How the NBP EMS Program Benefited the City of Fort Worth, TX Village Creek Wastewater Treatment Plant

The City of Fort Worth (Texas) Water Department's Village Creek Wastewater Treatment Plant (VCWWTP) provides regional wastewater treatment to Fort Worth as well as 22 customer cities, effectively serving approximately 885,000 customers. The Village Creek Wastewater Treatment Plant is a 166 MGD advanced exceptional quality (EQ) biosolids treatment facility that produces 100 dry tons of biosolids per day. 100% of the biosolids produced are Class A, The Class A, EQ, biosolids quality is achieved though a quality pre-treatment program of permitting and over-site of industrial and commercial facilities, efficient and productive anaerobic digestion and post lime stabilization. 100% of the biosolids are dewatered and beneficially recycled/reused by land application, under a privatized contract, in Tarrant County and eleven surrounding counties in the North Central Texas area. Over 65+ landowners, with 100+ sites amounting to 42,000+ acres of farm land and ranch lands participate in the biosolids recycling program. The program maintains a 60 day backlog for biosolids fertilization.

Fort Worth was one of the original agencies to voluntary become a National Biosolids Partnership (NBP) Demonstration Agency, and made a commitment to the development and implementation of an EMS for biosolids. In establishing a biosolids EMS, Fort Worth's expectations were to continue to advance to the "next level" in biosolids management by improving overall environmental performance, provide greater opportunities for public comment and involvement and improve communication between, divisions, employees, contractors, and public.

On July 20, 2005, the City of Fort Worth, Village Creek Wastewater Treatment Facility became just the seventh agency in the country to have its biosolids EMS program verified though an independent third party audit process and to achieve EMS Certification from the NBP.

Fort Worth EMS Team: (l to r) Jerry Pressley, Pre-Treatment; S. Frank Crumb, Acting Water Director; Stacy Walters, Laboratory; Maebell Brown, Assistant Water Director; Gary F. Rockers, EMS Coordinator and Biosolids Manager; Tom Boerth, Renda Environmental Inc.

NBP EMS Certificate: (l to r) S. Frank Crumb, Acting Water Director; Gary F. Rockers, EMS Coordinator/Biosolids Manager

Benefits

The Department has realized a number of benefits from developing and implementing an EMS. These include:

1. **Document Management.** VCWWTP, other Water divisions and our contractor spent numerous man- hours in accomplishing the development and update of relevant standard operating procedures (SOP's) throughout the biosolids value chain. Developing and writing the SOP's "in-house" nurtured the sense of employee awareness for the EMS and fostered the feeling of "making a contribution" to the EMS process and indirectly "improving the environment". Documents and SOP's are filed in a central location at each division. The documentation of procedures has greatly improved operational efforts for both the contractor and the City.

2. **Improved Communications.** Another benefit of the biosolids EMS implementation was the opportunity for each of the divisions in the Water Department, our contractor and other City Departments (Internal Audit, Legal, etc.) to learn more and understand better how biosolids processing, activities and operations interact with a number of groups. This awareness resulted in better, more effective communication between all groups and was a moral booster, which directly and indirectly supports biosolids best management practices and biosolids quality.

3. **Annual Goals and Objectives.** Each year a formal set of goals and objectives are established for the biosolids program. Clearly outlining annual biosolids goals and objectives have helped the biosolids program focus on, plan and improve current and future (continual improvement) biosolids operations and issues.

4. **Training.** The EMS process has helped VCWWTP put a greater emphasis on training and documentation of training activities. Training classes have been revised and new classes added, questionnaires/tests at the end of training sessions have been implemented to show training effectiveness.

5. **Improved Public Outreach Efforts with Interested Parties.** In addition to, a revised website format, which includes up-to-date biosolids information, easier contact information and phone numbers, and the annual Biosolids Management Program and EMS Performance Report, VCWWTP will now hold an annual biosolids stakeholders meeting for the purposes of informing interested parties about the biosolids program operations and activities and seek public comment and input.

Lesson Learned

- Time and effort in developing and implementing a biosolids EMS is considerable, but not overwhelming
- Take small steps, address the elements one at a time
- Involve EMS team members, both City and contractor
- Keep an EMS in perspective, an EMS management system is designed for continual evolvement and improvement, don't get stuck on completing an EMS
- View the audit (whether internal or external) as a process to improve your EMS. Audit findings will only help your biosolids program advance to a higher level of environmental performance.

Estimated Cost of EMS

Based on an average annual budget of $19M to $20M for the Village Creek Wastewater Treatment Plant for the past several years, the estimated cost for the Development, Implementation and future Maintenance of the NBP EMS is as follows:

EMS development and implementation time and cost:

• **EMS Development & Implementation:**	4,100 hours of City staff time over 3.5 years	$205,000
	Consultant Engineer (over 2.5 years)	$ 72,000
• **Internal Audit:**	100 hours of City staff time	$ 5,000
	Consultant Engineer	$ 1,500
	360 hours - City Internal Audit Division	$ 18,000
• **EMS 3rd party audit:**	160 hours of City staff time	$ 9,600
	Consultant Engineer	$ 2,300
	DNV (3rd party auditor)	$ 25,000
• **EMS maintenance-2005:**	200 hours estimated for entire year	$ 10,000

Year	Development & Implementation	Internal Audit	3rd Party Audit	Interim Audits	EMS Maintenance	TOTAL
2002	$28,700					$28,700
2003	$66,000					$66,000
2004	$142,000	$24,500				$166,500
2005	$40,000		$36,900		$10,000	$86,900
2006				$10,000	$6,000	$16,000
2007				$10,000	$6,000	$16,000
2008				$10,000	$6,000	$16,000
2009				$10,000	$6,000	$16,000
2010			$27,000		$10,000	$37,000

To view the City of Fort Worth Biosolids EMS program and biosolids web page, visit: http://www.fortworthgov.org/water/wastewater/emsbiosolids.htm.