

# National Biosolids Partnership Biosolids EMS Verification Audit Report

# City of Los Angeles Department of Public Works, Bureau of Sanitation

Los Angeles, California

Audit Performed By:

KEMA-Registered Quality, Inc., Chalfont, Pennsylvania

Audit Dates: May 25 to June 11, 2003 and August 21-22, 2003

Report Date: August 31, 2003

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# Report Distribution List:

City of Los Angeles Bureau of Sanitation National Biosolids Partnership KEMA-Registered Quality Inc. file Lead Auditor file, Auditors File (2)



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#### 1 SUMMARY

KEMA-Registered Quality Inc. (KEMA) conducted a Third Party EMS Verification Audit of the City of Los Angeles Bureau of Sanitation's Biosolids EMS during June 2003 and a follow-up audit in August 2003. This audit was performed at the request of the National Biosolids Partnership and the City of Los Angeles Bureau of Sanitation to analyze the Environmental Management System (EMS) being used by the Bureau of Sanitation in managing their biosolids practices and to assess this EMS for conformance with expectations and requirements of the National Biosolids Partnership EMS for Biosolids.

The audit included the development of an Audit Program, review of Environmental Management System (EMS) Documentation, analysis of the City of Los Angeles Bureau of Sanitation Biosolids EMS for conformance with all 17 elements of the National Biosolids Partnership "EMS for Biosolids" Standard and examination of outcomes resulting from the EMS throughout the biosolids value chain.

Based on results of our audit, KEMA-Registered Quality Inc. concluded that the City of Los Angeles Bureau of Sanitation Biosolids EMS does conform with requirements and expectations of the National Biosolids Partnership's EMS for Biosolids. We are, therefore, prepared to issue the following verification statement concerning the City of Los Angeles Bureau of Sanitation's Biosolids EMS:

"The City of Los Angeles Bureau of Sanitation has been independently certified by KEMA-Registered Quality Inc. as having an effective biosolids environmental management system that supports continually improving environmental performance, meeting regulatory compliance obligations, utilizing good management practices, and creating meaningful opportunities for public participation and is in conformance with the requirements of the National Biosolids Partnership."

This "Verification Statement" will be issued to the City of Los Angeles Bureau of Sanitation by KEMA-Registered Quality Inc. as a Certification that their Biosolids EMS conforms to NBP expectations and requirements. Continuing certification requires effective correction of nonconformances identified during the Third Party Verification Audit and continuing conformance with expectations and requirements of the NBP EMS for Biosolids standard (issued May 2002), as determined through annual interim audits.

During the initial audit (June 1 to 11, 2003), KEMA auditors identified two (2) major nonconformances and twelve (12) minor nonconformances with NBP's expectations and requirements. One additional nonconformance was identified during the corrective action audit. Our review of actions taken to address the nonconformances determined that all major nonconformances and four (4) of the minor nonconformances identified during the June audit have been effectively corrected. Our review of LA City's corrective action plans for the remaining nonconformances determined that acceptable plans are in place for correcting these minor nonconformances.

The KEMA audit team noted several positive attributes in the use of quality biosolids management practices, public acceptance, regulatory compliance and environmental performance by City of Los Angeles Bureau of Sanitation, including:



- A strong commitment from management and desire within the entire organization for the success of their biosolids management program and continual improvement in biosolids management activities.
- Operational controls and biosolids management practices throughout the biosolids value chain that meet or exceed those recommended in the NBP "National Manual of Good Practice".
- Effective processes for public participation and communication in planning biosolids program activities.
- Internal communication about the Biosolids EMS and its requirements that enables personnel at all relevant levels to understand their EMS responsibilities.

The most evident weakness of the LA City Biosolids EMS is that it is relatively new and, therefore, not fully mature. This has led to some omissions in processes needed for conformance with requirements of the 17 EMS Elements. Also, there is limited assessment of EMS conformance, particularly considering LA City's reliance on contractors for operational control and communication at remote locations.

#### 2 AUDIT DETAILS

# 2.1 Agency Details

Organization: City of Los Angeles Bureau of Sanitation

Address: 433 South Spring Street, Los Angeles, California 90013

Number Employees: 2700 (approximately)

Wastewater Treated: approximately 450 million gallons per day at Hyperion Treatment Plant + 30 million gallons per day at Terminal Island Treatment Plant

Biosolids Production: 82,000 dry tons per year (Class A) at Hyperion Treatment Plant + 4,000 dry tons per year (Class B) at Terminal Island Treatment Plant.

Biosolids Production Location(s):

Hyperion Treatment Plant, Playa Del Rey, California Terminal Island Treatment Plant, San Pedro, California

#### 2.2 Audit Company and Auditors Identification

KEMA-Registered Quality Inc. (KEMA) is an accredited Independent Third-Party Audit Company within the National Biosolids Partnership's Biosolids EMS Program. KEMA is also a RAB-accredited Registrar for ISO-14001 certifications.

KEMA's Auditors participating in this audit included Mr. Jon Shaver (Lead Auditor), Mr. Ralph Eschborn (Auditor) and Ms. Trudy Johnston (Auditor). All Auditors used meet the qualification requirements established by the National Biosolids Partnership for their respective roles.

# 2.3 Audit Purpose and Scope

This audit was performed at the request of the City of Los Angeles Bureau of Sanitation (LA City) and sanctioned by the National Biosolids Partnership to provide independent verification



that the Biosolids EMS being used by City of Los Angeles Bureau of Sanitation in managing biosolids:

- a) Conforms with requirements of the 17 Elements of the National Biosolids Partnership's EMS for Biosolids (May 1, 2002), and
- b) Meets National Biosolids Partnership expectations for effective EMS outcomes in the areas of environmental performance, regulatory compliance, public participation and quality biosolids practices.

The audit scope included activities performed by the City of Los Angeles Bureau of Sanitation in managing the production, storage, transportation and use of biosolids materials being produced at the Hyperion Treatment Plant (Playa Del Rey, California) and Terminal Island Treatment Plant (San Pedro, California). The scope also included contractor activities at sites being used for the land application of LA City biosolids in Kern County California and Buckeye Arizona and biosolids composting activities performed at the Griffith Park compost site within the City of Los Angeles

#### 2.4 Audit Events

The primary events within this audit are listed below. A detailed schedule of audit events is available upon request.

EMS Documentation Review – performed May 25 and 26, 2003

Examination of EMS Outcomes – performed June 4, 2003

Conformance Verification Audit – performed June 2 to 11, 2003

Follow-up / Corrective Action Audit – performed August 21 and 22, 2003

#### 2.5 Audit Methodology

EMS Documentation Review was performed offsite by the KEMA Auditors. EMS Documentation provided by LA City was reviewed for conformance with documentation requirements of the EMS for Biosolids.

The Conformance Verification Audit was performed to verify conformance of the LA City Biosolids EMS with all requirements of the 17 elements of the NBP EMS for Biosolids, using the NBP Third Party Verification Auditor Guidance (November 2002) as a reference. A "process audit" methodology was used to assess processes and practices in place for conformance with applicable requirements. See Section 5 of this report for a description of processes analyzed during the audit.

Examination of EMS outcomes was done to analyze the systemic health of the LA City Biosolids EMS and to identify improvements resulting from the EMS. This portion of the audit was performed in cooperation with LA City management to assist in providing a fair assessment of the value being contributed by the EMS.

#### 2.6 Reference Materials

The following reference materials were used during this audit:

National Biosolids Partnership EMS for Biosolids (May, 2002)



- NBP Third Party Verification Auditor Guidance (November 2002)
- City of Los Angeles Bureau of Sanitation EMS Manual (dated 4/24/03)

# 2.7 Audit Participants

The full audit was comprised of approximately 30 separate audits involving over 55 LA City personnel, contractor personnel and external interested parties. A full list of audit participants is available upon request.

The audit was coordinated on behalf of LA City by Ms. Diane Gilbert (Biosolids Regulatory Liaison) and Ms. Patricia Cruz (Biosolids EMS Coordinator).

#### 3 AGREEMENTS

LA City has promised to proceed with action plans to correct nonconformances identified during this audit and to complete these actions in a timely manner. LA City and KEMA have agreed to arrange for an interim audit by KEMA to occur within 12 months of this verification audit (i.e. by June 2004), as prescribed by the National Biosolids Partnership Biosolids EMS program. The scope of this audit will include verification of all corrective actions taken to address nonconformances identified during the verification audit and other biosolids activities to be agreed upon.

#### 4 DEFINITION OF TERMS AND GUIDELINES FOR CLOSURE OF FINDINGS

During the audit, nonconformances, remarks and observations were documented in Corrective Action Requests, the content of which is repeated in this report. Nonconformance, remark, and observation are defined as follows:

#### Major Nonconformance:

A major nonconformance exists if a relevant EMS requirement has not been met or if repeated or numerous deficiencies exist for the same requirement. A major nonconformance can represent:

- A. A systemic failure of the Environmental Management System.
- B. A situation that can result in an adverse effect to the biosolids policy.
- C. A condition that can cause an adverse effect on the environment.

#### Minor Nonconformance:

A "minor nonconformance" exists if a relevant EMS requirement has not been fully met. A minor nonconformance can represent:

- A. A non-systemic deficiency within the EMS (i.e. not likely to result in failure of the Environmental Management System).
- B. An isolated occurrence in which EMS requirements are not met.



# Observation:

"Observations" describe how the management system functions with respect to relevant requirements of the EMS. They can also identify opportunities for EMS improvement and/or highlight areas of strength within the EMS.

# **Corrective Action:**

For each nonconformance, corrective action must be completed and the implementation verified by KEMA, prior to, or during, the next audit.

#### 5 "PROCESS AUDIT" METHODOLOGY

A "process audit" method was used to analyze the management system. This standard KEMA approach identifies management processes being used by the organization and analyses the performance of each process for conformance with relevant EMS requirements and expectations.

From review of LA City EMS Documentation and discussions with management personnel, the following EMS processes and corresponding elements of the NBP EMS for Biosolids were identified.

	EMS Process	EMS Manual Elements
1.	EMS Documentation	Element 1 – Documentation of Environmental Management System for Biosolids
2.	Biosolids Management Policy	Element 2 – Biosolids Management Policy
3.		
	Communication & Performance Reporting	Element 6 – Public Participation in Planning
	T offormation Reporting	Element 9 – Communication
		Element 15 – Biosolids Management Program Performance Report
4.	Goals & Objectives	Element 5 – Goals & Objectives for Continual Improvement
		Element 6 – Public Participation in Planning.
		Element 13 - Monitoring & Measurement
5.	Identification of Critical Control Points	Element 3 – Critical Control Points
6.	Compliance with Legal &	Element 4 – Legal & Other Requirements
	Other Requirements	Element 13 - Monitoring & Measurement
		Element 14 – Nonconformances: Corrective & Preventive Action



	EMS Process	EMS Manual Elements
-	Control of Critical Control Points  Wastewater pre-treatment & collection Wastewater treatment & solids generation Solids stabilization, conditioning & handling Solids storage & transportation Biosolids use & disposition	Element 10 – Operational Control of Critical Control Points  Element 13 – Monitoring & Measurement
8.	Roles / Responsibilities &	Element 7 – Roles & Responsibilities
	Job Competency	Element 8 – Training
		Element 9 – Communication
9.	Emergency Preparedness & Response	Element 11 – Emergency Preparedness & Response
10.	Internal EMS Audit Program	Element 16 – Internal EMS Audit
11.	Nonconformances: Preventive & Corrective Action	Element 14 – Nonconformances: Preventive & Corrective Action
12.	Document Control & Recordkeeping	Element 12 – EMS Documentation, Document Control & Recordkeeping
13.	Management Review	Element 17 – Periodic Management Review of Performance
14.	Contractor Control	Element 1 – Documentation of Environmental Management System for Biosolids
		Element 2 – Biosolids Management Policy
		Element 7 – Roles & Responsibilities
		Element 8 – Training
		Element 9 – Communication
		Element 10 – Operational Control of Critical Control Points
		Element 11 – Emergency Preparedness & Response
		Element 12 – EMS Documentation, Document Control & Recordkeeping
		Element 13 – Monitoring & Measurement
		Element 16 – Internal EMS Audit



#### **6 SUMMARY OF AUDIT RESULTS**

The Third Party Verification Audit found two major nonconformances within the City of Los Angeles Biosolids EMS and twelve minor nonconformances. Subsequent audit of corrective actions taken by LA City verified that both major nonconformances and four of the minor nonconformances have been corrected. Corrective action plans for the remaining nonconformances have been approved by KEMA.

Based on these results, KEMA has concluded that the LA City Biosolids EMS conforms to requirements and expectations of the National Biosolids Partnership EMS for Biosolids. We are, therefore, prepared to issue a Certification to City of Los Angeles that includes the following verification statement:

"The City of Los Angeles Bureau of Sanitation has been independently certified by KEMA-Registered Quality Inc. as having an effective biosolids environmental management system that supports continually improving environmental performance, meeting regulatory compliance obligations, utilizing good management practices, and creating meaningful opportunities for public participation and is in conformance with the requirements of the National Biosolids Partnership."

Results of this Third Party Audit and the current status of the LA City Biosolids EMS for each of the 17 Elements of the NBP EMS for Biosolids are summarized below.

- "Corrected nonconformances" refers to audit findings that have been corrected by LA City.
   The Lead Auditor has verified the effectiveness of these actions in correcting the nonconformance.
- "Remaining nonconformances" refers to findings for which corrective action has not yet been verified. The Lead Auditor has approved corrective action plans for each nonconformance.
- "EMS Status" refers to the level of conformance, or nonconformance, of the LA City EMS with NBP expectations and requirements as of August 31, 2003 (i.e. following verification of corrective actions).

EMS Element	EMS Status	Corrected Nonconformances	Remaining Nonconformances
	(@ 8/31/03)	(corrective action verified for each)	(corrective action plan approved for each)
Documentation of EMS for Biosolids	Conforms	Nonconformance 03-01 (Minor)  Monitoring / measurement	None
		requirements for the "hauling / transportation" critical control point are not identified in the EMS Manual, indicating that these requirements have not been established for all biosolids program activities, as required by EMS Element 13.	
		See also Element 14	



EMS Element	EMS Status	Corrected Nonconformances	Remaining Nonconformances
	(@ 8/31/03)	(corrective action verified for each)	(corrective action plan approved for each)
2. Biosolids	Minor	None	Nonconformance 03-02 (Minor)
Management Policy	Nonconformance		The Biosolids Policy Statement does not specifically reference commitment to the principles of the Code of Good Practice, as required by EMS Element 2.
3. Identification of	Minor	None	Nonconformance 03-03 (Minor)
Critical Control Points	Nonconformance	None	The Griffith Park composting operation has not been identified as a critical control point, indicating that not all critical control points have been identified throughout the biosolids value chain, as required by EMS Element 3.  Nonconformance 03-14 (Minor)  There are no records that link critical control points and associated potential environmental impacts with corresponding operational controls, as required by EMS Element 3 and Element 10.
4. Legal and	Conforms	Nonconformance 03-04 (Minor)	
Other Requirements		The designated list used to identify applicable legal and other requirements is incomplete (i.e. does not include some key regulations), indicating other legal requirements are not being identified as required by EMS Element 4.  Nonconformance 03-12 (Minor)  The EMS procedure for incorporating changes in legal and other requirements (EMS Manual, Element 4) does not state how other requirements are identified and tracked, nor how changes in these requirements are incorporated into the EMS, as required by EMS Element 4.	



EMS Element	EMS Status	Corrected Nonconformances	Remaining Nonconformances
	(@ 8/31/03)	(corrective action verified for each)	(corrective action plan approved for each)
5. Goals and	Minor	None	Nonconformance 03-05 (Minor)
Objectives for Continual Improvement	Nonconformance		There is no specific reference in the EMS as to how environmental impacts, legal and other requirements and best management practices are considered in setting goals and objectives, as required by EMS Element 5.
Public     Participation in     Planning	Conforms	None	None
7. Roles and Responsibilities	Conforms	None	None
8. Training	Conforms	None	None
9. Communication	Minor	See Element 15 below	Nonconformance 03-06 (Minor)
	Nonconformance		Roles and responsibilities for contractors have not been included in the LA City Communications Program, as required by EMS Element 9. In addition, there is no evidence that contractors are required to establish and maintain regular monitoring and measurement procedures and practices for communications, as required by EMS Element 13.
10. Operational Control of Critical Control Points	Conforms	None	None



EMS Element	EMS Status	Corrected Nonconformances	Remaining Nonconformances
	(@ 8/31/03)	(corrective action verified for each)	(corrective action plan approved for each)
11. Emergency	Minor	None	Nonconformance 03-08 (Minor)
Preparedness and Response	Nonconformance	None	Emergency Preparedness and Response Plans (i.e. Business Plans) and equipment are not being maintained as required and the effectiveness of these preparations is not being tested as required, indicating that Emergency Preparedness and Response Plans are not being maintained, as required by EMS Element 11.
12. EMS	Minor	Nonconformance 03-09 (Major)	Nonconformance 03-15 (Minor)
Documentation, Document Control and Recordkeeping	Nonconformance	EMS documents and records requiring control have not been identified, procedures and responsibilities for controlling documents and for retaining and disposing of records are not defined and key EMS documents (for instance EMS Manual, Emergency Response Plans) are not being controlled. This indicates document control and recordkeeping practices are not functioning as required by EMS Element 12.	The document control and recordkeeping process identified in EMS Manual Element 12 does not address review / revision of documents, control of electronic storage methods and retention / disposal for records, as required by EMS Element 12. Also control of documents and records retained by contractors has not been addressed.
13. Monitoring and Measurement	Conforms	See Element 1 above	None
14. Nonconforman ces: Preventive	Minor	Nonconformance 03-13 (Minor)	Nonconformance 03-10 (Minor)
and Corrective Action	Nonconformance	There are no procedures documented in the EMS Manual for investigating and correcting noncompliances, as required by EMS Element 14.	Nonconformance correction and prevention procedures do not describe how investigation is done or how cause(s) identified, nor do they include procedures for verifying completion of corrective action, as required by EMS Element 14.



EMS Element	EMS Status	<b>Corrected Nonconformances</b>	Remaining Nonconformances
	(@ 8/31/03)	(corrective action verified for each)	(corrective action plan approved for each)
15. Biosolids Program Periodic Performance Report	Conforms	Nonconformance 03-11 (Major)  A Biosolids Management Program Performance Report has not been prepared and has not been made available to interested parties, as required by EMS Elements 9 and 15.	None
16. Internal EMS Audits	Minor Nonconformance	None	Nonconformance 03-07 (Minor) Internal audits do not determine whether LA City is effectively meeting its biosolids policy or evaluate performance relative to biosolids goals, objectives and performance measures or evaluate all biosolids activities (such as communications) performed by contractors, as required by EMS Element 16.
17. Periodic Management Review of Performance	Conforms	None	None

A discussion of each process audit conducted during this Third Party Verification Audit follows. Verification of effective correction of all findings is required during the next interim audit.

LA City was asked to review a draft version of this report for technical accuracy. Comments received from LA City related to the observations made have been inserted verbatim at the end of the audit discussion to which they pertain.



#### 7 AUDIT: DOCUMENTATION REVIEW

# 7.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia	Biosolids EMS Coordinator	LA City SAN
Gilbert, Diane	Biosolids Regulatory Liaison	LA City SAN
<u>Auditors</u>		
Eschborn, Ralph	Auditor	KEMA
Shaver, Jon	Lead Auditor	KEMA

#### 7.2 Documentation Reviewed

The LA City Biosolids EMS Manual was reviewed to confirm conformance of all the applicable requirements of the standard. In addition, Internal EMS Audit reports and contract documents were reviewed.

#### 7.3 Observations

LA City has prepared an EMS Manual to describe the applicable policies, programs, plans, procedures and management practices in its Biosolids EMS. The original manual was approved by LA City Council, which also authorized subsequent revisions to be approved by the Bureau of Sanitation Director. This manual is readily available to employees via the BEDRTS intranet system and to external parties via the LA City website.

The EMS Manual contains the LA City Biosolids Policy and summary descriptions of the following EMS processes, procedures, documentation and responsibilities:

- Procedure(s) for identifying and tracking applicable federal, state and local legal requirements and incorporating changes in these requirements into the EMS and operational controls.
- Procedure(s) for receiving inquiries and requests for information from interested parties about the EMS and biosolids management activities.
- Procedures for regular monitoring and measurement for assuring regulatory compliance, measuring biosolids program performance and tracking progress toward achieving biosolids program goals and objectives.
- EMS document control and recordkeeping requirements.

The EMS Manual does not include required procedures for identifying, investigating, documenting and correcting regulatory noncompliances.

The EMS Manual also contains the Bureau's Public Participation, Communications and Emergency Preparedness Programs and Plans, operational controls and management methods used to achieve compliance with legal and other requirements and describes biosolids management activities performed by its contractors.



Critical control points throughout the biosolids value chain are identified in the EMS Manual and consistent with the National Manual of Good Practice. Auditors note the intentional exclusion of control points for wastewater treatment. Environmental impacts, operational controls and monitoring / measurement requirements for the critical control points are also identified. "Hauling / transportation" is included as a critical control points, however no monitoring / measurement requirements are stated for this activity.

# 7.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids.

#### **Corrected Nonconformances**

Nonconformance # 03-01 (Minor)

Monitoring / measurement requirements for the "hauling / transportation" critical control point are not identified in the EMS Manual, indicating that these requirements have not been established for all biosolids program activities, as required by EMS Element 13.

Nonconformance # 03-13 (Minor)

There are no procedures documented in the EMS Manual for investigating and correcting noncompliances, as required by EMS Element 14.

Third Party Auditors verified that LA City has corrected these nonconformances by modifying Elements 13 and 14 of the EMS Manual to describe:

- Monitoring / measurement practices for the hauling / transportation control point.
- Practices used to identify, investigate and correct regulatory noncompliances.

#### 7.5 LA City Comments

The following comments were provided by LA City in response to the observations noted above.

The City's EMS manual contains nonconformance procedures that addresses legal and other requirements and is used to address regulatory noncompliances. The National Biosolids Partnership (NBP) EMS Guidance Manual. Chapter 9. Element 14. Page 9-8. Minimum conformance requirements item 14.1, states; "Develop and implement a procedure to investigate any noncompliance with an applicable regulatory requirements or nonconformance's with internal EMS procedures identified during routine monitoring and measurement or periodic internal EMS audits." Also in the NBP EMS Guidance Manual, Chapter 9, Element 14, Page 9-9. Interpretation, states "The term "nonconformance" refers to deviations from your EMS (an Nonconformance, as defined in this guidance, is different from internal system). "noncompliance," which refers to deviation from violation of regulatory requirements (external systems)." The City has developed EMS procedures to address all EMS nonconformance's, including regulatory noncompliance's. Although not included in the EMS manual, the City does have procedures currently in place to identify, investigate, document, and correct regulatory noncompliances. Internal procedures exist for monitoring and measurement noncompliance's and for reportable incidents, which include regulatory noncompliance's. These procedures are used in conjunction with the EMS nonconformance procedures.



#### 8 AUDIT: BIOSOLIDS MANAGEMENT POLICY

#### 8.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Fan, Steve Gilbert, Diane Kearney, Ray Mundine, Joseph Netto, Hiddo Wilson, Judith	Biosolids EMS Coordinator Operations Manager – HTP Biosolids Regulatory Liaison Assistant Director Plant Manager – HTP Plant Manager – TITP Director	LA City SAN
<u>Auditors</u> Eschborn, Ralph Johnston, Trudy Shaver, Jon	Auditor Auditor Lead Auditor	KEMA KEMA KEMA

#### 8.2 Documents Reviewed

LA City Biosolids EMS Manual, 2003 /2004 Workplans (Bureau, RAD, EMD Divisions), EMS Brochure, Shift Instructions

The NBP "Third Party Verification Auditor Guidance" (Ch 6 – Policy) was used as a reference.

# 8.3 Process Description

LA City's Biosolids Management Policy is included in their EMS Manual, Element #2 and has been approved by the Los Angeles City Council. This policy provides specific commitments which the Bureau of Sanitation undertakes, including "managing biosolids in an environmentally sound, socially acceptable and cost-effective manner", "complying with applicable regulations", "complying with CWEA Manual of Good Practice", "progressing towards Class A biosolids" and "implementing an EMS to ensure that these goals are met". It does not, however, specifically commit to follow the principles set forth in the NBP Code of Good Practice, although this commitment is included in the EMS Manual, Element 2 as a memorandum of understanding. Auditors attempted to find the same commitments elsewhere in the policy, however a written commitment to all ten of the principles of the Code of Good Practice could not be found.

The LA City Biosolids Policy Statement is included in a Biosolids EMS brochure that has been given to all employees and contractors and sent to interested parties, both proactively and upon request. It is also included in EMS Awareness Training and in Shift Instructions to operators, noted in Workplans developed by the Bureau and available on the LA City Bureau of Sanitation public website. Training/Orientation sessions have been held with principal contractors to make them aware of policy commitments and their need to conform to these.

LA City's 2003/4 "Workplan Goals" for each Division are consistent with commitments made in the Biosolids Policy (such as neighborhood empowerment, EMS implementation, environmental leadership).



# 8.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

<u>Audit Result</u> - The process described above was found NBP expectations and requirements, except as noted below:

# **Findings**

Nonconformance # 03-02 (Minor)

The Biosolids Policy Statement does not specifically reference commitment to the principles of the Code of Good Practice, as required by EMS Element 2.

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable. The effectiveness of the corrective action will be verified during the next interim audit (June 2004).

# 8.5 LA City Comments

The following comments were provided by LA City in response to the observations noted above.

In the NBP EMS Guidance Manual, Chapter 6, Element 2, Interpretation, its states: "To conform to the NBP's biosolids EMS policy Element, you must explicitly or by reference incorporate the NBP Code of Good Practice into the policy that governs your EMS." The City's EMS states that it will commit to the NBP Code of Good Practice by reference. The City's policy commits to implementing a biosolids EMS, and in order to implement an EMS an agency must agree to commit to follow the principles of Code of Good Practice. The City included the Code in its EMS Manual, Element 2 Biosolids Management Policy and also indicated with a statement that it commits to following the Code of Good Practice. The Letter of Understanding between the City and NBP is included in the City's EMS manual, and in the Letter of Understanding the City commits to implementing the NBP's Code of Good Practice. The Letter of Understanding was signed by the Hyperion Treatment Plant Manager, who is responsible for the EMS and also the City's EMS Manual, which includes the NBP Code of Good Practice. The City's EMS manual was approved and adopted by the Mayor and Los Angeles City Council, thereby committing the City to conform to the Code requirements.



# 9 AUDIT: PUBLIC PARTICIPATION, COMMUNICATION AND PERFORMANCE REPORTING

# 9.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Fan, Steve Gilbert, Diane Kearney, Ray Mundine, Joseph Netto, Hiddo Wilson, Judith	Biosolids EMS Coordinator Operations Manager – HTP Biosolids Regulatory Liaison Assistant Director Plant Manager – HTP Plant Manager – TITP Director	LA City SAN
Interested Parties Stovall, Brian Hagar, Phillip Auditors Eschborn, Ralph Shaver, Jon	Supervisor- Buena Vista Recreation Apartment Association of Greater Lo Auditor Lead Auditor	

#### 9.2 Documents Reviewed

LA City Biosolids EMS Manual, Responsible Biosolids Management planning documents, LA City Public Inquiry List, "Hotline" inquiries and response records, LA City Website,

The NBP "Third Party Verification Auditor Guidance" (Chs 7 – Planning, 8 – Implementation and 9 – Measurement and Corrective Action) were used as a reference.

# 9.3 Process Description

# **Public Participation**

Information about LA City's Biosolids EMS was made publicly available and public input in planning their EMS was encouraged on their website and in a series of mailings to over 1100 interested parties. The Integrated Resource Planning Group, which includes members of the public and interested parties, was also consulted in planning the EMS. REBOC and the EMS Task Force considered the input received in developing EMS procedures.

The Bureau's website states that they intend to conform to NBP's Code of Good Practice and to have third party verification of EMS conformance with NBP requirements. Communication in the LA City biosolids brochure includes the "policy statement" and a description of the principles of the Code of Good Practice.

A "hotline" telephone at the Hyperion plant, a readily available and interactive website and various public meetings, including monthly meetings with the El Segundo Citizens Group, provide meaningful opportunities for interested parties to give comments about their biosolids activities. All comments received are investigated and responded to.



The Integrated Resource Planning (IRP) Group provides direct public involvement in advising the Bureau in setting annual Workplan goals and objectives. In addition these goals are based on input from City Council and derived from overall City of Los Angeles initiatives, such as neighborhood empowerment and environmental leadership. The "neighborhood empowerment" initiative is particularly consistent with the public participation approach of the EMS Elements and Code of Good Practice.

An interested party (representative from Apartment Assoc of Greater Los Angeles) noted in an interview with third party auditors that he feels the Bureau's public participation approach is proactive and that current issues relate to "quality of service, quality of water, appropriate treatment practices and economics". He estimated that about 60% of LA City's communication program is "worthwhile".

# **Communications Program**

LA City's "communications program", described in Element 9 of their EMS Manual, includes both internal and external communication about their biosolids management program and their EMS. Internal communication is performed through an intranet system called BEDRTS (Biosolids EMS Document and Recordkeeping Tracking System) that allows employees to access information about the EMS. Feedback capability is available.

External communication is provided through the Bureau of Sanitation website link that provides information about the Biosolids EMS and enables input and feedback. EMS information available through the website includes Biosolids Policy, applicable legal and other requirements and goals and objectives. Intentions to issue Biosolids Management Program Performance Reports and results of third party audits are also stated.

LA City has had a proactive public communication program for several years, as evidenced by a 1995 award for a public presentation "biosolids-a useful resource". Videos are available (English and Spanish) for information about biosolids. Facility tours are conducted for the public and information about the biosolids program is presented during these tours. More recently, a major "Conference Center" is being built by the Bureau in Kern County to assist in communicating to the public about biosolids and related issues. A "hotline" telephone at the Hyperion plant allows immediate public input to plant operators. Complaints from this "hotline" are investigated by the Operators and responded to rapidly.

The Bureau relies heavily on contractor communications in land application areas, however the roles and responsibilities for contractors have not been included in their written Communications Program. Although contractor roles and responsibilities for communications are defined in their contract, these have not been specifically mentioned in the Bureau's Communication Program and there is no evidence that contractors are required to establish and maintain regular monitoring and measurement procedures and practices for EMS communications activities.

An interested party (Buena Vista Recreation area near Green Acres Farm) stated that the area is referred to as the "sewer park" and has received over 500 complaints in the past year concerning odors and flies. Reportedly, he has expressed his views to the County Supervisor but is not getting a response and noted "this is the first time anybody asked me about these things", which may reflect a lack of proactive communication in this area.

#### Performance Reporting

A Biosolids Management Program Performance Report (BMPPR) has not been prepared and no performance reports can be accessed from the LA City website. LA City confirmed that this



is intentional since the required "at least annually" has only recently expired. Third party auditors consider that this omission does not fulfill the expectation for providing public information about biosolids performance and is inconsistent with the Bureau's commitment to public communication.

# 9.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

#### **Findings**

Nonconformance 03-06 (Minor)

Roles and responsibilities for contractors have not been included in the LA City Communications Program, as required by EMS Element 9. In addition, there is no evidence that contractors are required to establish and maintain regular monitoring and measurement procedures and practices for communications, as required by EMS Element 13.

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to verification at the next interim audit.

#### **Corrected Nonconformances**

Nonconformance #03-11 (Major)

A Biosolids Management Program Performance Report has not been prepared and has not been made available to interested parties, as required by EMS Elements 9 and 15.

LA City has corrected this nonconformance by preparing an "Annual Performance Report" and making it available through their website. KEMA's Lead Auditor has reviewed results of this action and verified that the nonconformance has been effectively corrected. Continuing conformance will be verified during the next interim audit (June 2004).



# 10 AUDIT: GOALS AND OBJECTIVES

#### 10.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Dojiri, Mas Fan, Steve Gilbert, Diane Kearney, Ray Minamidie, Traci Mundine, Joseph Wilson, Judith	Biosolids EMS Coordinator Division Manager – EMD Operations Manager – HTP Biosolids Regulatory Liaison Assistant Director Division Manager – RAD Plant Manager – HTP Director	LA City SAN
Auditors Eschborn, Ralph Shaver, Jon	Auditor Lead Auditor	KEMA KEMA

#### 10.2 Documents Reviewed

LA City Biosolids EMS Manual, Bureau Workplans (2002/3 and 2003/4), EMD and RAD Division Workplans (2003/4)

The NBP "Third Party Verification Auditor Guidance" (Ch 7 – Planning) was used as a reference.

#### 10.3 Process Description

#### Setting Goals and Objectives

A well-developed and implemented process is in place for setting goals and objectives and monitoring progress in achieving them. Overall goals for the Bureau are set by the Director in an annual "Workplan" with input from City Council, which, by definition, allows for public input. The Director establishes related annual objectives for the Bureau, with input from Senior Managers and the Integrated Resource Planning (IRP) Group that includes stakeholders, public representatives and other interested parties. Division Managers then develop annual Division Workplans with objectives that contribute to the Bureau objectives and action plans, including responsibilities, timing and necessary resources for achieving the objectives. Annual Division Workplans are reviewed and approved by the Director.

While this process is well-established, there is no reference in the EMS procedures, nor any practice in place, identifying how environmental impacts, legal and other requirements and best management practices are considered in setting Bureau or Division goals and objectives. Auditors infer that this input comes from the REBOC team (includes Director, Assistant Directors, Division Managers, project leaders), however it is not clear how this consideration is actually done.

Examples of actual biosolids management goals set by LA City in Bureau Workplans relating to the four "outcome" areas established by NBP are noted below.



#### **Environmental Performance**

Ensure conformance with all elements of the Environmental Management System for Biosolids.

Maintain 100% beneficial reuse of biosolids.

Work with regulators, environmental groups and other stakeholders to develop strategies for environmental protection and enhancement.

# Regulatory Compliance

Comply with all federal, state and local regulations.

Negotiate permits for the four wastewater treatment plants.

#### **Quality Practices**

Achieve 100% production of EQ biosolids at Terminal Island Treatment Plant and pathogen equivalency at Hyperion Treatment Plant.

# Public Acceptance

Analyze data (from Solid Resources PDAs) to identify opportunities for improved service to the public,

Manage biosolids in an environmentally sound, socially acceptable and cost-effective manner.

Objectives in Division Workplans and action plans for achieving them contribute to the above goals, with specific responsibilities and measurable performance criteria.

#### Monitoring and Measuring Performance

Progress in achieving each Division Workplan objective is tracked within the Division (by the Division Manager) and reviewed at least quarterly with the Bureau Director and/or Assistant Directors. If needed, corrective action is agreed and taken to achieve the objective. Quarterly reports and annual Management Reviews on progress against the annual Bureau Workplans are prepared, discussed and issued internally.

#### 10.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

# **Findings**

Nonconformance # 03-05 (Minor)

There is no specific reference in the EMS as to how environmental impacts, legal and other requirements and best management practices are considered in setting goals and objectives, as required by EMS Element 5.

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to corrective action verification during the next interim audit (by June 2004).



#### 11 AUDIT: COMPLIANCE WITH LEGAL & OTHER REQUIREMENTS

#### 11.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Gilbert, Diane Kearney, Ray Minamide,. Traci Mundine, Joseph Netto, Hiddo	Biosolids EMS Coordinator Biosolids Regulatory Liaison Assistant Director Division Manager – RAD Plant Manager – HTP Plant Manager – TITP	LA City SAN
<u>Auditors</u> Eschborn, Ralph Johnson, Trudy Shaver, Jon	Auditor Auditor Lead Auditor	KEMA KEMA KEMA

#### 11.2 Documents Reviewed

LA City Biosolids EMS Manual, compliance records, internal audit reports, Kern County Regulation of Biosolids Land Application (January 2003)

The NBP "Third Party Verification Auditor Guidance" (Ch 7 – Planning) was used as a reference.

#### 11.3 Process Description

# Identifying and Tracking Legal and Other Requirements

Legal and other requirements are listed in LA City EMS Manual, Element 4. This list is intended to be a complete, however during the Verification Audit, auditors determined that several applicable regulations were not included (for instance, AQMD permits, the California Environmental Quality Act, the California Health & Safety Code). LA City subsequently modified this list to identify all applicable environmental regulations and specific other requirements to which they must comply.

Legal requirements applicable to LA City's biosolids management, including Federal, State and local requirements are identified and tracked by the "Regulatory Affairs Division (RAD) using internet tracking services and by "review of newspapers and attendance at relevant meetings". Consultants and contractors are also asked to provide input on local issues and this input is summarized and issued internally. Proposed legislation is sent to affected Divisions for comment—a list is kept of who needs to be alerted. A quarterly report (Biosolids Summary) issued by RAD summarizes any legal developments.

The Plant Manager at each plant directs changes in operational controls required based on information received from RAD about changes in regulatory requirements. Contractors are expected to remain up to date on compliance requirements and are assisted in this by the Biosolids Inspector. Auditors confirmed that new ordinance requirements in Kern County for Class A biosolids (January 2003) are incorporated into the EMS and operational controls.



RAD also holds workshops to ensure that aspects of new regulations are communicated; EMD is informed in order to assess need for additional monitoring. Individual divisions are responsible for making updating EMS to ensure compliance. These communication efforts are documented in Biosolids Monthly Reports (prepared by Biosolids Management Group).

During the Verification Audit, auditors noted that specific other requirements (such as California Manual of Good Practice) were identified, however no process or procedure was available for identifying and tracking these requirements or incorporating them into the EMS. Subsequent to the Verification Audit, a procedure was developed for identifying, tracking and incorporating these requirements into the EMS.

# Monitoring and Measuring

The Environmental Monitoring Division (EMD) monitors daily operating data for compliance with legal requirements. Any potential noncompliances are referred to the Plant Manager for action. Review of practices found that monitoring and measurement and corrective actions are being done as stated.

The measurement data is stored on a computerized recordkeeping system (BEDRTS).

Contractors evaluate land application data to ensure their land application activities are in compliance with EPA regulations and local ordinances. Bureau of Sanitation Inspector periodically monitors each contractor operation to ensure appropriate measurements are being performed and action is taken to correct any noncompliances.

# Nonconformances: Preventive and Corrective Action

A robust practice is in place for identifying, investigating and tracking noncompliances. Whenever actual or potential noncompliances are identified, the Plant Manager is informed and takes immediate action to ensure the noncompliance is corrected and/or prevented. During the Verification Audit, auditors noted that the EMS did not reference the actual practices used. LA City subsequently modified their EMS procedures (Elements 13 and 14) to provide this documentation.

#### 11.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids.

#### **Corrected Nonconformances**

The following nonconformances were identified during the Verification Audit and subsequently corrected by LA City.

Nonconformance #03-04 (Minor)

The designated list used to identify applicable legal and other requirements is incomplete (i.e. does not include some key regulations), indicating other legal requirements are not being identified as required by EMS Element 4.



Nonconformance # 03-12 (Minor)

The EMS procedure for incorporating changes in legal and other requirements (EMS Manual, Element 4) does not state how other requirements are identified and tracked, nor how changes in these requirements are incorporated into the EMS, as required by EMS Element 4.

LA City corrected this nonconformances subsequent to the Third Party Verification Audit, by modifying procedures for identifying and tracking applicable legal and other requirements (EMS Manual, Element 4). Nonconformance 03-04 was corrected by including applicable permit requirements and California regulations for biosolids management program. Nonconformance 03-12 was corrected by stating procedure and responsibilities for identifying and tracking "other requirements" and for incorporating these into the EMS.

KEMA's Lead Auditor reviewed results of these actions and verified that the nonconformances have been effectively corrected. Continuing conformance will be verified during the next interim audit (June 2004).



#### 12 AUDIT: IDENTIFICATION OF CRITICAL CONTROL POINTS

#### 12.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

Name	Position/Department	Company
Cruz, Patricia	Biosolids EMS Coordinator	LA City SAN
Dafeta, Tim	Division Manager – IWMD	LA City SAN
Fan, Steve	Operations Manager – HTP	LA City SAN
Fortune, Steve	Principal Sanitary Engineer	LA City SAN
Gilbert, Diane	Biosolids Regulatory Liaison	LA City SAN
Kearney, Ray	Assistant Director	LA City SAN
Mundine, Joseph	Plant Manager – HTP	LA City SAN
Netto, Hiddo	Plant Manager – TITP	LA City SAN
Wilson, Judith	Director	LA City SAN
<u>Auditors</u>		
Eschborn, Ralph	Auditor	KEMA
Johnson, Trudy	Auditor	KEMA
Shaver, Jon	Lead Auditor	KEMA

#### 12.2 Documents Reviewed

LA City Biosolids EMS Manual (Element 3)

The NBP "Third Party Verification Auditor Guidance" (Ch 7 – Planning) was used as a reference.

#### 12.3 Process Description

#### Identification of Critical Control Points

LA City EMS Manual (Element 3) identifies critical control points for biosolids operations throughout the biosolids value chain, along with their associated environmental impacts. These critical control points are consistent with recognized authoritative sources (NBP Manual of Good Practice), except that "wastewater treatment" is intentionally excluded since, in LA City's view, downstream processes can control biosolids quality.

Auditors noted that the Griffith Park composting operation is included in the LA City Biosolids EMS, however has not been identified as a critical control point.

Environmental impacts are identified for each critical control point in LA City EMS Manual, Element 3 and associated operational controls are identified in Element 10. However, there is no indication (i.e. no procedure or records) describing how the environmental impacts are being considered in developing operational controls and operating personnel, including Plant Management, stated that the controls are based only on regulatory requirements. Environmental Impact Analyses are used in other areas (such as project and equipment designs), but have not been used in developing operational controls.



# Observation

The Auditors' position on the exclusion of critical control points for the wastewater treatment stage is that LA City is in the best position to judge the technical merits of this exclusion and whether it is consistent with their goals and objectives, environmental impacts and legal and other requirements. Technical expert auditors found the exclusion to be technically reasonable, since the stabilization / digestion process has steady feed rates and operates under control, allowing biosolids quality and environmental impacts to be controlled by downstream processes.

# 12.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

# **Findings**

Nonconformance # 03-03 (Minor)

The Griffith Park composting operation has not been identified as a critical control point, indicating that not all critical control points have been identified throughout the biosolids value chain, as required by EMS Element 3.

Nonconformance # 03-14 (Minor)

There are no records that link critical control points and associated potential environmental impacts with corresponding operational controls, as required by EMS Element 3 and Element 10.

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to corrective action verification during the next interim audit (by June 2004).



# 13 AUDIT: OPERATIONAL CONTROL OF CRITICAL CONTROL POINTS

# 13.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

Name	Position/Department	Company
Ahoraian, Esfendiar	Dewatering Supervisor – HTP	LA City SAN
Anderson, Jeff	Lead Operator (compost)	LA City SAN
Ayers, Lonnie	Permit & Enforcement Manager	LA City SAN
Blasman, Paul	Associate Sanitary Engineer	LA City SAN
Bohlmann, Doug	Operations Superintendent-HTP	LA City SAN
Cruz, Patricia	Biosolids EMS Coordinator	LA City SAN
Dafeta, Tim	Division Manager – IWMD	LA City SAN
Darland, Dennis	APC Operator - HTP	LA City SAN
Deleon, Alfredo	Dewatering Supervisor – HTP	LA City SAN
Fan, Steve	Operations Manager – HTP	LA City SAN
Fortune, Steve	Principal Sanitary Engineer	LA City SAN
Gilbert, Diane	Biosolids Regulatory Liaison	LA City SAN
Guillen, John	Gardener (Griffith Park)	LA City SAN
Gutierrez, Conrad	Operator (Griffith Park)	LA City SAN
Johnson, Russell	Digester Operator – HTP	LA City SAN
Khan, Abdul	Operations Supervisor-HTP	LA City SAN
Kearney, Ray	Assistant Director	LA City SAN
LaBeau, Pamela	Biosolids Inspector	LA City SAN
Motley, Harold	Digester Operator - HTP	LA City SAN
Mundine, Joseph	Plant Manager – HTP	LA City SAN
Netto, Hiddo	Plant Manager – TITP	LA City SAN
Ngo, No	Dewatering Supervisor – HTP	LA City SAN
Siplon, Jordan	Operations Supervisor - HTP	LA City SAN
Walters, Doug	Sanitary Engineer	LA City SAN
Wilson, Judith	Director	LA City SAN
Yohannes, Bellete	Chief Industrial Waste Inspector	LA City SAN
<u>Contractors</u>		
Stockton, Steve	Vice President	RBM
Torres, Louie	Site Manager	RBM
Claridge, Ronald	Field Manager	Synagro
Geyer, Craig	Operations Manager	Synagro
Jones, David	Operations Manager	Synagro
King, Rick	Sr Operations Manager	Synagro
Laffoon,Jim	Field Manager	Synagro
Manga, Ebou	Operations Manager	Synagro
O'Rourke, Mike	Technical Specialist	Synagro
<u>Auditors</u>		
Eschborn, Ralph	Auditor	KEMA
Johnson, Trudy	Auditor	KEMA
Shaver, Jon	Lead Auditor	KEMA



#### 13.2 Documents Reviewed

LA City Biosolids EMS Manual, Standard Operating Procedures, preventive maintenance records, SCADA records, Shift Instructions (Dewatering & Digestion)

The NBP "Third Party Verification Auditor Guidance" (Ch 7 – Planning) was used as a reference.

#### 13.3 Process Description

#### General

Operational control requirements for critical control points (as identified in EMS Manual, Element 3) are described in EMS Manual Element 10. Operations Supervisors, operators and plant management noted that operational controls developed for the critical control points were derived primarily to meet regulatory requirements or evolved through informal efforts to improve performance. There is no reference as to how environmental impacts are specifically considered in developing these controls (see Identification of Critical Control Points), despite the fact that Environmental Impact Report methodology is used elsewhere.

Standard operating procedures exist for each biosolids process operated and maintained by the Bureau. In addition, "station orders" are used to communicate daily work instructions and operating data to and between operators. A computerized system (SCADA) is used for process control and recording operating measurements. Operations personnel were observed to know and understand SOPs, Control Orders, Shift Instructions and the SCADA system.

Through reviews of actual practices at both HTP and TITP, Auditors verified that the controls used in each process area are consistent with best practices (National Manual of Good Practice).

# Individual Biosolids Processes

In addition to the above, auditors observed practices for controlling each biosolids production and use operation.

# Wastewater Pretreatment and Collection

An effective communication process is in place to notify plant operations about any changes in the expected wastewater input stream. Monitoring of industrial sites is done by Bureau Inspectors and any NOVs are monitored for effective correction. State-certified laboratories are used in determining results on samples. Operating procedures have been established for several years ("procedures don't change").

#### Wastewater Treatment and Solids Generation

Critical control points for this step in the biosolids value chain have not been identified. Technical Managers feel that biosolids quality can be effectively controlled by downstream activities

#### Solids Stabilization, Conditioning and Handling

The stabilization process operates with steady feed to digesters and was observed to be under control, which supports Bureau's exclusion of wastewater treatment as a critical control point. When needed, corrective actions are quickly implemented to ensure continuing operational control. For instance, unusually strong odor caused by sulfur compounds was corrected by lowering temperatures.



# Solids storage and transportation

Storage and loading uses a computerized scale / weigh ticket / checklist system that ensures overweight trucks are diverted to an off-loading area. All in-weight trucks are inspected for tarping, leaks, cleanliness, and roadworthiness before being released.

# Biosolids use and disposition

Biosolids use applications include composting and land application. Composting (Griffith Park) is operated by LA City, however this use is not noted in the EMS Manual (see Audit – Identification of Critical Control Points). Land application operations (Kern County CA and Buckeye AZ) are performed by contractors.

The Griffith Park composting operation was observed to operate under control using established operating practices, batch records and control of materials for outgoing shipment.

Contractors at both land application sites were observed to operate under control. Operating procedures are in place and are being followed. Contractor personnel were able to describe operational controls that are consistent with best practices, such as approval of pre-application agronomic rate calculations, incorporation within 6 hours. As with other Bureau biosolids processes, no record directly linking operational controls with environmental impacts are available (see Audit – Identification of Critical Control Points).

#### Maintenance

A computerized maintenance system is used as a preventive and predictive maintenance tool. This robust system includes "smart numbering", routing and maintenance procedures. Equipment maintenance records are being maintained.

# **Monitoring and Measurement**

Monitoring requirements at identified critical control points are listed in EMS Manual Element 13. There is no reference in this list to monitoring requirements for the "hauling / transportation" control point, however auditors see this as a documentation issue since the transportation activities were observed to be under control. (see Documentation Review).

Contractors are required to take specific measurements (mainly to ensure compliance) and maintain records of operating data. Bureau of Sanitation Inspector periodically monitors each contractor operation to ensure appropriate measurements are being taken and initiate action to correct any deficiencies. During the third party audit, both contractors audited were able to produce records demonstrating compliance with legal requirements for land application.

#### 13.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids.

(see Audit – Identification of Critical Control Points)



#### 14 AUDIT: ROLES / RESPONSIBILITIES AND JOB COMPETENCY

#### 14.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

Name	Position/Department	Company
Coats, Frank	Operator Trainer	LA City SAN
Cuaresma, Larry	Asst Div Mgr – HRDD	LA City SAN
Fortune, Steve	Principal Sanitary Engineer	LA City SAN
Gilbert, Diane	Biosolids Regulatory Liaison	LA City SAN
Guillen, John	Gardener (Griffith Park)	LA City SAN
Kearney, Ray	Assistant Director	LA City SAN
Mundine, Joseph	Plant Manager – HTP	LA City SAN
Netto, Hiddo	Plant Manager – TITP	LA City SAN
Pacu, Joe	Senior Operator – HTP	LA City SAN
Contractors		
Stockton, Steve	Vice President	RBM
King, Rick	Sr Operations Manager	Synagro
Auditors	·	
Eschborn, Ralph	Auditor	KEMA
Shaver, Jon	Lead Auditor	KEMA

#### 14.2 Documents Reviewed

LA City Biosolids EMS Manual, Job Descriptions, Operator Certificates, EMS Awareness Training Program.

The NBP "Third Party Verification Auditor Guidance" (Ch 8 – Implementation) was used as a reference.

#### 14.3 Process Description

#### Role and Responsibilities

A Job description exists for every position in each Division and is accessible via the BEDRTS system. In some cases specific job descriptions could not be located by HRDD personnel, however Auditors confirmed these are available. Performance reviews are conducted to review competency and determine additional or updated job qualifications needed.

The Hyperion Treatment Plant Manager has been appointed with overall responsibility for ensuring EMS is implemented and maintained and stated that he feels sufficient resources are available to effectively implement and maintain the EMS. Two Division Managers also confirmed that they have sufficient resources to implement EMS in their areas. Changes in resources occur, if needed, through annual budgeting process.

Service Agreements ("Contracts") with the principal biosolids transportation and land application contractors specify the roles and responsibilities of that contractor.



# **Training**

All Operators must be certified by State of California, with re-certification every 3 years. Supervisors and a trainer, using "qualification cards" for specific tasks, do specific LA City evaluations of job competency for all operations personnel. Operators are re-trained if Supervisors feel it is necessary and if they are newly assigned to an area / functional task.

Personnel in each Division designated by Division Manager have received EMS Awareness training (including policy) and must pass a test to verify understanding. This training discusses critical control points (i.e. biosolids value chain), the importance of control and how various positions relate to these points. Division Managers confirmed that new / reassigned personnel would receive EMS awareness training applicable to their roles.

Records of completed training are kept electronically by HRDD and can be referenced by individual or by training program.

Although not specifically mentioned in contracts, contractors are required to conduct their own training as part of requirements to conform to LA City EMS requirements. Internal audit (3/13/03) indicate that the effectiveness of contractor training is being monitored. Review by third party auditors confirmed that contractors have in-house training programs that rely effectively on "on-the-job" training. Truck driver training on loading and spill response procedures is being done, as evidenced by observing trucks and interviewing a sample of drivers regarding spill response procedures and having them demonstrate spill response equipment.

# 14.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids.

Findings - None



#### 15 AUDIT: EMERGENCY PREPAREDNESS AND RESPONSE

#### 15.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Bohlmann, Doug Cruz, Patricia Dafeta, Tim Fortune, Steve Gilbert, Diane Mundine, Joseph Netto, Hiddo Ngo, Ho	Operations Superintendent-HTP Biosolids EMS Coordinator Division Manager – IWMD Principal Sanitary Engineer Biosolids Regulatory Liaison Plant Manager – HTP Plant Manager – TITP Dewatering Supervisor – HTP	LA City SAN
Contractors Stockton, Steve Manga, Ebou Auditors Eschborn, Ralph Shaver, Jon	Vice President Operations Manager Auditor Lead Auditor	RBM Synagro KEMA KEMA

#### 15.2 Documents Reviewed

Emergency Response Plans – IWMD, HTP, TITP, EMS Manual

The NBP "Third Party Verification Auditor Guidance" (Ch 8 – Implementation) was used as a reference.

# 15.3 Process Description

Emergency Response Plans (referred to as "Business Plans") at HTP, TITP and IWMD include biosolids activities. The HTP, TITP and IWMD Emergency Response Plans have not been reviewed in the past 2 years as required by State law and parts of the Plans are out of date (such as building layouts and other "draft" references that are over a year old). No evidence could be found that any of these Emergency Plans have been tested for effectiveness in the past two years and several personnel at HTP and TITP stated, "no emergency drills have been conducted in recent memory".

Response equipment is located in each control room at biosolids production facilities and at application site offices and on trucks transporting biosolids. An emergency response vehicle is available onsite at HTP. Some emergency response equipment in HTP operating areas (such as SCBA gear) was found to have not been inspected or tested in over a year.

Emergency Response procedures for chlorine were posted in the Dewatering Control Room at TITP. Chlorine has not been used on the site for several years.

Contractors are required by their contracts to maintain emergency preparedness and response plans and equipment. Emergency response procedures exist at both contractor sites audited. Review with contractor personnel indicated spill response procedures are in place and



understood. A truck driver was able to provide the emergency response plan and related equipment upon request.

# 15.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

#### **Findings**

Nonconformance # 03-08 (Minor)

Emergency Preparedness and Response Plans (i.e. Business Plans) and equipment are not being maintained as required and the effectiveness of these preparations is not being tested as required, indicating that Emergency Preparedness and Response Plans are not being maintained, as required by EMS Element 11.

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to corrective action verification during the next interim audit (by June 2004).



# 16 AUDIT DISCUSSION: INTERNAL AUDITS

#### 16.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Gilbert, Diane Kearney, Ray LeBeau, Pamela Mundine, Joseph	Biosolids EMS Coordinator Biosolids Regulatory Liaison Assistant Director Biosolids Inspector Plant Manager – HTP	LA City SAN LA City SAN LA City SAN LA City SAN LA City SAN
Auditors Eschborn, Ralph Shaver, Jon	Auditor Lead Auditor	KEMA KEMA

#### 16.2 Documents Reviewed

EMS Manual, Internal Audit Report (3/13/03), Corrective Action Forms

The NBP "Third Party Verification Auditor Guidance" (Ch 9 – Measurement and Corrective Action) was used as a reference.

#### 16.3 Process Description

LA City's internal audit program is described in the EMS Manual, Section 16. The internal audit process includes the purpose, scope, frequency and methodology for audits and a description of audit events and how associated responsibilities are assigned. Auditors used and their qualifications are identified in the audit process scope and in audit reports.

Review of the internal EMS audit report (dated 3/13/03) confirmed that the audit covered the entire Biosolids EMS for conformance with program requirements. Although intended (per audit scope), the internal audit report indicates that internal audits are not being used to determine if LA City is effectively meeting its biosolids policy commitments, nor did it evaluate performance relative to biosolids goals, objectives and performance measures, nor did it evaluate biosolids activities (specifically communications) performed by contractors. The internal audit report also did not provide objective evidence supporting conclusions or nonconformances identified.

Audit reports are issued within 2 months of completing the audit and submitted to the Management Review Team (MRT) and discussed during management reviews, including approval of EMS changes resulting from internal audits and assessment of need for changes in policy, goals and objectives. The report identifies findings, including nonconformances, but does not describe corrective actions or follow-up required. The HTP Plant Manager (member of MRT) stated that internal audit results are reported in a satisfactory format. Corrective action plans for identified nonconformances are developed with the appropriate Division Manager, however third party auditors could not confirm this is being done.



# 16.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

# **Findings**

Nonconformance # 03-07 (Minor)

Internal audits do not determine whether LA City is effectively meeting its biosolids policy or evaluate performance relative to biosolids goals, objectives and performance measures or evaluate all biosolids activities (such as communications) performed by contractors, as required by EMS Element 16.

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to corrective action verification during the next interim audit (by June 2004).



#### 17 AUDIT: NONCONFORMANCES: PREVENTIVE AND CORRECTIVE ACTION

### 17.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Dafeta, Tim Gilbert, Diane Kearney. Ray LeBeau, Pamela Mundine, Joseph	Biosolids EMS Coordinator Division Manager – IWMD Biosolids Regulatory Liaison Assistant Director Biosolids Inspector Plant Manager – HTP	LA City SAN
Contractors Stockton, Steve King, Rich	Vice President Sr. Operations Manager	RBM Synagro
Auditors Eschborn, Ralph Shaver, Jon	Auditor Lead Auditor	KEMA KEMA

#### 17.2 Documents Reviewed

EMS Manual, Internal Audit Report (3/13/03), Corrective Action Forms

The NBP "Third Party Verification Auditor Guidance" (Ch 9 – Measurement and Corrective Action) was used as a reference.

### 17.3 Process Description

#### Identifying and correcting EMS nonconformances

Procedures for identifying, investigating and correcting EMS nonconformances stated in EMS Manual Element 14 are being followed when EMS nonconformances are found during audits. The procedures do not include requirements for investigating nonconformances, nor for identifying root cause of the nonconformance.

Internal audits are used to identify EMS nonconformances. Details of any nonconformances found are described on a "Nonconformance Preventative and Corrective Action Report Form" that is included in the audit report. This form is also used to identify actions for correcting / preventing the identified nonconformance(s), including responsibilities and timing for the action(s). Corrective actions are tracked via the Nonconformance Tracking Log, however there is no evidence that corrective / preventive actions taken have been assessed to verify that the nonconformance has been eliminated (i.e. action completed).

### Identifying and correcting noncompliances

The procedure in Element 14 does not mention how noncompliances are identified, investigated and corrected, however third party auditors confirmed that effective practices are in place (see Audit Discussion – Legal and Other Requirements).



# 17.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

#### **Findings**

Nonconformance # 03-10 (Minor)

Nonconformance correction and prevention procedures do not describe how investigation is done or how root cause(s) are identified, nor do they include procedures for verifying completion of corrective action, as required by EMS Element 14

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to corrective action verification during the next interim audit (by June 2004).

## **Corrected Nonconformances**

Nonconformance # 03-13 (Minor)

There are no procedures documented in the EMS Manual for investigating and correcting noncompliances, as required by EMS Element 14.

LA City corrected these nonconformances subsequent to the Third Party Verification Audit, by modifying the procedures for identifying, investigating and correcting noncompliances in EMS Element 13.

# 17.5 LA City Comments

The following comments were provided by LA City in response to the observations noted above.

# Nonconformances: Preventative and Corrective Action

The procedures for addressing noncompliances are not required by the NBP EMS guidance manual if the agency has nonconformance procedures that address the entire EMS, which include legal requirements. (See comments in Section 8 of this report).



#### 18 AUDIT: DOCUMENT CONTROL AND RECORDKEEPING

### 18.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Dafeta, Tim Fortune, Steve Gilbert, Diane Mundine, Joseph	Biosolids EMS Coordinator Division Manager – IWMD Principal Sanitary Engineer Biosolids Regulatory Liaison Plant Manager – HTP	LA City SAN LA City SAN LA City SAN LA City SAN LA City SAN
<u>Contractors</u> Stockton, Steve Manga, Ebou	Vice President Operations Manager	RBM Synagro
<u>Auditors</u> Eschborn, Ralph Shaver, Jon	Auditor Lead Auditor	KEMA KEMA

### 18.2 Documents Reviewed

EMS Manual, Internal Audit Report (March 03), Shift Instructions, Emergency Response Plans (IWMD, HTP & TITP), RBM operating procedures, various Synagro documents and records

The NBP "Third Party Verification Auditor Guidance" (Ch 8 – Implementation) was used as a reference.

### 18.3 Process Description

The Bureau of Sanitation Biosolids EMS is described in their EMS Manual. EMS documents are located in the BEDRTS system and are accessible to any employee via intranet.

The documents and records control procedure in Element 12 says that each Division "has their own document control system" and is responsible for document creation / revision, but does not specifically identify the system or how control is done. That responsibility is inconsistent with references to "responsible agency / person" for specific documentation in each EMS procedure. Vendors are required by contract to identify and control EMS documents and records.

"Documentation" is noted in each EMS procedure and is also listed in the documents and records control procedure in Element 12. The list in Element 12 includes a mixture of documents and records and is inconsistent with documentation in the various EMS procedures. The presumption is that the "documentation" in Element 12 lists the documents and records requiring control, although there is no reference as to what documents and records actually do require control. This list omits documents that normally require control, such as operating procedures, Emergency Response Plans and contracts with contractors. Review of these documents revealed that several are not being reviewed as required and change control practices are not consistently being used.

The procedure in Element 12 also states that "document revision system included in EMS elements" is to be followed, however that system is not stated in any of the EMS procedures. It



also states that EMS documents are maintained on the BEDRTS system, however there is no reference as to how that system is controlled.

The list of documentation in Element 12 includes several "records" (such as analysis data), however there is no mention of records retention requirements in the procedures. Review of contractor records at both locations visited showed that the records necessary for regulatory compliance are being kept.

## 18.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

# <u>Findings</u>

Nonconformance # 03-15 (Minor)

The document control and recordkeeping process identified in EMS Manual Element 12 does not address review / revision of documents, control of electronic storage methods and retention / disposal for records, as required by EMS Element 12. Also control of documents and records retained by contractors has not been addressed.

LA City has developed a plan to correct this nonconformance. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to corrective action verification during the next interim audit (by June 2004).

# **Corrected Nonconformances**

Nonconformance #03-09 (Major)

There is inconsistent identification of EMS documents and records requiring control and of procedures for controlling EMS documents and records. Some important documents are not being controlled. Contractors are not clear about EMS documentation control requirements. Records retention procedures are not established. This series of minor nonconformances is evidence that document control and recordkeeping procedures have not been established, as required by EMS Element 12.

LA City corrected these nonconformances subsequent to the Verification Audit, by modifying document control and recordkeeping procedures in EMS Manual, Element 12). KEMA's Lead Auditor reviewed results of these actions and verified that the nonconformances have been effectively corrected.

#### 18.5 LA City Comments

The following comments were provided by LA City in response to the observations noted above.

The City identified in each element of its EMS manual, a Documentation and Responsibility Table. The NBP EMS Guidance Manual Chapter 8, Element 12, Page 8-70, Minimum Conformance Requirements 12:1 states: "Establish and maintain documentation, documents and records for the biosolids management program including the 17 elements of it EMS." The Documentation and Responsibility Tables are documents, records, reports, or meetings that support conformance with each EMS element. The documentation and responsible



agency/person is consistent throughout the EMS manual. The documentation listed in each Element supports that Element. Some documentation is used to support more than one Element and there could be a different responsible agency/person identified. For example, Element 4, Legal and other Requirements, the Regulatory Affairs Division is responsible for tracking the regulations but under Element 13, Monitoring and Measurement, for the same legal requirement the treatment plant and/or the Environmental Monitoring Division would be responsible for monitoring and measurement requirements to ensure compliance and mitigation of environmental impacts.

The documentation listed in Element 12, Documentation and Responsibility Table are documents that are controlled by each responsible agency and not by the EMS manual. Documents listed in Element 1 of the City's EMS manual are controlled by the EMS document control procedures listed in Element 12. Element 1 also identifies who is responsible for maintaining the EMS manual and EMS documentation.



#### 19 AUDIT: MANAGEMENT REVIEW OF PERFORMANCE

### 19.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Gilbert, Diane Kearney, Ray Mundine, Joseph Wilson, Judith	Biosolids EMS Coordinator Biosolids Regulatory Liaison Assistant Director Plant Manager – HTP Director	LA City SAN LA City SAN LA City SAN LA City SAN LA City SAN
<u>Auditors</u> Eschborn, Ralph Shaver, Jon	Auditor Lead Auditor	KEMA KEMA

#### 19.2 Documents Reviewed

EMS Manual, Management Review Report (date 3/18/03)

The NBP "Third Party Verification Auditor Guidance" (Ch 10 – Management Review) was used as a reference.

### 19.3 Process Description

The LA City EMS "Management Review Team" (MRT) includes the Director, Assistant Directors, each Division Manager and the EMS Coordinator. Many of these individuals also are members of the REBOC Team that provides management direction on issues concerning biosolids reuse, including public input consideration, an effective structure for performing reviews of EMS suitability, adequacy and effectiveness.

Requirements for the MRT in conducting management reviews are noted in LA City EMS Manual, Element 17 and include schedule and scope for the reviews, responsibilities and topics to be discussed, including need for changes in the EMS. The EMS Coordinator has been assigned (per EMS Manual, Element 17) to schedule the management reviews.

Review of management review records confirmed that these reviews are consistent with the requirements stated in the EMS Manual. The most recent management review meeting (record dated 3/18/03) included discussion of EMS performance, effectiveness of policy, goals and objectives, public participation and operational controls and follow-up actions to be taken based on the review.

### 19.4 Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids.

Findings - None



### 20 AUDIT: CONTRACTOR CONTROL

#### 20.1Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Gilbert, Diane Kearney, Ray Mundine, Joseph	Biosolids EMS Coordinator Biosolids Regulatory Liaison Assistant Director Plant Manager – HTP	LA City SAN LA City SAN LA City SAN LA City SAN
<u>Contractors</u> Manga, Ebou McGanigal, Brent Stockton, Steve Torres, Louie	Project Manager Senior Operations Manager Vice President Farm Manager	Synagro Synagro RBM RBM
<u>Auditors</u> Eschborn, Ralph Shaver, Jon	Auditor Lead Auditor	KEMA KEMA

#### 20.2Documents Reviewed

EMS Manual, Internal Audit Reports (contractor audits), Synagro records (Buckeye AZ), Responsible Biosolids Management Records (Kern County, CA), Kern County Regulation of Biosolids Land Application (January 2003)

The NBP "Auditor Guidance" was used as a reference.

#### 20.3Process Description

Biosolids management activities assigned to and performed by contractors are described in the EMS Manual and include transportation and land application. These activities are covered by contract agreement with the Bureau. The contracts are maintained up to date.

EMS requirements for contractors, including policy commitments made by the Bureau, have been communicated in meetings and orientation training sessions with each contractor and are noted in contract amendments. The Bureau's "Communication Program" does not, however, note the roles and responsibilities contractors have for public communication.

Contractor training programs for their own employees are primarily done "on the job". Bureau Inspectors assess the effectiveness of the training. Internal audits have not yet been used to assess contractor EMS performance other than superficially. For instance, communications effectiveness is not included in the latest internal EMS audit (3/13/03).

The Bureau also requires contractors to maintain emergency preparedness programs. Review of the programs in place at the Kern County and Buckeye sites showed these emergency plans do exist (primarily for responding to spills) and that personnel, including truck drivers, are aware of the procedures and that related equipment is available.

Review of contractor records at both locations visited showed that the records necessary for regulatory compliance are being kept. Some documents that require control (such as



Emergency Procedures) do not show revision dates or approvals and contractors were uncertain about their EMS document control requirements.

Contractors are required by the Bureau to maintain operations compliant with regulations and under control and to monitor and measure operations and keep records of operating data that demonstrates this control. Both contractors audited by third party auditors produced records demonstrating compliance with legal requirements for land application. A Bureau inspector inspects contractor operations at least quarterly to verify that records are available and demonstrate compliance and control. This inspector is authorized to request specific action to correct any deficiencies and there is ample evidence that this is being done and that the effectiveness of the action is being verified in follow-up inspections.

# 20.4Audit Result and Findings

<u>Audit Result</u> - The process described above was found to conform with applicable expectations and requirements of the NBP EMS for Biosolids, except as noted below:

<u>Findings</u> (each of these findings has been reported in the applicable process and are included at this point as a reference)

Nonconformance # 03-06 (Minor)

Roles and responsibilities for contractors have not been included in the LA City Communications Program, as required by EMS Element 9. In addition, there is no evidence that contractors are required to establish and maintain regular monitoring and measurement procedures and practices for communications, as required by EMS Element 13.

Nonconformance #03-07

Internal audits do not evaluate all biosolids activities (such as communications) performed by contractors.

LA City has developed plans to correct these nonconformances. KEMA's Lead Auditor has reviewed this plan and found it to be acceptable, subject to corrective action verification during the next interim audit (by June 2004).



#### 21 EXAMINATION OF OUTCOMES

The Third Party Verification Audit included an examination of the outcomes being achieved by LA City in using their biosolids EMS. These outcomes were examined in four specific areas, as required by the NBP "Third Party Verification Auditor Guidance", including:

- Environmental Performance
- Regulatory Compliance
- Quality Biosolids Practices
- Public Acceptance

# 21.1 Participants

The following employees were involved. Where necessary, other employees provided additional explanations.

<u>Name</u>	Position/Department	<u>Company</u>
Cruz, Patricia Gilbert, Diane Kearney, Ray Mundine, Joseph	Biosolids EMS Coordinator Biosolids Regulatory Liaison Assistant Director Plant Manager – HTP	LA City SAN LA City SAN LA City SAN LA City SAN
<u>Auditors</u> Eschborn, Ralph Shaver, Jon	Auditor Lead Auditor	KEMA KEMA

#### 21.2 EMS Outcomes – Environmental Performance

In implementing it's EMS, LA City identified critical control points throughout its biosolids value chain and environmental impacts associated with each control point. An intentional decision was made to exclude wastewater treatment as a control point since biosolids quality and environmental impacts can be adequately controlled by maintaining stability in downstream processes. The Griffith Park composting site was not included as a critical control point (see nonconformance 03-03) and an action plan has been prepared to correct this omission.

Standard operating procedures are established at each critical control point in the biosolids value chain and state of the art software (SCADA) is used for process control and recording operating measurements. The operating procedures being used are based on regulatory compliance needs or have evolved through informal efforts to improve performance and there is no evidence that environmental impacts were specifically considered in developing these procedures. The EMS has made the procedures and operating records electronically available to employees. Third Party Auditors confirmed that operators understand the installed operational controls and that actual practices follow the prescribed procedures.

The EMS has also established monitoring requirements at each identified critical control point (per EMS Manual, Element 13). The Environmental Monitoring Division measures operating data at biosolids production points and compares this data to regulatory requirements. Any real or potential noncompliances are referred to the Plant Manager for action. City Inspectors periodically monitor each contractor operation to ensure appropriate land application



measurements are being performed and that contractors take action to correct any noncompliances.

The EMS includes a well-developed process for setting goals and objectives both at the Bureau level and within each Division. Specific objectives are based on City-wide goals for environmental leadership that includes opportunities for public input both through City Council and through the Integrated Resource Planning Group that includes public participation. A knowledgeable team of LA City managers (REBOC) ensures environmental impacts, legal and other requirements and best management practices are considered in setting Bureau goals and objectives. Progress in achieving objectives is tracked by Division Managers and reviewed quarterly with senior management. There is no specific reference in the EMS as to how environmental impacts, legal and other requirements and best management practices are considered in setting goals and objectives, as required by EMS Element 5. (see nonconformance 03-05)

The Bureau uses a well-developed and implemented internal audit program for assessing EMS performance and identifying nonconformances. Internal audit results show these audits cover the entire EMS for conformance with biosolids program requirements, with the exception of regulatory noncompliance(s).

A Management Review Team (MRT) that includes the Director and other senior managers conducts management reviews of EMS performance at least annually. Many MRT members are also members of the REBOC Team that provides management direction on issues concerning biosolids re-use, consideration of public input and reviews of the suitability, adequacy and effectiveness of the Biosolids EMS. The most recent management review (recorded 3/18/03) included discussion of EMS performance and effectiveness and opportunities for continual improvement in biosolids program activities.

#### Continual Improvement – Environmental Performance

LA City's biosolids management system has enabled them to make environmental performance improvements. Auditors confirmed that the following improvements have occurred in recent months, or that plans are in place to cause the improvement to occur in the near future:

- Procedures for establishing, revising and tracking goals and objectives (Workplans) have been revised.
- A task force has been formed to address short and long-term odor reduction.
- Control of contractors has been recognized as an important factor and LA City has communicated specific performance requirements to contractors, particularly with respect to documenting and following operating procedures and reporting results to LA City. Documents are now received and recorded electronically.
- Reviews and updates of standard operating procedures are now being conducted, as prescribed in the EMS procedures.

In addition, LA City's commitment to continually improving their regulatory compliance is evidenced by planned modifications in their EMS processes based on Third Party Verification Audit results, including:

 Modification of process for considering environmental impacts in setting goals and objectives (corrective action plan for Nonconformance 03-05).



Expansion of internal audit program to include determination of whether LA City is effectively
meeting its biosolids policy, evaluation of performance relative to biosolids goals, objectives
and performance measures and assessment of biosolids activities (such as
communications) performed by contractors (corrective action plan for Nonconformance 0307).

# <u>Auditor Comments</u> (offered for consideration)

- Excluding wastewater treatment as a critical control point is acceptable as a quality practice, however this exclusion means the EMS is not being used to control environmental impacts at the wastewater treatment process. No deficiencies were found in this area, but it does offer an opportunity for LA City to expand the applicability of their EMS.
- Standard operating procedures have primarily been developed to address regulatory compliance issues. While this can, by extension, allow environmental impacts to be controlled, procedures should be reviewed and assessed based on direct control of identified environmental impacts.
- The internal audit report does not provide evidence supporting conclusions or nonconformances identified, corrective actions are being implemented and tracked.
- The 2002 Biosolids Management and EMS Performance Report does not specifically address contractor performance. It does describe LA City's contractor control activities, but it would be preferable to include a summary of actual contractor performance details.

## 21.3 EMS Outcomes – Regulatory Compliance

The Bureau has identified legal and other requirements that apply to its biosolids management activities in the EMS Manual. A procedure is established for identifying and tracking legal requirements through the Regulatory Affairs Division (RAD) and incorporating changes into operations through plant management. At the time of the Verification Audit, these procedures did not state how "other requirements" are identified and tracked. This omission has subsequently been corrected (action plan approved, results of action to be verified during next interim audit).

The process for setting biosolids goals and objectives involves senior Bureau personnel and interested parties (through REBOC and IRP) that allows for consideration of legal and other requirements in setting annual Workplan goals and objectives.

Auditor review of operational controls (operating procedures, maintenance and software controls) showed that these are effective in ensuring compliance with legal requirements. Operators and Supervisors confirmed that the controls are established with that intention. As an example, Operators lowered temperatures, as prescribed in procedures, to quickly abate an instance of high odor generated during digester testing.

Monitoring requirements at identified critical control points are established in the EMS Manual. The Environmental Monitoring Division (EMD) measures operating data at biosolids production points and compares this data to regulatory requirements. Any actual or potential noncompliances identified are referred to the Plant Manager for action. At land application sites, contractors measure application data to ensure compliance and Bureau inspectors periodically monitor each contractor operation to ensure compliance and initiate action needed



to correct any noncompliances. These procedures were not documented in the EMS at the time of the Third Party Verification Audit, however they have subsequently been added to the EMS Manual (action plan approved, results of action to be verified during next interim audit).

# <u>Continual Improvement – Regulatory Compliance</u>

LA City's biosolids management system has enabled them to make regulatory compliance improvements. Auditors confirmed that the following improvements have occurred in recent months, or that plans are in place to cause the improvement to occur in the near future:

- Procedures have been implemented and are being followed to ensure Biosolids applied in Kern County meet local ordinance requirements for EQ biosolids. Onsite testing (HTP) and contractor arrangements have been updated to include this legal requirement.
- Contractor inspections have been expanded to ensure compliance with legal and other requirements related to biosolids transportation and application.

In addition, LA City's commitment to continually improving their regulatory compliance is evidenced by planned modifications in their EMS processes based on Third Party Verification Audit results, including:

- Modification of process for considering legal and other requirements in setting goals and objectives (corrective action plan for Nonconformance 03-05).
- Documentation of procedure for identifying and tracking other requirements and incorporating changes into the EMS (corrective action plan for Nonconformance 03-12)
- Documentation of practices used to identify, track and correct noncompliances (corrective action plan for Nonconformance 03-13).

#### Auditor Comments (offered for consideration)

- The process for identifying and tracking "other requirements" is not well defined, since it
  has only recently been formalized. By focusing on this subject, LA City can expand their
  own EMS requirements and differentiate these from regulatory requirements.
- LA City contractor inspections at present do not address EMS conformance. Including EMS conformance in these inspections can help contractors understand and follow their responsibilities.

### 21.4 EMS Outcomes – Quality Biosolids Practices

LA City has identified critical control points throughout their biosolids value chain and operational controls at these control points that are consistent with the National Manual of Good Practice. Discussions with key operations personnel indicated that the stated control points and operational controls reflect actual practices and are in place where stated. Observation of operating practices found these to be consistent with National Manual of Good Practice.

The list of critical control points identified in EMS Manual, Element 3 intentionally excludes wastewater treatment since this step is not considered by the Bureau to have any irreversible effect on biosolids quality. In examining operations, auditors determined that a robust stabilization / digestion process exists with steady feed rates, which provides reasonable technical rationale to support exclusion of wastewater treatment.



#### Continual Improvement – Quality Biosolids Practices

LA City's biosolids management system has enabled them to continually improve their biosolids practices. Auditors confirmed that the following improvements have occurred in recent months, or that plans are in place to cause the improvement to occur in the near future:

- All biosolids produced at HTP are verified to meet EQ Biosolids requirements.
- Progress is being made to improve capability at TITP to enable Class A biosolids production.
- The EMS has been modified to include the Griffith Park composting site as a critical control
  point and plans are in place to expand the EMS scope to include this biosolids use and
  public communication operation.

In addition, LA City's commitment to continually improving their biosolids practices is evidenced by planned modifications in their EMS processes based on Third Party Verification Audit results, including:

- Identifying composting operation as a critical control point (corrective action plan for Nonconformance 03-03).
- Modification of process for setting goals and objectives to include consideration of best practices (corrective action plan for Nonconformance 03-05)
- Documentation of how critical control points and associated potential environmental impacts are linked to corresponding operational controls (corrective action plan for Nonconformance 03-14).

### 21.5 EMS Outcomes – Public Acceptance

LA City provides meaningful opportunities for the public to express their views and perspectives about biosolids activities through the Integrated Resource Planning (IRP) Group, which includes members from community groups and other interested parties, monthly meetings with the El Segundo Citizens Group, a "hotline" telephone that enables the public to immediately input inquiries or concerns and through their website that has feedback capability.

The Bureau's process for setting goals and objectives includes guidance from LA City Council, which represents public interests. The process also allows for public input from through the IRP Group.

An interested party (representative from Apartment Assoc of Greater Los Angeles) stated that he feels the Bureau's public communication approach is proactive. An interested party at a public recreation area near the Kern County applications site was not as positive, stating that the park is referred to as the "sewer park" and that the City has not adequately responded to the many complaints the park has received in the past year about odors and flies.

LA City relies on contractor communications in land application areas, however the roles and responsibilities for contractors have not been included in the Bureau's Communications Program. Also, there is no evidence that contractors are required to establish and maintain regular monitoring and measurement procedures and practices for communications.



# Continual Improvement - Public Acceptance

At the time of the Verification Audit, LA City had not prepared the required Biosolids Management Program Performance Report. Subsequently this report was prepared for year 2002 and posted on the LA City website.

In addition, LA City has initiated, or plans to implement, the following actions to improve public acceptance of their practices:

- Constructing conference center in Ken County (scheduled opening January 2004). This
  center will be used to conduct workshops, hold special interest meetings and inform the
  public about biosolids and the LA City EMS.
- Creation of a joint public communication program with contractors.
- Expanded use of existing public outreach methods (such as videos, biosolids brochures and plant tours). Public feedback has indicated a keen interest in these communication aids.

In addition, LA City's commitment to continually improving their biosolids practices is evidenced by planned modifications in their EMS processes based on Third Party Verification Audit results, including:

 Inclusion of contractor roles and responsibilities in the LA City Biosolids EMS Communications Program and expansion of this Program to include monitoring / measurement of contractor performance (corrective action plan for Nonconformance 03-06).



# **END OF REPORT**

Date Written: August 31, 2003

For further Information, contact:

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