



**Applying Kentorganite to a local farm.**

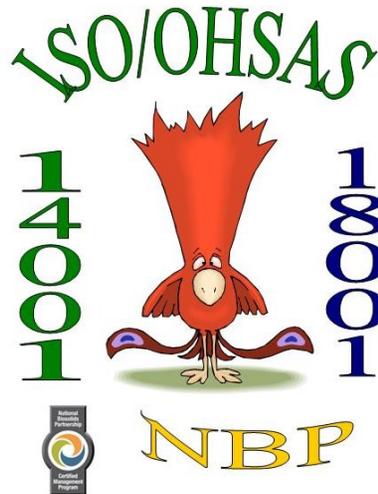
Kentorganite is the name of the biosolids product produced at the KCRRRF. Kentorganite is created through the process of treating a portion of the solids that result from the treatment of wastewater generated by residents, commercial establishments and local industries that discharge to the sewer system. The solids are dewatered using belt filter presses, then lime is added to reduce pathogens. The water content is then reduced in quantity using heat drying, with a portion being solar dried. The resulting product contains nitrogen and phosphorous and lime and is used as a soil conditioner on local farms replacing commercial fertilizer and lime. It is a highly prized product, and is considered by many experts to be one of the finest in the country. Kentorganite meets all of the US EPA Section 503 regulations and all DNREC biosolids permits.

**Quality of Kentorganite** Kentorganite's quality is considered to have excellent soil amendment qualities by local farmers, and offers them a natural alternative to chemical fertilizers. It is tested daily to ensure its continued quality. Local industries are regulated and permitted by Kent County to ensure that hazardous chemicals are not present.

During calendar year 2015, over 4,600 dry tons of Kentorganite were applied to fourteen local farms covering a total of over 2,500 acres. Local applications ranged in size from 1/2 acre to 200 acres at a time. Crops grown on these farms included alfalfa, barley, corn, grass hay, lima beans, pasture grasses, and soybeans. The use of Kentorganite instead of landfilling the biosolids has resulted in an estimated reduction in greenhouse gases of over 759 tons of CO<sub>2</sub> equivalent, which is the amount of CO<sub>2</sub> released by about 160 cars in a year.



Aerial photo of KCRWTF



**For more information:  
Kent County Dept. of Public Works**

139 Milford Neck Rd.  
Milford, DE 19963

Phone: 302-335-6000  
Fax: 302-335-0365  
Website: [www.co.kent.de.us](http://www.co.kent.de.us)



**For more information:  
Kent County Dept. of Public Works**

**▶ KENTORGANITE  
A Biosolids Success Story**

**2015 Annual Report**



**Kent County Regional  
Resource Recovery  
Facility**

**March 2016**

**Tel: 302-335-6000**



# Environmental, Health, Safety, Energy and Security Management System Highlights

In order to further ensure the quality of Kentorganite, Kent County Department of Public Works (DPW) joined the National Biosolids Partnership (NBP) in 2003 and subscribes to its Code of Good Practice.

Further the DPW has developed and implemented an Environmental, Health and safety, Energy and Security Management System (EHSES-MS) The EHSES-MS has been recognized by the NBP.

The facility is the eleventh wastewater facility to be verified by independent auditors to meet all of the requirements of the NBP Environmental Management System (EMS) program, and was certified on December 7, 2005.

Further, the DPW has also been certified to two additional management system standards, the ISO 14001 and the OHSAS 18001 by an independent auditor. The program was certified to the ISO 14001 and OHSAS 18001 standards on January 25, 2006, and was recertified in January 2009. Reverification of the NBP certification occurred in 2014.

*It is the first and currently the only resource recovery facility in the country to be certified to all three standards.*

## Audit Reports

The NBP interim audit occurred during November 2015. The interim NBP audit found no major nonconformances and five minor nonconformances. A nonconformance is where the program elements do not meet the requirements of the standard. The audit noted the following outcomes:

- Positive news articles have been issued in recent months about KCRRRF Sustainability efforts, including ISO-14001, OHSAS-18001 and Biosolids EMS Certifications.
- KCRRRF has received an EPA Region 3 award in 2011 for performance & innovations.
- The Delaware Governor recognized KCRRRF as an "efficient wastewater plant vital to the health & safety of everyone."

The facility also underwent ISO 14001 and OHSAS 18001 recertification audits during November 2015. The initial audit discovered no major nonconformances and five minor nonconformances. The minor nonconformances must be corrected before June 2016.

The auditor noted the following strengths of the program:

- Innovative energy reduction initiatives (use of solar energy, waste heat recovery)
- DNREC has accepted Kent County verified EMS as qualifying for State Loan Funding
- Unique focus on sustainability

The reports for all three audits can be obtained from the DPW website under the environmental management system page located at [www.co.kent.de.us](http://www.co.kent.de.us).

## OBJECTIVES AND TARGETS

The EHSES-MS has established a number of objectives that are designed to reduce the environmental impacts of facility operations and improve employee safety. Each objective has a target date for completion. Progress has been made against several of these objectives. Progress is as follows for 2009:

Reduction of the usage of electricity has progressed by: the completion of four years wind data to determine the feasibility of generating electricity on site, the operation of an 1.2 MW solar photovoltaic (PV) system, beginning operation of a solar biosolids drying system that uses additional solar heating to heat the floors of the system and the operation of a new basin air monitoring system to better control air addition to the basin.

Reduction of air emissions has progressed by: the use of better controls on the biosolids heat dryers including a more efficient scrubbing system, the obtaining of air permits to use biodiesel as the fuel for emergency generators, improving the operation of the

natural gas biosolids heat dryers.

The improvement of employee health systems has progressed with the establishment of a formalized respiratory protection program, a revised and comprehensive facility-wide emergency response plan, and the consolidation of the facility's material safety data sheet books.

An innovative UV system has been installed and both chlorine gas and sulfur dioxide gas have been removed from the site as of October 2010. This switch reduced greenhouse gas emissions by 55% from CY 2008 levels.

The facility became one of the few public resource recovery facilities to be accepted into the US DOE's Better Plants program. The KCRRRF committed to the following objectives to meet the Better Plant criteria and intends to continue to meet these:

Reduce electricity usage by 25% from 2015 levels by 2025

## HEADING INTO THE FUTURE

Future activities for the Kent County Regional Resource Recovery Facility's (KCRRRF) EHSES-MS program include the continuation of wind monitoring, the operations of a renovated biosolids processing system including replacing the current thermal dryers with a new more energy efficient dryer, and working toward becoming a zero net energy facility. The facility is working with the US DOE to develop a certified ISO 50001/SEP program, which will move the facility closer to becoming a zero net energy facility. The facility is working with several universities to investigate personal care products and pharmaceutical chemical effects on wastewater treatment. The facility will look to incorporating more renewable energy options within its operations including the use of more efficient blowers and biogas production.