurance coverage for resulting damages under their homeowner policy. Insurance policies and wordings vary from company to company; each policy should be reviewed carefully with a qualified insurance expert. ■



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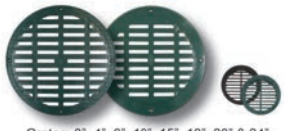

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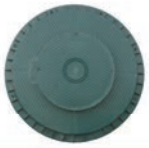

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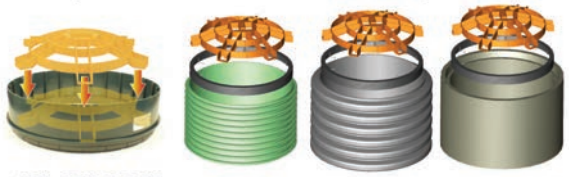

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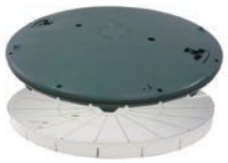

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President's Message

I am extremely excited about this year's conference. Sandy Bos, Ray Foster and the entire Conference Committee have been working very hard to put together what I feel is going to be the best OOWA conference and trade show yet. With a Business/Installer focus on Monday and technical sessions set for Tuesday there will be plenty of content for whatever your interest or need. Please take time to walk the trade show area where as many as 50 suppliers will be on hand to showcase new innovations designed to help your business and answer any of your questions. Please show your appreciation for their commitments of time and resources as well as their investments that ensure the success of our conference and association. Without the sponsors and exhibitors this conference would not be possible.

In 2011 Jim Collins wrote the book *20 Mile March* which depicts the importance of proper planning and execution. The book sets the example of the difference in strategy between the explorers Roald Amundsen and Robert Falcon Scott, in their efforts to lead their teams to be the first to the South Pole in October 1911. OOWA's initiatives are not unlike the strategies of Roald Amundsen and his team to reach the South Pole first on December 15, 1911. OOWA has been moving forward on all of our goals and objectives not unlike Amundsen's "20 mile march." All committees have continued to be actively tackling their objectives, the goal to create a strong and effective industry stakeholder association. I applaud all of the committee chairs, volunteers and the rest of the Board of Directors for their efforts over the past year. Many good things have happened and our association is growing stronger thanks to everyone's efforts. I encourage the march to continue.

It has be a distinct privilege to represent you all as President over the past 24 months. I have seen and been part of many great improvements and successes in my term; without a doubt some challenges along the way as well. OOWA continues to focus on delivering a strong message to the MMAH and MOE on the importance of sustainable, cost-effective long term onsite and decentralized wastewater solutions as a first or at least equal option in rural development. The importance of this message to be carried to the top of provincial policy making as well as to grass roots municipal planning is critical to the survival of our industry and our stakeholders.

I look forward to welcoming the new board members and executive committee as we step into the next year. I would like to thank them in advance for their commitment and contributions.

A special thanks as well to the editor, Terry Davidson and Katherine Rentsch and the Media Committee for this publication.

I hope to see you at the conference!

Don Krauss
President

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2012 *Ontario Building Code* Changes

Examinations and Knowledge Maintenance

Examinations

The Ministry of Municipal Affairs and Housing is updating all qualification examinations to reflect changes to the Building Code. Starting January 1, 2014, anyone qualifying for the first time or qualifying in a new category will be required to pass the new 2012 examinations.

Visit www.ontario.ca/BuildingCoderegularly for new examination dates.

Knowledge Maintenance

Knowledge maintenance assessments are designed to evaluate a practitioner's knowledge of changes between the 2006 and 2012 editions of the Building Code. Knowledge maintenance assessments will not be required immediately on January 1, 2014. The Director of the Building and Development Branch will advise affected practitioners when the knowledge maintenance program is being implemented, after which practitioners would have eighteen months' to comply with the requirements.

The ministry is developing educational material to help practitioners understand and apply the 2012 Building Code, and to prepare for future knowledge maintenance assessments. ■

15th ONTARIO ONSITE WASTEWATER ASSOCIATION ANNUAL CONFERENCE & TRADE SHOW

WELCOME!

We would like to extend a warm welcome to all of the participants, vendors, speakers, volunteers and sponsors for our 2014 Annual Education Conference and Trade Show. Our conference organizing committee has worked diligently and strategically (since last year's event at Blue Mountain Resort in Collingwood, Ontario) to implement the feedback and suggestions from our past participants.

Our agenda was adjusted from past years to provide topics sorted by professional subject matter and theme into each of the conference days. We truly felt this would allow more participants to attend more events specific to their interests and within budget, while allowing for a broader range in professional topics — building on our traditional conference flow.

The costing structure was adjusted to allow participants to select the events and days they wish to attend on an individual basis, while continuing to provide the value they expect at our conference and event services.

The Trade Show exhibits will again provide an opportunity for interaction and information sharing on equipment, tools, services, technology and resources available to the professional contractor, service provider and any other stakeholders interested in our growing industry, and ensuring we strengthen our efforts in improving water resource management throughout Ontario.

We would like to thank Don Krauss, Jane Zima and Mallory Lloyd for all their hard work and determination in helping put together what we hope to be the most successful OOWA Conference ever!

Regards,

The Conference Committee
Sandy Bos — Chair
Ray Foster — Co-Chair

conferenceSchedule

15th Annual Ontario Onsite Wastewater Association Conference & Exhibition

Sunday March 23, 2014

		Location
11:00 a.m. to 7:00 p.m..	Registration Desk Opens	Third Floor Foyer
6:00 p.m. to 7:00 p.m.	Welcome Reception	Exhibit Hall*
7:00 p.m. to 9:00 p.m.	Town Hall Meeting	Exhibit Hall*

Monday March 24, 2014 — Main Sessions

		Location
7:45 a.m. to 8:45 a.m.	**Coffee, Registration**	Exhibit Hall*
8:00 a.m. to 4:30 p.m.	**Trade Show Hours**	Exhibit Hall*
8:45 a.m. to 9:00 a.m..	**Opening Remarks** — Conference Chairs: Sandy Bos, Township of Muskoka Lakes and Ray Foster, ESSE Environmental Health	Great Room C
9:00 a.m. to 9:45 a.m.	**Keynote Address** — ***2012 Building Code: Decoding Part 8 "Sewage System"*** — Terry Davidson, Ottawa Septic System Office (OSSO)	Great Room C
9:45 a.m. to 10:00 a.m.	***Association Excellence*** — Mike Seiling, President, Ontario Building Officials Association (OBOA)	Great Room C
10:00 a.m. to 10:30 a.m.	**Networking/Tradeshow Break**	Exhibit Hall*
10:30 a.m. to 11:20 a.m.	***Soil Mechanics & Groundwater Flow De-Mystified*** — Robert Passmore, Paterson Group Inc.	Great Room C
11:20 a.m. to 11:30 a.m.	**Balancing Break**	
11:30 a.m. to 12:30 p.m.	***Designing, Installing & Maintaining SBTs*** — David Morlock P. Eng, Consulting Engineer, Chung & Vander Doelen Engineering Ltd.	Great Room C
12:30 p.m. to 2:00 p.m.	**Networking Lunch**	Exhibit Hall*
2:00 p.m. to 2:50 p.m.	***Designing Type A & Type B Beds*** —Eric Gunnell P.Eng, Gunnel Engineering Ltd.	Great Room C
2:50 p.m. to 3:00 p.m.	**Balancing Break**	
3:00 p.m. to 4:00 p.m.	***Estimating Materials*** — Ontario Rural Wastewater Centre (ORWC)	Great Room C
4:00 p.m. to 4:30 p.m.	**Networking/Tradeshow Break**	Exhibit Hall*
4:30 p.m. to 5:45 p.m.	**Annual General Meeting**	Great Room C
5:45 p.m. to 6:30 p.m.	No Events	
6:30 p.m. to 7:30 p.m.	**Pre-Banquet Reception**	
7:30 p.m. to 8:15 p.m.	**Banquet Awards Dinner**	Great Room C
8:15 p.m. to 8:45 p.m.	**Keynote Address** — ***New Initiatives at U.S. EPA to Address Onsite Systems —*** Joyce Hudson B.S Civil Engineering, U.S. EPA	Great Room C
8:45 p.m. to 9:30 p.m.	**Awards & Announcements** — Don Krauss, OOWA	Great Room C
9:30 p.m. — onwards	**Private Hospitality Events**	Hard Rock Club

Monday March 24, 2014 — Breakout Sessions

		Location
10:30 a.m. to 11:20 a.m.	***Onsite Wastewater Treatment System Drainfield Malfunction: Causes, Investigation, Prevention and Correction*** — Dennis F. Hallahan, Infiltrator Systems Inc.	Strategy Room 3
11:20 a.m. to 11:30 a.m.	**Balancing Break**	
11:30 a.m. to 12:00 p.m.	***Overhauling an Underperforming Denitrification System*** — Anne Egan, RJ Burnside & Associates Ltd.	Strategy Room 3
12:00 p.m. to 12:30 p.m.	***Septic Smart Educational Video Project*** — Darryl Finnigan B.Sc (Agr),M.R.M, Ontario Ministry Agriculture and Ministry of Rural Affairs (OMAFRA)	Strategy Room 3
12:30 p.m. to 2:00 p.m.	**Networking Lunch**	Exhibit Hall*
2:00 p.m. to 2:50 p.m.	***Ontario Highway Rules and Regulations for Commercial Motor Vehicles*** — Nick Korakas , Ministry of Transportation (MTO)	Strategy Room 3
2:50 p.m. to 3:00 p.m.	**Balancing Break**	
3:00 p.m. to 4:00 p.m.	***Trenchless Utility and Installing Detection Wire*** — Doug Niles, Trenchless Utility Equipment	Strategy Room 3

Schedule is subject to change

** Exhibit Hall is located in Great Room AB, Strategy Room 2 and 3 located on third floor of conference centre*

conferenceSchedule

Monday March 24, 2014 Breakout Sessions

10:30 a.m. to 11:20 a.m.	**Pumps & Controls for Onsite Systems** — Ontario Rural Wastewater Centre (ORWC)	Strategy Room 2
11:20 a.m. to 11:30 a.m.	**Balancing Break**	
11:30 a.m. to 12:30 p.m.	***Pumps & Controls for Onsite Systems*** — Ontario Rural Wastewater Centre	Strategy Room 2
12:30 p.m. to 2:00 p.m.	**Networking Lunch**	Exhibit Hall*
2:00 p.m. to 2:50 p.m.	***Managing Your Electrical System Risk*** — James Fraser IAEI,ECRA& NAFI, Electrical Safety Authority	Strategy Room 2
2:50 p.m. to 3:00 p.m.	**Balancing Break**	
3:00 p.m. to 4:00 p.m.	***Introduction to Septic Inspections*** — George Eastwood P.Eng, Canadian Onsite Wastewater Institute (COWI)	Strategy Room 2

Tuesday March 25, 2014 Main Sessions

		Location
7:45 a.m. to 8:45 a.m	**Coffee, Registration**	Exhibit Hall*
8:00 a.m. to 2:15 p.m.	**Trade Show Hours**	Exhibit Hall*
8:45 a.m. to 9:00 a.m.	**Opening Remarks** — Conference Chairs: Sandy Bos, Township of Muskoka Lakes & Ray Foster, ESSE Environmental Health	Great Room C
9:00 a.m. to 9:45 a.m.	**Keynote Address** — ***Nitrogen and On-Site Sewage Disposal in Chesapeake Bay Watershed*** — Jay Pragger, B. Sc. Maryland Department of the Environment	Great Room C
9:45 a.m. to 10:15 a.m.	**Networking/Tradeshow Break**	Exhibit Hall*
10:15 a.m. to 11:15 a.m.	***The Past 100 Years and Future of Onsite Resource Water*** — Colin Bishop REHS,RS, Anua	Great Room C
11:15 a.m. to 11:30 a.m.	**Balancing Break**	
11:30 a.m. to 12:30 p.m.	***Improving Regulatory Consistency*** — Terry Davidson, Terry Davidson, Ottawa Septic System Office (OSSO)	Great Room C
12:30 p.m. to 2:00 p.m.	**Networking Lunch**	Exhibit Hall*
2:00 p.m. to 3:00 p.m.	***Phosphorus Removal in Residential Leach Fields*** — Craig Jowett, Waterloo-Biofilter Systems Inc.	Great Room C
3:00 p.m. to 3:15 p.m.	**Networking/Tradeshow Break**	Exhibit Hall*
3:15 p.m. to 4:15 p.m.	***What We Know & Where We Need To Go*** — Trish Johnson M.A, RV Anderson Associates Limited	Great Room C
4:15 p.m. to 4:30 p.m.	**Closing Remarks —** Don Krauss, Ontario Onsite Wastewater Association (OOWA)	Great Room C

Tuesday March 25, 2014 Breakout Sessions

11:30 a.m. to 12:30 p.m	***Nitrogen and Phosphorus Removal in a Hybrid Constructed Wetland Treating Domestic Wastewater in a Cold Climate*** — Chris Kinsley/Jed Rode, University of Guelph	Strategy Room 3
12:30 p.m. to 2:00 p.m.	**Networking Lunch**	Exhibit Hall*
2:00 p.m. to 3:00 p.m.	***Decentralized Municipal Wastewater - Use of a Large Subsurface Disposal System at the Omemee WPCP*** — Kevin Warner, Cambium Environmental Inc.	
3:00 p.m. to 3:15 p.m.	**Networking/Tradeshow Break**	Exhibit Hall*
3:15 p.m. to 4:15 p.m.	***Out of sight -but not out of mind; the challenges and successes of a municipal on-site septic inspection program*** — Matthew Pearson MCIP, RPP, B.M. Ross & Associates Ltd, & Matt Farrell CET, Township of Huron-Kinloss	Strategy Room 3
11:30 a.m. to 12:30 p.m	**Possibilities for the Transformation of Pharmaceuticals in Onsite Wastewater Discharge using Advanced Ozonation Techniques** — Gordon Balch, Centre for Alternative Wastewater Treatment – Fleming College	Strategy Room 2
12:30 p.m. to 2:00 p.m.	**Networking Lunch**	Exhibit Hall*
2:00 p.m. to 3:00 p.m.	***Protecting The Environment of an Eco-Friendly Lakefront Lodge with MBR Technology*** — Khier Chibiani, Premier Tech Aqua	Strategy Room 2
3:00 p.m. to 3:15 p.m.	**Networking/Tradeshow Break**	Exhibit Hall*
3:15 p.m. to 4:15 p.m.	***Phosphorus Removal Case Study — Silent Lake*** — Steven Filipowitz, Ministry of Natural Resources (MNR)	Strategy Room 2

Schedule is subject to change

** Exhibit Hall is located in Great Room AB, Strategy Room 2 and 3 located on third floor of conference centre*

Keynote Speakers

Jay Pragger, Deputy Program Manager for Maryland Department of the Environment's (MDE) Wastewater Permits Program (WWPP) — Jay has lso served as project manager for the Innovative and Alternative On-site Sewage Disposal Program. Jay is on the expert panel tasked with identifying and recommending on-site wastewater treatment technologies, or modifications to existing wastewater treatment systems, that would reduce total nitrogen (TN) loads to the Chesapeake Bay.

Terry Davidson, P.Eng. — Terry is the Director of Regulations at the Ottawa Septic System Office located at the Rideau Valley Conservation Authority in Manotick, Ontario. The Ottawa Septic System Office has been delivering the septic approvals program since 1995 in the City of Ottawa, and expanded to the Tay Valley Township in 2004. His responsibilities include managing inspection and approvals of all on-site wastewater systems in the City of Ottawa and Tay Valley Township. Terry has also been instrumental in implementing and delivering a septic reinspection program in his jurisdiction. He is a past board member of OOWA and he coordinates and teaches onsite wastewater treatment courses offered through the Ontario Rural Wastewater Centre in Eastern Ontario.

Joyce Hudson is a Senior Environmental Engineer with the EPA Headquarters' Office of Wastewater Management where she leads EPA's Decentralized Wastewater Program, an effort to promote improved management of onsite/decentralized wastewater systems and awareness of the benefits of using alternative wastewater treatment approaches. She is a principal author of two key EPA documents, *Voluntary National Guidelines for Management of Decentralized Wastewater Systems*, to assist state and local governments and others improve management practices which contribute to septic system malfunctions and more recently, *A Model Program for Onsite Management in the Chesapeake Bay Watershed*, developed to assist states in managing their onsite programs with the goal of minimizing nitrogen impacts to the Chesapeake Bay. Joyce also led the development of several decentralized initiatives including a partnership with federal and state government officials and private industry which currently boasts 16 partner organizations, and an awareness program targeting homeowners, called SepticSmart. She has been employed with EPA for 33 years. Joyce holds a Bachelor of Science degree in Civil Engineering from Howard University, is a native of Washington, D.C., currently residing in Manassas, Virginia, and is married with three children.

Conference Speakers

Dr. Gordon Balch, Research Scientist — Dr. Balch has over 20 years of research experience dealing with environmental contaminants and has conducted research on the fate of both inorganic and organic contaminants. Dr. Balch has experience in both the public sector (University research) and private sector (environmental consulting) and thus brings a blend of experiences that contribute significantly to applied research and is familiar with the science — technology transfer needs that are common to industry. He participates in the development, implementation, and assessment and interpretation of testing protocols for the validation of technology claims. He has worked with close to 75 companies and as many technologies.

Colin Bishop is currently employed as Director Environmental North America for Anua. He started his career with the Mohave County Arizona Environmental Health Division as an Environmental Health Specialist and was later an Environmental Health Supervisor over one of three districts. He is an entrepreneur and has worked in the decentralized and on-site wastewater industry over the last 21 years in system manufacturing, design, service, regulation, inspection, sales and marketing, and site/soil evaluation. He is a Registered Sanitarian in Arizona, Louisiana, Texas and West Virginia. He is a Registered Environmental Health Specialist through the National Environmental Health Association. He earned a B.S. degree in Zoology from Brigham Young University in 1992. Colin lives in Woodville, Texas with wife, Mia, and their four children.

Kheir Eddine Chibani, Process Engineer, Premier Tech Aqua — Mr. Khier Chibani holds an undergraduate degree in Chemical Engineering and a Master's degree in Environmental Science from Ghent University in Belgium. He has worked within the wastewater treatment industry for the past twelve years and his work has focused on Enhanced Biological Phosphorus removal (EBPR) with concurrent nitrification and denitrification in a sequencing Batch Reactor (SBR). Mr. Chibani has worked for Premier Tech Aqua's engineering division since 2001, where he specializes in biological wastewater process design and implementation.Mr. Chibani is a member of Water Environment Association of Ontario (WEAO).

George Eastwood, M.Eng., P.Eng, RHI — George Eastwood is a practicing professional engineer (civil) and Registered Home Inspector in private practice since 1998. He combines engineering training with field experience to

conferenceSpeakers

provide specialized inspection, diagnosis and structural design services. His early work experience includes the design of onsite treatment and ground disposal systems.Mr. Eastwood's presentations include:

- MMAH OBC Part 8 & Part 9 courses
- OAHI Defect Recognition & Reporting Course
- Threshold School of Building "Construction Basics" module
- Conestoga & Mohawk Colleges "Introduction to Onsite Systems" (by COWI)
- "Enhanced Structural Assessments for Home Inspectors" (developed by GE)

Anne Egan, M.Sc. (Eng.), P. Eng. — Anne is an Onsite Wastewater Specialist with R.J. Burnside & Associates Limited and is involved primarily in wastewater system design for Burnside's private sector, public sector, and First Nations clients. Her experience includes all aspects of sewage system design, including collection and conveyance, various types of treatment, and disposal systems for subsurface and surface discharge of treated effluent. Ms. Egan is involved in all project phases, from planning level studies to conceptual design, detail design, procurement of approvals, and construction, for residential, institutional, commercial and recreational land uses.

Matt Farrell, CET — Matt Farrell became the Chief Building Official for the Township of Huron-Kinloss in 1999 after graduating from Conestoga College's Construction Engineering Technology Program. For the past 14 years Matt has been responsible for administering and enforcing the Building Code on behalf of the Township as well as the administration of Municipality's planning regulations. His knowledge of the *Ontario Building Code* and other rural area issues have led to him being a member of several regional working committees and a presenter on topics such as accessibility, agricultural construction requirements, drinking water source protection and renewable energy regulation. Matt has been an active member of the Ontario Building Officials Association and joined their Board of Directors in 2011. He currently sits as the Chair of their Education and Training Committee as well as their Rural Affairs Chair.

Steve Filipowitz, P. Eng. — Steve has been the Supervisor of the Environmental Design Unit with the Ontario Parks Branch for the Ministry of Natural Resources since 2004. He is a Civil Engineer specializing in water and wastewater systems. One of the many aspects of the Ontario Parks Design Unit is to be responsible for the designs, applications for Ministry of Environment approval and tender documents of new, alterations, upgrades or replacement of on-site wastewater systems at Provincial Parks. Steve also administers multiple vendor contracts for a variety of engineering and site investigation services not carried in-house. Prior to joining Ontario Parks, Steve has worked for engineering firms in Toronto, Peterborough and Whitby since graduating from the University of Toronto in 1992. Steve resides in Peterborough with his wife and two children.

Darryl Finnigan — Darryl has worked as a Policy and Program Analyst for the Ontario Ministry of Agriculture & Food in Guelph, Ontario since 2005. He is currently focused on agri-environmental projects in the Lake Simcoe watershed, including producing the *Septic Smart* Video series in 2011 in partnership with the Ontario Rural Wastewater Centre. Prior to joining OMAF, Darryl worked as a biologist examining pesticides for Health Canada in Ottawa, and as a consultant for environmental groups in Toronto. Darryl received his B.Sc. from the University of Guelph and his Masters of Natural Resource Management from Simon Fraser University.

James Fraser — James obtained his C of Q as a Construction and Maintenance Electrician in 1985. After receiving his licence, James worked as a service electrician and also trained apprentices with the Joint Apprenticeship Council (JAC). In 1988, training became James' key focus as he joined the staff at George Brown College to train apprentices in a full-time capacity. Here he taught all levels of the apprenticeship program, as well as the pre-exam courses for electricians and masters. During his tenure at George Brown College James co-authored two textbooks to support apprenticeship training which are used in courses at technical colleges across Canada. With the introduction of the Electrical Safety Authority in Ontario in 1999, James joined this provincial safety organization and has worked as a Wiring Inspector, Senior Inspector, and as Technical Advisor, Central Region. He is now in the role of General Manager for Southern Region, and oversees the Continuous Safety Services Program. James is a Master Electrician with ECRA/ESA, a Certified Electrical Inspector (CEI) with the International Association of Electrical Inspectors (IAEI), has CFEI certification with NAFI, and is also a member of the Canadian Association of Fire Investigators (CAFI).

Eric Gunnell, P.Eng — Eric is a professional engineer, specializing in the design of onsite wastewater systems. Eric is the president of Gunnell Engineering Ltd., which provides a range of rural engineering services. Gunnell Engineering Ltd. is actively involved in the design of conventional septic systems and various tertiary treatment systems, all of which are assessed to meet specific requirements of individual clients and their objectives for the property. Eric has extensive design experience with both Part 8 *Ontario Building Code* on-site sewage systems, as well as Ministry of Environment Environmental Compliance Approvals for Sewage Works. His area of expertise includes the design of new and replacement septic systems, site investigations, troubleshooting new and existing systems, investigation of failed systems, and assessment and upgrading of distressed or undersized systems. Eric is currently a Siting Member of *Ontario Building Code* Commission (BCC) Part 8; a Board Member and Past President of the Ontario Onsite Wastewater Association; and a member of Professional Engineers Ontario.

Dennis F. Hallahan, P.E., Technical Director Infiltrator Systems Inc. — Dennis has twenty-five years of experience with the design and construction of on-site wastewater treatment systems. He has authored several articles for onsite industry magazines and has given numerous presentations nationally on the science and fundamentals of onsite wastewater treatment systems. Dennis also oversees a department that is responsible for product research and testing at universities, test centers and private consultants. The department develops system sizing charts for national and international approvals and assists customers and field representatives in the planning and review of large commercial

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decentralized systems. He received his M.S. in civil engineering from the University of Connecticut and his B.S. in civil engineering from the University of Vermont. Dennis is a registered professional engineer in Connecticut. He has been with Infiltrator Systems for over 14 years and holds the current position as Technical Director. Dennis also holds patents for on-site wastewater products and has served for several years on the NOWRA Technical Practices Committee.

Trish Johnson, Small Solutions Strategic Advisor & Senior Environmental Consultant, R.V. Anderson Associates Limited — Trish is a Project Manager and a Small Solutions Strategic Advisor with RVA. She has worked for over 30 years in public, private and non-profit environmental management focusing on water and wastewater issues. Her specialties include land use impacts on water quality and "value for money" environmental policies and program implementation for all levels of government. She currently serves as a Senior Advisor for two municipalities and has also worked extensively for Aboriginal Affairs and Northern Development Canada (AANDC) assessing water and wastewater needs for Canada's First Nations. She is a passionate promoter of onsite and decentralized solutions and alternative water and wastewater technologies.

E. Craig Jowett, Ph.D., P.Eng., President, Waterloo Biofilter Systems Inc. — Craig is a geological engineer from University of Toronto and worked in the mining industry across Arctic Canada, central Europe and south west U.S. After his Ph.D. in geology-geophysics at Toronto, he was a NATO Science Fellow at University of Michigan and Cornell University, and Research Professor at University of Waterloo. He is now president of the Ontario manufacturing company Waterloo Biofilter Systems incorporated in 1995. He developed and commercialized the absorbent-medium trickle filter and the shallow area bed dispersal bed for tight clay soils. Newer developments are the (a) laminar-flow WaterTube septic tank, (b) WaterNOx nitrate removal technology, and (c) residential-scale phosphorus removal technology. He holds more than 20 patents in the area of sewage treatment, sits on several CSA and BNQ standards committees, and has authored numerous articles in the geology and sewage treatment fields.

Doug Joy, Ontario Rural Wastewater Centre — Doug is the Director of the Ontario Rural Wastewater Centre located in Guelph, Alfred and Baxter, Ontario. The Centre began in March 1998 as a joint effort between members of the University of Guelph and the Rideau Valley Conservation Authority and conducts research and workshops on on-site systems across the province. With over 60 workshop days per year and approximately 500 participants per year, the ORWC provides training across a wide spectrum of the onsite industry. He is currently a faculty member and Associate Director, Graduate studies in the School of Engineering where he teaches water resources and environmental engineering courses. His research focus in recent years has been the performance of onsite systems and their impact on the environment. He has served on, and chaired, both provincial and national committees developing standards for onsite systems and is a founding member of OOWA and former president.

Chris Kinsley, Manager, Ontario Rural Wastewater Centre — Chris has worked with the Wastewater Centre since its inception in 1998 and was instrumental in the development of the centre. Chris has developed and delivered over thirty training courses in the agri-food and decentralised wastewater sectors, both within Canada and overseas. Chris is a full time researcher and professor at the Alfred Campus of the University of Guelph where he teaches courses in environmental management and leads a research program in the field of decentralised wastewater treatment with an emphasis on constructed wetlands. Chris sits on the research committee of the Ontario Onsite Wastewater Association, Ontario Soil, Air and Water Research Committee, and chairs the research committee of the Canadian Decentralised Wastewater Consortium. Chris has a Master of Engineering from McGill University and is a Professional Engineer in the Province of Ontario.

Officer Nick Korakas, Ministry of Transportation (MTO) — for almost two decades Mr. Nick Korakas has served the private and public sectors as a transportation and industrial industry trainer facilitator. He is proud to say that he has assisted over 15,000 individuals achieve gainful careers in both industries. He was also routinely called upon by industry stakeholders to provide training, investigations and suggestions on improving over-the-road and workplace safety. In 2011 he joined The Ministry of Transportation in the capacity of Transportation Enforcement Officer. He is currently a certified CVSA officer that contributes to the approximate 100,000 commercial vehicle inspections that take place across the province annually and helps Ontario maintain the safest roads in the world.

David Morlock, P.Eng. — Dave is a consulting engineer and Manager of Wastewater Engineering Services at Chung & Vander Doelen Engineering Ltd. He earned a Bachelor of Science in Engineering at the University of Guelph in 1998, and has since spent most of his career in the onsite wastewater industry. He provides soil/groundwater analysis, hydrogeological analysis, design, tender/contract, and inspection services for onsite wastewater treatment system projects under both the OBC and OWRA (MOE) realms. Dave is a member of OOWA and has served on the OOWA Onsite Technical Issues Committee.

Doug Niles, Trenchless Utility — Involved in sales, support , training-education and a huge array of locate technicians from nuclear generating plants to roofers and waste water/septic/plumbers for the past 20 plus years. Doung says it will be a pleasure to discuss the issues and best practices of tracer wire installation placement , set up and protection then finally why and how the locate happens at this year's conference.

Robert Passmore — Robert is a practicing Professional Engineer of Ontario in the field of Environmental Engineering. Robert obtained his undergraduate degree in engineering from Carleton University in 1997. Robert has been involved with the Ontario Onsite Wastewater Association since

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2000 and served as a Board of Director Member for over 10 years. Robert's experience in the onsite wastewater industry extends from individual residential sewage system design to large subdivision designs on individual or communal sewage systems. He brings a solid background in soil science and groundwater mechanics to extensive design and regulatory experience to his many presentations over the past 12 years at the OOWA conference.

Matt Pearson — Matt is a Principal and Senior Planner at B.M. Ross & Associates Limited, an engineering and planning firm based in Goderich, Ontario along the shores of Lake Huron. This firm of 50 provides services to municipalities across southwestern Ontario. Matt's work has a focus on environmental planning and particularly, water quality issues along the lake. He works with rural municipalities to meet increasing infrastructure demands outside of traditional urban settings.

Katherine Rentsch, University of Guelph — Katherine joined the Ontario Rural Wastewater Centre at the University of Guelph after four years with R.J. Burnside & Associates Ltd., a local consulting firm. As project coordinator at the ORWC, Katherine is responsible for coordinating, developing and delivering workshops, courses, and information sessions to various groups within the onsite wastewater community. She is also involved in research projects partnering with various government agencies and the School of Engineering and is responsible for the day-to-day operations at the Centre. She is a course facilitator for most of the courses delivered in the Guelph centre and has taught over 35 workshops. Katherine is an active member in the onsite community and is a member of the Board of Directors of the Ontario Onsite Wastewater Association. She is actively involved with OOWA and is chair of the media committee. At Burnside, Katherine's primary focus was on the design and implementation of onsite wastewater treatment and soil absorption systems. In this role, she was responsible for preparing the design and supporting documentation for onsite wastewater treatment systems in rural areas where municipal wastewater services are not available. She also provided specialized sewage system design for nutrient removal requirements and specialized wastewater streams. Katherine has developed a thorough understanding of Part 8 of the *Ontario Building Code* as well as the Ministry of Environment Policy and Guidelines for OnSite Sewage Systems. Katherine also has extensive inspection experience. She conducted numerous inspections of new system installations and also completed two major reinspection projects for First Nation clients.

Mike Seiling — Mike Seiling is the Director of Building and Chief Building Official for the City of Kitchener and President of the Ontario Building Officials Association. Mike has 27 years of construction experience in the private and public sectors, including 22 years with the Kitchener Building Division. He is a graduate of Conestoga College; Construction Engineering Technical Program. He is a Certified Building Code Official with the OBOA. As OBOA President, he is responsible for regulatory advocacy, training and association excellence. Mike is a strong believer in partnering with his peers and an advocate in proactive communication.

Kevin Warner, M.Sc., P.Geo (Ltd), Senior Project Manager, Senior Hydrogeologist — Mr. Warner holds a Bachelors of Environmental Studies (Honours) from the University of Waterloo and a Master of Science from McMaster University. Mr. Warner is a Senior Project Manager at Cambium and has over fourteen years' experience practicing as a hydrogeologist in the environmental consulting sector. He has managed and directed numerous hydrogeological assessments and impact studies in various residential, industrial, commercial and municipal applications; namely private servicing for both water supply and wastewater systems for subsurface disposal. Mr. Warner is a member of the Ontario Onsite Wastewater Association and is an advisor to the Ministry of the Environment for development of regulatory policy regarding wastewater systems.

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Ottawa Business Area Promotes Wastewater Innovation

The Carp Road Corridor Business Association in west Ottawa is promoting innovation in wastewater technology and management as a way to stimulate economic development in the Corridor business area.

Last November the Business Association invited over 60 wastewater experts including a number of OOWA members to the "Cleantech in the Corridor" seminar. In a full morning session of presentations and then over lunch, attendees discussed ideas about accelerating the adoption of new wastewater technologies and servicing models and how that can stimulate economic development.

John Phillips, Chair of the Business Association and developer of the Carp Airport, provided welcome comments to guests. John described how the Corridor has a problem — efficient and cost effective wastewater management in a growing light industry business area — looking for solutions. He noted that the business opportunity from wastewater innovation is already being demonstrated by Corridor companies and wastewater innovation was the key to unlocking the economic development potential of the Carp Airport.

In the early morning session attendees heard from speakers who had been asked to answer the question: "Why should wastewater innovators come to the Corridor?"

The first speaker was Karen Pero, the Cleantech Business Manager at the City's economic development agency Invest Ottawa. Karen described the overall opportunity in clean technologies and how Ottawa is working to help grow Ottawa's existing companies and attract new companies to Ottawa including to the Corridor. Karen commented that Invest Ottawa's cleantech economic development planning and the work being done by the Corridor Business Association are aligned and, in her experience, the need for wastewater solutions in the Corridor is an excellent driver for innovation and new business opportunities.

Next was Professional Planner Bridgitte Alchawa from McIntosh Perry — a Corridor planning and engineering company and OOWA member. With the permission of a number of property owners, Bridgitte had prepared a concept plan for a new industrial subdivision in the Corridor serviced by a communal wastewater system. The concept plan demonstrated that planned development based on a communal solution provides opportunities to optimize land use. Bridgitte described how recent zoning changes in the Corridor business area are expected to stimulate area development — development which will result in opportunities for wastewater service providers.

The final speaker in the morning session was Marshall Deane from ASI in St. Catherines. ASI provides innovative treatment and management solutions across Ontario. ASI, with newterra and Clearford technologies, is the service provider for a private communal wastewater solution at the Carp Airport in the Corridor. The planned development at the airport is unique — a residential community located on airport property where owners will be able to taxi their airplane right up to their front door.

At coffee break, attendees had the opportunity to view information about the Carp Road Corridor and chat with the wide range of service providers attending the seminar including Bionest Technologies, Bishop Water, BluMetric, Clearford Industries, Hannah Environmental Equipment, Houle Chevrier Engineering, Make-Way Environmental Technologies, McIntosh Perry Planners and Engineers, MHPM Project Managers, newterra and The Septic Store.

The late morning session focused on the question: "How can wastewater innovation drive economic development in the Corridor business area?"

The first speaker was Marc McArthur from Crosstaff Consulting and co-organizer of the seminar. Marc is a business development specialist who has worked with clean technology companies for over ten years. He described the features of the Corridor which in his experience will lead to success — businesses needing solutions, companies providing solutions, a land base to pilot and demonstrate solutions and a business association working to facilitate economic development.

Roger Woeller, the Chief Corporate Development Officer for BluMetric Environmental Inc. spoke next. Roger has based his business in the Corridor for over 25 years and his firm is an OOWA member. He described his optimism for business growth in small scale wastewater management solutions and how his firm is delivering service worldwide — right from the Carp Road Corridor. Roger spent a few moments noting that most of his business is outside of Ottawa and, while lamenting what he saw as a lack of support in Ottawa and Ontario, he noted that change is happening and new and expanded opportunities are coming to the industry.

The final speaker of the day was Dr. Brian Mergelas, the CEO of WaterTAP Ontario. Brian described the important role WaterTAP is playing in promoting innovation and Ontario companies. He invited all participants to view the "Water Technology Map" on the WaterTAP web site. Brian, who travels around the world to promote Ontario's expertise in water innovation, noted he saw considerable opportunity for water innovation related economic activity in the Corridor.

The "Cleantech in the Corridor" seminar was attended by local wastewater service providers, innovation promotion experts and economic development specialists. All discussed and learned about the Corridor opportunity to locate and grow companies and demonstrate innovative servicing solutions all toward building a "water innovation business cluster" in the Corridor. The Carp Road Corridor Business Association is now planning its next steps to promote economic development and demonstrations of innovative wastewater technologies to support land development in the business area.

Photo: Roddy Bolivar, P.Eng. (left) was co-organizer of the "Cleantech in the Corridor" seminar. Dr. Brian Mergelas, CEO of WaterTAP Ontario, was the keynote speaker. Photo credit: Derek Dunn, West Carleton Review

Author Bio: Roddy Bolivar, P.Eng. is a water resource consultant who has worked on strategy and policy projects with OOWA including assisting in preparation of OOWA input to the Provincial Policy Statement. Roddy also works with the Carp Road Corridor Business Association and individual members in strategic planning for business development. He was the co-organizer of the "Cleantech in the Corridor" seminar. Roddy can be reached at roddy.bolivar@bolivarphillips.ca.

— www.bolivarphillips.ca
— www.watertapontario.com/a/downloads/WaterSectorMap.pdf

BUSINESS BYTES Marketing Ideas for Onsite Professionals

by Eric Casey, NOWRA

How's business for you? Hopefully it's good, or at least improving, but if you aren't getting the results you want, you might wish to take a look at how you're marketing your services. Perhaps it's time to shake things up a bit.

There are a number of ways to approach how you market your business. In fact, there are so many they are really beyond the scope of a single column, so this is part one of a 3-part series of marketing tips for onsite industry businesses. The focus here will be on electronic marketing, but before doing so, a few words about the importance of having a marketing plan.

People don't plan to fail; they fail to plan. The first and most important component to effectively marketing your business is to have a plan of action — in writing. A good marketing plan doesn't need to be fancy or elaborate. One page will probably do it, but it does need to contain the following elements:

- Define your objectives. Is your goal to increase new installation business? Repair and replacement? Keeping existing customers? Promoting a new service? Each question will likely generate a different set of goals for you.
- Marketing budget and a timeline of activities you will pursue. Your marketing budget doesn't need to be large. However, as a rule of thumb, the less money you spend means a greater investment of time on your part. If your budget doesn't have a monetary component, make sure it reflects the time you need to invest to make it effective.

When writing your plan, thing about what you will do to evaluate its effectiveness. A marketing plan is not a static document. Each time you draft one, it should build on the successes created from the previous one.

Online marketing tactics for you to consider.

Website. If you don't have a website, for many people, you don't exist. This is especially true for Generation X, which grew up online and is rapidly becoming the largest segment of new homeowners. More people use Google to research products and services than any other method. Setting up a website today is cheap and easy. No special programming knowledge is necessary; everything you need to have a web presence can be done via point and click of a mouse. Companies like GoDaddy and Intuit offer low cost options, as little as $5/month. Wordpress lets you build a website for free.

Facebook. Setting up a Facebook page for your company is a great way to stay connected to your current customers. It doesn't cost anything, but it does require regular attention to keep your name in front of your followers. Not sure how you might use such a page? Lots of septic companies already have Facebook pages and the good ones have many followers. Simply type "Septic" into the search box at the top of any Facebook page and you will get literally hundreds of results — and ideas of strategies which might work for you. Facebook also has good information to help small businesses make the most of their pages.

E-mail. This can be an effective and inexpensive method for reach both current and potential customers. Building a good email list takes time, but as your list grows, your results should generate increasing numbers of inquiries. There are many ways to use email to keep current customers and get new business:

- Create a newsletter. This doesn't need to be fancy, but it does need to contain news. The more you can provide your reader with information which is interesting and useful to them, the more effective it will be.
- Send out consumer focused articles on maintenance, what is and isn't flushable, landscaping, etc. Another useful tactic here is send an email when weather events such as freeze, drought or floods are affecting your customers' systems.
- Reminders about scheduling service calls, maintenance visits, contract renewals.
- Thanking your customers for their business — and perhaps asking them to recommend you to their neighbors or forwarding a helpful email to them.
- Promoting new services, awards your company receives, company milestones, etc.

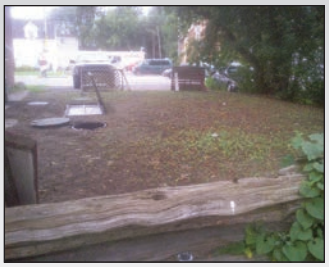
One key to effective email mail is to not overuse it. A quarterly message won't turn off many people; daily emails probably will. Also, always offer a way to unsubscribe from your mailing list.

Marketing Ideas for Onsite Professionals is a three-part series written by Eric Casey, Executive Director of fhe National Onsite Wastewater Recycling Association — the only national organization representing all segments of the onsite wastewater industry. Visit them at: www.nowra.org.

The second part of the series will appear in the Ontario Onsite Wastewater Association Newsletter, Volume 15, Issue 2, summer edition.

Septic System Replacement — Getting it Right!

by The Septic Store



When existing septic systems require replacement, one of the common problems is fitting the new system into the available property size while observing the OBC. Kollaard Associates Inc was contacted to investigate one such site and provide solutions; they found the main challenge to be that the available area for the new septic was very small. The existing septic bed was very old and had failed. The native soil on this property was silty clay with an additional challenge of two existing wells (the owners and the neighbor's) were too close to the existing septic.

Once all of the site information and surveying was complete, the situation and available options were reviewed with the local Chief Building Official (CBO). It was determined that the site would require treatment beyond the Tertiary level, and that the system would also need to disinfect the effluent prior to releasing it into the septic bed for final disposal.

An Advantex by Orenco was selected for its compactness and the availability of a UV disinfection unit to be integrated into the treatment unit. A model AX25RT unit was used in its mode 1A configuration. This configuration allowed for a gravity discharge outlet opposed to the more common configuration which includes an pumping discharge know as a mode 1B. The gravity discharge was directed to a small pumping chamber which housed the UV disinfection unit as well as the discharge pumping equipment required to dose the pressurized area bed. Flow exiting the dwelling enters a septic tank, separated effluent exits the septic tank and enters the recirculation chamber of the AXRT unit. The recirculation pump is timed to spray the effluent over the hanging synthetic textile media. The effluent then trickles through the media allowing microorganisms to digest the organic material. Approx 3/4 of the trickled effluent is returned to the recirculation chamber, the remaining effluent is sent to the discharge side of the AXRT unit to be sent to disposal. Recirculation times vary based on the design flow and usage of the system. Typically the system will recirculate three to four times per hour, discharge time and frequency depends on the disposal method. Quality from the AXRT units meets tertiary quality and sampling programs have demonstrated a high percentage of units consistently exceeding tertiary requirements. The recirculation system in

its standard configuration yields a 60 percent nitrogen reduction; this number can be increased with a simple change to the discharge plumbing allowing a portion of the treated effluent to be returned to the pretreatment/septic tank.

The brain of the system operating the Advantex unit is an Orenco Vericomm control panel. This panel has the ability to control the recirculation pumping equipment as well as the discharge pumping equipment located inside the Advantex. In this case the panel was connected to control the recirculation pump in the Advantex as well as the discharge pump located in the adjacent pumping chamber with separate timer settings and float inputs for each. This control was also fitted with the controls and ballasts to power and control the UV disinfection unit. The flexibility of design and programming allowed for one medium sized control panel, eliminating the need to have three separate controls. Vericomm panels are telemetry panels, and can be connected to a phone or internet connection. The panel will monitor various events and data from the AXRT unit and advise the maintenance provider via email of any alarm conditions. The panel will learn the normal use patterns referred to as "trend data" and alert the maintenance provider of system behavior that may be cause for concern. This communication from the panel comes at no additional cost to the homeowner.

The system installation was carried out in late June 2013 by Valley Sanitation Services. Installation went smoothly; some slight adjustments to the treatment train had to be revised to facilitate existing pipe elevations. The system has had some preliminary sampling and is in compliance with the tertiary requirements. More detailed sampling is scheduled to monitor additional parameters related to the UV disinfection system in 2014. ■

EQUIPMENT CORNER

Alert: Operating Construction Equipment in Reverse

Hazard Summary:

A construction worker was killed while working behind a piece of road building equipment operating in the reverse direction. A Ministry of Labour investigation found the worker had gone behind the equipment without the knowledge of the equipment operator. This was contrary to the work practice previously established between the heavy equipment operator and the engineering technician taking grade on the road construction project.

Required Action:

Whenever heavy construction equipment is being used, including road building equipment, workers working nearby must be sure to establish eye contact with the equipment operator.

Section 104 of O. Reg. 213/91, *Regulations for Construction Projects* requires that every project be planned and organized so that vehicles, machines and equipment are not operated in reverse or are operated in reverse as little as possible. Where this is not feasible the constructor/employer shall ensure that no vehicle, machine or equipment, crane or similar hoisting device, shovel, backhoe or similar excavating machine shall be operated unless the operator is assisted by a signaller,

(1) where the operator's view of the intended path of travel or any part of its travel is obstructed; or

(2) where it is in a location in which a person may be endangered by its intended path of travel.

Section 104 (5) states that the operator and the signaller shall jointly establish the procedures by which the signaller assists the operator and both shall follow those procedures.

Section 106 outlines the duties of a signaller including the direction not to perform other work while acting as the signaller. The employer shall also ensure the signaller has received adequate oral and written training in his or her duties as a signaller and is wearing adequate personal protective equipment, including a garment fluorescent blaze or international orange in colour. A review of the training needs of the workers required to perform the work should also occur.

Pre-job meetings should occur to review the scope of work, and safety hazards associated with the type of work that is to be performed. Clear and precise written instructions should be given to all workers and equipment operators regarding the hazards associated with working near or adjacent to heavy equipment and when the use of a signaller is required for the safe operation of the equipment. ■

Ontario Ministry of Labour: ISSN: 1195-5228, Issued: January 2001, Content last reviewed: January 2009

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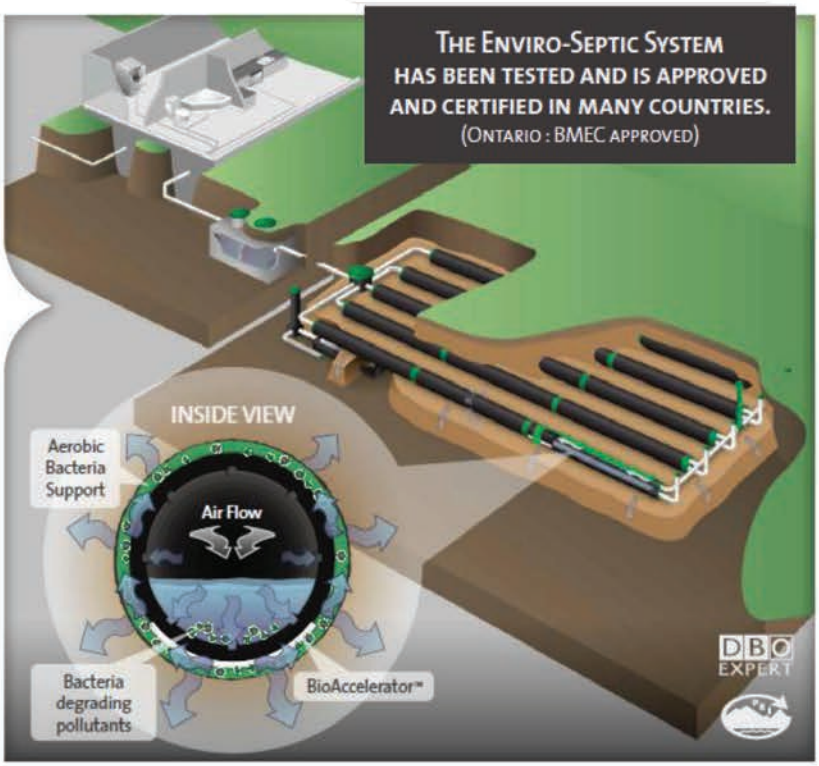

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Abstract: The Community of Victoria, PEI needed to replace its antiquated, failing septic systems with an environmentally sensitive, cost-effective solution suited to the unique requirements of its location. In addition, the treatment system had to accommodate the highly-variable daily flows common to a summer vacation destination. Victoria chose an Effluent Sewer collection system, followed by a textile-based treatment system, because of the system's outstanding performance and low operating and lifetime costs. The system is scalable and is capable of treating flows of up to 95,000 Lpd (25,000 gpd) during the tourist season, with peaks of over 180,000 Lpd (50,000 gpd). The community and its consulting engineer have won multiple awards, including the 2011 "Sustainable Community Award" from the Federation of Canadian Municipalities.

Figure 1: Surrounded by water, the small town of Victoria, PEI. Photo courtesy of Ron Garnett-AirScapes.ca

Figure 2: Historic period buildings and landmarks draw tourists and stimulate the local economy. The Victoria Wharf is one of the town's main tourist attractions. Victoria needed a wastewater system that could handle highly variable flows … flows that quadruple during the busy tourist season. Photo courtesy of The Studio Gallery, Victoria, PEI.

Scalable, Award-Winning Wastewater Solution

The Community of Victoria is a picturesque, rural fishing village located on Prince Edward Island in the Canadian Maritime Provinces. Its natural beauty, period buildings, and attractions make it a popular tourist destination. The community's public health and development potential, however, was hampered by its sanitation problems. Many historic buildings in the town core were using antiquated septic systems, which were frequently failing and in need of upgrades. Most of the small lots could not support a modern septic system meeting current codes. As a result, residents and business owners were forced to use a "bubble gum" approach to the problem, employing frequent septic tank pumping to get through the busy summer tourist season. Provincial regulators would not approve new development or expansion of businesses until the Village solved its septic problems.

When community members searched for a cost-effective, sustainable wastewater system, they had specific parameters in mind. First, because residential lots in the village center were laid out in the 1800s and were not large enough to accommodate traditional onsite wastewater systems, they needed a compact solution. Second, because treated effluent might negatively affect the nearby harbour and estuary, direct effluent discharge to the bay was not a popular option with residents and business people who depended on Victoria's coastal waters for their livelihood. Third, because Prince Edward Island relies on groundwater for its drinking water, the system needed to work well as part of an integrated, sustainable, watershed-based approach.

Engineering Technologies Canada, Ltd. (ETC: www.engtech.ca), was retained in September 2003, to identify and evaluate the various options and recommend a wastewater management solution best suited to the community's needs. After a detailed life-cycle analysis of several conventional and alternative systems, ETC recommended an Effluent Sewer and a Textile-Based Packed Bed Filter (PBF) treatment system. Installation was completed in 2008, and the system services 57 residential locations and six commercial sites.

Continued on page 23

Onsite Wastewater OWW APPs

APPs for the Onsite Wastewater Industry

OWW APPs is please to announce Septic System APPs

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… from page 20

With an Effluent Sewer, solids are collected in an on-lot underground interceptor tank at each site, where they decompose naturally. Primary treated effluent is pumped or flows by gravity to the PBF treatment system. The AdvanTex® Treatment System, manufactured by Orenco Systems, Inc., is an attached- growth system that uses a textile media to treat effluent effectively. The textile-based PBF system has low power requirements and low operation and maintenance costs. Because effluent is dosed at a specific rate to textile-based packed bed filter units, the system can accommodate widely varying daily flows. The PBF system can also be easily expanded to allow for further development in the area.

Figure 3: AdvanTex AX100 treatment units are modular, compact, reliable and are easily accessible for routine operation and maintenance.

After treatment, the effluent is dispersed to two land-based dispersal systems. The pressure-dose sand dispersal bed (mantle) operates year-round, while a subsurface drip irrigation system comes on line during the busy summer season to provide the total required effluent dispersal capacity.

Another key part of the integrated approach was a water efficiency program in which regular toilets were replaced with low-flow models (six litres/flush or less), and water meters were installed at each connection. In addition to reducing potable water demands, this helped reduce the amount of effluent needing treatment and allowed ETC to reserve more land at the wastewater treatment site for future expansion.

Victoria's treatment system is also scalable. While all 10 packed bed filter pods are used for peak summer flows, in the slower winter season the system uses only three pods and two pumps, conserving energy and extending equipment life.

Since the system is so robust and reliable, only a part-time operator is needed. This was a critical factor for the community. According to Kelly Galloway, P. Eng., the system's designer, "Operation and maintenance associated with traditional, 'big city' sewage treatment solutions can be onerous and time-consuming, requiring advanced, high-level operators. If these technologies are misapplied they can be a huge burden on small rural communities, often making up the biggest portion of their utility costs."

The operator for Victoria monitors the system remotely and is notified if any maintenance is needed via a telemetry control panel. Effluent quality is excellent; though BOD and TSS levels of 15 mg/L each were anticipated, actual levels are less than 10 mg/L, respectively. The system also exceeded the desired treatment requirement for Total Nitrogen[1] (see Table 1).

For the system's design, Galloway won the 2009 Engineers PEI Award for Engineering Achievement; subsequently, the Community of Victoria was honoured with the 2010 "Municipal Achievement Award" from the Federation of PEI Municipalities and the 2011 "Sustainable Community Award" from the Federation of Canadian Municipalities.

"ETC was successful in solving Victoria's challenging sanitation problems, which had eluded resolution via traditional engineering solutions for over 20 years," said Garry MacDonald, P. Eng., in his nomination of Galloway for the Engineers PEI Award. While more than 2,500 textile-based packed bed filters have been installed elsewhere, MacDonald noted that "[This was the] first municipal-scale STEG/STEP effluent sewer collection system in PEI … [and the] first major municipal scale, synthetic packed-bed filter treatment system in Atlantic Canada."[2]

Hilary Price, Administrator for the Community of Victoria, puts it this way: "The packed bed filter system was installed and became totally operational in 2008 … [It] has been a stimulus for expansion in our tourism businesses and has allowed our residential population to dramatically increase. Prior to the installation of this central sewage system, the community periodically experienced bad odours from failing septics. The new central sewage system rectified this problem and removed the serious public health hazard caused by failing septic systems … This system has exceeded our expectations in dealing with our wastewater disposal."[3] ■

Table 1: Final effluent sampling data as reported by Engineering Technologies Canada, Ltd. and the Village of Victoria.

DATE	cBOD (mg/L)	TSS (mg/L)	AMMONIA (mg/L)	TKN (mg/L)	NITRATE (mg/L)	TN (mg/L)	TP (mg/L)	FC (MPN/100mL)	pH
12-Aug-2009	<6	<5	0.88	2.1	48	---	8.57	---	6.7
03-Sep-2009	9	---	---	---	---	---	---	---	7.2
20-Sep-2009	<6	<5	0.59	2	37	---	8.46	---	6.9
21-Oct-2009	<6	---	11.4	12.2	25	---	9.15	---	7.4
26-Jul-2011	14	2	7.744	---	---	28.0	6.2	---	6.5
24-Aug-2011	<10	5	---	---	---	---	---	---	---
19-Oct-2012-	--	---	---	---	7	---	---	920	---
19-Oct-2012	---	---	---	---	4.8	---	---	---	---

[1] *ETC Environmental Results Report, p. A1*
[2] *Engineers PEI Award nomination form, p. 3*
[3] *E-mail conversation, January 21, 2011*

Ecoflo® Coco Filter: An Innovative Approach to Increasing Loading Rates

By Premier Tech Aqua

Premier Tech Aqua recently introduced its new Ecoflo® Coco Filter septic system to the onsite wastewater treatment market, adding an even more compact solution to its existing line of award-winning Ecoflo® Biofilter Ready-to-Use products. Ecoflo® Coco Filter is shipped to sites entirely pre-assembled (internal components and filtering media) in polyethylene and concrete tanks or as a kit to be incorporated into existing concrete tanks from local precasters.

Made of 100 percent coconut husk fragments, the filtering media has a high porosity factor and stable environment to promote high air and water exchange for a more durable filtering media to treat wastewater. The properties of the coco filter allow the applications of a higher hydraulic loading rate (HLR) resulting in a 30 percent smaller filtering media surface. Comparatively, at 5.7 m^2, the filtering media area of an ECP-2800 Ecoflo® Coco Filter provides the same treatment capacity (2840L/d) as an Ecoflo® Biofilter ST-650 model with a 6.5 m^2 area of filtering media. Just as the Ecoflo® Biofilter, the Ecoflo® Coco Filter is fully passive and features the same internal components as the Ecoflo® Biofilter (tipping bucket and distribution plates). As with the Ecoflo® Biofilter, at the end of the lifecycle of the coco filter, it is replaced via the cover using a vacuum truck to remove the spent filtering media. The warranty on the filtering media is then automatically renewed – making Ecoflo® Coco Filter a truly sustainable product and the only one with a renewable warranty.

Prior to the current NSF certification process, the Ecoflo® Coco Filter was submitted to a performance demonstration program, which took place at the Bellevue experimental station in Rivière-du Loup, Quebec. The system was submitted to the same testing protocol as NSF standard 40 from July 11, 2012 to March 13, 2013 for a total of 245 days (i.e., 35 weeks while NSF testing lasts only 26 weeks).

Average performances from the full scale bench test on the Ecoflo® Coco Filter are presented in the tables below.

Case Study

High-Performance, compact and low-maintenance wastewater treatment solution for a Vancouver Island RV Park

Camping has grown immensely in popularity across a widely varied clientele in recent years, and campground operators are required to make important investments to ensure a pleasant and safe environment to an ever-growing number of campers. As prices suggested for renting a campsite remain relatively low, land optimization and the final footprint of a septic installation have thus become determinant criteria for campground operators when choosing a wastewater treatment technology.

Cape Lazo RV and Campground is a 6.5 acre ocean-side property located on Vancouver Island. Originally developed in the early 1970s, the park recently upgraded its services with brand new onsite

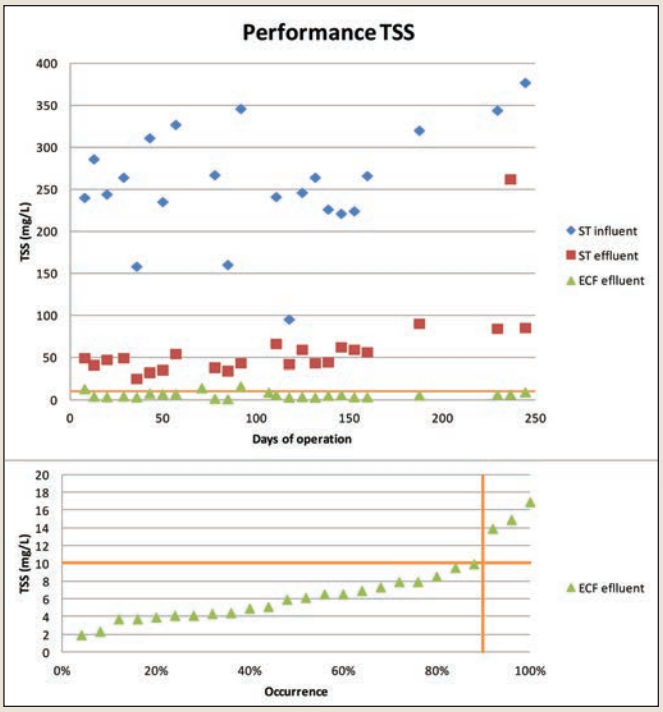


Figure 1: Concentration in Total Suspended Solids (TSS) at the septic tank influent (ST), the septic tank effluent (ST) and the Ecoflo® Coco Filter effluent (ECF) demonstrating that 90% of results are below 10 mg/L.

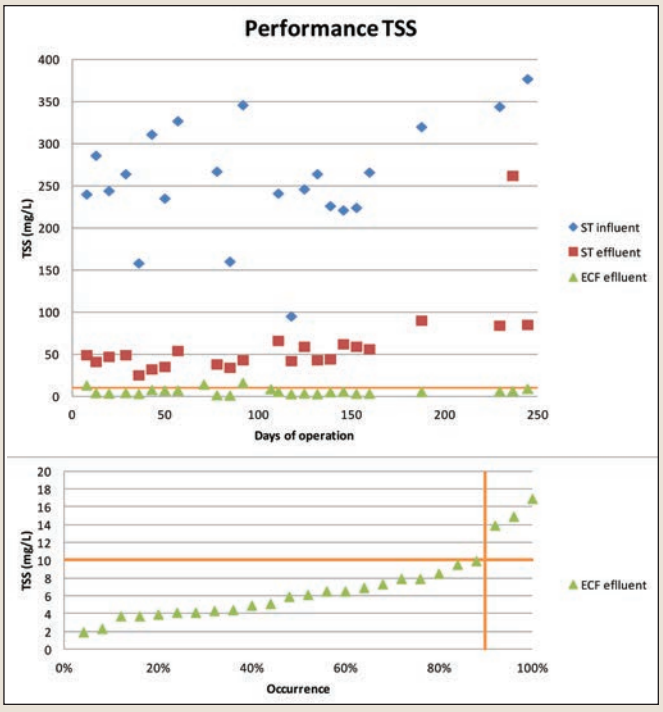
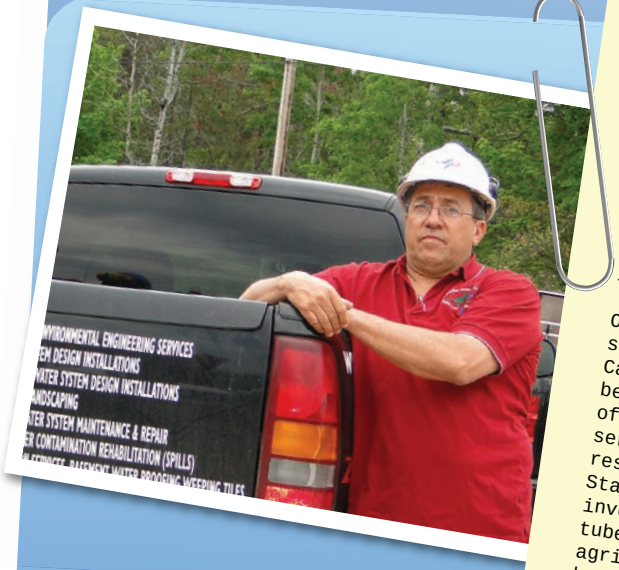


Figure 2: Concentration in Carbonaceous Biochemical Oxygen Demand (CBOD5) at the septic tank influent (ST), the septic tank effluent (ST) and the Ecoflo® Coco Filter effluent (ECF) demonstrating that 90% of results are below 10 mg/L.

MEMBER PROFILE Gerry Dignard



Gerry Dignard, CEO Canadian Shield Consultants Agency Inc.
Newsletter Membership Profile

Within the OOWA membership, many may not be familiar with the small community of St Charles, Ontario; but Gerry Dignard of Canadian Shield Consultants Agency Inc. is doing his part to put St. Charles on the map. Born and raised in St Charles, located just east of Sudbury and north of the West Arm of Lake Nipissing, the French Canadian family name "Dignard" is well known for its agricultural roots and love of all things Northern Ontario. Hockey, snow shoeing and timber harvesting are just a few of the activities that keep Gerry away from the office and in touch with the outdoors.

Over the years, Gerry has lived and worked across Ontario in places such as New Liskeard, Sudbury, Toronto and Brampton. Travelling across Canada from the high Arctic to the East Coast (and all points in between) is part of today's service industry, and with the introduction of a helicopter service, his company has opened up opportunities to service more remote regions and open new partnerships such as the new research laboratory with the Northern Ontario School of Medicine. Starting his career with Agriculture Canada as a technologist, Gerry investigated infectious diseases (ie. Cysticercus bovis) in cattle and tuberculosis in domesticated deer and buffalo, and armed with a strong agricultural background and interest in illness and disease. The link between the disease and failing septic systems inspired Gerry to develop an interest in septic systems and treatment. Focusing on wastewater treatment technologies and improving client service with research, design and engineering, Gerry has created a company synonymous with environmental stewardship and quality service.

Working as part of the training contingent of the MMAH when septic regulations changed from the MOE to the OBC back in 1998, staff of Canadian Shield Consultants Agency Inc. facilitated many of the training sessions across Ontario. This experience served well to expand the company's understanding on the needs of not just the general public, but also contractors and service providers in the industry. Gerry was one of the original participants when OOWA first began and has been a part of the organization in many different capacities over the years. When asked for his comments on our industry, he says "the industry needs to continue with more research and development of technologies and advanced treatment of pollutants of concern. As an association, we need to take a very important lead in this role and focus on environmental stewardship and protection of water supplies."

Making sure that there is little idle time in his day Gerry currently sits on the technical committee for OOWA. Ensuring community service remains a big part of his life, Gerry currently holds the position of zone chair for the local Lions Club, President of the local Catholic Church and President of the Sudbury District Health Centre. Work highlights include working in the high Arctic as a consultant on Victoria Island and the ongoing work in the mining industry, including the Ring of Fire in Ontario's north.

facilities, including washrooms, showers, and laundry. Each of the refurbished RV sites now offers full service for electrical, water and sewer hook-ups.

The project required the complete replacement of the original septic system — a conventional septic tank and disposal field installation — which had reached the end of its lifecycle and was unable to accommodate the requested capacity following renovations and development. Space was a major constraint and property owners required a system that could treat wastewater with optimal efficiency, but without reducing the number of available campsites. The native soil was clean medium grade sand and ideal for good drainage of the treated effluent.

In collaboration with Yellow Truck Septic in Comox, in early spring 2013 Premier Tech Aqua provided a cluster of Ecoflo® Coco Filters with a total surface of 67.5 m^2 of 100% organic coco filtering media for a flow of 22,000L/d. Comparatively, the project would have required a total surface of 84.5 m^2 of peat filtering media — a 30 percent reduction. The septic system fulfilled the low footprint, low maintenance, discharge and budgetary requirements and fit perfectly in the area designated by the owners for the new installation.

Supported by a unique annual maintenance program provided by Premier Tech Aqua's network of local service partners, the treatment station of Cape Lazo steadily produces a quality effluent of ≤ 10 mg/L in CBOD5 and ≤ 10 mg/L in TSS. ■

ROB'S world

by Rob Passmore,
Patterson Group Inc.

The opinions expressed herein are ***my own personal opinions*** *and do not reflect the opinions of OOWA's Board of Directors or of the Association.*

Small Town Ontario is Under Attack —

Is OOWA Capable of Coming to the Rescue?

The other day, I found myself driving from one meeting to another while listening to the Canadian Women's Gold Medal Hockey Game. I was fortunate enough to be able to duck into a pub and catch the end of the third period. As you all will recall, it was an almost miraculous comeback that the Canadians mounted to steal the gold from the Americans. While it was, indeed, an unforgettable match, this article is about what happened next. I was seated beside an older gentleman that had told me earlier in the period that he had been laid off from maintenance servicing in Ottawa, and had moved to the country to start his own business doing small engine repair. After the game had finished, and during the celebratory beverage that

Onsite Wastewater Treatment Better for the Environment?

OOWA Let's Take Adavantage and Promote Ourselves!

An Ecojustice report ranks 12 Ontario municipalities and finds that many are still polluting local bodies of water with sewage, endangering plant and animal species and making water unsafe for recreational use.

"The Great Lakes Basin provides drinking water for millions and is an essential part of life for Ontarians," said Liat Podolsky, Ecojustice staff scientist and the report's author. "We're urging municipalities to reduce sewage pollution and keep Ontario's water swimmable, drinkable and fishable."

The sewage pollution outlined in the report includes a foul cocktail of biological and chemical pollutants, including human waste, bacteria such as *E. coli,* and toxic chemicals. In the *2013 Great Lakes Sewage Report Card,* Ecojustice analyzed 12 Ontario municipalities for their sewage treatment and discharges. London and Windsor tied for last place. Peel Region took top honours, York and Durham were ranked second. Ecojustice recommends that all levels of government fund major sewage wastewater treatment upgrades to reduce sewage pollution. It also suggests that municipalities prioritize sewage infrastructure spending and invest in improved reporting of sewage pollution events so Ontarians are able to better protect their communities from harm. "Ontarians deserve to know when their local body of water has been contaminated," Podolsky said. "Alerting Ontarians to the frequency and size of this problem will ensure this issue gets the attention and investment it deserves."

The report found that many of Ontario's cities have outdated sewers that combine sewage and stormwater and are prone to overflows during

followed, I found out that he had moved to the Village of Lanark. As I explained what I did for a living, he started to tell me about a water quality and sewage system issue in the Village that had effectively divided the community and driven business away from the area. I had recalled that there had been issues raised in the media several years earlier, but I had no memory of what had become of it. At that time, as I recalled, there was some discussion within the onsite community in Eastern Ontario, to provide some assistance in disseminating accurate information about the benefits of onsite sewage treatment and that most water quality issues related to "sewage system contamination" were more likely a result of poor well construction and poor sewage system siting (i.e., on exposed bedrock) than on actual sewage system malfunctions. I could not remember anything further on this topic and neither could I recall what the outcome had been.

Just before we parted ways, we exchanged business cards and shook hands and I sat and reflected on what had just happened. I felt compelled to get involved with this issue in some sort of karma driven fatalistic compulsion to reacquaint myself with the situation facing the Village of Lanark and to try to help residents in some meaningful way. As I got up to speed on the issues, I learned that the Village had solicited advice from several experts. Unfortunately, these experts were not well versed in private serving options (as is almost exclusively the case) and several proposals were prepared. These proposals all called for the installation of municipal services at incredible expense to the Village and to the County. All options were too expensive and unsustainable with the current tax base. It became an election issue and, gladly, a mayor was elected who sought to gain more information about the situation without jumping on the municipal servicing bandwagon. A study was conducted by the local Health Unit which found that the situation wasn't quite as bad as what had first been suggested. Yes, there were many drinking water wells with nitrates and some *E.coli,* however, the nitrate concentrations were, without exception, less than the maximum allowable concentration in all sampled wells.

It is clear, from the studies completed, to date, that there is an issue with drinking water in the Village of Lanark, and it is equally clear that sewage system design and well construction are both the problem and the solution. Old sewage systems, of which many are, apparently, nothing more than holding tanks, need to be replaced with either onsite, or communal sewage systems. Moreover, the existing drinking water wells need to be repaired or replaced, as needed, where the wells allow for short circuiting of surface/shallow groundwater directly into the water supply aquifer.

Of equal importance is the need for the onsite wastewater treatment industry to get out in front of this issue. This is an election year, and by all accounts, the municipal servicing proponents are circling the wagons of the Village of Lanark once more.

OOWA has grown and matured over the past 14 plus years. When the organization first started, it did not have the capacity to focus efforts on issues such as these but that capacity is building. OOWA needs to get involved in these types of specific issues to move the onsite system agenda forward. With the Canadian Standards Association releasing the new Standard for Sewage Systems, it may be time for all of the fragmented organizations across Canada to form up under one umbrella similar to NOWRA in the United States. Perhaps it is time for OOWA to consider partnering with similar organizations in the province to present a united front on specific issues. This would allow for more capacity to push the onsite wastewater treatment agenda and make strategic partnerships easier to obtain and manage. Make no mistakes, this is exactly what the proponents of municipal servicing have done over the years and unless we follow in similar footsteps, we will all, as an industry, be left behind to pay the tax burden for the ill conceived decisions to provide municipal services where private services are most suitable — made by those who don't have both sides of the story and seemingly no other alternative. ■

heavy rainfall. When this happens, sewage is released into local water bodies with little to no treatment. It's called a combined sewer overflow. Sewage bypasses and spills are also common when treatment plants are overloaded by wet weather.

The Great Lakes Sewage Report Card [2013] analyzes and grades the sewage management programs of Peel Region, York and Durham, Collingwood, Kitchener-Waterloo, Midland, Brockville, Sarnia, Sudbury, St. Catharines, Toronto, London and Windsor.

In addition to ranking and grading the municipalities, the report provides an analysis of the region's sewage treatment laws and policies, and offers recommendations to ensure the protection of water quality in the Great Lakes for future generations.

Continued on page 29

Ontario Rural Wastewater Centre

Training Corner

Guelph Area Courses

- **Pumps & Controls**
  — April 8, 2014, Arkell Research Station, Guelph
- **Inspection and Evaluation of Onsite Sewage Treatment Systems for MOE Staff**
  — April 22, 2014, Arkell Research Station, Guelph
- **Soils 101 — Evaluation of Soils for Onsite Technologies**
  — May 6, 2014, Arkell Research Station, Guelph
- **Exploring New Options for Leaching Bed Designs under the 2012 Ontario Building Code**
  — March 26, 2014, Arkell Research Station, Guelph. Course will be delivered at the Sheraton on the Falls Hotel in Niagara Falls

Join OOWA

... work in the onsite industry? Join the Ontario Onsite Wastewater Association!

www.oowa.org/join

… from page 27

This report is a follow-up to 2006's *Great Lakes Sewage Report Card*, which surveyed 20 American and Canadian cities in the Great Lakes Basin. That report found that 92 billion litres of raw sewage, mixed with stormwater, were released into the Great Lakes in one year.

Municipalities, ranked from last to first:

12. Windsor (C-)
11. London (C-)
10. Toronto (C)
9. St. Catharines (C)
8. Sudbury (C)
7. Sarnia (C+)
6. Brockville (B)
5. Midland (B)
4. Kitchener-Waterloo (B+)
3. Collingwood (B+)
2. York and Durham (B+)
1. Peel Region (A-)

See more at: www.ecojustice.ca/media-centre/press-releases/ecojustice-report-shows-that-sewage-pollution-still-a-big-problem-in-great-lake basin#sthash.Jb41WOIZ.dpuf ■

Filed by Liat Podolsky
August 13, 2013

Ontario Rural Wastewater Centre Training Corner

Ottawa Area Courses

- **Part 8 Ontario Building Code Onsite Sewage Systems Installer/Inspector Certification Course** — *please note that this course does NOT include the licensing exam*
  — April 7 to 11, 2014, Baxter Conservation Area
- **Soils 101 — Evaluation of Soils for Onsite Technologies**
  — May 22, 2014, Baxter Conservation Area
- **Pumps & Controls**
  — April 2, 2014, Baxter Conservation Area
- **Exploring New Options for Leaching Bed Designs under the 2012 Ontario Building Code**
  — April 22, 2014, Course will be delivered in Horton Township, Renfrew County
  — May 7, 2014, IMPORTANT! This course will be delivered at the Cataraqui Conservation Authority, Kingston ON

News

Ministry of Municipal Affairs and Housing

Guiding Sustainable Prosperity in Northern and Rural Areas
February 24, 2014 12:45 p.m.

The Provincial Policy Statement 2014 (PPS 2014) increases the flexibility northern and rural communities have in applying good land use planning principles.

The PPS 2014 recognizes the distinctiveness of northern and rural communities and their importance to the provincial economy and our overall quality of life by:

- Adding a new section of rural policies to support healthy, integrated and viable rural areas
- Clarifying the types of uses permitted on rural lands, such as resource-based recreational uses and home-based businesses

- Providing greater flexibility for agriculture-related uses and making clear the wide range of economic opportunities allowed on farms
- Making clear that the studies needed to support the expansion of settlement areas or the conversion of employment areas to other uses do not need to be as complex as those needed to support bigger projects in urban communities
- **Allowing additional development that will be dependent on septic tanks and wells in areas where sewer and water services are not available, if it can be shown there will be no negative impacts on surface and ground water**
- Clarifying that municipalities can determine the appropriate locations for intensification and redevelopment, based on the services available or planned
- Making clear which policies are flexible to address regional differences and local context, such as size and diversity of settlement areas; and clarifying that development may occur in communities experiencing slow or no growth
- Directing development away from areas with a high potential for wildfires unless the risk to developments and residents can be reduced.

Special northern and rural primers are being developed to help land use planning decision-makers in those communities apply the policies of the PPS 2014.

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