



**National Biosolids Partnership
Biosolids Management Program Interim Audit Report**

**Camden County Municipal Utility Authority
Camden, NJ**

Audit Dates: December 16 & 17, 2013

Audit Conducted By: DEKRA Certification, Inc. (Chalfont, PA)

Audit Team: Mr. Jon Shaver, Certified Biosolids EMS Lead Auditor / Biosolids Auditor

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Report Date: December 22, 2013

Reviewed By: Andy Kricun, Executive Director CCMUA

Approved By: Michelle Hunn, DEKRA Certification, Inc.

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1. EXECUTIVE SUMMARY

DEKRA Certification, Inc. (DEKRA) conducted an independent third party audit of the biosolids environmental management system (EMS) being used by the Camden County Municipal Utility Authority (CCMUA) in managing its biosolids program. At CCMUA's request, DEKRA conducted the audit December 16 and 17, 2013. This was interim audit #3 following DEKRA's Verification of the CCMUA biosolids management system in September 2010.

Audit Purposes

This interim audit was conducted to:

- Confirm that the CCMUA biosolids management program is functioning effectively, with practices and procedures being performed as documented.
- Verify that the biosolids management program being used by CCMUA meets National Biosolids Partnership (NBP) expectations and conforms with requirements of the NBP BMP Elements.
- Examine outcomes CCMUA is achieving by using a systematic approach for managing its biosolids program.
- Verify that effective corrective action has been taken in response to open nonconformances from previous third party audits.

Summary of Audit Activities and Results

DEKRA reviewed the dynamics of CCMUA's biosolids program and audited parts of that program for conformance with expectations and requirements of the NBP Biosolids Management Program Elements (audit criteria). The audit scope was consistent with NBP requirements and the interim audits program agreed by CCMUA and DEKRA.

No major nonconformances and one minor nonconformance with respect to the audit criteria were found during this audit. CCMUA has developed corrective action plans to address the nonconformance that have been approved by DEKRA's Lead Auditor. DEKRA will review the effectiveness of the completed corrective actions during the next third party audit.

Audit Conclusions

The audit determined that:

- The CCMUA biosolids management program is functioning effectively and generating positive outcomes.
- The program meets NBP expectations and requirements of the NBP EMS Elements, with minor exceptions.
- All nonconformances from prior DEKRA audits have been effectively corrected.

Based on results of this audit, DEKRA verifies that the CCMUA biosolids management program meets NBP expectations and requirements. We recommend continuing certification within NBP Biosolids Management Program.

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2. AUDIT DETAILS

2A. Local Agency Details

Agency Name: Camden County Municipal Utility Authority (referred to as CCMUA in this report)

Facility: Delaware #1 Wastewater Treatment Facility, Camden NJ

Number of Employees (approximate) = 135

Volume of Wastewater Treated (approximate): = average 80 MGD

Biosolids Produced (approximate): approx 16,000 wet tons per year (60% Class A, 40% unclassified)

Contractors Participating in Audit

Synagro Inc.

CCMUA Biosolids Program

CCMUA's Biosolids Program includes defined processes for Pretreatment, Wastewater Treatment, Solids Dewatering, Biosolids Storage and Transportation and Biosolids Use, including incineration, and landfill. CCMUA manages their biosolids program using a management system approach based on the NBP EMS Elements.

2B. Audit Team

CCMUA authorized DEKRA Certification Inc. to conduct this Third Party Audit of their biosolids program. DEKRA is an accredited Third party Audit Company within the NBP Biosolids Management Program. Mr. Jon Shaver led the audit on behalf of DEKRA. Mr. Shaver is certified by NBP as a Biosolids EMS Lead Auditor and Biosolids Auditor. DEKRA and the auditor assigned to this audit have an independent relationship with CCMUA that meets NBP criteria for Third Party Auditors.

2C. Audit Scope and Locations

DEKRA conducted this audit at the Delaware #1 Wastewater Treatment Plant in Camden NJ. Biosolids incineration at the Gloucester County MUA was audited during this interim audit.

The scope of the audit included parts of the CCMUA biosolids program, with special attention to practices and management activities that directly support biosolids-related operations, processes and activities. The audit included the following, consistent with NBP requirements and the Scope of Work agreed by CCMUA and DEKRA.

1. Management System Dynamics
 - Management of Significant Changes
 - Biosolids Policy Commitments
 - Effectiveness Reviews:
 - Management Review Process

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- Corrective & Preventive Action Process
 - Goals & Objectives Process
 - Examination of outcomes being achieved in the areas of regulatory compliance, interested party relations, environmental performance and quality practices.
2. Process Audits
 - Communications Program
 - Corrective and Preventive Action
 - Biosolids Storage & Transportation
 - Biosolids Use – Incineration
 3. Verification of effective correction of open nonconformances from previous Third Party audits (September and December 2012)
 4. Interested party interviews

2D. Audit Methodology

The audit was conducted by qualified auditors following guidelines stated in the NBP Auditor Guidance (August 2011). The auditor observed practices in place, interviewed key persons and reviewed pertinent documents and records using sampling techniques to assess the systematic performance of the process being audited and the consistency of biosolids management practices with written procedures. Interested parties were interviewed and transaction tests were performed to verify the effectiveness of the management system. This audit is not a verification of compliance with any legal requirements applicable to biosolids practices performed by the agency or its contractors.

2E. 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, or the existence of multiple related minor nonconformances, or failure to effectively correct a nonconformance in a timely manner. For verification to continue, major nonconformances must be corrected and verified by third party audit within 90 days.

Minor Nonconformance – an isolated departure from requirements that does not represent a systemic failure. Minor nonconformances require timely and effective correction by the agency and verification by the third party auditor during the next third party audit.

Opportunity (for improvement) – a possible improvement in the management system based on audit observations. There is no obligation for action in response to these observations.

2F. Reference Materials

The following documents were used as references during this audit:

- CCMUA EMS Manual (March 2010, updated August 2011)
- National Biosolids Partnership “BMP Elements” (July 2011)
- National Biosolids Partnership Biosolids EMS Third Party Auditor Guidance (August 2011)
- National Biosolids Partnership Code of Good Practice

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National Biosolids Partnership Manual of Good Practice

2G. Additional Information

Further information about this audit and/or the National Biosolids Partnership Biosolids Management Program can be obtained from Camden County Municipal Utility Authority. Contact Mr. Andy Kricun (e-mail: andy@ccmua.org).

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3. SUMMARY OF AUDIT RESULTS

3A. Verification Conclusion

Based on results of this audit, DEKRA has verified that the CCMUA biosolids management system is functioning effectively and continues to meet expectations and requirements of the National Biosolids Partnership Biosolids Management Program, with minor exceptions. We recommend continuing certification within the NBP Biosolids Management Program.

3B. Strengths Observed

During this audit, DEKRA noted the following strengths in the CCMUA biosolids management system.

- CCMUA external communications and community outreach is a best practice for resource recovery utilities.
- The Camden Collaborative is an excellent example of a proactive public participation approach.

3C. Audit Findings – Nonconformances

The following minor nonconformance was identified during the audit. CCMUA has prepared corrective action plans for each nonconformance and those plans have been approved by the Lead Auditor.

Minor Nonconformance JS 13-01/ 17 NBP EMS Element 17 requires the organization management to review the BMP and its performance relative to policy commitments, goals, objectives, and established performance measures. The Management Review conducted 12/6/13 did not address performance relative to policy, goals & objectives or results of internal audits.

3D. 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 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 date of this audit report. Information about the appeals process is available from the National Biosolids Partnership. Contact Ms. Lisa McFadden at lmcfadden@wef.org.

3E. Agreements / Next Steps

CCMUA will take action to correct each nonconformance found during this audit. Review of action taken will occur during the next Third party Audit.

The next Interim Audit will be a Third Party Audit conducted in September 2014. CCMUA will make arrangements with DEKRA.

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4. MANAGEMENT SYSTEM DYNAMICS

Review of the management system dynamics and outcomes is intended to verify that the biosolids management system is functioning effectively and generating positive outcomes (results) and that changes are being incorporated into the system. The following summarizes DEKRA's review of the dynamics of the CCMUA biosolids management system.

4A Significant Changes

The following significant changes have occurred, or are underway, at CCMUA affecting their critical control points and biosolids EMS:

1. Biosolids drying equipment has been upgraded by installing strain presses to reduce fibres in the biosolids.

Transaction tests determined that this change was implemented in a manner that is consistent with CCMUA Biosolids Policy and EMS requirements.

4B Management System and Documentation Revisions

The EMS Manual, top-level documentation and major processes within the biosolids management system were reviewed. There were no structurally significant revisions. The manual continues to follow the NBP EMS Elements sequentially.

4C Examination of Outcomes

The CCMUA biosolids program is improving using their management system. The following outcomes within the past two years were confirmed.

Interested Party Relations

A Camden Collaborative Initiative has begun with participation from USEPA, NJDEP, CCMUA, Camden City officials and other partners.

CCMUA has received national recognition for environmental initiatives from NACWA, EPA, Johnson Foundation Water / Energy Symposium and National Utilities Convening

31 Raingardens have now been built in Camden

Environmental Performance

A "shelter belt" comprised of evergreen trees has been built between the plant and community residences and is helping to reduce odors.

An energy audit has been completed to identify opportunities to continue to reduce energy consumption.

Biosolids Quality

The addition of strain presses has allowed the biosolids dryer to operate more effectively in warm weather months.

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Regulatory Compliance

No compliance issues have occurred in the past year. An odor complaint in mid-2013 was handled effectively without compliance violation.

4D Biosolids Policy Commitments

The CCMUA Biosolids Management Policy remains as approved in October 2009. The Policy includes a commitment to follow the principles of the NBP Code of Good Practice. During this Interim Audit, DEKRA's Lead Auditor reviewed performance of CCMUA biosolids program and found biosolids activities to be consistent with commitments made in the Policy and the principles of NBP's Code of Good Practice.

4E Effectiveness Reviews

Biosolids Goals & Objectives

Eight of eleven objectives for 2013 have been achieved and satisfactory progress is being made for the other objectives. Objectives and action plans have been updated for 2014.

Communications Program

A strong, proactive Communications Program continues, with good interaction and response with interested parties, particularly members of the public and local community groups. CCMUA continues their involvement with the "Green Infrastructure Program" with local stakeholders. A Camden Collaborative has begun that includes participation from local officials, government and CCMUA.

Corrective and Preventive Action Process

CCMUA uses its Corrective and Preventive Action Process to investigate and correct management system nonconformances, most of which are identified by internal and third party audits. Nonconformances found during DEKRA's audit in 2012 were effectively corrected in a timely manner.

Management Reviews

Reviews of ongoing biosolids activities are conducted weekly to plan activities and address any concerns, particularly about effluent quality and odors. An annual report is issued to employees and the public.

4F Closed Nonconformances From Previous Third Party Audits

Corrective action taken in response to nonconformances from DEKRA's audit of the CCMUA Biosolids Management System in September 2012 and the status of those nonconformances are summarized below.

Minor Nonconformance JS 12-02/ 11 NBP EMS Element 11 requires the organization to require contractors to establish and maintain emergency preparedness and response plans and procedures.

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Emergency plans being used by Synagro for their operation in the wastewater plant have not been coordinated with CCMUA Emergency Plans in the plant.

Corrective Action – CCMUA determined that this nonconformance was caused by misunderstanding of responsibilities. In response, CCMUA assumed responsibility for approving Synagro's emergency preparedness. DEKRA's Lead Auditor verified that this action was effectively completed to prevent recurrence of the nonconformance. This nonconformance is now closed.

Minor Nonconformance JS 12-04/ 16 NBP EMS Element 16 requires the organization to establish an internal audit program to determine whether it is effectively meeting its biosolids management policy and that the internal audit program cover biosolids management activities performed by contractors. While a review of documentation has been completed, CCMUA has not conducted an onsite assessment of the use of their biosolids and consistency with their Biosolids Policy at the Lehigh Cement facility.

Corrective Action – CCMUA determined that this nonconformance was caused by lack of resources. In response, CCMUA assigned responsibility for periodically inspecting biosolids use sites, including the Lehigh Cement facility and conducted an audit of that facility. DEKRA's Lead Auditor verified that this action was effectively completed to prevent recurrence of the nonconformance. This nonconformance is now closed.

4G Interested Party Interviews

During this audit, DEKRA interviewed a representative of the New Jersey Department of Environmental Protection (NJDEP), a representative of Gloucester County MUA and a local priest. All were complimentary about CCMUA's external communications.

4H Use of NBP Certification and DEKRA Verification

Use of and references to NBP Certificate and DEKRA Verifications were reviewed. There were no concerns.

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5. PROCESS AUDITS

The following describes the results of DEKRA's audit of processes that CCMUA uses in managing biosolids activities. Consistent with NBP requirements, only parts of the management system are audited during interim audits, such that the entire management system and all 17 EMS Elements are covered at least once during the four annual interim audits between Verification Audits.

5A Processes Audited

5a. Summary

DEKRA audited the following processes that CCMUA uses in managing its biosolids program and determined the level of conformance of each process with NBP expectations and requirements of the audit criteria.

Process	Conformance with Applicable BMP Elements
Communications Program	Conforms
Corrective and Preventive Action	Conforms
Biosolids Storage & Transportation	Conforms
Biosolids Use – Incineration	Conforms

5b. Opportunities for Improvement

The following "opportunities" for improving the CCMUA EMS were noted during the audit. Opportunities do not represent nonconformances and CCMUA has no obligation to take any action in response to them.

- Consider Management Review as a process that includes weekly, monthly and annual performance reviews at different levels.
- Consider establishing key performance indicators as desired performance level and using objectives to define improvement targets.
- Corrective Action Plans could be separated to address the 3 areas associated with the odor complaint in mid-2013.
- Internal audit reports could more concisely define the audit purpose(s) and scope and conclusions related to the purpose(s).
- Spill cleanup equipment (e.g. shovels, rakes) could be added to trucks hauling biosolids.
- Expand the use of Corrective Action Process and assess trends that appear in causes.

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APPENDICES

List of Participants

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

CCMUA Personnel

Doug Burns	EMS Coordinator
Jack Connolly	Assistant Director O&M
Robert Cornforth	Director of Operations
Andy Kricun	Executive Director
Gayle Pagano	Division Chief – Regulatory Compliance
Chris Waldon	Sustainability
Janet Miles	DB/Guiarino Project Engineer
Oleg Zonis	DB/Guiarino Project Engineer

Interested Parties Participating

Steven Boyer	Environmental Specialist, NJDEP
Father Doyle	Priest, Sacred Hearts Church
Tom Sholders	Manager of Operations – Gloucester County MUA

List of Documents & Records Reviewed

“Pipeline” newsletter June 2013	Internal audit report 11/21/2013
Biosolids EMS Performance Report 2012	Management review of EMS performance 12/8/13
Biosolids Policy & CCMUA Resolution 10/19/09	SCADA screens (various)
Bulk densities 12-12-13	Site inspection Lehigh Cement 8/23/13
CAPAs (various)	Site inspection of Synagro Disposal site 8/27/13
CCMUA SOPs (various)	Synagro SOPs various
Dryer #1 performance data 12/12/13	
EMS Manual 2012, 2013	

END OF REPORT