



City of Chattanooga  
 Department of Public Works  
 March 1, 2016



## 2015 Biosolids Performance Report

### CHATTANOOGA WELCOMES A NEW BIOSOLIDS CONTRACTOR



Last spring 2015, Chattanooga welcomed a new Biosolids land application contractor, Denali Water Solutions. The Denali leadership team is forged from decades of experience in the broad wastewater industry. Years of managing wastewater residuals positions Denali to deliver top-notch service, reliable regulatory compliance and creative solutions at a competitive value. More than words, Denali's goal is to offer the best price for the best value.

It is really that simple, and Denali thinks our customers appreciate it. From California to Virginia, Denali provides land application, composting, dewatering, dredging, lagoon cleanout, digester cleanout, processing, permitting and operational management services to handle an array of wastewater and water residuals and biosolids.

Mount McKinley is the highest peak in North America and the center piece of the Denali National Park in Alaska. The Denali Team is so in awe of its rugged, picturesque beauty and bold presence, they chose the name for the company brand. Denali comes from Native Americans - meaning "great one". Much like this imposing, natural treasure...Denali believes their guiding principles are also simple, yet bold.

1. Deliver superior service.
2. Be environmentally reliable and compliant.
3. Be the best value.

For additional information, please visit [www.denaliwater.com](http://www.denaliwater.com)

The Biosolids Land Application program nearly took a nose dive when citizens in Bledsoe County (Pikeville) TN signed a petition, 800 strong, to ban the application of Biosolids by referendum vote in their county. The idea was then drafted into a proposed senate bill that would provide each county across the state the same referendum vote to decide to allow application of this type of fertilizer. The right to farm act, and the amount of wasted nutrient value most likely led to the house bill being tabled.

**SB1096 / HB1131 Counties can ban the application of biosolids and bulk biosolids.**

<b>Category</b>	Environment & Nature
<b>Sponsors</b>	Sen. Paul Bailey / Rep. Ron Travis
<b>Description</b>	Allows a county to ban the application of biosolids and bulk biosolids generated during the treatment of domestic sewage in a wastewater treatment works. Requires approval by referendum.
<b>Fiscal Note</b>	(Dated March 17, 2015) NOT SIGNIFICANT
<b>Senate Status</b>	03/25/2015 - Taken off notice in Senate Energy, Agriculture & Natural Resources Committee.
<b>House Status</b>	03/24/2015 - Taken off notice in House Agriculture & Natural Resources Subcommittee.

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EPA BIOSOLIDS:

Frequently Asked Questions <http://water.epa.gov/polwaste/wastewater/treatment/biosolids/genqa.cfm>

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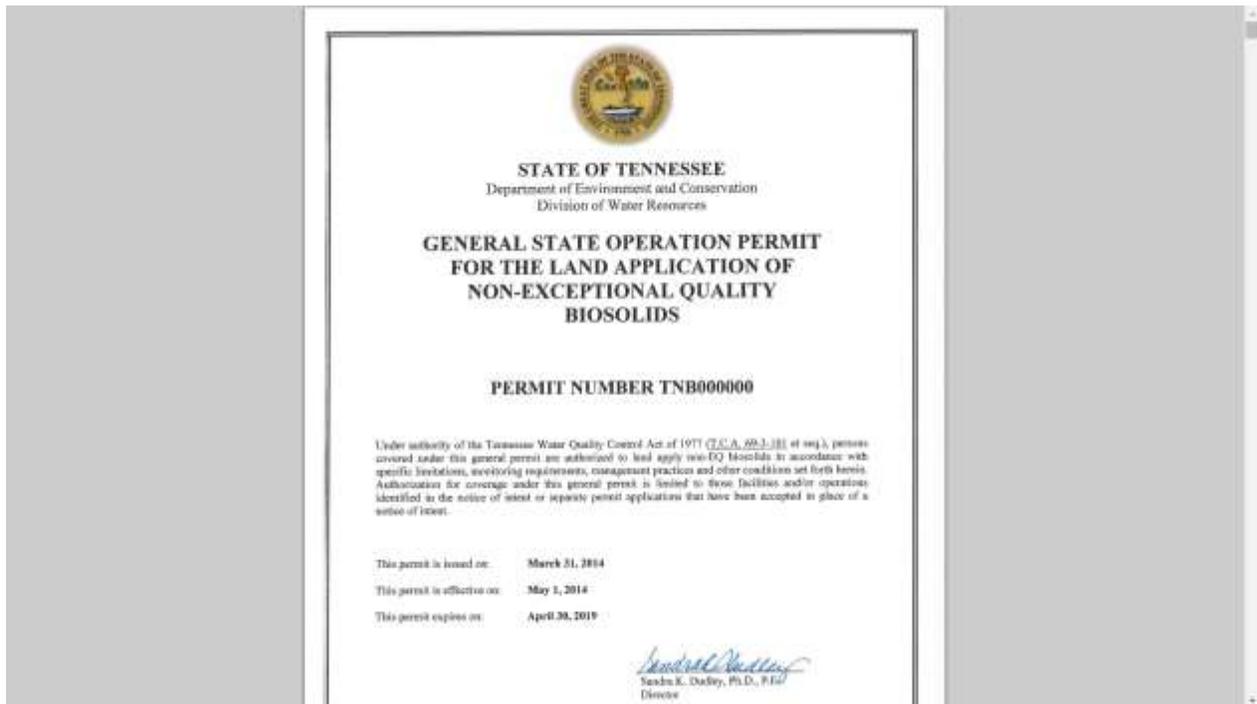
## **2015 BMS SUSTAINABILITY COMMITTEE MEETING**

October 14, 2015: Moccasin Bend invited external interested parties to attend that included Farmers, TDEC Officials, City Council, Friends of Moccasin Bend, North Shore Community, Denali, and the NPS (National Park Service). On the TN River Gorge Explorer we expressed to interested parties the need to participate in regular meetings in order to communicate their input on environmental impacts, quality management practices, health and safety risks, program performance, and areas for



## **Biosolids State Operating Permit**

On March 31, 2014, The State of Tennessee approved a General State Operating Permit for the Land Application of Non-Exceptional Quality Biosolids. This general permit authorizes the land application of non-exceptional quality (non-EQ) biosolids within the State of Tennessee provided that the permittee complies with all conditions in this general permit. It does not apply to facilities that incinerate sewage sludge, dispose of sewage sludge in a landfill, or place sewage sludge in a surface disposal site.



## **CONTACT INFORMATION**

For more information about the City of Chattanooga Biosolids Management Program, to provide comment or input to the program, or to be placed on our mailing list, please contact Matthew Snyder, BMS Coordinator at 423-757-0049, email: [msnyder@chattanooga.gov](mailto:msnyder@chattanooga.gov) Also, please visit our City of Chattanooga Biosolids webpage at [www.chattanooga.gov/Biosolids](http://www.chattanooga.gov/Biosolids) There you can find the Biosolids Facts, Criteria for Land Application, and Current Regulations.

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## CHATTANOOGA MAINTAINS NBP PLATINUM LEVEL

In April 2014 an independent audit of Chattanooga's BMS program was conducted by DEKRA-Registered Quality, Inc. (Re-Verification Audit Year 5). Based on this audit, Chattanooga's program was verified as meeting the National Biosolids Partnership (NBP) requirements and was recommended for continued certification. This is considered maintaining Platinum Level.

Although the audit found three minor nonconformances, all were corrected before the March 2015 Internal Audit Number 6 (which was substituted for the second time as the Independent third (3<sup>rd</sup>) Party Audit) to maintain NBP Certification again in 2015. The BMS program strengths noted by the audit were:

The focus on improved energy performance (approx. 12% reduction) is resulting in significant environmental improvement and lower costs. – The table identifying critical control points and operational controls is being used to determine the need for standard operating procedures and operator training.

The City of Chattanooga and DEKRA have agreed that the next Interim Audit will occur sometime in 2019. Chattanooga has the option of substituting an internal audit or using a Third Party Audit Company (e.g. DEKRA) to perform this audit. If an internal audit is substituted as an interim audit, the City of Chattanooga will ask DEKRA to review that audit in order to maintain Verification.

## INTERNAL AUDIT TEAM CONDUCTS YEAR 4 AUDIT

Chattanooga's Internal New Audit Team, conducted the Year 6 Interim Internal audit in February, 2016.

### EXECUTIVE SUMMARY

As noted in the Executive Summary, the purposes of the internal audit were:

- to determine if the Chattanooga ISS is complying with its Biosolids Management Policy and the NBP Code of Good Practice
- to determine if the Chattanooga ISS is making satisfactory progress toward its BMS Goals and Objectives.
- to evaluate the effectiveness of the City of Chattanooga's Biosolids Management System by reviewing selected processes from within the Biosolids Value Chain.

Audits were conducted for the following processes: Pretreatment & Collection; Wastewater Treatment & Solids Generation; Biosolids Preparation (incl. stabilization, conditioning, & handling); Solids Storage & Transportation; Biosolids Use-Land Application-Tennessee and Alabama; Communication (internal & external); Competency, Awareness, & Training; Compliance (with legal & other requirements); Contractor Control; Corrective and Preventive Action; Critical Control Points & Operational Controls (identification); Document Control & Recordkeeping; Emergency Preparedness; BMS Documentation; BMS Planning; Engineering (incl. process design); Goals & Objectives; Internal BMS Audits; Laboratory; Maintenance; and Management Involvement (incl. Policy, Mgmt. Review); Maintenance Safety

### SUMMARY OF AUDIT FINDINGS

#### BMS Strengths

- A study was completed by consulting engineers for a Green Infrastructure Program Plan which includes controls for the combined sewer system sub-basins which will reduce I&I flows to the wastewater treatment facility. The plan was approved by the EPA and will be implemented 2016-2018.
- Fats, Oils, and Grease ("FOG") Management CMOM Program to establish methods to identify persistent sources of FOG causing problems in the WCTS and the best method or mechanism

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for addressing those sources; Established a Performance Measure to Maintain 100% trained staff to monitor the number of Pretreatment Program employees trained on FOG Management Program. The plan was approved by the EPA and is ongoing. In addition to this plan, Matthew Snyder has been mailing out flyers to educate the public on FOG, and conducting outreach programs in local schools.

- Evaluate the effectiveness of the FOG Program and identify new goals and Key Performance Indicators (KPIs); Monitor cost of regulatory fines for SSOs due to FOG, and Established Performance Measure to < 15% ratio of noncompliance/inspections to measure the number of annual Noncompliance Notifications versus the total FSE inspections.
- MBWWTP Process Controls Program
- The MBWWTP Bar and Fine Screen Replacements project was performed in late 2015 and early 2016. Existing screening facilities at the MBWWTP influent pump station are inefficient and at the end of their useful service life. In addition to their age, the fine screens blind often due to rags in the influent. The purpose of this project is to design and construct a solution which will correct the screening issues at the plant.
- The MBWWTP Effluent Disinfection System Upgrade project was performed in January of 2016. This project involved the design and construction of a new bulk sodium hypochlorite system to replace the chlorine gas system at the MBWWTP and drastically increases safety to the operators and public by eliminating the need for Chlorine Gas.
- 74,483 wet tons of biosolids were utilized for land application, with zero taken to landfills.
- There have been no NOV's since the BMP began at MBWWTP.
- A new training program has begun, wherein a retired operator was brought back as a contractor in order to train, cross-train, and mentor newer liquids operators.

All Audit Reports are available in their entirety at [www.Chattanooga.gov/Biosolids](http://www.Chattanooga.gov/Biosolids)

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## CITY ENTERS INTO A CONSENT DECREE WITH THE EPA

The Tennessee Clean Water Network (TCWN), United States Environmental Protection Agency (USEPA) and the Tennessee Department of Environment and Conservation (TDEC) negotiated a Consent Decree with the City of Chattanooga (the City) to address sanitary sewer overflows (SSOs), wet weather discharges from the West Bank and East Bank outfalls, and other wastewater system issues. The City of Chattanooga entered into a mutual partnership between EPA, the State, and TN Clean Water Network to help protect the health of the Tennessee River and its tributaries, and the people who use and enjoy them. The Consent Decree calls for implementation of repair and capacity projects in various parts of the City's sewer system, which will result in a substantial improvement in water quality over time

The Consent Decree will be implemented in two phases. During the first phase – which lasts five years – the City will focus on high priority projects (the Early Action Capital Projects listed in Appendix C). The City will also develop and implement a Phase I sewer repair program that will rehabilitate approximately 15% of the sewer system. These improvements are expected to eliminate discharges from the West Bank and East Bank outfalls and reduce SSOs. In the second phase, the City will develop and implement additional projects designed to further improve operation and maintenance of its sewer system.

<http://tcwn.org/press>

<http://tcwn.org/sites/tcwn.org/files/Chattanooga%20Appendices%20FINAL%20-%20reduced%20size.pdf>

[http://tcwn.org/sites/tcwn.org/files/ChattanoogaDraft\\_Consent\\_Decree%20Final.pdf](http://tcwn.org/sites/tcwn.org/files/ChattanoogaDraft_Consent_Decree%20Final.pdf)

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## PROGRESS TOWARD GOALS AND OBJECTIVES

Chattanooga's Moccasin Bend Wastewater Treatment Plant (MBWWTP) has maintained its four primary goals and associated objectives for continuous improvement of its biosolids BMS. The BMS management team regularly reviews the goals and objectives and revises as necessary. The following is our 2015 progress report toward those goals:

**Regulatory Compliance** – All biosolids produced and land applied in 2015 met all EPA 503 compliance requirements (see below for comparison). Regular meetings and site inspections with the land application contractor are held, as well as random truck inspections. No notices of violation (NOV's) were issued in 2015, with the quality of the biosolids produced being more consistent than years past. The public input hearing took place at the TDEC field office for questions and comment for a General Land Application Permit for Biosolids. This new regulation was finalized, and will allow TDEC to enforce against poor application practices. This will lead to improved environmental quality and public perception of wastewater solids reuse in agriculture.

**Quality Management Practices in Biosolids** – In 2015 certification of all Chattanooga biosolids as a commercial fertilizer product was continued with the Tennessee Department of Agriculture. A consultant is currently working with Chattanooga to determine the feasibility to continue Class A / Exceptional Quality (EQ) certification of the biosolids produced from the Filter Press process. A final report from Hazen & Sawyer details progress towards this goal. Currently, Chattanooga continues to conduct 24 hr. delineation of staging for pH tests on all cake to establish documentation of a stable product to meet Vector Attraction Reduction (VAR) standards. This testing is submitted to EPA for review and acceptance monthly and annually.

**Environmental Performance** – Moccasin Bend WWTP has implemented a Strategic Energy Management Plan to reduce and study energy consumption at the facility by hiring the consultant, AEED. The initial steps involved changes to lighting and switches to reduce waste during non occupied and occupied hours by changing existing less efficient bulbs and ballasts to more efficient types. The BMS Coordinator, Matthew Snyder, maintained his LEED (Leadership in Energy and Environmental Design) professional Certification this year. LEED AP O+M (Operations & Maintenance) enables him to take a more in depth look at the seven (7) areas of LEED at Moccasin Bend and recommend upgrades or changes that will be more sustainable for the future of the facility.

**Relations With Interested Parties** – Our Objective to Increase outreach attempts and Relations with interested parties through plant tours was achieved two fold in 2015 through the creation of a plant tour for children and adults. Over 1,000 Persons from ages 8 to 80 viewed outreach in the form of Wastewater Treatment presentations and walking tours at the plant, to our new "Mighty Microbe Series" which were enjoyed by all ages. In total, 583 people received information about the biosolids program. Every employee, ~ 160 total, went through the BMS Training.

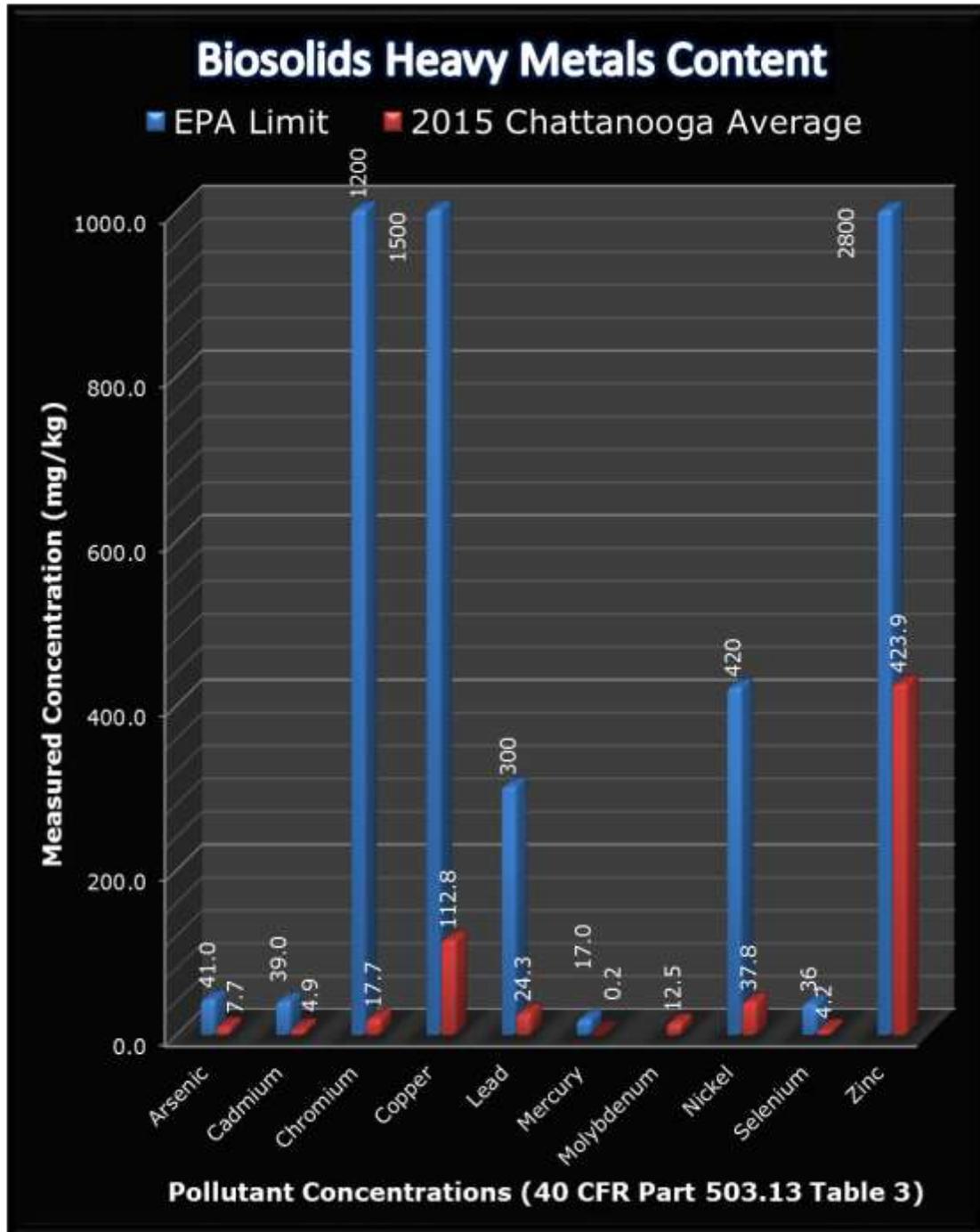


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## REGULATORY COMPLIANCE

The biosolids produced at MBWWTP have consistently met all standards for Class B biosolids required by the EPA, and are well below the regulatory limits for metal concentrations as shown in the attached chart (2015 data). There have been no Notices of Violation for biosolids production and land application for the past year, and the City has met the Tennessee Department of Environment and Conservation (TDEC) Guidelines for the Land Application and Surface Disposal of Biosolids.



(EPA does not set a limit for Molybdenum or Chromium but it is tested for anyway)