

Camden County Municipal Utilities Authority

2014 Environmental Management System Performance Report

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The National Biosolids Partnership (NBP) is an alliance of the National Association of Clean Water Agencies (NACWA) and WEF, with advisory support from the U.S. Environmental Protection Agency (EPA).

Results of Audit: CCMUA meets NBP Expectations and Requirements

An Interim Audit was conducted January, 20-22, 2015. The audit was conducted by an independent third party auditor, DEKRA, to verify that CCMUA's Biosolids Environmental Management System is meeting the requirements of the NBP Biosolids Management Program.

The results of the audit determined that: (1) CCMUA's biosolids management system is functioning effectively and generating positive results. (2) The program meets NBP expectations and requirements of the NBP EMS Elements. (3) All nonconformance from prior third party audits have been effectively corrected.

In January, the interim audit was conducted over three days where key persons were interviewed, including Synagro and NJDEP, documents and records were reviewed to assess systematic performance of the process being audited and consistency of the written procedures. At the interim audit, DEKRA found four minor non conformances in the CCMUA management system that required correction.

The minor nonconformance are: NBP BMP Element 8 requires the organization to establish and maintain a training program, including general awareness of the BMP, to ensure employees responsible for specific biosolids management activities are competent in performing their assigned tasks and duties.

A new contractor supervisor now working at the CCMUA plant regularly has not received awareness training in the CCMUA EMS or its biosolids policy and goals.

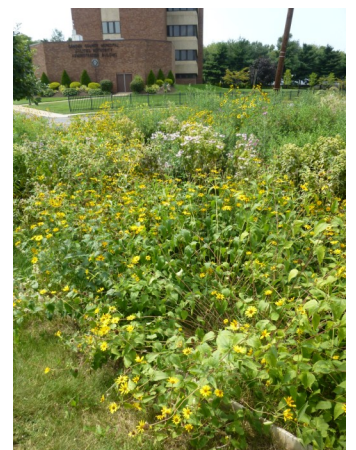
NBP BMP Element 10 requires the organization to maintain operational controls at critical control points, including process control systems. The automated process control system is not protected against unintended intrusion (e.g. no password protection).

NBP BMP Element 14 requires the organization to establish formal corrective action plans to address the findings of internal BMP audits. Findings from the internal audit in January, 2014 were not

linked to the Corrective Action process.

NBP BMP Element 17 requires the organization to review the BMP and its performance relative to policy commitments. The Management Review conducted December, 2014 did not address the Biosolids Policy commitments.

These non conformances have now been corrected.



Progress Towards Goals and Objectives

Camden County MUA continues to optimize achievement of its four main long term goals to help continually improve performance of its Environmental Management System. These goals are to:

1. Optimize water quality performance,
2. Optimize air quality/odor control performance
3. Minimize cost to ratepayers and
4. Improve community relationship

In addition, the CCMUA has a num-

ber of objectives which contribute to, and fall under, the overarching umbrella of these main goals. Most of the objectives established for year 2014 were completed and completed on time. Accomplishments include:

- Maintain Effluent TSS <10 PPM
- Maintain Effluent BOD <5 PPM
- "0" Air Permit violations per year
- Conduct at least one inspection of biosolids hauling desti-

nations (i.e. landfill, land application sites) per year

- Reduced energy use from distribution grid by 10% by using solar power
- Update SOPs to reflect EMS requirements.
- Completed the Sludge Drying Facility
- Constructed six new rain gardens during 2014.
- Maintained R&R requirements of \$3.5 million/year or less.

“ Be a good neighbor to the surrounding community with a view to not only doing no harm, with respect to odor impacts, but also to undertake initiatives to improve the quality of life for our neighbors.”

Each year CCMUA establishes objectives to help achieve its main goals and continually improve its Environmental Management System. Listed below are the current goals for 2015.

- Maintain Effluent TSS <10 PPM
- Maintain Effluent BOD <5 PPM
- "0" Air Permit violations and odor complaints per year
- Conduct at least one inspection of biosolids hauling destinations (i.e. landfill, land application sites) per year
- Update SOPs as needed to reflect EMS requirements

2015 Objectives

- Reduce energy by using solar power and proceed with the construction of the Sludge Digester.
- Complete the 18 new green infrastructure projects.
- Maintain R&R requirements to \$3.5 million/year or less.
- Use 100% green energy by 2017



Anaerobic Sludge Digester

The Authority is in the process of evaluating the addition of an Anaerobic Sludge Digester. A Request for Proposals will soon be issued for this addition to the treatment process. Construction is expected to begin in 2015.

The primary objectives of the proposed Sludge Digestion System at the CCMUA are to:

- Improve the performance of the sludge drier facility
- Reduce overall operating costs
- Advance Camden County’s Sustainability program through the generation of renewable energy and reduction in green house gas emissions
- Maximize the beneficial use of the biosolids produced

Regulatory Compliance

CCMUA’s Environmental Management System complies with all applicable federal, state, and local requirements.

CCMUA’s plant effluent concentrations of TSS and cBOD are averaging below 15 mg/l and 10 mg/l, respectively, which is significantly lower than the discharge permit requirements of 30 mg/l and 25 mg/l, respectively. Zero non-compliances occurred in the past year. The effluent quality has remained at

optimal levels, nearly drinking water levels throughout the year.

Biosolids produced at CCMUA met all standards required by U.S. EPA for metal concentrations.

The treatment plant’s outstanding performance captures approximately 20,000 tons of biosolids per year that otherwise would go into the Delaware River.



Environmental Performance

One of the main priorities for CCMUA is to minimize adverse impact from odors emanating from the wastewater treatment and sludge disposal process. This is being done both through implementation of a “zero tolerance” policy for odors, and through capital improvements. The CCMUA has also been pursuing this goal through implementation of successful odor

control strategies, such as assigning additional supervisors, operators and maintenance staff on weekends, produce sludge cake with solids concentration of at least 27% to reduce the amount of sludge to be hauled out from plant, and minimization of off-site sludge hauling during off hours. In addition, suspended solids levels in the effluent have been reduced 35 percent from 9.3 parts per million parts per “0” air permit violations.

CCMUA Starts Green Infrastructure Projects

During 2014, the Authority met its goals for Environmental Justice and Green Infrastructure through the Camden Smart Initiative.

Camden SMART is a collaboration between the City of Camden, Camden County Municipal Utilities Authority, Cooper's Ferry Partnership, Rutgers Cooperative Extension Water Resources Program, New Jersey Tree Foundation, NJ Department of Environmental Protection. The purpose of Camden SMART is to develop and

implement a comprehensive network of green infrastructure programs and storm water management in the City of Camden.

As a founding member of Camden SMART, the Authority has received funding from the New Jersey Environmental Trust (NJEIT) to build a series of new green infrastructure projects. These projects are expected to prevent 1.9 million gallons of stormwater from flooding neighborhoods each year. Below is a list of the project sites:

Acelero Learning Center	St. Joan of Arc Church
Adventure Aquarium	St. Bartholomew Church
Brimm Medical Arts School	BPSOS Community Garden
Catto Community School	Respond Day Care
Cooper Sprouts Community Garden	U.S. Wiggins Elementary School
Dudley Grange Park	Yorkship Elementary School
Henry H. Davis School	Mt. Zion Highway of Holiness
Neighborhood Center	Union Field/ Malandra Hall
Ferry Avenue Branch Library	

CCMUA Completes Green Infrastructure Projects

Camden SMART Project	Street Address	Neighborhood	Completion Date	Gallons of Stormwater Captured per Year
Trenton Ave, Rain Garden	Trenton & Newton Ave	Cooper Grant	June-14	
CSO Thorndyke, Rain Garden	Route 30 & Thorndyke	Marlton	June-14	221,000
CSO Baird Blvd, Rain Garden	Baird Blvd & Cooper River	Marlton	June-14	122,000
CSO Jackson, Rain Garden	200 Jackson Street	Waterfront South	June-14	258,000
Neighborhood Center, Porous Pavement	278 Kaighns Ave	Central Waterfront	November-14	17,306
Mt. Zion Highway of Holiness, Porous Pavement	295 Chestnut Street	Central Waterfront	November-14	51,541
			TOTAL:	669,847

2014 Environmental Infrastructure Trust Projects

In July, 2014 a series of stormwater management projects began. Funded by the New Jersey Environmental Infrastructure Trust these will manage 100 million gallons of stormwater each year. Below is a description of each project:

Von Nieda Park Stormwater Management

The Von Nieda Park Stormwater Management Project has installed new reinforced concrete storm sewer pipes, added a stormwater detention basin, reconstructed baseball fields, and has added two new storm water depressions to the park. Flow from the park now will be conveyed into the Baldwin's Run daylighted stream and out to the back channel of the Delaware River.

Baldwin's Run Urban Daylighting Project

The Baldwin's Run Urban Daylighting Project has reconstructed an historic streambed that used to run through Von Nieda Park. The newly constructed streambed is now an active waterway that conveys water from Von Nieda Park out into the backchannel of the Delaware River. The

project included wetlands creation, a boardwalk path and a multi-use trail. The project is located between Harrison Ave and the backchannel of the Delaware River northwest of Von Nieda Park.

Phoenix Park Project

Phoenix Park has transformed a five acre brownfield site into a new waterfront park that manages over five million gallons of stormwater each year. The park's green space bridges a decades-old gap between a distressed urban residential neighborhood and the Delaware River, offering views of the skyline of Philadelphia from the heart of Camden's industrial waterfront. The park creates an opportunity for residents of the Waterfront South neighborhood to experience a park setting on their waterfront, amidst the surrounding heavy industry. Phoenix Park includes a gravel walking path with trees, native wildflower meadows and turf grass. The project is located just south of the Camden County Municipal Utilities Authority plant in the Waterfront South neighborhood.

Green Infrastructure Projects

The Green Infrastructure Projects include 18 new green infrastructure projects scattered throughout Camden. Projects include the installation of rain gardens, porous pavement, rainwater harvesting cisterns, stormwater planters and various tree and shrub plantings. The combined sites manage over 1.9 million gallons of stormwater each year helping to reduce flooding.

Sewer Rehabilitation Project

This project has rehabilitation/reconstructed structurally and hydraulically deficient sewers, ranging from 12" – 72" in diameter, at eight locations within the City of Camden. The project includes replacement of sewers, installation/replacement of manholes/inlets and other related structures, reconnection of sewer laterals, jetting/vacuuming of adjacent existing sewers, and street/sidewalk restoration.



CCMUA Continues to Reduce Odors, Lower Fuel and Disposal Costs

Sludge Drying Facility

The sludge dryer has passed its performance test. The dryer performed about 5% better than the guarantee. The dryer must still pass the winter performance test. At the end of 2014, all three of the sludge dryers were operating. During most of the year two of the three dryers were operating and processing most of the sludge from our facility. At full capacity the dryers will process an average of 160 tons of sludge per day. The Dryers have reduced the quantity of sludge to 40 tons per day and thereby significantly reduced disposal costs by 50 percent.

In addition to sludge disposal costs, odors have been reduced as a result of the reduction in truck traffic by at least 80%. This reduction will also help to im-

prove the quality of life for the surrounding neighborhood.

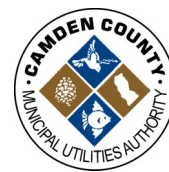
Other benefits of the sludge drying facility include a reduction in carbon emissions. The sludge from the dryer is being converted to a renewable fuel which creates energy and powers manufacturing operations. The Authority's sludge will be burned instead of over 6,000 tons of coal. This substitution of dried sludge for coal will reduce carbon emissions by 17,000 tons annually.

During 2014 the Authority made progress towards the addition of a Sludge Digester in order to lower fuel and disposal costs. Management will continue to proceed with this during 2015.



Camden County Municipal Utilities Authority

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MISSION STATEMENT

Total commitment to our customers, public health and quality wastewater management through teamwork and individual effort by participating in ongoing training, education and research, maintaining regulatory compliance, and striving for continuous improvement of systems and services.

EMS Team Members:

- Andrew H. Kricun, Executive Director
- Robert G. Cornforth, Director of O&M
- Jack J. Connolly, Jr., Director of O&M
- Gayle Pagano, Chief of Regulatory Compliance
- Steve Lee, Chief Operator
- Douglas Burns, EMS Coordinator