



**National Biosolids Partnership
Audit Report**

Biosolids EMS Interim Audit

**Louisville & Jefferson County Metropolitan Sewer District
Louisville, KY**

Audit Dates: November 11, 2010, December 11, 2010

Audit Conducted By:

KEMA-Registered Quality, Inc. (Chalfont, PA)

Auditor: Mr. Jon Shaver, Biosolids EMS Lead Auditor

Report Written By: Jon Shaver, Biosolids EMS Lead Auditor / Biosolids Auditor

Report Date: December 16, 2010

Reviewed By: David Coe, Louisville & Jefferson County Metropolitan Sewer District



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1. EXECUTIVE SUMMARY

KEMA-Registered Quality Inc. (KEMA) conducted an independent audit of the environmental management system (EMS) being used by the Louisville and Jefferson County Metropolitan Sewer District (MSD) in managing its biosolids program. The audit was performed at MSD's request and was part of interim audit #2 following KEMA's Verification of the MSD biosolids management system in July, 2008. The audit was comprised of an initial review on November 11, 2010 and a follow-up review on December 11, 2010.

The purpose of KEMA's audit was to assess the suitability of an internal audit performed by MSD in June 2010 for substitution as an interim audit within the NBP Biosolids Management Program. MSD stated that they intend to use that audit to meet their requirements for Certification within the National Biosolids Partnership (NBP) Biosolids EMS Program. That program requires certified agencies to conduct interim audits of their biosolids management system at least annually and allows for substitution of internal audits as the required interim audit under certain circumstances.

During our November audit, KEMA reviewed an internal audit that MSD conducted in June 2010 and the report of that audit. In the follow-up audit conducted December 11, KEMA reviewed an updated report of the internal audit and corrective actions that MSD took in response to findings from the November audit.

KEMA has determined that the internal audit conducted by MSD in June 2010, with subsequent corrective actions, has met NBP expectations and requirements for substitution as an interim audit within the NBP Biosolids Management Program. KEMA's Verification of that management system will continue through June 2011 and we recommend continuing Certification within the NBP Biosolids Management Program.

2. AUDIT DETAILS

2A. Agency Details

Agency Name: Louisville & Jefferson County Metropolitan Sewer District

Biosolids Production Sites: Morris Forman Wastewater Treatment Plant, Louisville KY

2B. Audit Purpose, Criteria and Scope

The purpose of this audit was to determine if the MSD internal audit conducted in June 2010 meets NBP requirements and can be substituted as an interim audit within the NBP Biosolids Management Program. Continuing Verification of the MSD biosolids management system by KEMA will be based on the results of this audit.

The audit included a review of the MSD internal audit report dated "August 9, 2010" and related documentation provided by MSD. Criteria for KEMA's audit included the NBP EMS Elements (May 2002) and NBP Auditor Guidance (August 2007).

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2C. Audit Company and Auditor Qualifications

This Audit was conducted by KEMA-Registered Quality Inc., an accredited Third Party Audit Company within the National Biosolids Partnership Biosolids EMS Program. Mr. Jon Shaver conducted the audit for KEMA. Mr. Shaver is certified by NBP as a Biosolids EMS Lead Auditor and Biosolids Auditor. Both KEMA and Mr. Shaver have an independent relationship with Louisville & Jefferson County Metropolitan Sewer District that meets criteria established by the National Biosolids Partnership for Third Party Audit Companies and Auditors.

2D. Definitions of Audit Findings & Required Corrective Action

Major Nonconformance – a serious omission from requirements and/or other departure that represents, or could cause, a systemic failure. Major nonconformances must be effectively corrected within 90 days for KEMA's Verification to proceed.

Minor Nonconformance – an isolated departure from requirements that does not represent a systemic failure. Minor nonconformances require timely and effective correction and verification by a Third Party Auditor.

Opportunity (for improvement) – possible improvement in the EMS based on auditor observations. There is no obligation for action in response to these observations.

2E. Appeals

The NBP provides an appeals process for biosolids organizations and interested parties that disagree with the findings of a third party EMS audit. The verification appeals process involves an Appeals Board; representing a balance of biosolids management interested parties, including an environmental advocacy group, and wastewater industry professionals. An appeal must be submitted within 30 days of the official verification decision or interim audit decision by the Audit Company. Anyone who may need help in understanding the appeals process should contact the National Biosolids Partnership staff, Mr. Jim Cox by e-mail: jcox@wef.org.

An appeal process is available to persons concerned about the methods and/or scope of this audit. Further information about this appeal process can be obtained directly from KEMA (contact Pierre Salle, pierre.salle@kema.com or Jon Shaver jon.shaver@kema.com) or from NBP (contact Jim Cox, jcox@wef.org).

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3. SUMMARY OF AUDIT RESULTS

3A. EMS Strengths

KEMA noted the following strengths in the MSD biosolids management system.

- Findings from the internal audit performed by MSD in June 2010 were well documented.

3B. Nonconformances Remaining Open

During this audit, KEMA found no major nonconformances and 4 minor nonconformances with respect to the audit criteria. Review of these nonconformances determined that they do not represent a systemic deficiency. The nonconformances found are listed below:

Minor Nonconformance JS/10-05/NBP Auditor Guidance NBP requires that interested parties be advised of an intended interim audit and be given the opportunity to attend that audit (reference: Auditor Guidance August 2007 section 5.2). No documentation was provided to demonstrate notification to interested parties about the intent to receive an audit or discussion about approaches to observe the audit

3C. Nonconformances Closed

During the initial review of MSD's internal audit KEMA found 4 major nonconformances with respect to the audit criteria. MSD took corrective action in response to these nonconformances and KEMA reviewed the effectiveness of those actions. The results are summarized below.

Major Nonconformance JS/10-01/ Element 2 Commitment to the NBP Code of Good Practice requires that MSD establish an environmental management system that is effective in managing biosolids operations. Four major nonconformances and eighteen nonconformances found within the management system during the internal audit is a significant number of findings that would, under normal circumstances, represent a systemic failure. There is no statement or evidence that this number of nonconformances does not represent a failure to effectively establish the biosolids management system.

Corrective Action – In response to this nonconformance MSD's internal auditors reviewed the nonconformances they found to determine if a systemic problem is occurring with respect to the MSD biosolids management system. A statements was added to the internal audit report (revision 11/30/10) that "It is the opinion of the auditors that this number of nonconformances does not represent a systemic failure of the management system." This nonconformance is now closed.

Major Nonconformance JS/10-02/ Element 14 EMS Element 14 requires that formal corrective action plans be developed for nonconformances found during internal audits. No evidence was provided to demonstrate that corrective plans have been developed or that action is being taken to address findings from the MSD internal audit.

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Corrective Action – In response to this nonconformance MSD developed corrective action plans for each nonconformance found during their internal audit. This nonconformance is now closed.

Major Nonconformance JS/10-03/ Element 16 EMS Element 16 requires that internal audits include an analysis of whether the organization is effectively meeting its biosolids program goals and objectives. No evidence was provided to demonstrate that an analysis of progress in achieving biosolids program goals and objectives was performed as part of internal audits in 2010.

Corrective Action – In response to this nonconformance MSD conducted a separate assessment of their performance in achieving biosolids objectives. This nonconformance is now closed.

Minor Nonconformance JS/10-04/ Element 16 EMS Element 16 requires that internal audit records include identification of lead auditor(s), qualifications, and description of auditor (s) roles and responsibilities. The internal audit report dated August 6, 2010 does not refer to auditor qualifications, roles and responsibilities.

Corrective Action – In response to this nonconformance MSD added an Appendix to their audit report noting the qualifications and roles / responsibilities of the internal auditors. This nonconformance is now closed.

Major Nonconformance JS/10-06/NBP Auditor Guidance NBP requires that internal audits being substituted as interim audits include a review of progress toward goals and objectives; EMS outcomes (environmental performance, regulatory compliance, interested party relations, quality practices); actions taken to correct minor nonconformances; the management review process; corrective action requests and responses; and preventive action requests. (Reference: Auditor Guidance August 2007 section 5.2.2). The internal audit MSD intends to substitute as an interim audit did not include reviews of process effectiveness required for interim audits.

Corrective Action – In response to this nonconformance MSD revised their internal audit report on November 30, 2010 and included an assessment of effectiveness of management reviews, corrective and preventive action, outcomes and progress towards goals and objectives. This nonconformance is now closed.

Minor Nonconformance JS/10-07/NBP Auditor Guidance NBP requires that interim audits of a certified agency's biosolids management system be completed and reported annually. The report of MSD's internal audit being substituted as an interim audit is dated "final draft August 9, 2010). Since the internal audit report is identified as "draft", it cannot be considered to be a final report.

Corrective Action – In response to this nonconformance MSD revised their internal audit report on November 30, 2010. The reference to a "draft" report was removed. This nonconformance is now closed.

Minor Nonconformance JS/10-08/ NBP Auditor Guidance NBP requires that interim audits be consistent with an agreed-upon interim audit plan (NBP Auditor Guidance 5.2.2). There is no evidence that the internal audit MSD intends to substitute as an interim audit addressed Pretreatment & Collection, Wastewater Treatment & Solids Generation, Laboratory, or Maintenance as required by the interim audits program agreed by MSD and KEMA.

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Corrective Action – In response to this nonconformance MSD revised their internal audit report on November 30, 2010 to note that Pretreatment & Collection, Wastewater Treatment & Solids Generation, Laboratory, Maintenance were included in the scope of the internal audit. This nonconformance is now closed.

3D. Plans for Closure of Open Nonconformances

Effective corrective action is required for each nonconformance found during the KEMA audit. MSD will prepare corrective action plans, submit those plans for approval by KEMA's Lead Auditor and take timely action to implement their corrective action plans. The effectiveness of action taken will be verified during the next Third Party Audit, which is currently planned to occur in June 2011.

3E. Opportunities for Improvement

The following "Opportunities" for improving the MSD internal audits and biosolids program were identified during KEMA's audit.

- Descriptions of audit findings (nonconformances) could note the requirement and evidence of nonconformance and be stated in a way that enables corrective and preventive action to be easily identified.
- The MSD internal audit found 22 nonconformances, which could indicate a systemic problem with respect to the management system. While MSD management review judged that there was no systemic problem, that determination, with evidence, could be stated in the internal audit report.
- A clearer statement of observations and findings specific to the Pretreatment & Collection, Wastewater Treatment & Solids Generation, Laboratory, Maintenance areas / processes could help in identifying any opportunities for improvement.

3F. Verification Statement

Based on the results of this audit, KEMA has verified that the MSD biosolids management system meets NBP expectations and the requirements and we recommend continuing Certification within the NBP Biosolids Management Program.

3G. Next Steps

Interim audit #3 is required by June 2011. Since Major Nonconformances were initially found in this audit, KEMA recommends that the interim audit in 2011 be conducted as a Third party Audit. MSD should make arrangements for that audit with their desired Third Party Audit Company.

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4. AUDIT OBSERVATIONS + RESULTS

The following describes the results of KEMA's audit of the MSD internal audit conducted in June 2010 and reported August 9, 2010.

4A Conformance with NBP EMS Elements

The MSD internal audit included an analysis of whether MSD is effectively meeting its biosolids management policy and program requirements. An additional assessment was performed to analyze the extent to which biosolids program goals, objectives and performance measures are being met. No contractor activities were specifically addressed in the internal audit.

The MSD internal audit report dated August 9, 2010 and revised November 30, 2010 summarized the audit scope and methodology and identified the auditors who conducted the audit. The report provided a clear description of nonconformances found and opportunities for improvement. Although not summarized, findings were reported in a manner that would allow management action.

KEMA Audit Result

The internal audit conducted by MSD was found to meet applicable requirements of the NBP EMS Elements.

In addition, the following opportunities were noted:

- Descriptions of audit findings (nonconformances) could note the requirement and evidence of nonconformance and be stated in a way that enables corrective and preventive action to be easily identified.

4B Conformance with NBP Expectations for Interim Audits

The MSD internal audit was conducted in June 2010 consistent with NBP requirements to conduct annual interim audits (verification anniversary date July 30). The audit covered program requirements following the EMS Elements sequentially. KEMA notes that the internal audit did not follow the "Louisville Green Management System Manual" that was approved and issued in February 2010, or reference requirements in that manual.

KEMA Audit Result

The internal audit conducted by MSD was found to be consistent with applicable NBP expectations and requirements, except as noted below.

Minor Nonconformance JS/10-05/NBP Auditor Guidance NBP requires that interested parties be advised of an intended interim audit and be given the opportunity to attend that audit (reference: Auditor Guidance August 2007 section 5.2). No documentation was provided to demonstrate notification to interested parties about the intent to receive an audit or discussion about approaches to observe the audit

In addition, the following opportunities were noted:

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- Internal audits could be more directly associated with the MSD management system if they referenced requirements stated in the Management System Manual.

4C Consistency with Interim Audits Program

The “Interim Audits Program” agreed by MSD and KEMA (date July 2, 2008) required audits of at least the following processes as part of the year 2 interim audit (i.e. 2010): Pretreatment & Collection, Wastewater Treatment & Solids Generation, Competency, Awareness & Training, Document Control & Recordkeeping, Emergency Preparedness, Laboratory, Maintenance. The internal audit conducted in June 2010 addressed Competency, Awareness & Training and Document Control & Recordkeeping and Emergency Preparedness.

KEMA Audit Result

The internal audit conducted by MSD was found to be consistent with the agreed interim audits program, except as noted below.

Minor Nonconformance JS/10-08/ NBP Auditor Guidance NBP requires that interim audits be consistent with an agreed-upon interim audit plan (NBP Auditor Guidance 5.2.2).

There is no evidence that the internal audit MSD intends to substitute as an interim audit addressed Pretreatment & Collection, Wastewater Treatment & Solids Generation, Laboratory, or Maintenance as required by the interim audits program agreed by MSD and KEMA.

In addition, the following opportunities were noted:

- The agreed Interim Audits Program could be modified to include audits of the necessary processes in years 3 and 4 (2011 and 2012).



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APPENDICES

List of Participants

The following persons participated in this audit. Other persons provided additional explanations, as needed.

<u>Name</u>	<u>Position</u>	<u>Organization</u>
David Coe	EMS Coordinator	MSD

List of Documents & Records Reviewed

Internal audit report (August 9, 2010)
Internal audit report (revised November 30, 2010)
Corrective and Preventive Action Spreadsheets
Assessment of performance in achieving goals and objectives (12-07-10)

END OF REPORT