

BIOSOLIDS EMS MANUAL

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Audit Criteria	Policies, practices, procedures, or requirements against which the auditor compares collected audit evidence about the subject matter. (Note: requirements may include but are not limited to standards, guidelines, specified organizational requirements, and legislative or regulatory requirements.)
Audit Findings	Results of the evaluation of the collected audit evidence compared with the agreed audit criteria.
Biosolids	Solid organic matter recovered from a wastewater treatment process and used especially as fertilizer – usually used in plural.
Biosolids EMS Manager	(Contract Services Administrator) heads the EMS Team. The Biosolids EMS Manager oversees the implementation, application, and continued development of the EMS program.
Biosolids Management Program	A comprehensive program covering all aspects of the organization’s biosolids activities throughout the biosolids value chain, including management processes for all critical control points in order to mitigate environmental impacts, meet legal and other requirements and execute action plans to achieve biosolids program goals and objectives.
Biosolids Policy	Statement by an organization committing it to the principles set forth in the NBP Code of Good Practice with respect to biosolids management and any other overall environmental goals voluntarily adopted by the organization.
Biosolids Program Goal(s)	Performance improvement goals that are consistent with an organization’s biosolids management policy to assure biosolids activities comply with applicable laws and regulations meet quality and public acceptance requirements and prevent other unregulated adverse environmental and public health impacts by effectively managing all critical control points. Biosolids program goals include but are not limited to compliance with specific regulatory requirements, improving biosolids quality and public acceptance, and reducing or eliminating direct/indirect negative environmental impacts.
Biosolids Program Objective(s)	A detailed performance requirement, quantified wherever possible, based on a biosolids program goal. One or more objectives must usually be met in order for the underlying goal to be achieved.
Biosolids Public Acceptance Requirements	Biosolids physical, chemical, biological and aesthetic characteristics and management methods that must be met consistently and reliably in order to achieve public acceptance of the organization’s selected biosolids management methods.
Biosolids Value Chain	Sequence of activities from wastewater pretreatment, discharge and collection through wastewater treatment, solids treatment, stabilization, conditioning, handling, storage, transportation, and final utilization of biosolids that are covered by legal requirements and impact the quality of biosolids and their suitability for the intended use or method of disposal.
Business Plan	A summary of the yearly initiatives, budget, strength, weakness, opportunity, and threat analysis, and purpose for an individual, team, or department. The business plan illustrates how the initiatives relate to the City’s Comprehensive Plan, Strategic Goals, and EMS plan.
CFR	Code of Federal Regulations
Changing Circumstances	Internal and external changes that affect the organization’s EMS include: changes in legislation; varying expectations of interested parties; changes in the organization’s products or activities, technological advances; consumer interest; and feedback from environmental incidents.

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Comprehensive Business Plan	A summary of the recommended policies, strategies, programs, and projects that will enable the City to achieve its mission of focusing on the future, working together to build strong neighborhoods, develop a sound economy, and provide a safe community. The plan is reviewed and updated yearly and provides the framework for department and individual employee business plans.
Continual Improvement	Process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization’s environmental policy.
Contractor	“Private” company(ies) hired by the City to provide biosolids dewatering/processing, stabilization, transportation and land application using best biosolids management practices outline in the EMS Blueprint.
Corrective Actions	Specific actions and steps taken to correct an organization’s nonconformance(s) to policies, procedures, and other legal, quality , and public-acceptance, and to mitigate any resulting negative impacts on the environment.
Critical Control Points	Those locations, unit processes, events, activities and other requirements throughout the biosolids value chain under the organization’s direct control or influence that require effective policies, programs, procedures, practices, monitoring and measurements to assure the biosolids activities meet legal, quality and public acceptance requirements. Critical control points include all biosolids management activities that are covered under applicable legal and other requirements.
Deming Quality Management Cycle	Systematic series of steps for gaining valuable learning and knowledge for the continual improvement of a product or process
Emergency Preparedness	A structured emergency planning process to ensure that plausible emergency situations that can affect appropriate biosolids management have been identified, response plans and procedures developed, and trained emergency response personnel and equipment are available and in a state of readiness.
Emergency Response	Specific emergency plans and activities that are initiated to contain an emergency situation and bring it under control so as to minimize environmental impacts.
Employees	Any individual directly employed by the City of Fort Worth including Village Creek Water Reclamation Facility, Fort Worth, Texas.
EMS Blueprint	A set of documents developed by the National Biosolids Partnership to act as a guide to establish, implement, and operate an effective EMS for biosolids. The blue print includes The Code of Good Practice, The National Manual of Good Practice, the EMS Guidance Manual, and The Third-Party Verification Program.
EMS Documents	Various documents that collectively comprise the biosolids environmental management system documentation, including the biosolids management policy, biosolids program, procedures, practices, operating instruction, and other supporting documents required by the environmental management system and applicable biosolids laws and regulations.
EMS Document Levels	The EMS manual consists of a hierarchy of documents that cover all aspects of the biosolids chain from the planning stages through documentation of the plans execution. This hierarchy consists of four different levels of documents as explained below:

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EMS Management Team	The team consists of the following personnel: Assistant Director (Pollution Control), Water Systems Superintendent, Asst. Water System Superintendent (Operations), Asst. Water System Superintendent (Maintenance), Plant Engineer (VCWRF), Environmental Program Manager (Pretreatment Services), Water Quality Manager (Lab), Biosolids EMS Manager, Biosolids EMS Coordinator, and Biosolids Manager (Contractor). The EMS Management Team sees that the EMS program is implemented into the daily activities and operations of the biosolids program. They help the Biosolids EMS Manager plan and execute EMS implementation, assist with internal and interim audits, provide recommendations for improvement, and identify possible nonconformances.
EMS Records	Various records/reports of biosolids management activities required by the environmental management system and applicable biosolids laws and regulations, including but not limited to records/reports of, equipment calibration, monitoring, measurement, laboratory testing, inspections, operating logs, emergency response incidents, outside party inquiries, public participation meetings, audits, corrective actions, management reviews and performance reports. Records describe the results of specific biosolids management activities for a prescribed event, activity and/or period of time.
Environmental Impact	Any positive or negative effect that biosolids management activities have on the environment.
Environmental Management System (EMS)	An organized system that meets the requirements of the EMS Elements for achieving the biosolids management policy requirements and for developing, implementing, reviewing, and maintaining effective biosolids management programs, procedures, and practices. The EMS needs to manage all critical control points associated with biosolids activities where there is a potential to create significant negative environmental impacts.
Environmental Management System Audit	A systematic and documented verification process of objectively obtaining and evaluating evidence to determine whether an organization's environmental management system conforms to the environmental management system audit criteria set by the organization, and for communication of the results of this process to management.
Environmental Performance	Measureable results of the environmental management system based on its biosolids management policy and goals and objectives.
EPA	Environmental Protection Agency
External Communication	Communication with corporations and individuals not directly employed by the City of Fort Worth, including companies contracted to do work for the City.
Gap Analysis	An examination of an organization's current operating and management procedures and programs to determine areas that do not conform to EMS requirements. This procedure identifies areas that need work during EMS development and implementation.
Interested Parties	Individuals or groups concerned with or affected by the environmental performance of Village Creek Water Reclamation Facility's biosolids management activities. These parties include customers, future customers, farmers/ranchers, regulators, government officials, local residents, the media, environmental groups, and the general public.
Internal Communication	Communication with employees and departments of the City of Fort Worth
Knowledge	To recognize, be familiar with, or understand information, activities, and actions based on experience or association; acquaintance with a science, art, or technique.
Legal Requirements	The environmental federal, state, and local laws and regulations that are applicable to an organization's biosolids management program activities. A list of these regulations is shown in the attached table of Regulations Applicable to the VCWRF Biosolids Value Chain.

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Level 1 Documents	(Example - Policy) These documents establish visions, mission, and policies for the biosolids program. They include the biosolids management policy that conveys the principles and commitments established in the <i>Code of Good Practice</i> .
Level 2 Documents	(Example – EMS Manual) These documents consist of the general plans and procedures that identify the processes and biosolids management activities within the biosolids program and define responsibility and regulatory applicability.
Level 3 Documents	(Examples – Standard Operating Procedures) These documents consist of operating procedures, work instructions, and other documents that dictate how the City manages and controls its biosolids processes.
Level 4 Documents	(Examples – Records and Data) These documents consist of the EMS records and reports of monitoring activities and other objective evidence that demonstrate compliance with regulatory requirements and EMS principles.
Measurement	A systematic method for estimating, testing, or otherwise evaluating key parameters and characteristics of an organization’s biosolids management activities to determine compliance with a specific standard, regulatory or other performance requirement, or to measure progress toward its biosolids program goals and objectives.
Monitoring	A systematic process of watching, checking, observing, inspecting, keeping track of, regulating or otherwise controlling key parameters and characteristics of an organization’s biosolids management activities to determine compliance with a specific standard, regulatory or other performance requirement, or to measure progress toward its biosolids program goals and objectives.
National Biosolids Partnership (NBP)	A voluntary partnership formed in 1997 between the National Association of Clean Water Agencies (NACWA) and Water Environment Federation (WEF), with advisory support from the U.S. Environmental Protection Agency (EPA). The Partnership is committed to developing and advancing environmentally sound and sustainable biosolids management practices through comprehensive management systems.
Noncompliance	A deviation from or violation of federal, state and local laws, regulations and other compliance requirements applicable to the organization’s biosolids management activities.
Nonconformance	A deviation in the City of Fort Worth’s established Biosolids management Policy and Environmental Management System for the Code of Good Practice principles and/or the requirements of the EMS Elements. Nonconformances include circumstances that have the potential to create a noncompliance situation or significant environmental impact. Nonconformances can be minor or major in nature.
Operational Control Procedure	A set of standard work instructions and practices for employees describing the “how to” steps in managing the critical control points of a specific biosolids management activity.
Operational Controls	Ordinances, regulations, standard operating procedures (SOP), work practices, technology, instrumentation and process controls, monitoring and criteria developed, implemented, and maintained by the organization to ensure effective management of all critical control points associated with its biosolids management activities so that the organization’s biosolids program conforms with the biosolids management policy, meets legal and other requirements, and achieves the biosolids program goals and objectives.
Opportunity for Improvement	An opportunity for improvement is a program aspect or component that conforms to the requirements outlined in the EMS Elements, but which may be improved by following suggestions, examples or benchmarks cited during internal or external audits or when the opportunity presents it.

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Other Management Controls	Other management methods such as contract specifications, agreements, contractor oversight procedures and pretreatment ordinances, permit programs, inspections and monitoring programs are used to ensure that biosolids activities meet other requirements as necessary.
Other Requirements	Other binding biosolids management practices and environmental requirements to which an organization voluntarily subscribes as part of its environmental management system. Examples include binding agreements with customers, suppliers, and public organizations and commitments to go “beyond compliance” performance. A list of these requirements is shown in the attached table of Regulations Applicable to the VCWRF Biosolids Value Chain.
Outside Parties	Individuals or groups concerned with or affected by the environmental performance of an organization’s biosolids management activities. These parties include customers, regulators, local residents, the media, environmental groups, and the general public.
Preventive Actions	Specific actions and steps taken to identify, analyze, and eliminate the root causes of noncompliance(s) and nonconformance(s) and to put in place permanent solutions that will prevent a recurrence.
Public Education	Systematic public communications program for educating interested parties and other stakeholders on the department’s biosolids management activities.
Public Participation	Specific approaches and actions taken by the organization to involve interested parties and the general public in its biosolids management program including establishing and improving goals and objectives. See also Element 5.0.
Responsibility(ies)	The specific Task(s) a group or individual carries out in a lead or supporting role that accomplish and/or support operational and strategic goals and objectives.
Role(s)	The purpose(s) of the activity (ies) a group or individual performs with respect to the biosolids value chain.
Skills	The ability to use knowledge effectively and readily in execution or performance of tasks and activities; a developed aptitude or ability; the ability to do something competently.
Standard Operating Procedure (SOP)	A set of standard work instructions and practices for employees describing the “how to” steps in managing the critical control points of a specific biosolids management activity.
Strategic Goals	Primary goals the Mayor and City Council identify in the Comprehensive Plan.
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
Total Quality Management Principles	An improvement strategy focusing on customer satisfaction, employee empowerment, continual gathering and use of statistical data, and creating an environment that promotes unity and change.
Training	Teaching to make fit, qualified, or proficient; preparation for a test of skill or knowledge; instruction in disciplines and techniques.
Water Department Business Plan	Each year the Water Department formulates its business plan outlining the department’s mission, vision, organization, strengths, weaknesses, opportunities, threats, budget, and initiatives and their relation to the Comprehensive Plan and Strategic Goals.
Water Department Master Plan	The Master Plan establishes and prioritizes the long-term water and wastewater goals of the department. The “Wastewater Collection System Master Plan” and the Wastewater Facilities Plan are the portions of the overall master plan that outline the long-term goals for wastewater treatment and biosolids handling. A copy of the Water Department Master Plan is kept in the Assistant Water Director of Wastewater Treatment’s office and the Technical Services office in VCWRF.