



Element 1: Documentation of Biosolids Management Program	
This Manual was Approved by:	Date: 10 Nov 2014
Myron Erickson, P.E., Deputy Director of Public Works	
Manual Revision History	
Date	Description
1/16-2/29/12	Condense and revise elements as result of 2010 audit
5/6/14	Update narrative
9/30/14	Update positions and narrative; revise goals and objectives

Background

The City of Wyoming Clean Water Plant provides wastewater treatment for the City of Wyoming, the City of Kentwood, Byron Township and Gaines Township. In addition to the clean water discharged back into the natural environment at its Grand River outfall, approximately 6800 dry tons of biosolids are annually produced as a byproduct.

The City of Wyoming biosolids program works to promote the beneficial reuse of biosolids through an agronomically based, environmentally safe, and publicly acceptable program. This will be done by developing and maintaining a management system for biosolids that is consistent with the National Biosolids Partnership's Code of Good Practice and that includes: third party verification; quality monitoring; emergency response plans; sustainable and environmentally acceptable management practices and operations; preventive maintenance guidelines; and methods for effective communication with all those involved with the biosolids program.

Procedures

1. The EMS Team is responsible for communicating the biosolids management policy to employees, contractors, and other interested



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Procedures

1. The EMS Team is responsible for communicating the biosolids management policy to employees, contractors, and other interested

parties, using one or more of the communication tools listed under Element 5 of the EMS.

2. The EMS will be revised by the EMS Coordinator as needed. The EMS Coordinator will inform upper management and the EMS Team of significant revisions to the EMS Manual through the use of one or more of the communication tools described in Element 5. The EMS Coordinator is responsible for incorporating the above policy into the Clean Water Plant's biosolids program, procedures, and practices.
3. The most recent version of the EMS Manual will be posted on the City's intranet and internet pages.

References

EMS Guidance Manual (January 2005 Revision)

EMS Manual, Element 5: Communication

NBP Code of Good Practice

City of Wyoming's Clean Water Plant NPDES Permit

City of Wyoming Guiding Principles

Pretreatment Program Procedures-40 CFR 403.8(f)(2)(v)

Land Application of Biosolids-Administrative Rule Part 24, R 323.2410

Responsibility

EMS Coordinator

EMS Team



Element 2: Control of Operations	

Background

Critical control points (CCPs) are those locations, processes, events, activities, and other requirements in the chain of activities from pretreatment/collection through to final disposition of biosolids that are under the organization’s direct control or influence.

Operational controls (OCs) are those ordinances, regulations, standard operating procedures, work practices, etc., used for effective management. CCPs must be properly managed to produce biosolids that meet all applicable legal, quality, and public acceptance criteria, and achieve environmental performance. Operational controls are in place to manage the critical control points of the Clean Water Plant’s biosolids value chain. Wyoming recognizes that proper and consistent management of the operational controls is a major predictor of the success of its program.

The City of Wyoming’s Clean Water Plant has established and maintains regular monitoring and measurement procedures and practices for all of its biosolids management activities in order to:

1. Ensure continued compliance with applicable State/Federal regulatory and other legal requirements.
2. Measure biosolids program performance at critical control points.
3. Track progress toward achieving its biosolids program goals and objectives as requires under Element 4.

The Clean Water Plant’s NPDES permit identifies monitoring, measurement and reporting requirements specified by the MDEQ and the EPA. These elements pertain to all management categories in the Biosolids Value Chain, which is the complete sequence of activities from industrial pretreatment, the collection system, wastewater treatment, and solids treatment and disposition.

Procedures

1. The EMS Team will review the critical control points, operational controls, and monitoring and measurement activities on an annual basis, or sooner

- whenever a major operational or regulatory change dictates. The NBP Manual of Good Practice will be considered in this process.
2. Whenever the CCPs are revised, related information pertaining to roles and responsibilities (Element 8) will also be revised as appropriate. The revisions must be approved by the EMS Coordinator after discussion by the EMS Team.
 3. Critical control points and associated operational controls and affiliated impacts on the NBP Key Outcomes are identified in Table 2.1 of the biosolids EMS. The table also identifies the appropriate EMS members responsible for evaluating the critical control points for the EMS program.
 4. The City's biosolids contractor will have input into identifying and establishing operational controls for any activities they undertake that can impact the biosolids value chain.
 5. Analytical or instrumentation data is stored electronically following the procedures established in Element 8.
 6. Progress toward meeting goals and objectives established in Element 4 will be tracked at intervals deemed appropriate by the EMS Coordinator. Progress will be noted on the action plan template, which is included under the Element 4 procedures.
 7. The City of Wyoming requires its contractors to establish and maintain regular monitoring and measurement procedures and practices for all their assigned biosolids management activities, as defined in their service agreements.
 8. Monitoring and measurement results shall be recorded and the records maintained as established in the recordkeeping procedures under Element 8.
 9. All revisions will be documented in writing by the EMS Coordinator.

References

EMS Guidance Manual (January 2005 Revision)

NBP National Manual of Good Practice, Appendix F

Responsibility

EMS Team

EMS Coordinator

Table 2.1: Biosolids Value Chain Table

Biosolids Value Chain Link	Operational Controls	Critical Control Point	Key Outcome Impacts	Legal & Other Requirements	Monitoring and Measurement	Roles and Responsibilities
<p>Pretreatment & Collection System</p>	Permit generation Inf/Eff monitoring Mass balance analysis IPP SOPs	Industrial Outfall	Compromised biosolids quality Collection system odors Sanitary sewer overflows	40 CFR Part 403	Analytical data IPP Annual report Biosolids Annual report	Director of Public Works; Deputy Director of Public Works; Environmental Services Supervisor; Environmental Services Inspector; Environmental Services Specialist
	Site inspections Trap cleaning User education PW communication	Restaurant Grease Trap (i.e., the FOG control program)			IPP Annual report	
	Illicit discharge detection Trunk line monitoring PW communication Citizen informants	Collection System			Analytical Data Response records	
	Discharge Permit Hg Reduction Plan Inspection & sampling	Dental Control			Influent data Effluent data Biosolids quality	

Biosolids Value Chain Link	Operational Controls	Critical Control Point	Key Outcome Impacts	Legal & Other Requirements	Monitoring and Measurement	Roles and Responsibilities
<p>Wastewater Treatment & Solids Generation</p>	<p><u>Daily:</u> metals, compatibles, solids, pH <u>Monthly:</u> VOC, SVOC <u>Continuous:</u> temperature, pH, visuals</p>	<p>Influent Quality</p>	<p>Permit violation (loading to receiving stream) Compromised biosolids quality Plant odors</p>	<p>NPDES permit NIOSH Pub No. 2002-149 Federal Clean Air Act – Article II, Part 55 Michigan Public Act 451</p>	<p>Monthly Discharge Monitoring Report</p>	<p>Director of Public Works; Deputy Director of Public Works; Environmental Services Supervisor; Maintenance Supervisor; Laboratory Services Manager; Operations Supervisor</p>
	<p>SOPs; Operator skill</p>	<p>Centrifuge</p>			<p>Centrifuge (daily) data</p>	
	<p>Pumping/inventory strategy</p>	<p>Primary Clarification</p>			<p>Operator's white board/ weekly meetings</p>	
	<p>Operators' set points SOPs Skills SCADA Maintenance</p>	<p>Treatment process control</p>				

Biosolids Value Chain Link	Operational Controls	Critical Control Point	Key Outcome Impacts	Legal & Other Requirements	Monitoring and Measurement	Roles and Responsibilities
<p align="center">Solids Stabilization, Conditioning and Handling</p>	<p align="center">Skills, SOPs, mixing formula</p>	<p align="center">Stabilization process/mixing tank</p>	<p align="center">Field odors</p>	<p align="center">NPDES permit NIOSH Pub No. 2002-149 Federal Clean Air Act – Article II, Part 55 Michigan Public Act 451</p>	<p align="center">Laboratory analysis to confirm PSRP (mixing and pH documentation)</p>	<p align="center">Director of Public Works, Deputy Director of Public Works, Biosolids Coordinator, Operators, Contractors, GVRBA Project Manager</p>
	<p align="center">Polymer addition</p>	<p align="center">Pumping/Polymer dosing</p>	<p align="center">PSRP failure VAR failure</p>		<p align="center">Lbs/day polymer used</p>	

Biosolids Value Chain Link	Operational Controls	Critical Control Point	Key Outcome Impacts	Legal & Other Requirements	Monitoring and Measurement	Roles and Responsibilities
Solids Storage and Transportation	Monitoring of stored biosolids (e.g. nitrogen data)	Storage	Site spillage/slop Field odors	MDOT rules and regs (contractor) Contractor MOU	Superintendent's Monday morning meetings	Director of Public Works; Deputy Director of Public Works; Environmental Services Supervisor; Maintenance Supervisor; Laboratory Services Manager; Operations Supervisor, GVRBA Project Manager
	Storage management (e.g. jet mixing) Dewatering	Use and optimization of storage capacity			Solids content;	
	Spill prevention Spill response Sampling records Flow metering Truck & trailer p.m. Point of use deodorizer Foul air scrubbing	Truck Loading			Spills; complaints	
	Truck and trailer p.m. Spill prevention Spill response Driver credentials: illicit substance testing, valid drivers license, driver orientation	Hauling, Route, Neighbor Notification			Drivers Inspections	
	Storage management Spill prevention & response Flow metering Pump preventive maintenance	Pipeline to Grand Rapids WWTP (GVRBA)			Work Orders	

Solids Storage and Transportation (cont'd)	pH monitoring; chemical addition	Scrubbers		Air Regs		
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Biosolids Value Chain Link	Operational Controls	Critical Control Point	Key Outcome Impacts	Legal & Other Requirements	Monitoring and Measurement	Roles and Responsibilities
<p>Biosolids Re-Use or Disposition</p>	<p>Site Location Location for off loading trucks Perimeter of biosolids application site (isolation distances) Agronomic rates Contractor “Pre-Op” sheets – approval by Biosolids Coordinator</p>	<p>Site Selection & Approval</p>	<p>VAR Field Odors</p>	<p>Mich Part 24 Rules 40CFR Part 503</p>	<p>Biosolids Coordinator’s Inspections</p>	<p>Contractor, Environmental Services Inspector; Biosolids Coordinator; Deputy Director of Public Works; Environmental Services Supervisor</p>



Element 3: Compliance	

A. Legal and Other Requirements

Background

The practice of land applying biosolids is subject to great oversight and regulation. Hence, the Wyoming Clean Water Plant has in place a process to identify and interpret, all applicable regulations.

Legal requirements are considered to be the federal, state, and local laws and regulations that are applicable to the Wyoming Clean Water plant’s biosolids management program activities as well as any service agreements with contractors.

Other requirements are considered to be other binding practices and environmental requirements to which the organization voluntarily subscribes as part of its biosolids management system. Examples include binding agreements with customers, suppliers, and public organizations and commitments to performing beyond minimal compliance.

Operational control procedures are other management methods such as contract agreements, contractor oversight procedures, pretreatment ordinances, permit programs, inspection and monitoring programs.

Procedures

The City of Wyoming’s Clean Water Plant will utilize a variety of sources for identifying, tracking, analyzing and determining the impact of the various legal, regulatory and legislative initiatives on the biosolids value chain. These include but are not limited to the following:

1. Clean Water Plant management will strive to attend conferences, workshops and seminars made available to our industry, which, in his judgment, are the most appropriate.
2. Michigan Water Environment Association Committee work. EMS Team members will attend and participate in MWEA and other trade and industry committees.

3. Environmental Services Supervisor and Laboratory Services Manager will keep abreast of changes in Federal regulations affecting the industry. This can include periodic searches of the Michigan Register, the Federal Register, and industry related journals and newsletters. It can also include communicating with individuals at local, state and federal agencies.
4. The EMS Coordinator will be responsible for communicating new requirements (e.g. monitoring and reporting requirements) to affected parties. Communication may occur through a variety of mechanisms, including email, internal memoranda, all-plant meetings, quarterly EMS Team meetings, EMS Team e-mail distribution list, which, taken together also comprise on-going management review (see Element 11 for more detail). The EMS Coordinator will also make any necessary changes to the EMS manual and/or supporting documentation.

B. Monitoring and Measuring Compliance

The Clean Water Plant is subject to several facility compliance audits or inspections related to its NPDES permit. On at least an annual basis, Michigan Department of Environmental Quality (DEQ) staff audit the facility and its Industrial Pretreatment Program.

The DEQ also audits or inspects the land application program on a similar basis. A biosolids program audit typically occurs once every 5 years. Approximately 2 times within a 5-year cycle a biosolids facility inspection occurs. Reconnaissance of the biosolids facility occurs at least annually or more often as needed. The DEQ performs biosolids field reconnaissance for new fields introduced into the program. Additionally, the DEQ inspects between 20-30 fields (post-application) per year.

C. Corrective Non-Compliance

Background

The purpose of this section is to develop and implement procedures for investigating noncompliance with legal/regulatory and other requirements, including conformance issues that may arise from monitoring/measurement activities, EMS protocols, or nonconformance noted as a result of internal or external EMS audits. This section will also establish procedures for identifying the cause and taking actions to correct the non-conformance issues, and document the necessary corrective actions taken to prevent a recurrence.

The City of Wyoming has developed the following procedures to ensure prompt response to any nonconformance events. Events of this nature will be treated with the utmost attention by Clean Water Plant Supervisory personnel.

Procedures

Corrective Action Procedures for Nonconformance

City of Wyoming corrective action procedures have been established to address nonconformance identified during routine monitoring and measurement. This plan identifies the nonconformance, the root cause(s), and the corrective action being taken. The corrective action procedures also identify changes to policies, programs, plans, operational controls, or monitoring/measurement procedures to prevent future nonconformance.

- 1) Upon identification of a nonconformance during routine monitoring and measurement procedures, the EMS Coordinator will inform the EMS Team who will be charged with investigating the cause(s) of the nonconformance and making recommendations for corrective action(s).
- 2) The EMS Coordinator will review the findings and work with appropriate Supervisors to select the proper corrective action and oversee the action implementation.
- 3) Changes to policies, programs, plans, operational controls, or monitoring/measurement procedures will be identified to help prevent future nonconformance as appropriate.
- 4) Records will be maintained on any nonconformance including all relevant data and reports along with recommendations and follow-up information. Tables 9.1 and 9.2 will be completed by the auditor and the EMS Coordinator.
- 5) Additionally, legal/regulatory requirements are specifically identified in the City of Wyoming's NPDES Permit. The permit contains procedures for investigating nonconformance with the legal/regulatory requirements identified in the permit, one of which is the Residuals Management Program.

Corrective Action Procedures for EMS Audits

Formal corrective action plans have been established to address the findings of internal EMS audits under Element 9, and EMS verification audits conducted by third parties. The corrective action plan will be documented, and describes what actions will be taken to address the audit findings, the individual(s) responsible, the estimated completion date, and required resources to develop and implement corrective and preventive action. Progress in completing the corrective actions will be tracked and periodically updated. The corrective action plan includes recommended changes to policies, programs, plans, operational controls, or monitoring/measurement procedures to prevent future nonconformance. These changes are subsequently documented in the corrective action plan, and in the EMS manual and other relevant EMS documentation.

1. EMS Nonconformance Identified During Internal Audits

- Internal audits will be conducted in accordance with procedures developed under Element 9.
- An audit worksheet (Table 9.2) will be completed for each element audited. The worksheet will contain the following information:
 - a) Element #
 - b) Auditor's name
 - c) Period being audited
 - d) Audit date(s)
 - e) Summary of findings

- f) Nonconformance (if any) and cause
 - g) Corrective actions already taken (if any)
 - h) Recommended additional corrective actions (if any)
 - i) Person(s) responsible for implementing corrective action(s)
 - j) Changes in policies, programs, plans, operational controls and monitoring/measurements needed to prevent reoccurrence (if any)
 - k) Estimated completion date
 - l) Required resources
 - m) Method of tracking progress
- EMS Coordinator is responsible for tracking progress, using Table 9.1. Progress will be tracked using methods that the EMS Coordinator deems appropriate. For minor nonconformance progress will be tracked every two weeks. For major nonconformance, progress will be checked every four weeks. Tracking will be documented by completing the tracking sheet which is included as part of the audit worksheet.
 - Any changes to policies, programs, plans, operational controls, or monitoring/measurement procedures will be documented in the corrective action plan, and in the EMS manual and other relevant EMS documentation.
 - The EMS Coordinator will prepare and submit a written report to the EMS team and the Clean Water Plant Superintendent within 30 days after the conclusion of the audit. The report will summarize the internal audit results and corrective actions (if necessary) that have already been taken or will be taken to address any nonconformance.

2. EMS Nonconformance Identified During Third Party Audits

- Third party audits will be conducted in accordance with the procedures identified by the National Biosolids Partnership.
- Audit reports will be submitted to the City of Wyoming's EMS Coordinator.
- If the auditor identifies nonconformance, the EMS Coordinator will follow the steps listed for internal audits (1 - b, c, d and e).
- Minor nonconformance will be corrected within a 30 day period and major nonconformance will be corrected within a 90 day period, unless the auditor and the Clean Water Plant agree that these timeframes need to be extended.

References

Table 3.1: Legal and Other Requirements

EMS Guidance Manual (January 2005 Revision)

Table 9.1: Tracking Worksheet

Table 9.2 Audit and Corrective Action Worksheet

City of Wyoming Residuals Management Plan

City of Wyoming Clean Water Plant NPDES Permit

City of Wyoming EMS Manual, Element 10: Internal Audits

EMS Guidance Manual (January 2005 Revision)

Responsibility

Director of Public Works

Deputy Director of Public Works

Biosolids Coordinator

Environmental Services Supervisor

Table 3.1: Legal and Other Requirements

Regulation or Guidance	Description/Point of Application	Electronic Location (if applicable)	Hard Copy Location (if applicable)	Governing Agency
Federal				
CFR Title 40 Chapter I Part 503	Standards for Use or Disposal of Sewage Sludge	http://www.epa.gov/owm/mtb/biosolids/503pe/503pe_1.pdf	Environmental Services Supervisor's Office	US EPA
CFR Title 40 Chapter I Part 403	Guidance Manual for POTW Pretreatment Program Development	http://www.epa.gov/npdes/pubs/owm0003.pdf	Environmental Services Supervisor's Office	US EPA
NIOSH Guidance DHHS (NIOSH) Publication Number 2002-149	NIOSH Guidance Related to Worker Exposure to Class B Biosolids	http://www.cdc.gov/niosh/docs/preprint/pdfs/biosolidsb.pdf	Environmental Services Supervisor's Office	NIOSH
Federal Clean Air Act Article II, Part 55	Regulation of nuisance odors and discharge of air streams treated for odor control	http://www.epa.gov/air/caa/		US EPA
State				
NPDES Permit (CFR Title 40 Chapter I Part 122)	National Pollutant Discharge Elimination System Pollutant Minimization Plan for Total Mercury	http://cfpub.epa.gov/npdes/index.cfm (General information on permit requirements)	Environmental Services Supervisor's Office	US EPA MDEQ
Part 24 of Section 323 of PA 451	State of Michigan Biosolids Regulations	http://www.michigan.gov/deq/0,1607,7-135-3313_3683_3720-9615--,00.html	Environmental Services Supervisor's Office or on file at the MDEQ	MDEQ
Residuals Management Plan	Residuals Management Plan developed by the City as required by the NPDES Permit	http://wyomingmi.gov/EnvironSvc/BioSolids.asp	Env Srvcs Supv Office	MDEQ
Michigan Public Act 451	Regulation of nuisance odors and discharge of air streams treated for odor control	http://www.legislature.mi.gov/(S(2wg45aa hkb2no545h2myzj45))/mileg.aspx?page=getObject&objectname=mcl-act-451-of-1994		MDEQ
DOT regulations	State and Highway Rules and Regs	http://www.michigan.gov	Synagro Office	MDOT
Local				

Chapter 86 of the City of Wyoming Code of Ordinances	Sewer Use Ordinances	http://www.municode.com/resources/gateway.asp?pid=10150&sid=22	Environmental Services Supervisor's Office	City of Wyoming
Other				
Contractor Service Agreement	Contract and MOU for hauling and land application services with Synagro. Specifies contractor responsibilities.	n/a	Environmental Services Supervisor's Office	City of Wyoming
National Biosolids Partnership	Biosolids EMS Guidance Manual	http://www.biosolids.org	Environmental Services Supervisor's Office	NBP



Element 4: Goals & Objectives	

Background

The City of Wyoming Clean Water Plant believes that values shape our goals and we support Recycling/Reuse in the agricultural community. In keeping with the vision set forth in the City’s Guiding Principles to optimally utilize its natural and human resources, the purpose of this element is to drive the continual improvement of our biosolids operations by establishing a combination of long-term and short-term biosolids program goals and objectives for biosolids management activities.

The City’s Biosolids Management Policy identifies overarching goals for the CWP’s biosolids management program. Specifically, *“It shall be the objective of the City of Wyoming Biosolids Recycling Program to promote the beneficial reuse of biosolids through an agronomically based, environmentally safe, and publicly acceptable program.”* All of the City’s goals and objectives will serve the purpose of enhancing and fulfilling this policy.

Procedures

1. The EMS Team will review and evaluate new and existing goals at least annually at the end of the biosolids reporting year (September 30).
2. Goals will be established using SMART criteria (Specific, Measurable, Achievable, Relevant, and Time-bounded).
3. The draft set of goals and strategies will be presented to the EMS Team for review and comment. Modifications will be made by the EMS Coordinator if deemed appropriate.
4. The final goals and roles/responsibilities will be shared with upper level management. They will also be included in the annual biosolids management program report. The current goals and objectives are contained in Table 4.1.
5. The EMS Coordinator will prepare an action plan containing schedules, milestones and resources available to support each goal, consistent with template 4.1.

6. The EMS Coordinator will be responsible for tracking progress on each goal, at intervals deemed appropriate by the EMS Coordinator. Progress will be noted in the action plan template.

References

City of Wyoming Guiding Principles

City of Wyoming EMS Element 2: Biosolids Management Policy

Template 4.1: Action Plan and Tracking Template

EMS Guidance Manual (January 2006 Revision)

Table 4.1: Goals and Objectives

Responsibility

EMS Coordinator

EMS Team

Template 4.1: Action Plan and Tracking Template

Objective	Target Date	Person Responsible	Resources Available	Date Completed	Integration of Elements; Potential Impacts; and Outcomes
Objective #		EMS Coordinator, (include any other individuals as necessary)	Cite budget and/or other resources	Insert date completed	Cite relevant elements, etc
Objective #		EMS Coordinator, (include any other individuals as necessary)	Cite budget and/or other resources	Insert date completed	Cite relevant elements, etc
Objective #		EMS Coordinator, (include any other individuals as necessary)	Cite budget and/or other resources	Insert date completed	Cite relevant elements, etc
Objective #		EMS Coordinator, (include any other individuals as necessary)	Cite budget and/or other resources	Insert date completed	Cite relevant elements, etc
Objective #		EMS Coordinator, (include any other individuals as necessary)	Cite budget and/or other resources	Insert date completed	Cite relevant elements, etc

Table 4.1 – Biosolids EMS Goals and Objectives

Strategic Focus Area: Environmental Performance

Goal Statement	Objective(s)	Activities (Action Steps)	Resources	Person Responsible	Target Date	COW Sustainability Outcome(s)
<p>Reduce the Environmental Impact of the Biosolids Program</p>	<p>Strive to reduce the annual energy use of biosolids mixing/holding tanks benchmarked against the previous calendar year#1-2014</p>	<ul style="list-style-type: none"> • Review energy use • Develop and optimize % solids control in mixing/land application strategy. 	<p>Operations Staff, Office Staff, Maintenance Staff</p>	<p>Biosolids Coordinator</p>	<p>06/1/14</p>	<p>Environmental Responsibility</p>
	<p>Continue to participate in regional reduction of EDCs and PPCPs#2-2014</p>	<ul style="list-style-type: none"> • Leadership on regional drug task forces • Maintain relationships with existing stakeholders (PD, Metro, DEA) • Develop informational brochures, educational materials, update website • 	<p>ESS Supervisor, Kent County personnel</p>	<p>ESS Supervisor</p>	<p>12/31/14</p>	
	<p>Characterize the levels of pharmaceutical compounds in land-applied biosolids.#3-2014</p>	<ul style="list-style-type: none"> • Determine parameters to sample for • Take samples from daily loads • Develop baseline characteristics for future comparison. • Participate in the Great Lakes Alliance project 	<p>ESS Staff</p>	<p>ESS Supervisor</p>	<p>12/31/15</p>	

Strategic Focus Area: Quality Product						
Goal Statement	Objective(s)	Activities (Action Steps)	Resources	Person Responsible	Target Date	Sustainability Outcome(s)
Provide a Consistent, Value-added Product	Observe micronutrient trends to identify abnormalities at the conclusion of the DEQ biosolids reporting year.# 4-2014	<ul style="list-style-type: none"> Review annual biosolids metals results, compare with previous years Review influent data and abnormal industrial user discharges Continue operation of Hg MMP 	ESS Supervisor, ESS Staff, Laboratory Staff	ESS Supervisor Biosolids Coordinator	12/31/14	Environmental Responsibility
	Minimize variability in land applied biosolids.#5-2014	<ul style="list-style-type: none"> Develop investigative plan to establish where inconsistencies are; measure current variability rates Develop and optimize mixing /hauling strategy Measure results 	ESS Supervisor Lab Staff Operations Staff	Biosolids Coordinator	12/31/14	Stewardship of Natural Resources

Strategic Focus Area: Regulatory Compliance						
Goal Statement	Objective(s)	Activities (Action Steps)	Resources	Person Responsible	Target Date	Sustainability Outcome(s)
Maintain 100% Compliance with 503(b) Land Application Regulations	Maintain metals concentrations below 503 (b)requirements. #6-2014	<ul style="list-style-type: none"> Develop metals reduction plans when needed Work with industrial users in metal reduction efforts Measure effectiveness 	ESS Supervisor, ESS Staff, Laboratory Staff	Biosolids Coordinator	12/31/14	Environmental Responsibility

Strategic Focus Area: Interested Party Relationships						
Goal Statement	Objective(s)	Activities (Action Steps)	Resources	Person Responsible	Target Date	Sustainability Outcome(s)
Have a Publically Accepted Biosolids Program	Ensure 100% pre-emptive assessment (pre-application) for land application sites.#7-2014	<ul style="list-style-type: none"> • Audit use of application packet • Determine if process needs changes • Implement changes and measure success/failure 	ESS Staff, Biosolids Coordinator, Land-application Contractor	Biosolids Coordinator	12/31/14	Quality and Responsive City Services
	Maintain current level of participation in state/non-profit committees.#8-2014	<ul style="list-style-type: none"> • Continue participation in IPP Committee • Continue participation in BS Committee 	ESS Staff, Biosolids Coordinator, MWEA, WEF	Biosolids Coordinator	12/31/14	

Strategic Focus Area: Organizational Culture						
Goal Statement	Objective(s)	Activities (Action Steps)	Resources	Person Responsible	Target Date	Sustainability Outcome(s)
Encourage the Culture of	Maintain current level of professional development opportunities.#9-2014	<ul style="list-style-type: none"> • Incorporate appropriate training amounts in annual budgets 	ESS Supervisor, Administration	ESS Supervisor	12/31/14	Quality and Responsive City Services

<p>Valuing Employee Participation</p>	<p>Maintain current participative environment.#10-2014</p>	<ul style="list-style-type: none"> • Encourage goal and career mapping in annual appraisals • Participative weekly departmental and quarterly plant-wide meetings 	<p>,</p>	<p>ESS Supervisor</p>	<p>12/31/14</p>	
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Template 4.1: Action Plan and Tracking Template

Objective	Target Date	Person Responsible	Resources Available	Date Completed	Integration of Elements; Potential Impacts; and Outcomes
Objective #1 Energy audit	2/4/14	EMS Coordinator, (include any other individuals as necessary) Aaron Vis	Cite budget and/or other resources	Insert date 2/4/14 completed	Cite relevant elements, etc
Objective #3 Sample ppcp's	ASAP	EMS Coordinator, (include any other individuals as necessary) Dave and Jamie	Cite budget and/or other resources	Insert date completed	Cite relevant elements, etc
Objective #4,6 Micronutrient evaluation	2/4/14	EMS Coordinator, (include any other individuals as necessary) Kim Hackbardt	Cite budget and/or other resources	Insert date 2/4/14 completed	Cite relevant elements, etc
Objective #5,7 Land Ap evaluation	2/13/14	EMS Coordinator, (include any other individuals as necessary) Kim , Dave O, Mike O, Ron and Tyler	Cite budget and/or other resources	Insert date 2/4/14 completed	Cite relevant elements, etc
Objective #		EMS Coordinator, (include any other individuals as necessary)	Cite budget and/or other resources	Insert date completed	Cite relevant elements, etc



Element 5: Communication	

Background

Communication is key for the long-term stability of the City’s biosolids program. The communication program has two components, one for external communication with partnering agencies, other stakeholders, and the public, and one for internal communication with management, employees, and contractors. The underlying purpose of all our communication efforts is to actively promote the City’s commitment to the NBP Code of Good Practice and to our own EMS.

The City’s EMS communication channels have the following purposes:

- ✓ To create avenues for the public and interested parties to receive or access information about the biosolids EMS, biosolids management activities, and the Clean Water Plant’s performance in these areas.
- ✓ To establish a high quality, two-way flow of information that allows interested parties to communicate their perceptions and concerns regarding biosolids management activities.
- ✓ To allow communication to occur with interested parties before problems arise or negative incidents occur.
- ✓ To accommodate the sharing of key EMS Elements and 3rd party verification audit results with interested parties.
- ✓ To foster an environment that leads to the timely response to inquiries and requests for information.
- ✓ To define the communication roles and responsibilities of contractors.

Procedures

As noted above, the City’s communications approach follows two channels based on internal related communication and external directed communication.

A. External Communication and Public Participation

Formal and informal mechanisms of participation are listed below, and communications with external/interested parties will follow these participation mechanisms. These mechanisms allow the interested parties to give and receive information from the Clean Water Plant, thus fostering a two-way flow of information.

1. **Public Participation:** The principles enumerated in the NBP Code of Good Practice and the City's Guiding Principles form the foundation for all the City's public participation activities. Where reasonable and appropriate or when legally required, opportunities will be provided for the public to formally participate in planning processes. This determination will generally be made by the Clean Water Deputy Director of Public Works, the City Council and/or the EMS Coordinator. Formal and informal participation opportunities are described below.
2. Information on the status of Wyoming's EMS, including the third party verification process, will be shared with interested parties using any of the formal or informal participation opportunities identified below, as deemed appropriate by the EMS Coordinator. Information will be shared with the public via the following methods:

a. Formal Public Participation Mechanisms:

MDEQ Annual Report. As stipulated in the City's NPDES permit, the MDEQ requires an annual report to be submitted every year. The report contains technical information on biosolids quantity and quality and application locations.

City Council Meetings. All biosolids-related contracts, projects, etc. are open to public comment at regular sessions of the City Council.

Public Informational Meetings. When reasonable and appropriate, opportunities will be provided for the public to formally participate in the planning process. This determination will generally be made by the Director of Public Works.

Grand Valley Regional Biosolids Authority. The public is invited to attend authority meetings.

Biosolids Stakeholder Meeting. Interested parties are invited to participate in an annual meeting to provide input/feedback. Relevant information regarding the biosolids program will be provided to the public at this time. Examples of the Stakeholder meeting are Farmer Appreciation Day, CWP Open Houses, etc.

b. Informal Public Participation Mechanisms:

City Web Site. Information related to the City's biosolids program will be posted on the City's website. The City maintains an email link so that public comment or questions may be directed to City staff for response.

Print and Broadcast Media. From time to time and where appropriate, the City may use various print, broadcast, or electronic media to disseminate information and receive feedback on selected

biosolids-related activities. This method may be exercised by the Director of Utilities, the Deputy Director of Public Works, or the EMS Coordinator.

Informational brochures. As necessary, the City may develop brochures with information on its biosolids management program along with ways that interested parties can communicate with the City to express their views and suggestions (e.g., by providing the City's website address).

Email. The City may use emails to provide information to interested parties and receive feedback.

Newsletters. The City may utilize informational newsletters, possibly published by other entities (MDEQ, NBP, etc) that would be distributed to plant personnel and interested parties. The newsletters would provide timely information on biosolids-related activities.

Plant Tours and Presentations to School or Community Groups. The City provides tours of its Clean Water Plant to a wide variety of school and community groups. Biosolids-related issues are an important part of this function.

3. Response to Public Input: The City is committed to active public participation and will actively seek input from the public both during the initial program development and during the continuous improvement phase of the program. The City will record and respond to significant input received from interested parties. An effort will be made to initially respond to all inquiries or requests for information within 2 business days of receipt of inquiry or request. Complex inquiries/requests may require additional response time. The respondent will vary depending on the nature of the input received. The methods of recording and responding may also vary and will be left to the discretion of the responder. Available methods include, but are not limited to, phone calls/logs, complaint forms, emails, letters, memoranda, transcripts from public meeting/hearings, etc. The City will strive to minimize its response time to input received from the public.
4. Interested Parties: The following groups may have an interest or stake in Wyoming's biosolids program.

City of Wyoming staff
 City Council Members
 Citizens and Sewer Rate Payers
 Downstream Communities
 Adjacent Communities

Michigan Township
 Association
 Landfill Owner/Operator
 Regulators (MDEQ)
 Educators

Media Representatives
 Local Environmental Organizations
 (WMEAC, etc)
 Grand Valley Metro Council
 Biosolids Contractor
 Grand Valley Regional Biosolids
 Authority

Elected Officials/Community
 Leaders
 Water Quality Professionals
 Farmers and Farm Organizations

Information to be made available to interested parties will include the following, which will also be posted on the City's website:

- a) The City's Biosolids management policy
 - b) The applicable legal and other requirements (i.e., Table 3.1)
 - c) The biosolids program goals and objectives for continual improvement (i.e., Table 4.1)
 - d) The periodic biosolids management program performance report
 - e) A detailed report of the independent, third-party EMS verification audit results
 - f) The City's Residuals Management Program (RMP)
5. Contractors will direct requests for external information to the EMS Coordinator who will either provide a response or forward it to the appropriate department for a response.

B. Internal Communication

To keep Clean Water Plant employees and contractors informed and aware of the biosolids EMS and related SOPs, the City will employ a variety of communication methods such as emails, intranet posting, written memoranda, all-plant meetings, and verbal communication.

Internal communications are either directly dealt with, or they are forwarded to the Biosolids Coordinator, depending on the nature of the inquiry or request.

The EMS Team will meet not less than quarterly to discuss the EMS, the biosolids program and policy, and to review any changes, responses, new happenings, etc. The purpose of the EMS Team meetings is to color and inform the opinions of the major policy makers (i.e., Director, Deputy Director) and to keep the EMS on track and moving forward.

C. Management Program Reporting

Annually the EMS Coordinator will prepare a written report that summarizes the performance of the biosolids management program. The report shall be issued by the end of June each year and will be made available to the public on the City's website as well as in hardcopy form.

The performance report will address performance during the previous biosolids reporting year (i.e., October through September). The report will include the following information:

- Summaries of monitoring data and other measurements that demonstrate the performance of the City's biosolids program relative to established goals, objectives, and legal requirements.
- A summary of relevant contractor activities
- Summaries of actions that have been taken on a voluntary basis.
- Performance relative to each of the 11 elements of the EMS, including nonconformance issues and resolutions.
- A summary of internal audits conducted during the year.
- A summary of information regarding third party audits conducted during the year.

References

EMS Guidance Manual (January 2005 Revision)

City of Wyoming Annual Biosolids Report (as submitted to the MDEQ)

Responsibility

Plant Superintendent

EMS Coordinator

City of Wyoming City Council

Biosolids Coordinator

Biosolids Contractors

References

EMS Guidance Manual (January 2005 Revision)

NBP Code of Good Practice

City of Wyoming's Clean Water Plant NPDES Permit

City of Wyoming Guiding Principles



Element 6: Competency	

Background

Wyoming is committed to making sure each Clean Water Plant employee understands his or her role in the biosolids re-use program. Since the plant spans many different job descriptions, each staff member should have a clear comprehension of how any given task can impact biosolids quality or the public perception of our work. Training plays an important role in the overall performance of the biosolids program and is necessary to effectively implement, manage, and maintain the EMS. Employees receive a variety of training relevant to their job classifications and in various forms ranging from hands-on, classroom, web-based, etc. All training is documented and records are maintained of all training the employees receive. This element defines the responsibilities and training of all the staff members directly involved in the EMS and makes clear their authority to act.

Procedures

1. Roles and responsibilities for various individuals, workgroups, and contractors pertaining directly to the biosolids EMS are assigned by the EMS Coordinator. Changes are made as necessary.
2. The EMS Coordinator will also review existing roles and responsibilities whenever significant operation changes are made to ensure that roles and responsibilities are appropriately defined.
3. Within the EMS Manual, each individual element contains a list of staff members responsible for overseeing the procedures within that element. Additionally, Table 2.1 in Element 2 identifies Critical Control Points, Operational Controls, and the responsible persons for each control and Table 4.1 in Element 4 identifies Goals and Objectives, and the person(s) responsible for each objective listed.
4. General descriptions of the roles and responsibilities for various positions and workgroups are provided below. The City’s Union Contract embodies specific job descriptions for represented employees.

Director of Public Works. This position is responsible for oversight of the wastewater treatment utility. It plays a major role in setting program direction, budgeting, and communicating to City Council.

Clean Water Plant Superintendent. This position is responsible for coordinating activities within the various workgroups, for establishing overall direction, determining broad priorities, and ensuring that all aspects of the operation and maintenance of the Clean Water Plant are conducted in an efficient, cost effective manner and are compliant with the existing rules and regulations that control our profession. The Superintendent reports to the Director of Public Works and has overall management responsibility for the activities of the following workgroups:

Environmental Services (IPP and Biosolids Programs)
Maintenance
Laboratory
Operations
Administrative

Laboratory Services Manager. This position reports directly to the Plant Superintendent and is responsible for managing the Utility Department's laboratories.

Environmental Services Supervisor. This position reports directly to the Plant Superintendent and is responsible for ensuring compliance with all biosolids and industrial pretreatment program requirements. Furthermore, it plays a major role in tracking legal and legislative initiatives at the local, state, and federal levels.

Environmental Services Inspector. This position reports to the Environmental Services Supervisor and is responsible for the industrial sewer use inspection and investigation, cross connection inspection, and may assist in the inspection of biosolids application sites.

Environmental Management System Coordinator. The EMS Coordinator is determined by the Deputy Director of Public Works and is responsible for ensuring that the EMS is properly managed.

Biosolids Coordinator. This position reports to the Environmental Services Supervisor. It oversees the day-to-day field activities of the program and serves as the first point of contact for the contractor. It also plays a major role in tracking legal and legislative initiatives at the local, state, and federal levels. A key position, the Biosolids Coordinator is directly responsible for the following on a day-to-day basis:

Farmer contact
Scheduling

Field set up (with input and assistance from the contractor)
Site inspection
Sampling
Loading calculation and tracking
Report generation
Interaction with local elected officials
Interaction with appointed health officials
Interaction with regulatory agency personnel
Communication with and direction of contractor crew
Contract compliance

GVRBA Project Manager. Reports to GVRBA Board quarterly on activities related to both plants' (Grand Rapids, City of Wyoming) solids handling programs.

Contractor. The Clean Water Plant utilizes the services of a contractor to provide biosolids transportation and application. The contractor is responsible for following policies and procedures necessary to ensure that operations are conducted in a safe and environmentally sound manner. The contractor is involved in the Biosolids EMS development from the beginning and develops internal procedures utilized by its employees to support and supplement the Clean Water Plant's program.

EMS Team: The Clean Water Plant's EMS Team consists of the major CWP workgroup supervisors, the Plant Superintendent, the Biosolids Coordinator, the Environmental Services Inspectors, the Director of Public Works, and can include contractor representation. The purpose of the team is to discuss policy and program changes, assure communication between different plant functions and the EMS Coordinator, and to color and inform the opinions of the major policy makers (i.e., Director, Superintendent). In this way, the EMS Team aims to keep the EMS on track and moving forward.

5. All employees and contractors, as appropriate, will receive training that addresses the following awareness, skills, and knowledge areas.
 - ✓ The biosolids value chain
 - ✓ Any biosolids-related legal and regulatory requirements that apply directly or indirectly to a given employee's job
 - ✓ Standard Operating Procedures and work instructions that are necessary to meet all the legal, quality, and public acceptance requirements.
 - ✓ Monitoring and measurement as it relates to any given employee's job
 - ✓ Documentation, document control and record keeping as it relates to a given employee's job

6. An introductory employee training program introduces employees to the concepts of EMS, consistent with the items listed above, and keeps the concepts fresh by regular discussion at regularly scheduled all-plant meetings. Existing employees and contractors will participate and new or transfer employees will receive this training as part of their orientation. The Plant Superintendent (with input from EMS Coordinator) is responsible for ensuring that all employees and contractors receive the initial training and that all new employees receive the training as part of their orientation. Record of this orientation is logged in Table 6.1: Employee Orientation Training Records, or similar, which is maintained in the plant's human resources files, as outlined in Element 8: Documentation, Document Control and Recordkeeping.

References

EMS Guidance Manual (January 2005 Revision)

City of Wyoming Clean Water Plant Employee Union Contracts

Element 2: Critical Control Points, Table 2.1: Critical Control Points

Element 4: Goals and Objectives, Table 4.1 Goals and Objectives

City of Wyoming and Synagro Contract Services Agreement

Table 6.1: Employee Orientation Training Records

City of Wyoming EMS Manual, Element 8: Documentation, Document Control and Recordkeeping

Responsibility

All Clean Water Plant staff

All Clean Water Plant Contractors



Element 7: Emergency Preparedness and Response	

Background

Well-defined emergency preparedness and response procedures are a significant element of the biosolids management program. The following procedures help to ensure effective response to accidents and emergency situations associated with biosolids management activities. These procedures help to minimize the potential impact on human health or the environment should an unusual or emergency situation arise.

The City of Wyoming’s Clean Water Plant will review and evaluate the efficiency of its emergency preparedness and response procedures, including its communication systems, and revise them as needed. Wyoming also requires its contractors to establish and maintain emergency preparedness and response plans and procedures to ensure effective response to accidents and emergency situations associated with its biosolids management activities.

Procedures

The Clean Water Plant has developed individual operating procedures for emergency-specific situations. Updates and revisions to the procedures are made on an as-needed basis or as program/plant operations change. Revisions and updates to biosolids-specific emergency procedures are the responsibility of the EMS Coordinator.

1. Preventive Action: During annual inspections of Industrial Users, the Environmental Services Inspector evaluates the need for a slug control plan at each significant industrial user site. In the event of an unusual industrial loading occurrence, the industrial representative is required to notify the Environmental Services Supervisor who works in conjunction with the Operations Supervisor to develop an action plan that minimizes impact on the plant.

2. Preventive Action: Procedures and requirements for land application during extreme weather conditions (flooding, frozen soil, etc.) are established within the City’s approved Residuals Management Program (RMP) in accordance with the State of Michigan Administrative Rules Part 24.

3. In the case of flooding of the Clean Water Plant, employees will follow the Operational Changes for Plant Flooding guidance document, which is maintained by the Maintenance Supervisor.
4. In the event of a power interruption or outage, Clean Water Plant staff will follow the Standard Operating Procedure for switching the plant to generated power, which is maintained by the Maintenance Supervisor.
5. Preventive Action: Awareness level training on emergency procedures will be done for all employees at an all-plant meeting at least annually. Contractor drivers are trained when they first come on the job site. Employees directly involved with the biosolids program (Environmental Services) also receive training at formally organized training events (MWEA, NBP, MDEQ, etc.).
6. Copies of the Emergency Response Plan are made available to employees in electronic form via the employee intranet and also in hard copy form. Important emergency contact information is kept in all contractor trucks.
7. Preventive Action: Testing of the procedures and response plan will be done periodically as determined by the Plant Superintendent or Environmental Services Supervisor. All emergency response equipment shall be on site or readily available within a minimum response time.
8. The City of Wyoming's Biosolids contractor has developed emergency response plans to supplement and enhance those already in place. These include transportation and applicable spill response.

References

City OF Wyoming Residuals Management Program
NBP EMS Guidance Manual (January 2005 Revision)
Pretreatment Program Procedures-40 CFR 403.8(f)(2)(v)
Land Application of Biosolids-Administrative Rule Part 24, R 323.2410
Emergency Response Manual
Operational Changes for Plant Flooding
SOP for Switching to Generated Power
Contractor Spill Control Plan

Responsibility

Deputy Director of Public Works
Environmental Services Supervisor
Biosolids Contractors
Operation Supervisor
Maintenance Supervisor
IPP Staff
EMS Coordinator



Element 8: Document Control and Recordkeeping	

Background

The City of Wyoming’s Clean Water Plant has established and maintains documentation and records for its biosolids management program. This element distinguishes between documents and records. Documents describe *what is going to happen*. Records comprise *evidence that something has happened*.

Procedures for Document Control

1. All printed (i.e., hard copy) documents are considered uncontrolled. The party responsible for the document is responsible for removing obsolete versions of the document. The following documents related to the City of Wyoming’s Biosolids Mgt System are considered controlled documents:

<i>Document Type</i>	<i>Responsible Party</i>	<i>Location</i>
Standard Operating Procedures	Work Group Supervisors	Work Group Supervisor offices
Policy Statements	Plant Superintendent or Deputy Director of PW	Superintendent’s office
Emergency Plans	Plant Superintendent or Deputy Director of PW	Superintendent’s office
Job Descriptions	Plant Superintendent or Deputy Director of PW	Superintendent’s office
Contractor documents	Env Svcs Supv	Env Svcs Supv Office
Mgt System Manual	EMS Coordinator	EMS Coord Office

Procedures for Record Control

2. Records are controlled by the responsible party listed below. They are secure, accessible, identifiable, and retained in a accordance with COW retention policy. The following records related to the City of Wyoming’s Biosolids Management System are considered controlled records:

<i>Record</i>	<i>Responsible Party</i>	<i>Location</i>
List of inquiries from external parties and response	Environmental Services Supervisor (ESS)	ESS’ office
EMS Training records	EMS Coordinator	EMS Coordinator’s office
Safety Training records	COW Risk Control Officer	Risk Control
Competency Records (e.g., performance appraisals, licenses)	Plant Superintendent or Deputy Director of PW	Plant Superintendent’s office
SCADA records	Operations Supervisor	Operations Supervisor’s office
Emergency Drills	Plant Superintendent or Deputy Director of PW	Plant Superintendent’s office
Emergency incidents/investigations	Environmental Services Supervisor (ESS)	ESS’ office
Corrective Actions in response to non-compliance, non-conformance	Environmental Services Supervisor (ESS)	ESS’ office
Biosolids Annual Report	Environmental Services Supervisor (ESS)	ESS’ office
Internal Audit Results	EMS Coordinator	EMS Coordinator’s office
Management Review minutes	EMS Coordinator	EMS Coordinator’s office

References

Biosolids Related SOPs

City of Wyoming EMS Manual, Element 2: Critical Control Points, Table 2.1 Critical Control Points

City of Wyoming EMS Manual, Element 4: Goals and Objectives, Table 4.1: Goals and Objectives, Template 4.1: Action Plan and Tracking Template
City of Wyoming EMS Manual, Element 6: Training, Table 6.1: Employee Orientation Training Records
City of Wyoming Safety Program Training Matrix
City of Wyoming EMS Manual Element 1: Biosolids Management Policy
City of Wyoming EMS Manual, Element 9: Nonconformance: Preventive and Corrective Action, Table 9.1: Tracking Worksheet, Table 9.2: Audit and Corrective Action Worksheet
Standards for Use or Disposal of Sewage Sludge-CFR Title 40 Chapter I Part 503
City of Wyoming EMS Manual, Element 11: Biosolids Management Report, Table 11.1: Annual Management Review of Performance Report

Responsibility

EMS Coordinator
Risk Management Supervisor
Biosolids Contractors
Maintenance Department Staff



Element 9: Corrective and Preventive Action	

Background

The purpose of this element is to develop and implement procedures for investigating noncompliance with legal/regulatory and other requirements, including conformance issues that may arise from monitoring/measurement activities, EMS protocols, or nonconformances noted as a result of internal or external EMS audits. This element will also establish procedures for identifying the cause and taking actions to correct the non-conformance issues, and document the necessary corrective actions taken to prevent a recurrence.

The City of Wyoming has developed the following procedures to ensure prompt response to any nonconformance events. Events of this nature will be treated with the utmost attention by Clean Water Plant Supervisory personnel.

Procedures

Corrective Action Procedures for Nonconformances

City of Wyoming corrective action procedures have been established to address nonconformances identified during routine monitoring and measurement. This plan identifies the nonconformance, the root cause(s), and the corrective action being taken. The corrective action procedures also identify changes to policies, programs, plans, operational controls, or monitoring/measurement procedures to prevent future nonconformances.

- 1) Upon identification of a nonconformance during routine monitoring and measurement procedures, the EMS Coordinator will inform the EMS Team who will be charged with investigating the cause(s) of the nonconformance and making recommendations for corrective action(s).
- 2) The EMS Coordinator will review the findings and work with appropriate Supervisors to select the proper corrective action and oversee the action implementation.
- 3) Changes to policies, programs, plans, operational controls, or monitoring/measurement procedures will be identified to help prevent future nonconformances as appropriate.
- 4) Records will be maintained on any nonconformances including all relevant data and reports along with recommendations and follow-up information. Tables 9.1 and 9.2 will be completed by the auditor and the EMS Coordinator.

- 5) Additionally, legal/regulatory requirements are specifically identified in the City of Wyoming's NPDES Permit. The permit contains procedures for investigating nonconformances with the legal/regulatory requirements identified in the permit, one of which is the Residuals Management Program.

Corrective Action Procedures for EMS Audits

Formal corrective action plans have been established to address the findings of internal EMS audits under Element 10, and EMS verification audits conducted by third parties. The corrective action plan will be documented, and describes what actions will be taken to address the audit findings, the individual(s) responsible, the estimated completion date, and required resources to develop and implement corrective and preventive action. Progress in completing the corrective actions will be tracked and periodically updated. The corrective action plan includes recommended changes to policies, programs, plans, operational controls, or monitoring/measurement procedures to prevent future nonconformances. These changes are subsequently documented in the corrective action plan, and in the EMS manual and other relevant EMS documentation.

1. EMS Nonconformances Identified During Internal Audits

- Internal audits will be conducted in accordance with procedures developed under Element 10.
- An audit worksheet (Table 9.2) will be completed for each element audited. The worksheet will contain the following information:
 - a) Element #
 - b) Auditor's name
 - c) Period being audited
 - d) Audit date(s)
 - e) Summary of findings
 - f) Nonconformances (if any) and cause
 - g) Corrective actions already taken (if any)
 - h) Recommended additional corrective actions (if any)
 - i) Person(s) responsible for implementing corrective action(s)
 - j) Changes in policies, programs, plans, operational controls and monitoring/measurements needed to prevent reoccurrence (if any)
 - k) Estimated completion date
 - l) Required resources
 - m) Method of tracking progress
- EMS Coordinator is responsible for tracking progress, using Table 9.1. Progress will be tracked using methods that the EMS Coordinator deems appropriate. For minor nonconformances progress will be tracked every two weeks. For major nonconformances, progress will be checked every four weeks. Tracking will be documented by completing the tracking sheet which is included as part of the audit worksheet.

- Any changes to policies, programs, plans, operational controls, or monitoring/measurement procedures will be documented in the corrective action plan, and in the EMS manual and other relevant EMS documentation.
- The EMS Coordinator will prepare and submit a written report to the EMS team and the Clean Water Plant Superintendent within 30 days after the conclusion of the audit. The report will summarize the internal audit results and corrective actions (if necessary) that have already been taken or will be taken to address any nonconformances.

2. EMS Nonconformances Identified During Third Party Audits

- Third party audits will be conducted in accordance with the procedures identified by the National Biosolids Partnership.
- Audit reports will be submitted to the City of Wyoming's EMS Coordinator.
- If the auditor identifies nonconformances, the EMS Coordinator will follow the steps listed for internal audits (1 - b, c, d and e).
- Minor nonconformances will be corrected within a 30 day period and major nonconformances will be corrected within a 90 day period, unless the auditor and the Clean Water Plant agree that these timeframes need to be extended.

References

Table 9.1: Tracking Worksheet

Table 9.2 Audit and Corrective Action Worksheet

City of Wyoming Residuals Management Plan

City of Wyoming Clean Water Plant NPDES Permit

City of Wyoming EMS Manual, Element 10: Internal Audits

EMS Guidance Manual (January 2005 Revision)

Responsibility

EMS Coordinator

EMS Team

Internal Audit Team

Third Party Auditors

Table 9.1: Tracking Worksheet

Date	Status of corrective action	Supporting documentation

Table 9.2: Audit and corrective action worksheet

Element #:	
Audit type:	
Auditor's name:	
Period being audited:	
Audit date(s):	
Summary of findings:	
Nonconformances (if any) and cause:	
Recommended additional corrective actions (if any):	
Person(s) responsible for implementing corrective action(s):	
Changes in policies, programs, plans, operational control and monitoring/measurements needed to prevent reoccurrence (if any):	
Estimated completion date:	
Required Resources:	
Tracking:	



Element 10: Internal EMS Audit	

Background

The Clean Water Plant will utilize an internal audit process to monitor its conformance with procedures specified in the Biosolids EMS. This process will better enable the Clean Water Plant to successfully complete mandatory external audits and play an important role in the continual improvement process. It is designed to provide an unbiased, internal evaluation of conformance with EMS common procedures, legal and other requirements, and programmatic goals and objectives.

Procedures

1. Internal audits will be completed on an ad hoc basis, or may be triggered by a nonconforming or emergency event. Internal audits may not be completed in those years when a formal 3rd party audit is conducted.
2. The audit will address program activities completed since the immediately preceding internal or external audit.
3. The audit will be conducted by peer agencies whenever possible.
4. The audit will assess the success of policy commitments.
5. The audit will assess the results of a contractor assessment.
6. In the event that a peer agency is unavailable, Clean Water Plant staff will be responsible for auditing selected elements of the EMS, and an effort will be made to ensure that individuals are not assigned audit responsibilities for an area that they manage as part of their day-to-day activities. If this scenario becomes the audit procedure, audit responsibilities are as follows:
 - Laboratory: Elements 1, 2, 3,
 - Operations: Elements 4, 5, 6,
 - Maintenance: Elements 7, 8, 9
 - Environmental Services: Elements 10, 11
7. All audit results will be submitted to the EMS Coordinator within 10 days of its conclusion.

8. The audit will evaluate performance relative to established biosolids program goals, objectives, and performance measures. The audit will cover the 11 Elements of the City of Wyoming's EMS program and will include any applicable contractor activities.
9. All documents and records related to internal audits will be maintained in accordance with the documentation and record keeping procedures established in Element 8.
10. Auditors will have access to the NBP Third Party Auditor's guidance document and other appropriate material. Auditors will utilize one or more of the objective methods listed in the Third Party Auditor's Guidance document to evaluate conformance. The objective methods listed in the Auditor's Guidance are as follows:
 1. Document and records review
 2. Interviews
 3. Direct observation
11. Auditors will complete an audit worksheet that is specific to each element. Information contained in the worksheet includes:
 - a) Element being audited
 - b) Audit type (e.g. internal or external audit)
 - c) Auditor's name
 - d) Period being audited
 - e) Audit date(s)
 - f) Summary of findings
 - g) Nonconformances (if any) and cause
 - h) Corrective actions already taken (if any)
 - i) Recommended additional corrective actions (if any)
 - j) Person(s) responsible for implementing corrective action(s)
 - k) Changes in policies, program, plans, operational controls and monitoring/measurements needed to prevent reoccurrence (if any)
 - l) Estimated completion date
 - m) Required resources
 - n) Method of tracking progress
12. The auditors will complete (a) through (e) above as well as all specific questions contained in the worksheets. Completed worksheets will then be submitted to the EMS Coordinator.
13. The EMS Coordinator will complete (f) through (n). This may be done by completing the appropriate sections directly on the worksheet or addressing them through a separate written report.
14. The worksheet reporting process allows management to take action to make necessary modifications to the EMS and biosolids management

program. Nonconformances will be addressed using the procedures identified in Element 9.

15. The EMS Coordinator will prepare and submit a written report to the Clean Water Plant superintendent within 30 days of the audit completion, summarizing the internal audit results and corrective actions (if necessary) that have already been taken or will be taken to address any nonconformances. The audit report will be available electronically both on the City's website and on the City's intranet site.
16. The EMS Coordinator will periodically evaluate the need to provide training or guidance to the internal auditors. The EMS Coordinator will be responsible for coordinating any subsequent activities related to training or guidance.

References

EMS Guidance Manual (January 2005 Revision)

NBP Third Party Audit Guidance Document

City of Wyoming EMS Manual, Element 9: Nonconformances: Preventive and Corrective Action

City of Wyoming EMS Manual, Element 8: Documentation, Document Control and Recordkeeping

Responsibility

Clean Water Plant Supervisory Personnel and Selected Staff

Table 1: Tracking Worksheet

Date	Status of corrective action	Supporting documentation

Table 2: Sample audit and corrective action worksheet

Element #:	
Audit type:	
Auditor's name:	
Period being audited:	
Audit date(s):	
Summary of findings:	
Nonconformances (if any) and cause:	
Recommended additional corrective actions (if any):	
Person(s) responsible for implementing corrective action(s):	
Changes in policies, programs, plans, operational control and monitoring/measurements needed to prevent reoccurrence (if any):	
Estimated completion date:	
Required Resources:	
Tracking:	



Element 11: Management Review	

Background

The City of Wyoming will conduct on-going management review of its biosolids management program to address the possible need for changes to policy, the goals and objectives, the biosolids management program and other EMS elements based on internal EMS audit results, third party verification audit results, changing circumstances, and the City’s commitment to continual improvement. Both formal and informal review will take place on all levels from the City Manager down to the staff level and at various frequencies ranging from weekly to annual to ad hoc.

Procedures

1. The EMS Coordinator and the Clean Water Plant Superintendent or Deputy Director of Public Works will formally review EMS and related biosolids management activities on an annual basis. This review will be coordinated by the EMS Coordinator. The review will be conducted by July 15th of each year and will cover activities conducted during the previous year. The review will include:
 - a. A preliminary review of the annual Biosolids Program Performance Report
 - b. Conformance with policy commitments, and any possible need for changes to the policy
 - c. Nonconformance incidents
 - d. A review of progress toward achieving current Biosolids goals and objectives, and any new goals and objectives
 - e. Review internal audit results, if applicable
 - f. Review external thirds party audit results, if applicable
 - g. Changing circumstances such as major process changes which may require updates to the biosolids EMS critical control points and other elements of the system
 - h. Documented commitment that opportunities for continuous improvement and other system improvements are being investigated and implemented.

2. Informal, on-going review of biosolids program related activities also occurs at the following events and frequencies:

3. The EMS Coordinator will develop a schedule and action plan to address recommendations from the management review functions using the action plan template included in Element 4.
4. Progress on any action items identified from the management review will be tracked and documented using the Annual Management Review of Performance Record of Progress Sheet (attached to this element).

References

EMS Guidance Manual (January 2005 Revision)

City of Wyoming EMS Manual, Element 4: Goals and Objectives, Template 4.1: Action Plan and Tracking Template

City of Wyoming EMS Manual, Element 1: Biosolids Management Policy

Table 11.1: Annual Management Review of Performance Report

Responsibility

Clean Water Plant Superintendent

EMS Coordinator

Meeting or Event	Participants	Purpose
<i>Monday A.M. Superintendent's meeting; weekly</i>	CWP supervisors and Superintendent	Look back over weekend; plan for upcoming week.
<i>Wednesday A.M. CWP staff meeting; weekly</i>	PW Director; Utility billing/City Treasurer; Water Plant; CWP work group supervisors	Coordination of overall utility effort.
<i>City Manager Monthly Utilities Meeting</i>	PW Director; CWP and WTP Superintendents; City Mgr; Deputy City Mgr;	Upper level management review.
<i>City Manager's Monthly Staff Meeting</i>	All City department heads and key supervisors	Upper level management review.
<i>GVRBA Tech Team meeting, as needed</i>	Tech Team members from GR, Wyoming	Discussion of technical issues pertaining to GVRBA.
<i>GVRBA Operations Team meeting, monthly</i>	Ops Team members from GR, Wyoming	Discussion of operational issues pertaining to GVRBA.
<i>GVRBA Board meeting, quarterly</i>	GVRBA Board members	Conducting of the business of the GVRBA.
<i>CWP work group meetings; weekly or monthly</i>	Staff of each work group meeting with its supervisor and the CWP superintendent	Work group direction, coordinated with overall plant management.
<i>All-utility meeting; annual</i>	All utility department staff	Annual review of all utility programs.
<i>Wholesale customer meeting; annual</i>	Utility department heads; utility supervisors; wholesale customer reps	Annual review of all utility programs as they pertain to wholesale customer service.

Table 11.1: Annual Management Review of Performance Report

Review preliminary periodic Biosolids program Performance report:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review progress on goals and objectives:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review internal audit results and conformance with policy commitments:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review any nonconformance incidents (if applicable) and corrective action:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review external audit results, if applicable:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review process changes and any possible needs for changes to the policy:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review commitment to continuous improvement and actions taken:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:

Date Completed: _____

Completed By: _____

Table 11.1: Annual Management Review of Performance Report

Review preliminary periodic Biosolids program Performance report:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review progress on goals and objectives:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
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Review any nonconformance incidents (if applicable) and corrective action:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
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Review process changes and any possible needs for changes to the policy:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:
Review commitment to continuous improvement and actions taken:	Suggested Actions:	Responsible person(s):	Changes to policies, plans, procedures, etc.:

Date Completed: _____

Completed By: _____