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Biosolids Environmental Management System Gap Analysis

AGENCY 2 - EPA REGION 7

EMS Element	Purpose of Element	Gap An	
		Current Situation <i>(per response to questionnaire)</i>	Gaps
Environmental Policy	Organizational commitment to Biosolids Code of Practice	<p>Mission of Dept of Water Services is to be the finest water supply, wastewater treatment and stormwater management utility; provide excellent customer service and a quality product at reasonable price; act in an environmentally responsible manner and establish a continuous improvement culture</p> <p>As part of Dept of Water Services long-term commitment to excellence it has created the Associates Creating Excellence (ACE) Total Quality Management Program. Specific commitment to performance measurement systems, benchmarking, citizens' advisory groups, attitude and opinion surveys and regional water authority marketing plans, capital improvements, and national efforts to improve water services management.</p> <p>Plant Operations & Maintenance Business Unit (which includes biosolids management) has established specific strategic team goals to:</p> <ul style="list-style-type: none"> • Increase efficiency/effectiveness of O&M 	ACE value comm and ut specifi

		<ul style="list-style-type: none"> • High acceptably high level of compliance with applicable standards and regulations • Provide safe working environment • Utilize available technology • Optimize associate development • Continuously improve 	
Planning Environmental Aspects	Process for identifying environmental aspects and impacts of biosolids management activities	<p>The environmental aspects of the full life cycle of biosolids management activities from pretreatment through final disposition are well defined and documented in permits and program documents.</p> <p>Pretreatment ordinance has comprehensive provisions for SIU permitting, monitoring, enforcement response, etc. aspects identified and updated.</p> <p>Primary solids at facility 1 are dewatered and incinerated/ash impounded on site; back-up landfill disposal -- aspects identified</p> <p>Digested primary and secondary solids from 3 facilities are dewatered, pumped to land application storage impoundment, land applied aspects identified and managed through lined storage impoundments and land application.</p>	<p>Large amou stored impou digest surfac the 10 facility site.</p> <p>Impou beyon consid groun in plac potent are no potent exists.</p>
Planning Legal & Other Requirements	Process for tracking and evaluating applicable legal and other requirements	<p>Industrial Waste Control Division and legal counsel track legal and regulatory requirements and provide interpretive memoranda to Wastewater Treatment Division and support NPDES permit negotiations.</p> <p>Water Services is member of AMSA and tracks/participates in federal legislative tracking and rule-making activities. Agency was active on POTW incineration issue to keep under purview of wastewater regulations.</p> <p>Water Services Department/Wastewater</p>	<p>Histori not ta positio relate regula state Regul been f compli requir</p>

		<p>Treatment receive BNA and various legislative and regulatory tracking publications/newsletters.</p> <p>Education and training budget includes national/regional conferences, workshops, symposiums on biosolids, solids handling.</p>	
Planning Objectives & Targets	Establishing long- and short-term improvement goals for biosolids management	<p>The ACE Quality Management Program commits the Water Services Department/ Wastewater Treatment Division to a list of specific improvement objectives and measurable targets related to long term goals related to compliance, improving the effectiveness/efficiency of wastewater treatment O&M, assuring a safe working environment and using of state-of-the-art wastewater (and biosolids) management technology.</p> <p>The Wastewater Treatment Division has developed specific objectives and targets for odor control, facility capital improvements and developing environmentally acceptable biosolids management methods.</p>	Other to odor evaluation disposal there objectives biosolids
Planning Biosolids Management Program	Program to achieve biosolids management objectives and targets, including compliance and best practices	<p>The ACE Quality Management Programs has led to the development of a utility business plan linked with each long term Water Services strategic goal, identifying specific activities and tasks, responsible persons/groups, schedules and resources needed to implement these improvements.</p> <p>There are specific goals for developing a biosolids master plan that is being linked with facilities plans and overall utility master plans and the Wastewater Treatment Division has awarded a contract for developing a biosolids master plan.</p>	There program yet development beyond feasibility reuse/ specific improvements
Implementation Structure & Responsibility	Defining organizational roles and responsibilities for biosolids management	Wastewater Treatment Division has organized the treatment plant operations into two cross-functional, self-directed operations and maintenance teams: the Plant	The biosolids require responsible explicit classification

		<p>Liquids Team, the Plant Solids Team. The Plant Solids Team is responsible for all O&M of solids and biosolids at the facility 1 treatment plant.</p> <p>The mechanics at facility 2 are assigned and trained to do impoundment management, dredging and land application of biosolids but these responsibilities are not defined in job responsibilities/classifications.</p> <p>Division Manager personally directs and oversees biosolids land application program and is leading the development of the biosolids management master plan.</p> <p>Industrial Waste Control Division has clearly defined responsibilities for the industrial pretreatment program, pollution prevention and internal compliance auditing program.</p> <p>Moving to broadly defined cross-functional teams.</p>	<p>Waste not tra roles for out beyon requir</p>
<p>Implementation Training</p>	<p>Training program to provide necessary awareness, skills, and knowledge for biosolids mgt., incl. best practices</p>	<p>On-the-job training plus elective solids and biosolids management courses for plant operators and certified mechanics are formally available as is OT-compensated on-the-job cross-training Roughly 25-30% of operators have done some land application cross-training.</p> <p>Strong push for across-the-board plant operator certification—Class A-D (A is the high)—operator certification is mandatory—and City pays for tuition reimbursement. Also developing a parallel program for maintenance trade certifications. Wastewater treatment division has also commissioned a study to evaluate the feasibility and recommendations for skill-based compensation to provide incentives for cross-training and acquisition of broader skills and knowledge.</p> <p>Have formal continuing education and career</p>	<p>No for land a specifi curric individ electe contin and th devel</p>

		<p>advancement biosolids-specific training nearby, local community with college; training policy includes tuition reimbursement and part of continuing education credits.</p> <p>Training curriculum is well developed and documented for safety, and are readily available.</p>	
Implementation Communication	Formal process for internal and external communication on biosolids management	<p>Informal internal communications for biosolids, although there is general education and awareness about the biosolids program.</p> <p>There is a department newsletter and other vehicles and mechanisms in place for internal communications as part of ACE, but historically these have not been used to create awareness of the division's biosolids management program.</p> <p>Externally, there is a formalized process and procedure for responding to public inquiries and complaints and odors and biosolids land application at facility 2 land application site.</p> <p>Agency also produces an annual report and offers a video on city water and wastewater treatment operations.</p>	No for and o promo mana benefi biosoli Depar City e be ex
Implementation Documentation & Document Control	Formal process for creation, storage, use, modification, and disposal of EMS documents	The Strategic Business Plan for the Water Service Department provides a blueprint documenting mission, vision, values, policy, long-term goals, objectives, targets and performance measures. The plan, however, is not specific to biosolids and does not link the strategic goals, objectives and targets with formal management decision-making, standard operating processes, comprehensive biosolids performance measures and records documents.	With t sever treatm term o relate odor c plan f dispos curren there i biosoli pretre with fi
Implementation Operational Control	Detailed procedures addressing environmental aspects of biosolids	The Industrial Waste Control Division managed pretreatment program has formal procedures and requirements for permitting, monitoring, enforcement	SOPs mana the W cover No for

	<p>management. (best practices procedures)</p>	<p>oversight, and auditing of the SIU and other user groups. Other initiatives include the formal household hazardous waste program. In addition to retail customers, the SOPs include structured auditing and oversight of wastewater received from wholesale customers.</p> <p>Approximate 25-30% of the solids management SOPs are formalized and documented, including a procedure pumping between facilities 1 and 2.</p> <p>The biosolids land application management plan includes detailed procedures for managing the land application, including biosolids and soil testing, determining agronomic rates and field nutrient and metals loading. The program was developed as an enhancement to previous land application, biosolids injection programs begun during the 1980s.</p>	<p>update metho</p> <p>No pr and m (Nam versio appro respo</p>
<p>Implementation Emergency Preparedness & Response</p>	<p>Procedures to prepare and respond to emergency conditions, including emergency communication</p>	<p>While staff has responded effectively to serious emergency situations such as the mid-1990s flood event (s), there is no formal emergency preparedness and contingency plan for biosolids related to severe weather-related events or unmanaged releases of biosolids to the environment.</p> <p>There are formalized procedures for reporting and responding to leaks of hazardous wastes/substances into the sewer system.</p> <p>Emergency Response provisions are included in contract documents and supplement requirements for both one time and proposed contract for off-site land application/landfilling of biosolids.</p>	<p>There emerg and re respo event circu impac e.g., p releas primar undig faciliti WWT the pu biosoli storag how e know?</p> <p>There impou biosoli from p</p>
<p>Checking Monitoring & Measurement</p>	<p>Procedures for routine compliance monitoring and measuring progress on objectives/targets</p>	<p>Wastewater Treatment Division has the necessary equipment and conducts extensive monitoring, measurement and testing to document and control the effectiveness and quality of</p>	<p>There tracki and pr biosoli objecti biosoli</p>

		<p>the pretreatment program, primary solids dewatering/incineration and WWTP thickening/digestion of solids prior to storage, pumping and land application solids testing, ground water monitoring and soil testing.</p> <p>The Industrial Waste Control Division has a formal compliance self-assessment process to assure that Water Services Operating Divisions are in compliance with regulations and permit requirements.</p>	<p>There are procedures that require Waste Industry Division compliance</p>
Checking Nonconformance, Corrective & Preventive Action	Procedure for identifying and addressing nonconformances to internal EMS requirements	<p>The internal inspection and compliance auditing process that is conducted by Industrial Waste Control has formalized requirement for analysis, corrective action to both fix non-conforming and areas and to prevent a recurrence.</p> <p>The ACE Quality Management Program will eventually include formalized cause-effect, root cause analysis and corrective action as part of the continuous improvement management process.</p>	<p>The compliance program and standards formal documents</p>
Checking Records	Procedure for maintenance and disposal of biosolids management records	<p>Wastewater Treatment Division conducts extensive recording keeping of measurement, testing, monitoring, permit applications, inspections, etc associated with the pretreatment program, WWTP solids operations, the incinerator operations and land application program.</p>	<p>The National requirements retention formal policy staff beyond</p>
Checking Internal Audit	Procedure for periodic internal auditing of EMS	<p>The Water Services Department, Industrial Waste Control Division, has a formal internal compliance auditing activity that periodically evaluates operating divisions such as Wastewater Treatment.</p> <p>There is also a formal safety inspection and audit program as part of the Department's safety program.</p>	<p>Current audit conformance requirements</p>
Management Review	Process for review by senior management of the effectiveness of the EMS and improvement progress	<p>Management reviews are ad hoc and informal.</p>	<p>There are periodic program progress objectives</p>

This gap analyses was conducted using a Prototype EMS and screening level questionnaire developed by the National Biosolids Partnership for information gathering and demonstration purposes. It should be understood that the gap analysis results summarized above are based primarily on on-site interviews of the management team responsible for pretreatment, wastewater treatment, and biosolids management activities at the participating utilities. The findings reflect the interview team's interpretation of the degree to which a formal biosolids management system is in place and functioning effectively.

The findings are, however, based primarily on self-declared representations of the current situation and limited document reviews, which is no substitute for a more rigorous, in-depth verification audit process involving on-site staff interviews, and detailed work place observations. A formal EMS verification audit would be based on a common set of biosolids management procedures/practices that are under development. Finally, the audit would examine in much greater detail the *linkages* among various biosolids activities in order to determine whether an actual management *system* was in place and functioning effectively. The gap analyses presented in this report, by necessity, focused more on the existence of certain activities, not their linkages.

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