



Biosolids ● Industrial Pretreatment ● Reuse

2016 Industry Day

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Each year, the City of Raleigh hosts an Industry Day event for our network of industrial users and interested parties. Industry Day was held on Dec. 20, 2016 at the Neuse River Resource Recovery Facility (NRRRF). The event included general Public Utilities and industrial pretreatment updates, as well as information from the City of Raleigh Stormwater Management Division and an engineering perspective of our ongoing treatment plant upgrades. A plant tour of our Neuse River Resource Recovery Facility was offered as well as lunch and networking.

Each year, one or more industries receive the Industrial Pre-

treatment Award. This annual award recognizes a commitment to environmental stewardship and cooperation with the City of Raleigh Industrial Pretreatment Program. Among the requirements to win the award, most notably are (1) 100% compliance with permit requirements in the previous year; (2) Attendance in the previous year's workshop; and (3) Candidates must not have received an award within the past three years. This year's winner was Pepsi Bottling Ventures, LLC located in Garner, NC.

The City of Raleigh thanks all attendees and participants in our annual Industry Day. We welcome you to attend our next event in Fall 2017.



2016 Industry Day Award



2016 Industry Day

Pretreatment Reporting

Your friendly reminder about monthly reporting requirements:

- Reports due on the 20th of the month
- Cover page (Monthly Facility Status Sheet)
- Summary page (Industrial Data Summary Form)

- Lab reports and Chain of Custody

For any non-compliance events:

- 24-hour notification requirement
- Resample within one week of becoming aware of a violation
- Investigate cause of non-compliance

For information concerning the City of Raleigh Industrial Pretreatment Program, please feel free to contact us:

Ryan Faw, Industrial Pretreatment Coordinator, 919-996-3679,

Ryan.Faw@raleighnc.gov



Infectious Disease Response Plan



Biohazard Symbol

“How do we ensure we are using best management practices during an emergency event?”

Over the past several years, infectious disease outbreaks across the world have given water and wastewater utilities an emerging challenge for which to prepare. The most recent Ebola outbreak certainly got everyone thinking. How do we protect the public and our employees working at our treatment plants and in our sanitary sewer collection system? How do we ensure we are using best management practices during an emergency event?

In addition to a well-established blood borne pathogen program, the City of Raleigh has developed an Infectious Disease Response Plan.

This plan provides the Public Utilities Department with a standardized response and recovery procedure to prevent, minimize, and mitigate injury and damage resulting from infectious disease emergencies. The goals of this plan are to (1) Minimize wastewater system damage and restore service as needed; (2) Minimize impacts to and increase safety of the public and City employees; (3) Minimize negative impacts on public health and the environment; (4) Provide emergency public information; (5) Provide wastewater system information for stakeholders and interested parties; and (6) Ensure effective communication between all those involved during an

infectious disease occurrence.

The City of Raleigh is in close communication with the Wake County Health Department and our local hospitals to ensure proper notification and disinfection practices are followed if needed. In addition to these local controls, the City of Raleigh remains in communication with agencies such as the Water Environment Federation, American Water Works Association, and U.S. Centers for Disease Control and Prevention for useful information.

2016 Reuse Water Flow Totals



Irrigation at NRRRF



Sign

Month	EM Johnson WTP Bulk Reuse Flow Total gal	Neuse River Resource Recovery Facility Bulk Reuse Flow Total gal	Smith Creek WWTP Bulk Reuse Flow Total gal	Little Creek WWTP Reuse Distribution Flow Total gal	Neuse River Resource Recovery Facility On Site Irrigation Flow gal	Neuse River Resource Recovery Facility Reuse Distribution Flow Total gal
Jan 2016	0	0	0.00	1,545,200	0	14,821,000
Feb 2016	0	682	0.00	1,171,200	0	14,082,000
Mar 2016	0	6,017	3,300.00	1,340,700	0	26,421,000
Apr 2016	0	4,550	300.00	1,464,800	3,990,000	45,128,700
May 2016	500	0	0.00	2,257,000	1,288,000	32,372,000
Jun 2016	2,475	0	0.00	2,693,200	8,001,000	34,976,000
Jul 2016	3,100	3,780	0.00	2,587,500	7,473,000	40,605,000
Aug 2016	2,124	4,740	0.00	3,160,600	8,617,000	43,966,000
Sep 2016	0	48,300	0.00	2,850,400	2,100,000	39,583,100
Oct 2016	0	0	0.00	2,612,800	1,064,000	35,060,000
Nov 2016	0	15,000	0.00	2,960,100	335,000	16,145,000
Dec 2016	0	14,000	0.00	2,582,800	0	12,658,000
Minimum	0	0	0.00	1,171,200.00	0	12,658,000
Maximum	3,100	48,300	3,300.00	3,160,600.00	8,617,000	45,128,700
Total	8,199	97,069	3,600.00	27,226,300.00	32,868,000	355,817,800
Average	683	8,089	300.00	2,268,858.33	2,739,000	29,651,483

QA/QC: A Laboratory Perspective

When sending samples to a laboratory for testing how can you be confident in the results you receive? How do you know the staff has been well-trained or the instruments well-maintained? These are questions you should be asking whenever you send samples to a laboratory. The Neuse River Resource Recovery Division relies on the services of the Neuse River Resource Recovery Laboratory (NRRRL) to support an array of scientific, regulatory and administrative decisions; making it imperative to produce accurate, reliable data in a timely and cost-effective manner. For a laboratory to achieve this, it must maintain a suitable Quality Assurance and Quality Control (QA/QC) program. Here at NRRRL our QA/QC program is based on the NC Administrative Code 15A NCAC 15A .0800, 40 CFR Part 136, good laboratory practice and method specific requirements. This article seeks to provide a better understanding of what

you should look for in QA/QC program.

Quality assurance and quality control are essential aspects of any laboratory testing. Both ensure that the data generated are consistent from one day to the next and the results from one analyst can be compared to those by another. QA is the process or system used for managing quality. While QC refers to the measure used to verify that the quality system applied is effective.

NRRRL operates as a North Carolina certified municipal wastewater laboratory that analyzes domestic and industrial wastewater, surface water, groundwater, and biosolids samples. We dedicate an average of 130 hours per month fulfilling quality control activities for the 50 parameters we monitor. Aspects of the NRRRL quality assurance includes: standard operating procedures for laboratory methods, training and awareness practices so that staff meets

specified performance criteria, established maintenance procedures for equipment, well-maintained traceability to source chemicals and standards, and a two tiered peer-review process for regular quality control evaluations and data reporting. Quality control examples include reagent blanks, duplicates, matrix spikes, continuing calibration verifications, second source standards, and blind proficiency testing; all of which provide indication of a laboratory's accuracy, precision, and overall quality of data.

Before you consider taking your samples to a laboratory, make sure they are implementing the proper QA/QC to guarantee the generation of precise and accurate analytical data. A commitment to quality is one that's long-term and pursues continual improvement. To know more, please contact Darrell Crews, NRRRL Supervisor at: Darrell.Crews@raleighnc.gov.



*Tamika Black (Senior Chemist)
Analyzing for metals*

"NRRRL operates as a North Carolina certified municipal wastewater laboratory..."

2016 Raleigh Plus Distribution

Weather events such as Hurricane Matthew challenged our Raleigh Plus deliveries this past year. In 2016 the NRRRF distributed over 41,000 tons of Raleigh Plus to 102 farmers over 27 counties along with application on City of Raleigh permitted land. Water Plant Residuals from the E.M. John-

son Water Treatment Plant were distributed to 28 farmers across 12 counties to the sum of 14,602.51 tons. For more information contact Barrett Denning, Residual Distribution Coordinator for the City of Raleigh at 919-996-3700 or 919-369-2100.



Raleigh Plus on Pad

Wastewater Environmental Management System Update

What is a WEMS?

The Resource Recovery Division's WEMS (Wastewater Environmental Management System) utilizes an environmental policy to recognize responsibilities to protect the environment and public health. The Resource Recovery Division's Environmental Policy is as follows:

The Resource Recovery Division recognizes the responsibility to protect the environment and public health focusing on products for beneficial reuse by :

- Complying with all applicable laws and regulations
- Seeking continuous improvement in all operations
- Promoting positive relations with interested parties
- Prevention of pollution
- Following the principles of National Biosolids Partnership Code of Good Practice

The WEMS team establishes annual goals in order to measure success and create opportunities for improvement. Some of the highlights of this year's WEMS program include:

2016 Regulatory Compliance:

NRRRF received Platinum Award from the National Association of Clean Water Agencies (NACWA) for 13 consecutive years without a permit violation

Of the 15 Targets & Objectives set for 2016, 10 were achieved, two were carried into 2017, and three were eliminated from consideration.

A third party audit is scheduled for March 6-10, 2017 for recertification in ISO 14001:2015 as well as the National Biosolids Partnership.

2017 Targets & Objectives

- Establish a Plant Advisory Committee made up of pertinent stakeholders for all three treatment plants
- Establish upstream water quality monitoring program for all three treatment plants
- Expand usage of alternative energy systems
- Eliminate potential pollutant sources on NRRRF plant site
- Optimize new biological phosphorous removal at NRRRF
- Develop Equipment Operating Procedures (EOIs) for plant equipment at Little Creek and Smith Creek WWTPs
- Maintain 100% regulatory compliance

The Targets & Objectives program continues to be a key process in the continual improvement of the Wastewater Environmental Management System.

For more information about our WEMS program, contact Emily Fentress at 919- 996-3700 or via email at Emily.Fentress@raleighnc.gov



2017 Targets and Objectives for Wastewater Environmental Management System



Approved uses for Reuse Water

- Landscape irrigation of residential lawns, golf courses, parks, landscaped areas, and other public, industrial, or commercial grounds
- Dust control for street sweeping
- Roadway pretreatment
- Directional Boring
- Vehicle Washing
- Pesticide application
- Pressure washing
- Decorative ponds & fountains that do NOT have a drain to surface waters, storm drains, or catch basins. Must display permanent weather-proof signage
- General construction purposes such as soil compaction, dust control, and asphalt reclamation
- Cooling tower and boiler blowdown water
- Toilet Flushing



Class B Liquid Biosolids Application

Class B liquid biosolids application was slowed by wet weather throughout 2016. Land Management staff applied three batches from Covered Aerobic Digesters (CADs) which varied in Plant Available Nitrogen (PAN). NRRRF staff hauled 808 tanker loads totaling 4,930,295 gallons to Terragators for land application to over 472 acres of land; 75 acres being off-site privately owned permitted fields. The varieties of application crops include; wheat, coastal bermuda, fescue, corn, grain sorghum, and sunflowers. Land Management staff worked extremely hard and long hours during those applications averaging three to four tanker loads per hour. The Land Management Program is currently preparing equipment for application during the 2017 calendar year.



NRRRF Sunflowers



Class B Liquid Land Application

City of Raleigh—Public Utilities Resource Recovery Division

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Raleigh, NC 27610

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Fax: 919-996-5707

E-mail: Marla.Dalton@raleighnc.gov

We're on the Web!

www.raleighnc.gov



More Ways to Contact Us

Do you have a question or just want some general information about something happening around the plant but don't know who to contact? We've made it easier for you to submit your comments, concerns or questions with the development of three new email addresses.

For biosolids information: Biosolids@raleighnc.gov

For wastewater treatment operations information: Wastewater.Treatment@raleighnc.gov

For reuse water information: Water.Reuse@raleighnc.gov

Resource Recovery Division is composed of the following programs: Administration, Laboratory, Plant Operations, Plant Maintenance, Remote Facilities (pump stations, odor control and air release valves), Land Management, and Pretreatment.

There are approximately 106 employees working at this facility, which is a 24-hour-per-day/seven-days-a-week operation.

If you have questions or concerns, please feel free to contact us:

- Robert Massengill, Public Utilities Director, 919-996-4540 or Robert.Massengill@raleighnc.gov
- Marla Dalton, Environmental Coordinator, 919-996-3700 or Marla.Dalton@raleighnc.gov
- Jeremy Blackmon, Asst. W&S Superintendent, 919-996-3700 or Jeremy.Blackmon@raleighnc.gov
- Emily Fentress, Process Control Training Officer, 919-996-3700 or Emily.Fentress@raleighnc.gov
- Darrell Crews, Laboratory Supervisor, 919-996-3700 or Darrell.Crews@raleighnc.gov
- Ryan Faw, Pretreatment Coordinator, 919-996-3700 or Ryan.Faw@raleighnc.gov
- Tim Woody, Resource Recovery Superintendent, 919-996-3700 or Tim.Woody@raleighnc.gov
- T J Lynch, Asst. Public Utilities Director, 919-996-4540 or TJ.Lynch@raleighnc.gov