

Biosolids Environmental Management System

Performance Report 2004



July 2004 was a historic milestone as King County's Wastewater Treatment Division (WTD) became the third public agency in the country to be certified by the National Biosolids Partnership (NBP). WTD has developed an Environmental Management System (EMS) that meets the requirements of the partnership. An EMS provides a better way to lead, manage, compete, stay in compliance, and

enhance public understanding.

Goals and benefits of the EMS include:

- Improving cross-sectional communications
- Preserving institutional knowledge

- Facilitating continual improvement
- Increasing environmental awareness
- Increasing efficiency and productivity.

In 1999, King County joined with 26 other agencies in the NBP's national demonstration project to create the "EMS blueprint" using the NBP Code of Good Practice and long-established King County biosolids policies as guiding principles.

In fall 2002, we completed our first EMS internal audit. Based on this experience we further refined our EMS to prepare for the 3rd party verification audit. We successfully completed our verification audit and became NBP certified in July 2004. Pre-

presented here is a discussion of what we accomplished, what we learned, our strengths and weaknesses, and what direction we plan to take in the future.

"Excellent, well organized EMS - the key to having a successful program."
-EMS 3rd Party Auditor

The EMS is a rigorous system to treat wastewater solids to exceed regulations and attain the highest quality of biosolids possible at reasonable cost.

The Biosolids Value Chain



Work groups participating in the WTD EMS have a direct influence on the quality and final use of biosolids and are therefore part of the biosolids value chain. These groups are Industrial Waste Pretreatment, South and West Point treatment plants, Environmental Compliance & Community Relations, Technology Assessment & Resource Recovery, and our recycling partners.

The biosolids value chain is a sequence of

steps that wastewater goes through, including pretreatment and discharge from the source to collection, primary and secondary treatment, solids conditioning and stabilization, and biosolids handling, transportation, storage and recycling. All these activities affect the quality and stability of biosolids and their suitability for recycling (land application, compost, soil reclamation).

The EMS Team



The EMS Team will keep working on EMS continual improvements.

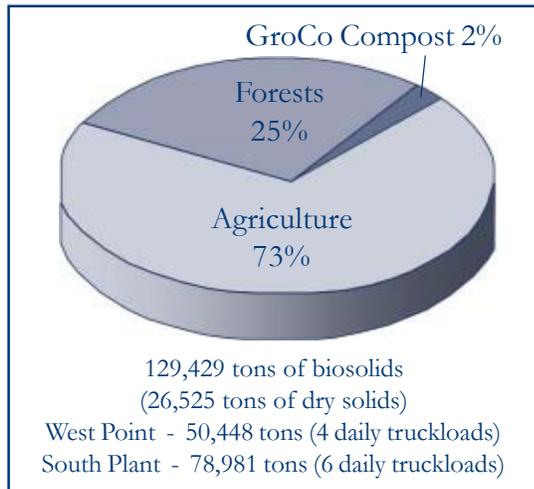
The EMS team has devoted lots of time and energy to developing and implementing King County's EMS for biosolids. The EMS Team is represented by each step of the WTD biosolids value chain:

- Jim Sifford, Industrial Waste Program
- Julie Adams, Technology Assessment and Resource Recovery
- Katherine McKee, Environmental Compliance & Community Relations
- Jim Pitts, South Treatment Plant
- Lisa Vogel, EMS Coordinator, Biosolids Program
- Sekhar Palepu, West Point Treatment Plant

Recycling Partners in the EMS

- Great Western Soil Conditioners Inc.
- Natural Selection Farms Inc.
- Boulder Park Inc.
- RAMCO Inc.
- GroCo Inc.

Where did the biosolids go in 2003?



Biosolids are the nutrient-rich, organic, soil-like product of wastewater treatment.

Benefits of the EMS

For King County, the biggest benefit of the EMS has been improved communications among the components of the biosolids value chain that share in the quality, treatment, and recycling of biosolids. Additionally, the EMS created an increased awareness of biosolids and the importance of everyone's job in creating the best product possible. The EMS has given us an opportunity to showcase our program and examine all facets to make the necessary changes for continual improvement.

There were three activities related to the EMS that were the most beneficial:

- Training all staff and contractors
- Testing staff with possible audit scenarios
- Creating EMS truck signs as a program identifier.

"The pretreatment program is outstanding and an excellent example of management of this critical control point."

-EMS 3rd Party Auditor

Steps to Certification

- Complete final draft of EMS - April 2002
- Implement EMS - May 2002
- Internal audit - October 2002
- Correct nonconformances - May 2003
- 3rd party verification audit - May 2004
- Evaluate outcomes, obtain NBP certification - July 2004
- Prepare performance report - September 2004
- Management review - November 2004
- Continual checking, testing and improving.

Environmental
Management
System



EMS Achievements in 2003-2004

Overall, we performed well in meeting our objectives and targets. We are now helping to weave the concepts of the EMS into other county programs and projects. Achievements towards our 2003-2004 goals include:

- Making sure the EMS manual was fine-tuned, implemented, audited by a 3rd party, and verified
- Training more than 150 wastewater treatment staff and 40 recycling partners in the EMS
- Fine-tuning the biosolids reconciliation and tracking system
- Improving timeliness of annual biosolids report submittal to regulatory agencies
- Establishing baseline biosolids characteristics upon which to measure future performance and improvements.

What Were the Audit Results?

In fall 2002, we conducted our first internal audit and observed various nonconformances. Most were administrative, and corrective actions were quickly implemented.

After another year of implementation, the 3rd party audit was conducted. The 3rd party audit is a three-step process consisting of a desk audit, readiness review, and verification audit. During the first two steps, several opportunities for improvement were found. We were then given the opportunity to remedy nonconformances and observations to improve our EMS in preparation for the verification audit, which covered all elements of the EMS in considerably greater detail than previous steps.

We passed our 3rd party audit in July 2004 with flying colors! The auditors found no major nonconformances, seven minor nonconformances, and four opportunities for improvement. For a complex system with very high standards, that is impressive.

How is the Public Involved in the EMS?

We maintain the following activities to inform our interested parties:

- Establish, maintain and document regular communications with stakeholders
- Establish interested parties list and request comment on 3rd party audit scope of work
- Solicit opportunity to review and comment on EMS manual
- Invite interested parties to participate in the 3rd party audit and/or to tour treatment plants or project sites
- Provide notification of appeals process for anyone who disagrees with the audit findings
- Maintain internet Web site.



Open houses, such as this one at South Treatment Plant, and tours enable interested parties to get a firsthand look at the process. To schedule a tour, call 206-263-6028.

"The [recycling partners] who team with King County are dedicated, knowledgeable, enthusiastic, and supportive of the EMS initiative."

-EMS 3rd Party Auditor

What's on the Web?

- General information on EMS
- Biosolids quality and annual project summaries
- Annual report on biosolids program
- EMS audit reports
- Annual EMS performance report
- EMS outcomes.



The EMS truck symbol is used throughout the division to provide visibility and support for the EMS program.

One of our EMS outcomes is the reduction of mercury in biosolids by up to 50% as a result of the installation of dental amalgam separators.

The EMS Outcomes

One guiding principle behind an EMS is to improve or enhance performance. The four outcomes to indicate that our EMS is functioning and complies with the NBP's program are:

- Environmental performance
- Regulatory compliance
- Better relations with interested parties
- Quality biosolids practices.

Our EMS audit confirmed we have addressed our performance in the four EMS outcomes that interconnect with the WTD Productivity Initiative.

The EMS provides a structure for documenting our work to demonstrate King County is meeting one of its Productivity goals of being "the best" public wastewater provider in the nation by 2005.

Future Improvements

In the next year, we will be working to make the internal audit process more rigorous. The improvements will include the creation of an in-house team to perform the audits. Based on audit findings, we will be focusing on our goals and objectives, identifying only the specific items to be achieved during each year.



For More Information...

Please visit our Web site at <http://dnr.metrokc.gov/WTD/biosolids/EMS.htm> or call Lisa Vogel at (206) 263-3428.



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