



Applying Kentorganite to a local farm.

Kentorganite

Kentorganite is the name of the biosolids product produced at the Kent County Regional Wastewater Treatment Facility.

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 in Kent County. The solids are dewatered using belt filter presses, then adding lime to reduce pathogens. The water content is then reduced in quantity using heat drying. 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.

Quality of Kentorganite

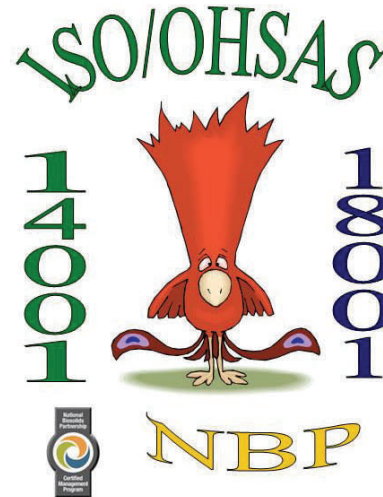
Kentorganite's quality is second to none. It is considered to have excellent soil amendment qualities by local farmers, and offers them a natural alternative to chemical fertilizers. It is tested daily to ensure its continued quality. Local industries are regulated and permitted by Kent County to ensure that hazardous chemicals are not present.

Kentorganite is processed to ensure that it's fertilizer quality meets all the US Environmental Protection Agency's requirements. Monthly composite samples are taken and verified by an independent laboratory to ensure a quality product.

During calendar year 2010, over 10,000 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 1,650 tons of CO₂ equivalent, which is the amount of CO₂ released by about 350 cars in a year.



Aerial photo of KCRWTF



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**For more information:
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▶ **KENTORGANITE** **A Biosolids Success Story**

2010 Annual Report



**Kent County Regional
Wastewater Treatment
Facility**

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Environmental, Health, Safety and Sustainability 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, Safety and Sustainability Management System, now referred to simply as the Sustainability Management System (SMS). The SMS 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 is due to occur in 2011.

It is the first wastewater facility in the country to be certified to all three standards.

Audit Reports

The NBP interim audit occurred during November 2010. 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 determined:

- The management system is generating positive outcome, particularly in energy reduction initiatives;
- No major nonconformances and five minor nonconformances were found;
- No nonconformances from prior third party audits exists; and
- Several opportunities for improvement were noted.

The facility also underwent ISO 14001 and OHSAS 18001 surveillance audits during November 2010. The initial audit discovered one major nonconformance and seven minor nonconformances. The major nonconformance was corrected by January 31, 2011. The minor nonconformances must be corrected before June 2011.

The auditor noted the following strengths of the program:

- Operations supervisors and operators are well aware of the SMS and its fundamental requirements;
- Significant EHS improvements have been made in the past 2 years and/or are being planned; and
- The internal audit performed in 2010 was concise and provided useful findings

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.

OBJECTIVES AND TARGETS

The SMS 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 a year's wind study to determine the feasibility of generating electricity on site, the design of an 800 kW solar photovoltaic (PV) system, design of a passive solar biosolids drying 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.

The innovative UV system has been installed and both chlorine gas and sulfur dioxide gas have been removed from the site as of October 2010.

The facility became only the second public wastewater facility to be accepted into the US EPA's National Performance Track program. Unfortunately, EPA ended the program in 2009. The KCRWTF committed to the following objectives to meet the Performance Track criteria and intends to continue to meet these:

Reduce electricity usage by 10% from 2009 levels by 2011.

Reduce the volume of sanitary sewer overflows by 25% from 2009 levels by 2011.

HEADING INTO THE FUTURE

Future activities for the Kent County Regional Wastewater Treatment Facility's (KCRWTF) SMS program include the construction and operation of a renewable energy park featuring 800 kW of PV solar, the continuation of wind monitoring, the operations of a renovated biosolids processing system including piloting a passive solar biosolids drying system, and major upgrades at the facility to reduce nutrients to the local receiving stream, which will also improve the nutrient content of the Kentorganite. In addition, the KCRWTF will seek to reduce phosphorous entering the system from local industries and other commercial operations.