

First of all, it is important for all of us to admit that “we humans” are the cause of the problem of municipalities having to manage biosolids. Each of us consume nutrients and produces about pound a day, so our municipal wastewater treatment plants must find ways to manage this material safely and efficiently.

The Green Knight Economic Development Corporation (“GKEDC” or “Green Knights”) was founded in March 1999, as a non-profit organization with the mission of securing financial resources and using them for the creation of quality employment opportunities and to provide additional social benefits to the citizens of the greater Slate Belt Region. In 2001, the Green Knight’s built the Energy Center, a gas-to-energy power plant, with Waste Management on the landfill property. The Energy Center uses the landfill’s methane — a gas byproduct of decayed waste that is consumed as a fuel by the Green Knights’ three (3) turbine-driven generators that produce nearly ten megawatts of electric power or the equivalent of enough electricity to supply 8000 households. This electricity is then sold as “green / renewable” power and these profits are used to fund the GKEDC mission.

The Slate Belt Heat Recovery Center (Center) is a valuable addition to the GKEDC Energy Center – the benefits are too numerous to put in just a couple of paragraphs.

The GKEDC is the perfect location for the Slate Belt Heat Recovery Center as the Center will take the wasted heat from the three (3) turbine-driven generators and employ proven community friendly technologies that will provide a safe solution to a solid waste challenge – one that occurs every day, in every community - by drying biosolids into environmentally effective renewable fuel and Class A fertilizer products that are natural and endlessly renewable resources.

The project partners, Synagro, GKDEC and WM, have the highest good-neighbor expectations for the Center and have designed a facility that will provide benefits and prevent impacts to the local community. The proposed Heat Recovery Center offers short and long term benefits including:

- Maximizing the value of the existing infrastructure already committed by WMI and GKEDC;
- Creating additional economic benefits for GKEDC and the community because Synagro will purchase exhaust heat created by the Green Knight Energy Center. This will create an additional revenue stream that will allow GKEDC to build on its local economic development record that includes attracting Techo-Bloc to our community, supporting construction of the new Slate Belt YMCA and providing environmental grants and scholarships to students in the Pen Argyl Area School District;
- Increasing the efficiency of GKEDC power plant by utilizing otherwise wasted heat;
- Reduces the amount of waste that enters landfills (Pennsylvanians produce an estimated 2.2 million tons of wastewater solids, or sewage sludge and residential septage, each year — nearly a quarter of a ton per household, per the state Department of Environmental Protection);
- Transforming wastewater treatment plant biosolids into a valuable product with diverse market appeal;
- Reducing greenhouse gas emissions;
- Providing a possible backup beneficial use option for landfill gas in the event the GKEDC turbines are taken off line during an unforeseen emergency;
- Offsetting fossil fuel consumption through possible down-stream use of dried biosolids as a renewable fuel.
- Construction of the Center will generate approximately 40 direct construction jobs during an 18-month building period and approximately 16 permanent, family-sustaining jobs. These jobs will have a multiplier effect and will create and sustain other local jobs, build the tax base of the community and contribute to economic growth in the Slate Belt and beyond.

Many of the Center’s processes will require permits and the Center will meet or exceed all applicable U.S. Environmental Protection Agency, Pennsylvania Department of Environmental Protection and Delaware River Basic Commission regulations. Some of those permitted processes at the Slate Belt Heat Recovery Center include:

- Approved Biosolids are treated and dewatered at a municipal wastewater treatment plant prior to delivery.
- Biosolids are loaded on trucks and will be transported in water-tight covered trucks on approved truck routes.
- All pre-approved biosolids received will be from Pennsylvania, New Jersey and New York. The twenty (20) in-bound and five (5) out-bound trucks that will service the Center each day will follow all transportation and environmental regulations.
- At the Heat Recovery Center, biosolids will be unloaded into a hopper and the trailer is washed prior to leaving.

The wash water is collected and treated with other process air at the on-site decentralized water treatment system.

- Once delivered, biosolids are then introduced into the dryer system by being placed on heat exchangers which capture the waste heat generated by the turbines from the electric-generating process at the GKEDC gas-to-energy plant. This process loop evaporates the water in the biosolids thus creating a Class A biosolids product.

- The heat drying process works much like a pizza oven and evaporates the moisture from the biosolids within the dryer. For this project, Synagro has elected to propose utilizing the Haarslev belt dryer technology which has been successfully in operation worldwide for more than 30 years.

- Environmental protection features of the Heat Recovery Center process equipment include:

- o The Center's dryer building and process air will be captured and treated by engineered air-scrubbers designed to comply with Federal clean air emission standards.

- o Operation at low temperatures taking advantage of as much available turbine exhaust heat as possible;

- o Complying with the State-of-the-Art Safety Guidelines;

- o Low dust and emissions - The safety concept of the gentle drying process meets the standard of drying plants identical in design which are in operation worldwide. Due to the low dust content in the dryer air system, the drying process is intrinsically safe;

- o The retention time of the product inside the dryer will be in average of 60-120 min, depending on the several process parameters. These conditions (temperature and retention time) ensure compliance with USEPA Class A distribution regulations.

- o The evaporated process water will be condensed back to liquid where it is treated at an on-site decentralized water treatment system to appropriate Federal and State Clean Water Standards to meet applicable permitted discharge requirements. Decentralized systems play a big role in wastewater treatment in small communities across the country. A decentralized wastewater systems treat wastewater from homes and businesses near the source where generated rather than collecting and transporting waste to a centralized treatment plant great distances away.

The final product, Granulite™, looks like granules of dirt and is known as “Class A biosolids” pellets. About 100 tons of Granulite™ will be shipped out per day for use as a fertilizer and/or commercial customers, such as cement plants, which can use the pellets as a renewable fuel to heat their kilns rather than using fossil fuels, such as coal, thus reducing greenhouse gas emissions.

The use of biosolids products is a time-tested practice that occurs every day around the world with no adverse impacts on public health or the environment. Comprehensive Federal and State regulations ensure the safety of recycling biosolids and their nutrients back to the soil. In fact, the U.S. EPA's risk assessment on biosolids was the most complex and comprehensive risk assessment ever conducted in U.S. history. The EPA risk assessment concluded that biosolids are safe for use on land when the EPA Clean Water Act Regulations - 40 CFR Part 503 - are adhered to. Granulite™ qualifies as a properly treated and safe Class A biosolids product for unrestricted use under those State and Federal regulations.

The production and use of Granulite™ and other Class A biosolids products creates substantial value across every community and the environment by reducing waste destined for landfills, recovering natural resources, generating renewable energy, lowering greenhouse gas emissions and improving the quality of our waterways. Biosolids products are highly processed and analyzed to ensure their safety and beneficial reuse. Biosolids product use in soil:

- o Improves soil quality and crop health, and increases crop yields;

- o Sequesters carbon in the soil and reduce greenhouse gas (GHG) emissions and energy consumption as compared to the production of inorganic fertilizer;

- o Lowers fertilizer use and expense, as nutrient rich biosolids can supplement or replace commercial fertilizers;

- o Protects groundwater because, unlike commercial chemical fertilizers, plant nutrients are released slowly, eliminating excess nitrogen (nitrate) release into groundwater.

Today, Synagro has beneficially recycled more than 11 million tons of biosolids over the past 30 years with no adverse health impacts. Every day, Synagro works with their municipal wastewater treatment customers around the country to find the best ways to manage biosolids safely and efficiently. Synagro has nine drying facilities currently operating in the US, some with residents much closer than at the Grand Central Landfill location. None of the nine facilities have received odor complaints to date.

The closest similar facility is in Philadelphia and it is available for guided site tours.

For more information, visit synagro.com/locations/sbhrc or contact Jim Hecht, Project Developer, at jhecht@synagro.com.

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Biosolids - Wasting a valuable resource or being resourceful with a valuable “waste”?

Attention: Municipal, Waste & Recycling, Environmental, Science & Agricultural reporters/editors

GUELPH, Ontario, Aug. 10, 2016 (GLOBE NEWSWIRE) -- Below is a statement issued by Professor P.K. Sibley.

In today's society, readers of newspapers should expect rational and balanced perspectives on complex environmental issues that confront Canadians. It was with considerable dismay, therefore, that we read the recent article entitled, “Scientist's Open Letter on the Dangers of Biosolids” by Dr. Sierra Rayne, John Werring, Dr. Richard Honour, and Dr. Steven R. Vincent (Rayne et al.) on the issue of biosolids management. We feel that the authors of the article have misrepresented many aspects about the management of biosolids and in particular have unfairly demonized the practice of applying biosolids onto agricultural lands. As scientists with significant experience researching the environmental impact of biosolids, we wish to respond with a more balanced perspective on the issue of managing biosolids in Canadian society; a perspective based on evidence. First of all, it is important for all of us to admit that “we” are the cause of the problem in managing biosolids. Each of us produces about half a kilogram of excrement a day, or about 6 billion kilograms per year produced over the entire Canadian population, and so our municipal wastewater treatment plants must find a way to treat and dispose of all of this material. According to the Rayne et al. article, all human waste should be immediately land-filled in lined units until a better solution is found; but, very significantly, they offer no solutions. From a practical and economic perspective, land-filling would incur incredible financial and administrative burden on municipal governments who would be faced with the costs of constructing such exacting holding facilities, not to mention having to find locations for the landfills and dealing with the concerns of people who live near the proposed landfill sites. Lined landfills are costly repositories that should be reserved for our most difficult-to-manage wastes. Biosolids are not the “toxic stew” that Rayne et al. attempt to portray. The “sludge” that collects in wastewater treatment plants is treated through sophisticated, engineered processes such as anaerobic digestion, composting, or alkaline stabilization before it becomes the biosolids end-product. Sludge treatment reduces odour and levels of pathogens, as well as enhancing degradation of many organic chemicals. When biosolids are applied carefully and judiciously to agricultural soils, this material adds nutrients to the soils that benefit crop production and reduce the need for chemical fertilizers. In most jurisdictions across Canada, applying biosolids to agricultural fields is strictly regulated. In Ontario, the maximum application rate is 22 tonnes/hectare every 5 years, with regulated waiting periods for both harvest and animal grazing to provide additional time for pathogen die-off and degradation of organic chemicals. The Canadian Council of Ministers of the Environment endorses land application as a sustainable and responsible method of managing biosolids, as do most provinces and territories that regulate biosolids.

By focusing exclusively on the occurrence of chemicals in biosolids, Rayne et al. have stoked fears among the public about exposure to toxic chemicals. They have equated chemical presence, at any level, with unacceptable risk. This correlation is truly unscientific, and frankly, irresponsible. As any thinking individual knows well, any chemical can be harmful to humans if exposure is high enough; two acetaminophen tablets can cure your headache but too many taken at once may harm or kill you. The authors claim that humans and the environment are at risk from chemical exposure without taking into consideration the levels of the chemicals in biosolids and in the amended soils. To take their example of polybrominated diphenyl ethers - the quantities of these flame retardants in biosolids are but a trace of what is found in upholstery and carpets in our homes and vehicles. As in any exposure scenario, the mere presence of a chemical is not the end of the story and most certainly should not be the basis for decision-making in society. In our opinion, the publication of this article that so willfully neglects the merits and benefits of biosolids in agriculture, forestry, reclamation, and urban beautification, and predicts significant human health risks, is not only devoid of a strong basis in evidence, but detracts from more important dialogues on environmental challenges currently faced by society, such as climate change. The weight-of-evidence, when examined fairly and from an unbiased perspective, does not support a moratorium on the land application of biosolids. It would simply be wasteful to disregard the benefits that can result from responsibly and safely recycling this important resource. A crucial part of choosing an appropriate waste management approach for a community is transparency and community involvement in the selection process. The lack of these elements has been rightfully cited as an important cause for public distrust. Therefore, any waste management approach needs to incorporate an appropriate risk communication process and acknowledge that a practice cannot be considered sustainable without public acceptance. As scientists, we encourage a civil and informed discussion on biosolids management; one that incorporates fact and weight-of-evidence in an honest national dis-

course rather than the use of inappropriate catch phrases and misleading information to instill undue fear in a trusting public. Sincerely, P.K. Sibley, PhD, Professor, University of Guelph L.H. McCarthy, PhD, Professor, Ryerson University C.D. Metcalfe, PhD, Professor Trent University J.E. Loyo, PhD, Lecturer, Rice University

A photo accompanying this release is available at: <http://www.globenewswire.com/newsroom/prs/?pkgid=41074>

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