About Lystek

- Proven, award-winning provider of solutions for the conversion of biosolids and other organics into a Class A fertilizer product

- Solutions from the Waste Water Treatment Plant - through to beneficial end use

- Founded in 2000 at the University of Waterloo, headquartered in Cambridge, Ontario
  - Proprietary technology - protected by several US and CDN patents

- Experienced management team – expertise in microbiology, wastewater engineering, regulatory affairs, agrology, business development & marketing

- Helping municipalities & other generators and their communities understand how these materials can be turned into a ‘resource’, instead of ‘waste’ through advanced treatment
Why were we founded?

• Escalating management challenges & costs – storage, transport & disposal is forcing communities to re-think needs & approaches – problems are not going away!

• Disposal in landfills is not considered sustainable - or responsible

• Concerns about pathogens, metals & odors are contributing to a distinct shift away from Class B - toward Class A treatment solutions. For example, in a recent WEFTEC workshop, it was noted that “Class B biosolids may contain pathogens, but Class A materials are treated to reduce enteric viruses below detection limits....”
  – Safe, proven solutions & products are in high demand
  – Must be fiscally & environmentally responsible – reasonable up-front investments & ongoing costs are critical considerations
  – Public understanding & acceptance is key – polarizing subject matter!
How does Lystek do it?

OUR TECHNOLOGY

• Patented technology utilizes a combination of heat (temperature), high shear mixing and pH (alkali) adjustment (KOH)

• Creates a unique, liquid fertilizer product called LysteGro that is still very high in organic matter (14-17%) with virtually complete pathogen kill

• Results in a low odor, Class A fertilizer product with high N-P-K values – registered & recognized as such at the federal level (Canada)

• Same system can be used to increase biogas recovery for green energy while reducing operating costs and overall volumes to manage

• Is simple & proven, takes up very little space, is low cost and easy to operate
Solutions - Overview

Lystek

- Biosolids & Organics Processing
- Fertilizer Production/Land Application
- WWTP Optimization
- Lagoon Clean Ups
Where is Lystek in use now?

<table>
<thead>
<tr>
<th>Site</th>
<th>Guelph</th>
<th>St Marys</th>
<th>Southgate OMRC</th>
<th>Iroquois</th>
<th>Elora</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Operating</td>
<td>Operating</td>
<td>Operating</td>
<td>Operating</td>
<td>2014</td>
</tr>
<tr>
<td>Volumes</td>
<td>18,000 t/ 26%</td>
<td>3,500 t/ 26%</td>
<td>150,000 t/ 3% - 26%</td>
<td>50,000 t/ 3% - 26%</td>
<td>3,000 t/ 26%</td>
</tr>
<tr>
<td>Capacity</td>
<td>10 m³/h</td>
<td>3 m³/h</td>
<td>30 m³/h</td>
<td>9 m³/h</td>
<td>5 m³/h</td>
</tr>
<tr>
<td>Ownership</td>
<td>Guelph</td>
<td>St Marys</td>
<td>Lystek</td>
<td>Third High Farms</td>
<td>Elora</td>
</tr>
</tbody>
</table>

Solutions provider for the Cities of Toronto, Ottawa, Peterborough, Orangeville, the Regional Municipality of Waterloo and more....
In-Plant Deployments

City of Guelph

Town of St. Marys
Regional Processing Centre

Approach to OMRC

Rear of OMRC – biofilter system
Regional OMRC – Details

• State-of-the-art, fully licensed, regional receiving & processing facility

• Located in the Township’s zoned “Eco Industrial Park “ – heart of a farming community with a population base of approximately 7,000 residents

• Initiative that is fully supported by local Mayor, Council & majority of the community

• Constructed in 2012/2013 – Commissioned in April, 2013

• Capacity – to divert up to 150,000 tonnes of bio-organics from landfills annually

• Providing services to customers within 80 – 90 mile radius

• Extensive biofilter system for treating/handling all building air emissions/odors

• Fully lined & covered storage reservoirs for finished fertilizer product - capacity for approximately 64,000 m3 or 16,900,000 US gallons
Regional OMRC

OVERVIEW OF CENTRE OPERATION
Regional OMRC – Storage

Covered & Lined – Rain Water Capture & Re-use
Key Issues/Community Concerns?

- Truck traffic and noise – safety?
- Odors – quality of life?
- Pathogens, metals – health & safety
- Environmental impacts?
- Proximity to town?
- Jobs & other economic benefits?
- Who are you people & why in our community?
- First Nations – environment, unresolved land claims

Public understanding & acceptance is key – polarizing subject matter!
How do you achieve community buy in?

START BY LEARNING ABOUT THE COMMUNITY!

• Historical situation – what’s the back story/history of biosolids in the area?

• What is the demographic make up of the community?
  – Rural (agriculture) vs. more urban – or mix?
  – What is the general education level/awareness?
  – What are their general values/beliefs?

• What are the economic drivers in the community?

• What are some of the other, existing sensitivities – i.e. environmental, political, etc.?
How do you achieve community buy in?

START BY LEARNING ABOUT THE COMMUNITY!

• Who are the key, community influencers/leaders – formal and informal?

• What can you learn from the above to help you formulate an engagement plan?

• UNDERSTAND GOING IN THAT:
  - YOU NEED TO BE CONSISTENT & TRANSPARENT
  - IT WILL TAKE BOTH TIME & MONEY TO "SUCCEED"
  - NO MATTER HOW WELL PREPARED, YOU MAY STILL HAVE SURPRISES
    (i.e. MEDIA SAVVY "NIMBY’s", FIRST NATIONS INTERESTS)
  - NO MATTER WHAT YOU DO, IT IS UNLIKELY YOU WILL EVER ACHIEVE 100% "BUY IN" OR SUPPORT!

Listek
Nothing wasted. Everything to gain.
Development of Key Messages

WHY SHOULD THE COMMUNITY WELCOME/TRUST YOU?

• Who are you (people)? What you’ve done previously (expertise)? How does this align with the community’s goals and values? Explain.

• What is your value to the community? Job creation? Increased tax revenues? Reduced costs? Provision of some product and/or services not currently available? Explain.

• Does your solution meet/exceed all applicable regulatory guidelines and/or requirements? (local, state/provincial, federal, etc.) Is it proven? Explain.

• Develop messages & open dialogue with simple, easy to understand language. Avoid using big words, being too “scientific” or using too much “techno speak”.

• If they can’t understand you, they will never trust you!

• Above all, make sure your messages are consistent, transparent and sincere!

Listek
Nothing wasted. Everything to gain.
Sustainable Cycle

- Decreases need for organic “waste” disposal
- Decreases management program costs
- Meets demand for local agriculture
- Increases use of organic, nutrient-rich fertilizers
- Decreases reliance on chemical fertilizers
- Increases yield of existing farmlands
Formulating & executing your plan

GETTING THE MESSAGE OUT

Build a list of stakeholders and ensure your message is appropriate for each.

Execute using a diverse range of communications approaches/channels – for example:

- Introductory letters to educate & inform the community about your initiative
- Voluntary facilitation of a Public Advisory/Liaison Committee
- Public information centres & presentations w/displays
- Refer to & share information/research/references from credible, third party sources, (customers, industry associations, gov. agencies, educational institutions)
- Distribute a community newsletter – hard copy & online (digital) formats
- Offer tours of any enabled sites you may already have (as practical)
- Get articles & “good news” into the local media – BECOME MEDIA SAVVY!
Formulating & executing your plan

MORE IDEAS FOR GETTING THE MESSAGE OUT

- Presentations to, and participation in, the local Chamber of Commerce
- Sponsorships of local sports teams and community events
- Post Q & A’s from the community on your own & the host community’s web site
- Development & distribute/share Case Studies, testimonials, etc.
- Attendance and participation in, local Council meetings
- Establishment & ongoing relationships with key community leaders
- Make sure you are in full compliance with all regulatory framework & can count on the “good word” & support from these critical, third party stakeholders

BE EMPATHETIC, CONSISTENT & TRANSPARENT AT ALL TIMES!
Welcome Note from the President

Welcome to our latest newsletter! Over the coming months, and beyond, we will be working in cooperation with our community to help our project emerge. This newsletter will demonstrate what can be accomplished when technology, people, and a change of the mind are combined to create sustainable solutions for real-world challenges.

We are glad to share that the current practice of dumping expensive biosolids on farm lands or into aquatic areas cannot continue. Instead, we aim to share the newsletter's objectives and upcoming events. The newsletter will be released every 2-3 months and will cover events in the community that we feel are of interest. It will also serve to keep you informed about current events.

Who is Lystek?

Lystek is a Canadian-based company that produces sustainable fertilizer from biosolids. Our mission is to make the world a better place by providing nutrient solutions that are safe, effective, and environmentally friendly.

Lystek’s mission is to provide nutrient solutions that are safe, effective, and environmentally friendly. Our products are designed to improve soil quality and plant health, while promoting sustainable agriculture.

In our business, we focus on the development of innovative technologies to create a sustainable future. We believe that every action we take should contribute to a better world.

In this newsletter, we share our company’s philosophy and beliefs with you. We strive to balance the needs of our clients with the needs of the environment, species, and economies. We are committed to providing high-quality products that are safe, effective, and environmentally friendly.

Thank you for your interest in Lystek. We look forward to working with you and helping you achieve your sustainability goals.

Lystek

Lystek

Lystek

Lystek
Sponsorship

2011-12 Champion Novice Storm Team Wins Regional Tournament

In case you haven’t already heard, the Dundalk Novice Storm Hockey Team won the Kincardine Regional Silver Stick Tournament on December 30, 2011. ‘Teams from all over the part of the province compete in this four-day tournament and the Dundalk team came out on top! The next step is an opportunity for these twelve local players to compete in the International Silver Stick Tournament in St. Clair Shores, Michigan on January 30-31, 2012. This is a once in a lifetime experience for these 9 year olds and Lystek is proud to have been chosen as the primary sponsor of the team for this event. Go Storm!”
Public Advisory Committee

Lystek Southgate PAC Meeting

Regulated Metal Information

Permanent chair named

Stephanie G. Redmond will be the permanent chair of the Southgate Organic Materials Recovery Centre (OMARC) Public Advisory Committee (PAC).

He served on the Lystek advisory council last year, according to a press release issued by Lystek.

Mr. Redmond, formerly an Environmental Management Specialist, is known with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). He is also a member of the board of directors of the Great Lakes Water Quality Agreement.

Mr. Redmond is recognized for his contributions to the environmental management and stewardship of natural resources.

He has experience in monitoring and protecting the environment, as well as in developing and implementing sustainable waste management practices.

Mr. Redmond’s experience in environmental management and stewardship will be an asset to the PAC, which is responsible for advising the OMARC on environmental matters.

Mr. Redmond is a member of the Canadian Association of Professional Agrologists (CAPA) and is a board member of the Ontario Association of Professional Agrologists (OAPA).

He has also served as a member of the Southend Farm Organic Materials Recovery Centre’s PAC.

Stephanie G. Redmond

FOR IMMEDIATE RELEASE
February 29, 2012

Public Advisory Committee elects former OMAFRA Environmental Management Specialist, Stephen G. Redmond as Permanent Chair

Dundalk, Ontario – Lystek advises that a vote was taken last night at the second meeting of the Southgate Organic Materials Recovery Centre (OMARC) Public Advisory Committee (PAC) and, in a unanimous decision, Mr. Stephen G. Redmond, formerly an Environmental Management Specialist with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) was elected as permanent Chair.

Mr. Redmond recently left OMAFRA to pursue a full-time interest in Redmond Agronomic Services, a professional Crop & Nutrient Management Consulting practice he has also operated since 1996.

Mr. Redmond is a recognized professional who understands the importance of the Chair and the requirements for objectivity. He is well known in the local area as he was originally from Dundalk and has family that still resides in the community.

Here are some additional facts about Mr. Redmond that qualify him to act as permanent Chair for the PAC:

- Operated an agronomic consulting business since 1996
- BSc in Agriculture from University of Guelph
- Certified as a Crop Advisor in ON (CCA)
- Designated as a Professional Agrologist (P.Ag.) by the Ontario Institute of Agrologists
- Experience in monitoring construction of natural gas pipelines for farmers
- Experienced in chairing council and finance committees
- Currently a board member of Ailsa Craig & Area Foodbank

As previously announced PAC meetings take place on the last Tuesday of each month from 7-9 PM at Lystek’s Community Information Office at 40 Main St., Dundalk, Ontario.

For more information about this Release and/or the PAC, please contact Kevin Luttrell, Director of Business Development, at 1-888-501-6505 ext 106 or kevin@lystek.com.

Lystek International is an award-winning company founded in 2000 by leading researchers at the University of Waterloo. The company has patented processes for converting biomass into an organic-based fertilizer product that meets the stringent guidelines of the Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) and the Canadian Food Inspection Agency (CFIA). Lystek is committed to environmental stewardship and contributing to the economic well-being of the communities in which it operates. The Southgate Organic Materials Recovery Centre will leverage Lystek’s proven, technologically advanced process to convert organic waste into a high-quality, rich organic-based fertilizer product that is approved for agricultural use by the Canadian Food Inspection Agency.
## Product Analysis - Metals

<table>
<thead>
<tr>
<th>Metal (mg/kg)</th>
<th>Maximum allowable (ON)</th>
<th>Lystek Fertilizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>As</td>
<td>170</td>
<td>2.5</td>
</tr>
<tr>
<td>Cd</td>
<td>34</td>
<td>1.8</td>
</tr>
<tr>
<td>Cr</td>
<td>2800</td>
<td>127</td>
</tr>
<tr>
<td>Co</td>
<td>340</td>
<td>3</td>
</tr>
<tr>
<td>Cu</td>
<td>1700</td>
<td>700</td>
</tr>
<tr>
<td>Pb</td>
<td>1100</td>
<td>25</td>
</tr>
<tr>
<td>Hg</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Mo</td>
<td>94</td>
<td>18</td>
</tr>
<tr>
<td>Ni</td>
<td>420</td>
<td>21</td>
</tr>
<tr>
<td>Se</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>Zn</td>
<td>4,200</td>
<td>1,183</td>
</tr>
</tbody>
</table>
# Product Analysis – Pathogens

<table>
<thead>
<tr>
<th>Pathogens</th>
<th>MDL</th>
<th>Class A Criteria</th>
<th>Untreated dewatered biosolids</th>
<th>Lystek treated biosolids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fecal coliforms (MPN/g dry wt)</td>
<td>1.8</td>
<td>&lt; 1,000</td>
<td>&gt; 1,600</td>
<td>&lt; 1.8</td>
</tr>
<tr>
<td><em>Escherichia coli</em> (MPN/g dry wt)</td>
<td>1.8</td>
<td>-</td>
<td>&gt; 1,600</td>
<td>&lt; 1.8</td>
</tr>
<tr>
<td>Salmonella (P-A / 25 g)</td>
<td>1</td>
<td>&lt; 3 MPN/4g</td>
<td>POS</td>
<td>NEG</td>
</tr>
<tr>
<td>Polio virus (pfu / 4g)*</td>
<td>1</td>
<td>&lt; 1</td>
<td>776</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Ascaris eggs (per 4g)*</td>
<td>1</td>
<td>&lt; 1</td>
<td>131</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>
First Nations Consultations

Media Release

Monday July 23 | Caledonia, Ontario | For immediate release

Report Supportive of Lystek And Encourages Continued Dialogue

A report presented to the Haadensoonee Development Institute (HDI) says that the processing technology designed by Lystek International is safe and is a significant step forward for the biosolids sector in Ontario.

“The product produced by the Lystek process is a fertilizer with a 3-3-3 equivalence,” said report author, Barry Hill. He continued: “It will provide much needed organic matter to Ontario soils as well as micronutrients.”

The report was commissioned by the HDI as part of their review process for the Lystek organic material recovery center (OMRC) which the company is planning to build in the Eco Park located in the Township of Southgate. Lystek is a recognized leader in converting biosolids into a ready-to-use CFIA registered fertilizer. Its technology is being used successfully by the City of Guelph, the Town of St Marys and is under serious consideration by other municipalities.

“We were pleased to read the report from Mr Hill,” said Kevin Littler, Director of Business Development for Lystek. “Having someone with his professional credentials and agricultural experience get to know our technology is very important for us. This report supports what our clients, the general marketplace and our team already knows; our process is good for everyone involved.”

As part of his research for the report, Mr. Hill attended a tour of a Lystek installation along with other members of the Southgate community. Mr. Hill commented: “I am glad to know that my report can be a part of the continued positive conversations between our community and Lystek. As a proud farmer and member of Six Nations of the Grand River, I think there is an opportunity here for long-term partnerships.”

Although we’ve been advised for a long time regarding this project was originally aimed by the Ministry of the Environment in the late 1990’s for the area. The Grand River has seen significant growth and development since then, and it is important to ensure that any new projects are environmentally sustainable and beneficial to the community. Lystek has undergone a rigorous process to ensure that their technology is safe and effective. The company has been working closely with regulatory bodies and community members to ensure that any potential environmental impacts are minimized.

In short, I am generally pleased with the professional approach that Lystek has taken in this matter. We are excited to continue working with them in the consultation process, although it is not yet complete. Based on the information provided by Lystek, and feedback from my colleagues and other First Nations, the Grand River has been working closely with Lystek to ensure that any potential environmental impacts are minimized.
Bioassays of Biosolids Land Application in Ontario

Lynda McCarthy
Ryerson University, Toronto
May 22, 2011
Media Releases

**Media Release**

**Six Nations of the Grand River Consultation Team Tours Lystek Site - All Parties Proud of Growing Relationship**

Attention Environmental and agricultural reporters/editors:

October 1, 2012 - Cambridge ON – For Immediate Release | After a joint tour of the Lystek facility under construction in the Southgate Eco Park, officials from Six Nations of the Grand River Consultation and Accommodation Process (CAR) team and Lystek are proud of the growing and positive relationship between their organizations.

"Touring the actual Lystek site and facility and learning about their process first hand has been very helpful and informative," commented Lenoy Rombee, Director of Lands & Resources. "Clearly, there has been a lot of inaccurate information and rumors circulating about this development," he said. "We now have an even stronger understanding of the positive impact that Lystek technology can have for all communities and the environment."

The tour was a part of the evolving relationship between Six Nations of the Grand River and Lystek. Conversations over the year have included discussions about project development, site design, water management and protection, product storage and the efforts that have gone into securing there will be no negative impact on the surrounding environment.

The Lystek process is recognized in the industry as being one of most advanced biostabilization management solutions in the world. The safety and environmental integrity of the Lystek technology is paramount for the Six Nations Community. Therefore, as part of their continued research into the project, the Six Nations CAP team has also commissioned the services of external experts to perform an independent third party peer review of the technical and environmental merits of the Lystek process. Lystek welcomes this external review. "As we have said from the outset, Lystek is happy to provide any information required to help the community of Six Nations better understand and feel comfortable with our project" said President of Lystek, Rick Rombee.

"The biostabilized compost can sometimes include misconceptions," observed Southgate Mayor Brian Myles, who was also on the tour. "The tour was an opportunity to clarify that the Lystek closed loop system is going to have no impact on the local water tables and is the perfect tenant for the Southgate Eco Park. We are very pleased to be working with leadership from Six Nations and Lystek to make this park a part of our common economic and environmental future."

-Lystek International Inc.

**Media Release**

**Ministry of Environment Issues Approval for Lystek Centre in Southgate Eco Park**

Attention Environmental and agricultural reporters/editors:

October 9, 2012 - Cambridge ON – For Immediate Release | Lystek has been notified by the Ministry of the Environment (MoE) that all three of its Environmental Compliance Approvals (ECA) for waste, air and water/surface water have been approved. This makes the final indicators required for the company to complete construction of its Organic Material Recovery Centre (OMRC) located in the Township of Southgate’s Eco Park.

"This is a very rewarding day for the team at Lystek," commented Rick Rombee, President. "We have complete confidence these approvals would be issued. This approval for this project is especially satisfying as we have invested a great deal of time and effort educating and working with the local community to secure the economic and environmental benefits of this initiative were and are, clearly understood. We are ecstatic about this opportunity to continue building on our proven history of success while growing our business and serving new markets and customers."

The MoE approvals are confirmations that the Lystek OMRC meets the province’s stringent environmental, operational and regulatory conditions. This is the culmination of a process that Lystek has been working on for over a year including in-depth evaluation of the planning, construction, operations and environmental monitoring for the centre. It also involved extensive conversations with local and regional stakeholders.

Lystek plans to complete construction of the centre, including installation and testing of state of the art technology, over the next two months. The company anticipates being ready for operations early in the New Year. The Lystek process is recognized as one of the most advanced biostabilization technologies in the world.

"I want to congratulate Lystek on this important accomplishment," said Southgate Mayor Brian Myles. "It’s excellent Lystek’s presence in the Kitchener-Waterloo region and its leadership in seeing their unique biostabilization technology through the planning and construction phases of a new OMRC. Lystek technology transforms biostabilized compost, traditionally used to sequester or mitigate nutrients, into a nutrient-rich, agricultural fertilizer. For more information please contact Kevin Lovell, Director of Business Development. Tel. 519.534.1883 | Office: 22444-4250x106 | Email: kevin@lystek.com"

-Lystek International Inc.
Lystek International recognized for biosolids technology

This is the second annual Lystek has received directly from recent years. The company previously received the Regional Innovation award in 2013 from the National Research Council of Canada. The firm of St. Mary’s, Ontario, is in the running to win the prestigious award for its innovation and leadership in the field of biosolids management.

Lystek’s innovative technology helps to convert biosolids into a valuable resource for land application. The process involves the use of a proprietary treatment system that reduces the volume of biosolids by 90%, allowing for more efficient land application.

A better way to land-apply biosolids

Lystek’s 35,000 cubic metre capacity beds are 10,000 cubic metres of organic material.

In what makes Lystek different from the other biosolids management companies is its unique process of conversion. The company’s proprietary process involves the use of a patented system that reduces the volume of biosolids by 90%, allowing for more efficient land application.

Kevin Lindhout and Mike Snugwort of Lystek agree that the technology is the future for the industry.

By Stephanie Delegan

Lystek International

To view this article, please visit Lystek’s website at www.lystek.com.
Agricultural Tours

Georgian Soil and Crop Summer Tour
Wednesday, August 14, 2013
10:00 A.M. - 3:15 P.M.
Tour Starts at the Grey Dufferin Community Pasture Farm

Tour the Grey Dufferin Community Pasture Farm at noon.
BBQ at the Farm Location - Farm of Mike Swiderski.
Directions will be provided that day if needed.

Tour Lystek’s OMRC Plant in the Municipality of Southgate
191 Eco Parkway, Southgate

Tour the patented, proven and innovative Lystek process that you will see during this exciting tour of their new plant in Dundalk, transforms non-hazardous, organic materials into a safe, pathogen-free, nutrient-rich fertilizer product, called Lystakore. This unique, CFIA registered fertilizer product is high in organic matter content and it features predictable (NPK) values. Therefore, it is ideally suited to help reduce costs and improve soil performance for agriculture as well as situations where reclamation or remediation is required. Come see this remarkable process in action and find out more! Closed shoes required.

Directions from the Pasture Farm: Turn left north onto Grey Rd 88. Turn east right onto Grey Rd #. Turn right onto the W Back Line (also known as 1Aa Street 5/2nd Line SW). Turn left onto Eco Parkway. Drive to the end of the street, 191 Eco Parkway, on the left.

No Admission Charge to the Farming Community
There will be a bus departing from Alliston for this tour.
For more info, please contact
Martha Patton, 905-434-9096
Crop Trials – University of Guelph

No Fertilizer

Lystek Fertilizer

Chemical Fertilizer
Awards

WEAO AWARD - APRIL 2013

Rick Mosher, President of Lystek, is presented with the Technology Development award from Gary Burrows, President of the Water Environment Association of Ontario (WEAO) – April 2013
Thank You

Nothing wasted.
Everything to gain.

t: 226-444-0186
e: kevinl@lystek.com
w: www.lystek.com