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NEW Water
The brand of the Green Bay Metropolitan Sewerage District

February 27, 2020

VIA CERTIFIED MAIL AND
EMAIL TO WHEELER.ANDREW@EPA.GOV AND MOONEY.JOHN@EPA.GOV

Mr. Andrew Wheeler
EPA Administrator
U. S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Mr. John Mooney
U.S. Environmental Protection Agency
Mail Code A-187
77 West Jackson Boulevard
Chicago, IL 60604-3507

RE: 40 CFR § 60.4861(b) Final Root Cause Analysis and Emissions Report
NEW Water Fluidized Bed Incinerator
Operation Permit No. 405004600-P30
WPDES Permit No. WI-0065251-01-1

Dear Messrs. Wheeler and Mooney:

The Granular Activated Carbon (GAC) has been operational with the fluidized bed incinerator since February 13, 2020. The purpose of this letter is to provide you with a final Root Cause Analysis Report regarding the thermal excursion event experienced by Green Bay Metropolitan Sewerage District ("NEW Water") and actions taken by NEW Water to prevent a reoccurrence of this event in the future. In addition, the letter will describe the emissions associated with the excursion event.

Background Information

On December 31, 2019, NEW Water filed a written report with EPA pursuant to 40 CFR § 60.4861 (the "Malfunction Report"). In addition on the same date, NEW Water filed a request for a 30-day extension to the written report deadline pursuant to 40 CFR sec. 60.4861(b) (the "Extension Request"). Subsequently, on January 3, 2020 NEW Water supplemented the response to 40 CFR § 60.4861(a)(9) with the written root cause analysis based on NEW Water's understanding of the malfunction event at that time (the "Initial Root Cause Report"). A copy of the Malfunction Report, Extension Request, and Initial Root Cause Report are enclosed hereto as Attachment A.

NEW Water retained Chavond-Barry Engineering Corporation ("CBE") as a consultant to provide a complete, independent review of the facts underlying the malfunction event involving the GAC and provide some recommendations to determine, correct, and eliminate the primary causes of the malfunction (the "Engagement"). CBE has completed the Engagement and provided a final report on the findings and

recommendations resulting from the Engagement (the "CBE Report"). A copy of the CBE Report is enclosed hereto as Attachment B.

Overview of the CBE Report

The CBE Report identifies the primary causes of the malfunction and the excess emissions resulting from the malfunction event. Additionally, the report recommends and prioritizes possible actions that may reduce the likelihood of a similar event from occurring in the future and limit the amount of damage that might occur as a result.

It is important to note that the GAC technology will produce exothermic reactions as the carbon adsorbs moisture and contaminants to remove them from the incineration flue gas stream. This makes the operational conditions of the GAC, as well as the protective monitoring systems, important to manage the heat produced by these reactions.

Actions Undertaken by NEW Water to Prevent a Future GAC Malfunction

The actions taken by NEW Water in response to the root cause analysis findings contained in the CBE Report have been focused on addressing the operational conditions and improving the monitoring systems necessary to avoid a future malfunction event (the "Mitigation Actions").

The Mitigation Actions undertaken by NEW Water are summarized, as follows:

Action	Result/Expected Result	Status
Added 27 new carbon bed temperature monitoring points	Early detection of a hot-spot will enable earlier mitigation and protect from extensive damage	Completed and operational
Optimization of upstream venturi scrubber and WESP	Optimize SOx and particulate removal to protect GAC performance and reduce likelihood of need for washing carbon	Scheduled for mid-March
Enhanced protection system interlocks	Eliminate gaps in the protective system controls, resulting in increased alarm and protective functionality, while avoiding nuisance quenching of carbon	Completed and operational
Improved CO monitoring system maintenance practices	Spare parts are now on hand, quarterly preventative maintenance scheduled to improve system up-time and reliability	Completed
Operator training	Increase awareness of GAC control functionality changes, hot-spot identification, response protocols	Completed, will provide refresher training going forward
Post quench/wash response	Dispose of carbon, avoid high-risk conditions in GAC	Decision made, no attempt to dry carbon until modified drying procedure fully developed and evaluated

Evaluate alternative carbon source	Testing and engineering evaluation may indicate decreased hot-spot formation with alternative carbon source(s)	Testing has been completed, evaluation underway

The Engagement and the resulting CBE Report were intended to determine, correct, and eliminate the primary causes of the malfunction event. NEW Water believes that actions taken by NEW Water described in this letter and based upon the CBE Report will serve to significantly reduce, if not eliminate, the occurrence of a similar malfunction event in the future.

Emissions Associated with the GAC Malfunction

NEW Water is subject to two emission limits for mercury under its air operation permit. The first is a mass limit of 3.2 kg (7.1 pounds) per 24-hour period, established under the National Emission Standard for Mercury (40 CFR 61, Subpart E). The second is a concentration limit of 0.0010 milligrams per dry standard cubic meter (mg/dscm), corrected to 7% oxygen, established under the Standards of Performance for New Stationary Sources: Sewage Sludge Incineration Units (40 CFR 60, Subpart LLLL). Attachment C contains a summary of emissions of mercury while incinerating sludge without use of the GAC during the malfunction.

The information contained in this letter and attachments is intended to conclude the reporting requirements associated with the GAC malfunction event. However, NEW Water is open to providing any further information necessary for the agency to consider an appropriate response to this malfunction event. Please feel free to contact me with any further questions on this topic.

Sincerely,

GREEN BAY METROPOLITAN
SEWERAGE DISTRICT

The undersigned is the Executive Director of Green Bay Metropolitan Sewerage District, also known as NEW Water, and hereby certifies, based on information and belief formed after reasonable inquiry, the statements and information contained herein are accurate.

Thomas W. Sigmund

Thomas W. Sigmund, P.E.
Executive Director

Enclosures: Attachment A
Attachment B
Attachment C

cc: Louise Gross (gross.louise@epa.gov)
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