BIOSOLIDS EMS — ELEMENT 10.0 OPERATIONAL CONTROL OF CRITICAL CONTROL POINTS

REVISION	EFFECTIVE DATE	APPROVAL SIGNATURE
12	10/06/2021	

PURPOSE

Element 10.0 describes the methods necessary to properly manage the critical control points identified in Element 3.0. The standard operating procedures, work practices, instrumentation, and monitoring programs outlined in this document are designed to ensure that all critical control points are managed within acceptable parameters. When operations consistently, efficiently and effectively meet applicable legal requirements and management objectives, an organization may eliminate or minimize negative environmental impacts, gain public acceptance and maximize the benefits delivered to the community from the biosolids program.

SCOPE

This procedure applies to the operational control of all critical control points throughout the biosolids value chain.

KEY WORDS

- Critical Control Points
- Operational Controls
- Standard Operating Procedures (SOPs)
- Preventive Maintenance Program
- Monitoring Activities
- Best Management Practices

RESPONSIBILITY

The EMS Management Team is responsible for identifying critical control points, operational procedures and potential environmental impacts, as specified in NBP documents and Element 3.0. The EMS Management Team also reviews and comments on proposed revisions to the critical control points and ensures that employees are provided with the resources necessary to perform biosolids management activities and BMP functions in an effective and consistent manner. Specific organizational and Contractor roles and responsibilities are further documented in Element 7.0, and approved City of Fort Worth contracts and service agreements.

PROCEDURE

The EMS Management Team identifies the unit processes, events, activities and other requirements at each Critical Control Point. The EMS Master Table in Element 3.0 includes the roles and responsibilities, key operational parameters, Standard Operating Procedures, legal and regulatory requirements, monitoring and maintenance activities and environmental impacts associated with each critical control point within the biosolids value chain. The table also provides the location for hard copies of all Standard Operating Procedures.

Standard Operating Procedures (SOP)—Village Creek Water Reclamation Facility (VCWRF)

Village Creek Water Reclamation Facility maintains a current set of SOPs for plant processes in the VCWRF Library. The SOP manuals are identified by process and location as listed in the following table:

Table 10.1 VCWRF SOP manuals by process/location

Process/Location	Abbreviation		Process/Location	Abbreviation
Biosolids	BSLD		Monitoring	MNTR
Dissolved Air Floatation Thickeners	DAFT		Odor Control	ODOR
Digesters	DIGR		Operations	OPER
Disinfection	DSFN		Plant	PLNT
Environmental	ENVL		Primary	PRIM
Filters	FILT		Reclaimed Water	RCLM
Gravity Belt Thickeners	GBTK		Scum Handling	SCUM
Grit	GRIT		Secondary	SECY
Headworks	HDWK		Safety	SFTY
High Rate Clarification	HRCN		Storm Conditions	STRM
Influent Flow	INFL		Gravity Thickeners	THIK

The Standard Operating Procedures consist of step-by-step operational control and safety procedures for each plant process. The original "controlled" hard copy of each SOP is stored in the VC Administration Library. Electronic copies of the operational control procedures for treatment plant processes are available on the VCWRF network at: *\\fwwvc02\VC_Lib\SOP\Current_SOPs.*

Standard Operating Procedures (SOP)—Contractor

The Biosolids Contractor also maintains a set of SOPs for their operations. The "controlled" hard copies of these SOPs are stored in the Contractor's office at the Sludge Only Landfill (SOL). Copies of specific SOPs are located at the dewatering facility process laboratory and in each truck used to haul biosolids material. The Biosolids Contractor maintains a table of contents for all SOPs.

Operation and Maintenance Manuals for Plant Equipment—Village Creek

The Village Creek Water Reclamation Facility has operation and maintenance (O&M) manuals that contain step-by-step operational procedures, repair instructions and safety precautions for each piece of plant equipment. The City keeps the original "controlled" hard copies of the operational and maintenance manuals in the Maintenance Section Library. Electronic copies of the plant operational control procedures are available on the City's intranet at: *\\Fwwvc02\VC_Lib\O&M_Manuals*

Maximo

Water Department and VCWRF staff use a computerized maintenance management system (Maximo) to issue work orders for predictive, preventative, routine and emergency repair activities. The Maximo program generates work orders and tracks data including employee labor hours, equipment history and cost, area history and cost, and facility history and cost. Employees use the system to order supplies and create preventative maintenance schedules. The software stores standard operating procedures, meter and equipment calibration data, safety protocol, maintenance instructions, and other useful information for multiple users. Reports generated by Maximo are used to evaluate equipment efficiency, document employee labor hours, and record equipment failure and repair costs. Maximo is an important tool in an overall asset management strategy.

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Training
The EMS Management Team is responsible for providing employees with appropriate training and adequate resources to implement operational control procedures at critical control points and to utilize appropriate monitoring and measuring techniques for compliance with regulatory and BMP requirements. Employees receive instruction through a variety of venues on-the-job, in formal classrooms, at professional conferences, and during meetings and presentations (Refer to Element 8.0).

Communication
The EMS Management Team develops and documents the operational control procedures that are communicated to appropriate employees and external parties and contractors, as outlined in Element 9.0.

Implementation
The EMS Management Team oversees the implementation and monitoring of operational controls to ensure that employees in each activity area receive the necessary resources, training and support services to properly perform the tasks and functions of their positions.

Review
The EMS Management Team reviews the critical control points and associated operational controls during internal audits, the annual management review meeting and whenever changes are proposed, as outlined in Element 3.0. Feedback provided by the team is used to revise the Critical Control Points Master Table. An updated Master List will be emailed to all team members once the edits are finalized. The Biosolids EMS Manager will also notify the NBP and assigned third-party auditor in writing of the changes.

REFERENCES

- BMP Guidance Manual, (NBP, June 2011)
- Code of Good Practice, (NBP, June 2011)
- Manual of Good Practice for Biosolids, (NBP, June 2011)

EMS Cross References

- Element 3.0 Critical Control Points
- Element 4.0 Legal and Other Requirements
- Element 7.0 Roles and Responsibilities
- Element 8.0 Training
- Element 9.0 Communication and Public Outreach
- Element 16.0 Internal EMS Audit
- Element 17.0 Periodic Management Review of Performance

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REVISION HISTORY

Revision #	Date	Revision Description
12	10/06/2021	Update To All Sections Except Review, References and Cross References Sections
11	09/21/2018	Update to Procedure and References sections
10	08/03/2016	Merged element to new EMS format, included Maximo software under Procedure
09	10/06/2014	Updated links
08	10/11/2013	Updated SOP list
07	08/05/2013	Updated references
06	04/18/2012	Update Procedures
05	11/16/2010	Update definition of EMS Management Team and references. Review and update critical control points (EMS Master Table)
04	05/15/2008	Audit (YR2) 2007
03	06/29/2007	Audit (YR1) 2006
02	11/29/2004	2004 Issue
01.a	10/18/2004	Internal Audit Revisions
01	10/01/2004	Approval Draft
SR	01/30/2004	Issued for Status Review