



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

March 15, 2022

Mr. Bradley Flynt
Treatment Plant Superintendent
City of Greensboro
T.Z. Osborne Water Reclamation Facility
2350 Huffine Mill Road
McLeansville, North Carolina 27301

Dear Mr. Flynt:

On August 9, 2021, in response to a July 14, 2021, U.S. Environmental Protection Agency Region 4 request, the City of Greensboro's T.Z. Osborne Water Reclamation Facility (T.Z. Osborne) submitted an updated petition with attachments (see Enclosure A), to EPA Region 4 describing an alternative monitoring procedure (AMP) entitled – EPA Region IV Submittal Package – Site-Specific Alternate Monitoring Plan for the VenturiPak Scrubber (CD-22) prepared by GEL Engineering of NC, Inc. of Raleigh, NC, and dated August 2021. This AMP was originally submitted to the North Carolina Department of Environmental Quality's Division of Air Quality (DAQ) (see Enclosure B) on June 25, 2021. The DAQ subsequently informed the EPA Region 4 of the petition in July of 2021, which resulted in the EPA Region 4's direction to the facility to file a separate request directly to the EPA.

The City of Greensboro cited two provisions of 40 CFR Part 60, Subpart M – Emissions Guidelines (EG) and Compliance Times for Existing Sewage Sludge Incineration (SSI) Units. Under §60.5175(b) {or §62.15965(b) in the SSI Federal Plan}, if a facility does not use a wet scrubber, fabric filter, electrostatic precipitator, activated carbon injection, or afterburner, or if emissions are limited in some other manner (e.g., materials balance), then the facility must submit a petition to the EPA for approval to use an alternative control device. The petition must also include monitoring associated with the validation of compliance during non-performance testing times. The City of Greensboro installed a sorbent polymer composite (SPC) modules system to control emissions of mercury from the SSI. SPC modules are fluoro-polymer filters manufactured primarily to control emissions of mercury.

On May 2, 2018, the EPA Region 4 delegated authority of the Federal SSI plan for existing SSI units to the North Carolina Department of Environmental Quality (NCDEQ) {See 83FR 19184}; the approval of major alternatives to monitoring, however, are not delegated to state agencies under the provisions of §62.16050. Based on our review of the information provided, Region 4 disapproves the petition. Details regarding our review and the basis for our disapproval are provided in the remainder of this letter.

Description of SSI and SPC System

As described in the petition, T.Z. Osborne operates a wastewater treatment facility in McLeansville, Guilford County, North Carolina. NCDEQ's DAQ issued Title V Operating Permit No. 04489T26 to T.Z. Osborne on March 2, 2021. T.Z. Osborne operates a sewage sludge fluidized bed incinerator designated as source ES-01 (6,000 pounds of dry sludge per hour maximum charge rate). The SSI is fired by natural gas/No. 2 fuel oil-fired burners with an auxiliary heat input rating of 8.61 million British thermal units per hour (MMBtu/hr). Emissions from the incinerator are controlled by a VenturiPak scrubber (CD-22). The VenturiPak scrubber is equipped with a wet tray, a venturi throat spray manifold, and SPC mercury control modules. Each SPC module is 25" wide x 27" long x 13" high. The SPC Mercury Control Stage consists of three layers (each containing four removable SPC modules) with additional space for a fourth layer if needed for future expansion. T.Z. Osborne also included the manufacturer's information: EnviroCare International VenturiPak Scrubber Functional Specifications, as well as the Operation and Maintenance Manual for the Fluidized Bed Incinerator VenturiPak Scrubber System.

SSI Regulatory Requirements

As required in paragraphs §60.5175(b)(1) thru (b)(5) {or §62.15965(b)(2)(i) thru (b)(2)(v) in the SSI Federal Plan}, a petition must include the specific parameters to be monitored, a discussion of the relationship between these parameters and the emissions of regulated pollutants, a discussion of the parameter operating limits and averaging periods, the instruments and methods used to monitor these parameters, and the frequency and methods for recalibrating the instruments used for monitoring these parameters.

T.Z. Osborne's Proposed AMP for the SPC Modules

T.Z. Osborne proposes to perform the following:


- Monitoring of the pressure drop across the VenturiPak scrubber mercury modules.
Use ≤ 4 inches of water column as an operating limit.
- Monitoring of the VenturiPak scrubber outlet exhaust gas temperature.
Use < 180 degrees F as an operating limit.
- Perform quarterly physical inspections of the mercury modules using procedures recommended by the manufacturer.

EPA Region 4 Determination

Based upon our review of your submittal, the EPA disapproves the proposed AMPs of pressure drop, scrubber outlet exhaust gas temperature and physical inspection of the mercury modules because these monitoring techniques are insufficient to ensure that the mercury emissions limit (0.037 mg/dscm @ 7% O₂) is continuously met. On September 1, 2021, the EPA Region 4 provided feedback to your facility regarding the deficiencies of your proposed AMP. Additionally, the EPA Region 4 also requested additional information from you regarding the manufacturer's operation and maintenance manual and provided you with a copy of a previously approved AMP from the EPA Region 4 (see Enclosure C) to assist you in understanding what procedures the EPA expects for SPC modules controlling mercury emissions in a fluidized bed incinerator scrubber. To date, we have neither received responses to our questions nor have we received any feedback.

This AMP disapproval was coordinated with the EPA's Office of Enforcement and Compliance Assurance and the EPA's Office of Air Quality Planning and Standards. If you have any questions regarding this disapproval, please contact Mark Bloeth of my staff at bloeth.mark@epa.gov or (404) 562-9013.

Sincerely,
**CAROLINE
FREEMAN**

 Digitally signed by CAROLINE
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Date: 2022.03.15 21:25:02 -04'00'

Caroline Y. Freeman
Director
Air and Radiation Division

Enclosure A – Site-Specific Alternate Monitoring Plan (August 2021)
Enclosure B – Original AMP submittal to NCDEQ (June 2021)
Enclosure C – AMP Approval Example from EPA Region 4 (March 2021)