

Camden County Municipal Utilities Authority

2015 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

DEKRA Certification, Inc. conducted an independent third party audit of the environmental management system used by the Camden County Municipal Utility Authority (CCMUA) in managing its biosolids program.

The results of the audit determined that: Use of a management system approach is generating positive outcomes for CCMUA's biosolids program in the areas of regulatory compliance, environmental performance, quality practices and relations with interested parties.

CCMUA biosolids practices are consistent with NBP expectations and meet requirements of the NBP BMP Elements, with minor exceptions.

All nonconformances from prior DEKRA audits have been effectively corrected.

This audit conducted on

February 1-5, 2016 has verified that the CCMUA biosolids management program meets NBP expectations and requirements and we recommend Recertification within NBP Biosolids Management Program.

During this audit, DEKRA noted the following strengths in the CCMUA biosolids management system. Leadership by CCMUA in the Camden Collaborative Initiative is an excellent example of proactive outreach and public participation.

CCMUA has prepared corrective action plans for the six nonconformance identified and those plans have been approved by the Lead Auditor.

The audit was consistent with NBP requirements for Reverification Audits and the Scope of Work agreed by CCMUA and DEKRA. It was conducted as an inte-

grated audit covering requirements of ISO-14001:2004 and the NBP BMP Elements (July 2011), with special attention to practices and management activities that directly support biosolids-related operations, processes and activities.



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

number of objectives which contribute to, and fall under, the overarching umbrella of these main goals. Most of the objectives established for year 2015 were completed and completed on time. Accomplishments include:

- Maintained Effluent TSS <10 PPM
- Maintained Effluent BOD <5 PPM
- "0" Air Permit violations per year
- Conducted one inspection

of biosolids hauling destinations (i.e. landfill, land application sites) per year

- Reduced energy use from distribution grid by 10% by using solar power and proceeded with the construction of the sludge digester.
- Update SOPs to reflect EMS requirements.
- Constructed 18 new green infrastructure projects during 2015.
- 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.”

2016 Objectives

Each year CCMUA establishes objectives to help achieve its main goals and continually improve its Environmental Management System:

- Maintain Effluent TSS <5 PPM or less
- Maintain Effluent BOD <5 PPM or less
- "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
- Reduce energy by using 10% solar power and pro-

ceed with the construction of the Sludge Digester.

- Start the construction of ten new green infrastructure projects.
- Earn 14001 certifica-

tion for the entire plant.

- Use 100% green energy by 2017
- Continue to monitor the Sludge Drying Facility to ensure that it processes at least 90% of our sludge produced.



Regulatory Compliance

Anaerobic Sludge Digester

The Authority has received approval from the Local Finance Board for the contract between the Authority and the selected vendor, Anaergia to operate an Anaerobic Sludge Digester. An application for funding the digester has been made to the NJEIT. Construction of the digester is expected to begin in 2016.

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

- Improve the performance of the sludge drier facility.
- Reduce overall operating costs including electricity, sludge disposal, associated maintenance and chemical costs.
- Advance Camden County's Sustainability program through the generation of renewable energy and reduction in green house gas emissions.

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

The Authorities effluent concentrations of TSS and cBOD are averaging below 10 mg/l and 5 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 efflu-

ent 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 su-

pervisors, 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 Completes Green Infrastructure Projects

During 2015, 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 projects completed during 2015:

Project Name, Features	Street Address	Neighborhood	Completion Date	Gallons of Stormwater Captured per Year
Acelero Learning Center, Downspout Planters	311 Grand Ave	Marlton	September-15	29,687
Adventure Aquarium, Rain Gardens	1 Riverside Drive	Central Waterfront	September-15	158,854
Brimm School, Porous Pavement, Stormwater Planter	1626 Copewood Street	Whitman Park	September-15	121,774
Octavius V. Catto School, Rain Garden, Trees	3100 Westfield Ave	Dudley	September-15	207,031
Copper Sprouts Community Garden, Rain Garden, Rainwater Harvesting, Porous Sidewalk,	7th & Newton Steet	Cooper Grant	September-15	221,415
Dudley Grange Park, Rain Garden, Trees	3100 Federal Street	Dudley	September-15	27,488
Ferry Avenue Library, Rain Garden, Stormwater Planter, Downspout Planter, Tree	852 Ferry Avenue	Centerville	September-15	282,508
Henry H Davis School, Downspout Planters	3425 Cramer St	East Camden	September-15	79,716
St. Joan of Arc Church, Rainwater Harvesting	3107 Alabama Rd	Fairview	September-15	2,500
St. Bartholomew's Church, Rain Garden, Rainwater Harvesting	749-751 Kaighns Ave	Bergen Square	September-15	7,500
Vietnamese Community Garden, Rain Garden, Rainwater Harvesting, Porous Sidewalk	29th & Cramer St	Dudley	September-15	114,279
Respond Day Care, Rainwater Harvesting, Trees	309 Vine St	Coopers Point	September-15	35,735
US Wiggins Elementary School, Porous Pavement, Tree Pit	400 Mt. Vernon St	Bergen Square	September-15	79,716
Union Field/ Malandra Hall, Rain Garden	1244 S Merrimac Rd	Fairview	September-15	340,000
Yorkship School, Porous Pavement, Landscape Planters, Trees	1251 Collings Ave	Fairview	September-15	145,414

Environmental Infrastructure Trust

Projects Completed

In July, 2014 a series of stormwater management projects began. Funded by the New Jersey Environmental Infrastructure Trust, these manage 100 million gallons of stormwater each year. Below is a description of each project completed during 2015:

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 con-

veys 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 site is connected to the

Michael Doyle Fishing Pier with a walkway along the Delaware River. These are 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 stormwater 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 Disposal Costs.

Sludge Drying Facility

During 2015, the Drying Facility was safely operated, with zero recordable injuries, and complete environmental compliance was maintained 45,615 wet tons of biosolids were processed during the year. Uncontrollable circumstances led to approximately 24,300 tons of lost capacity when dryers were out of service.

At full capacity the three dryers can process an average of 160 tons of sludge per day. During several months, only one of three dryers were

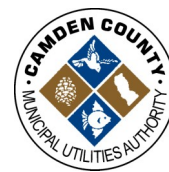
operational. At least two dryers are needed to be able to process most of the sludge produced by the facility. The main reason the dryers were out of service was the failure of the main shaft. As of the date of this report, one dryer is being repaired and two are operational.

The dryers have the ability to reduce sludge disposal costs, by up to 50%. These dryers also reduce odors as a result of the reduction in truck traffic. This reduction in odors helps to improve the quality of life for the surrounding neighborhood.



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
- John J. Connolly, Jr., Director of O&M
- Gayle Pagano, Chief of Regulatory Compliance
- Steve Lee, Chief Operator
- Douglas Burns, EMS Coordinator
- Scott Schreiber, Budget Officer