Region 2 Enforcement & Compliance Assurance Division
Air Compliance Branch

Inspection Report

Inspection Date: February 28, 2023
Facility Name: Albany County Water Purification District – North Plant
Facility Address: 1 Canal Road S (off Jones Road), Menands, NY 12204
ICIS-Air/RMP ID #: NY0000004012600138
Federal Facility: No
NCI: None
Facility size: Minor
Activity: FCE
State Referral: No
EJ: Yes
NAICS code: 221310 Water Treatment Plant
EPA Lead Inspector: Phil Ritz 212-637-4064
EPA Asst. Inspector: Joseph Cardile 212-637-4054
ERG Asst. Inspectors: Steve Rapp, ERG Inspector, 339-364-4264
Elizabeth Hubbard, ERG Inspector Trainee, 336-543-7326

State Inspector: Rahman Rafique, New York State Department of Environmental Conservation ("NYSDEC")

Facility Contact: Craig A. Hurteau, Permit Compliance Manager, 518-447-1619

Information Sources Consulted:

- ☐ ICIS-Air (Integrated Compliance Information System)
- ☒ ECHO (Enforcement and Compliance History Online)
- ☐ TRI (Toxic Release Inventory)
- ☒ CEDRI
- ☐ Dun & Bradstreet
- ☐ EnviroFacts
- ☒ State Contact
- ☒ State Website/Database
- ☒ File Review
- ☐ Google/Bing/Aerial Photographs/Maps/Diagrams
- ☐ Facility Website
- ☐ Previous Inspection Reports
- ☐ Information Collection Request
- ☒ Other

1. Plant Description:

Albany County Water Purification District (ACWPD) operates a wastewater treatment facility ("North Plant" or "facility") that is designed for an average flow of 35 million gallons per day. Primary components of the wastewater treatment process consist of preliminary treatment (i.e., grit screens), primary clarifiers, aeration tanks, final clarifier, sludge holding tanks, and chlorination tanks. Sludge removed during the wastewater treatment process is thickened using dissolved air floatation units, chemically conditioned for odor control and coagulation/flocculation, and dewatered using a belt press. The cake from the belt press is incinerated in one of two multiple hearth incinerators. Only one multiple hearth incinerator (MHI), either MHF01 or MHF02, operates at any given time. However, at the time of the inspection, MHF01 was out of service.

In its Clean Air Act (CAA) Title V permit, the North Plant is defined by the following emission units: Emission unit 1SSINP consisting of two, ten-hearth furnaces (MHF01 and MHF02) that incinerate sewage sludge generated from the treatment of municipal wastewater received at the North Plant. Emission unit 1SSINP is located at the Solids Building. Each furnace is vented to a Envirocare VenturiPak ™ scrubber system consisting of a quench stage, condenser stage, venturi, and high efficiency mist eliminator. Incinerator ash is managed in two on-site lagoons, where the ash is allowed to dry prior to being sent off-site for use or disposal.

The MHIs are subject to 40 CFR Part 60, Subpart MMMM; 40 CFR Part 61, Subparts C and E; and 40 CFR Part 503, Subparts A and E. The contaminants regulated under 40 C.F.R. Part 60, Subpart MMMM, "Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units" ("Subpart MMMM") are cadmium (Cd), lead (Pb), mercury (Hg), sulfur dioxide (SO_2), oxides of nitrogen (NOx), carbon monoxide (CO), dioxan/furans (d/f), hydrogen chloride (HCl) and particulates (PM).

The North Plant includes two 1,214 horsepower Caterpillar C27 diesel-fired emergency engines. The facility must comply with the applicable portions of 40 CFR 60 Subpart IIII. Diesel fuel for the generator engines is stored in an 8,000-gallon horizontal above ground storage tank. A 60-kilowatt natural gas-fired emergency generator also is subject to the RICE MACT. A gasoline dispensing facility is used to fuel ACWPD vehicles and equipment with gasoline or diesel fuel, which are stored in vertical tanks.

2. Compliance History:

Based on EPA's Enforcement and Compliance History Online (ECHO) website, the State conducted 3 partial compliance evaluations (PCEs), including 1 stack test observation, and 3 full compliance evaluations (FCEs) since 2018. EPA has conducted 2 PCEs, including 1 stack test observation, and 1 FCE. There does not appear to be any formal or informal CAA federal enforcement actions taken at the facility over the past five years.

3. Facility Entry:

The representatives of the U.S. Environmental Protection Agency (EPA), Joseph Cardile and Phil Ritz, as well as Steve Rapp and Elizabeth Hubbard from Eastern Research Group (ERG), arrived at the North Plant at approximately 9:00 am. Shortly after, a representative of the New York State Department of Environmental Conservation (NYSDEC), Rahman Rafique, arrived. The EPA representatives ("the inspectors") were met at the administration building by: Angelo Gaudio, Executive Director; Craig Hurteau, Permit Compliance Manager; and Jacob O'Connor, Permit Compliance Technician ("the facility representatives") of the ACWPD. The inspectors and facility representatives met in a conference room for the opening conference. The inspectors presented their identification credentials and provided an overview and scope of the inspection, including a focus on the requirements of Subpart MMMM.

4. Entry Conference/Technical Discussion:

The facility representatives provided general background and history of the North Plant. The two sewage sludge incinerators (SSIs) were constructed in 1973. ACWPD generally incinerates sludge five to six days per week and only runs one unit at a time. Currently, MHF01 is not operational due to the use of some of its parts for maintaining MHF02. ACWPD has approximately 60 employees that work at ACWPD's North Plant and South Plant (located at 209 Church Street in Albany). The facility runs five to six days per week and processes between 20 to 22 million gallons of wastewater per day. The facility accepts septage, as well as fats, oils, and grease (FOG) from outside parties, which is mixed with the sludge. The facility typically has a sludge feed rate of seven to eight wet tons per hour. The solids content of the sludge that is burned is typically in the mid-20 percent, which is achieved using a belt press and is calculated daily based on analysis performed by ACWPD's laboratory. The representatives explained however, that the sludge feed rate can vary considerably depending on conditions in the wastewater process, such as a recent mechanical problem with one of the clarifiers. The inspectors noted that the facility's CAA Title V operating permit Item 36.1 sets a design capacity of each MHI as 26.3 dry tons per day. The facility representatives said they monitor wet tonnage throughput because its easiest to monitor real time, and dry tonnage must be calculated after the fact.

The facility representatives explained that, in response to the 2018 Consent Order with NYSDEC, in July 2022, the ACWPD developed a long-term sludge disposal study that includes an engineering plan with options for operational improvements and increased efficiencies at both the North Plant and South Plant facilities. They explained that the current draft study includes the possibility of rehabilitating the SSIs at both facilities or rehabilitating the North Plant SSI and piping wet sludge from the South Plant to the North Plant for processing and incineration. Other

options include building an anaerobic sludge digester and/or sludge drying facility to replace the four SSIs at the North and South Plants. Of the alternative scenarios evaluated in the study, it was determined that consolidation of South Plant and North Plant sludge handling processes is the most cost-effective and energy efficient means of long-term sludge disposal for the ACWPD. In this scenario, un-thickened liquid sludge generated at the South Plant would be pumped to the North Plant via an approximately four-mile-long six-inch pipe. The study says that improvements would be made to the North Plant dewatering processes to accommodate the increased sludge volumes. The North Plant incinerators would also be rehabilitated and improved, and the incinerators will have adequate capacity to meet the projected maximum month combined sludge production condition. Consolidation of the solids handling processes would allow the ACWPD to decommission the South Plant incinerators, reducing operating and energy costs significantly. According to the July report, the estimated capital cost of the overall recommended consolidation project is $46,350,000 and could take several years for permitting and construction. They explained they are finalizing the report and expect to submit the final report to NYSDEC soon.

The facility representatives noted that the potential presence of perfluorooctanoic acid (PFOA) and perfluoro-octane sulfonic acid (PFOS) in sewage sludge limits some of the other potential options for disposal of sludge, such as land application. ACWPD is currently testing some of its permitted dischargers, which include a couple of paper mills, for PFOS and PFOA. They noted that for the engineering study, they considered pyrolysis (e.g., in Schenectady, NY) and gasification of sludge for use in combined heat and power at the North Plant, but the examples they reviewed were not readily replicable and/or functioning sufficiently for serious consideration.

The inspectors noted that the repairing and rebuilding of an SSI can be considered a "reconstruction" under section 129 of the CAA, as well as "modification" under New York's New Source Review (NSR) permitting regulations. They noted that the section 129 reconstruction differs from a modification or reconstruction under either New Source Performance Standards (NSPS) under section 111, or NSR modification under section 110 of the CAA. They noted that for SSIs, the reconstruction applicability threshold is met when cumulative costs, over the lifetime of the unit, exceed 50% of the initial construction cost with some exclusions, like pollution control equipment. They noted, if the costs of rehabilitating the North plant were added to the changes made to the plant over the past 50 years, the plant could be considered reconstructed and therefore, could be subject to the NSPS regulations under 40 C.F.R. Part 60, Subpart LLLL, "Standards of Performance for New Sewage Sludge Incineration Units."

Sludge Incineration Process:

The facility representatives described the operation of the multi-hearth incinerators as follows. Activated sludge is sent to dissolved air flotation tanks, then to holding tanks, then to the belt press and the dewatered sludge travels by conveyor to the top of and into the MHI. The MHIs have 10 hearths. Hearths 1 and 2 dry the sludge. Hearths 3 and 4 are the combustion zone. Hearths 5 through 10 complete the combustion and cool the ash.

Air Pollution Control Bypass:
The inspectors asked if the SSI had an emergency bypass stack and if so, how often it was used. The facility representatives said that there was a bypass, and it was used approximately 10 times per year due to a variety of causes. However, the facility does not currently have an automated monitoring system for the bypass events and the representatives were not sure if the facility's Supervisory Control and Data Acquisition (SCADA) system could monitor the range of positions of the bypass damper.

Ash Handling:
The facility representatives described the ash handling at the facility. Ash from the SSIs falls from the lowest hearth to a hopper where it is combined with scrubber effluent and then pumped by pipes to outdoor lagoons. Each of the ash lagoons has a storage capacity of approximately one year after which they are drained, piled, put into trucks, and hauled away by truck to a landfill or composting operation. The inspectors asked about steps the facility takes during the ash handling process at the outdoor lagoons to minimize fugitive emissions, particularly during the process of emptying one of the lagoons. The representatives explained that the superintendent checks progress periodically, including sampling the material. The inspectors expressed concern that the current ash handling plan, which appears to consist of section 4, "Bag Leak Detection" in the site-specific monitoring plan (SSMP) and section 5, "Ash Handling System Description" of the SSMP Appendices, does not confer how the facility will minimize fugitive emissions from the outdoor aspects of the ash handling and, therefore, the plan should be updated to include any standard operating procedures used to minimize fugitive ash emissions from the lagoons, including the periods of time when one of the lagoons is being emptied.

Air Pollution Control System:
The inspectors asked if the facility has a final control plan (FCP) that describes how each of the nine pollutants regulated by Subpart MMMM are controlled, as required by the regulations (Subpart MMMM, section 60.5110) and Item 56.2 of the facility's Title V permit. The facility representatives said they did not have a control plan but described the air pollution control systems of the incinerators. They explained the flue gas exhaust from the SSI first goes through the EnviroCare scrubber system that includes several stages or types of scrubbing units in the same housing, including a quench section, a venturi scrubber section, two impingement tray scrubbers, and a mist eliminator section. The representatives explained that the water used in the scrubbers is the treated effluent from the wastewater treatment at the facility. However, they noted that the pH of the effluent is not typically adjusted because the water in the area is naturally alkaline. To control products of combustion, the facility operators rely on adjustment to the sludge feed rate, combustion temperature, and excess air. The gas goes from the scrubber unit out the stack on the roof of the solids building.

Petition to EPA and Site-Specific Monitoring Plan (SSMP):
The inspectors expressed concern that for NOx, Hg, and d/f, it appeared that the facility had not yet established monitoring parameters, set limits for those operating parameters during stack tests, or demonstrated continuous compliance. They explained that section 60.5175 of Subpart MMMM requires an SSI to submit a petition to EPA if an air pollution control device other than a wet scrubber, fabric filter, electrostatic precipitator, activated carbon injection, or afterburner is used, or if an SSI limits emissions in some other manner (e.g., materials balance), to comply with

the emission limits in section 60.5165 and Table 3. The inspectors explained that section 60.5175 requires the petition to identify, among other requirements, the specific parameters that would be monitored, including a discussion of the relationship of the parameters and emissions and how minimum or maximum values will be established and averaging times for the monitoring. The inspectors explained that, where a petition is required, EPA must approve the petition prior to the facility conducting initial performance testing or finalizing its SSMP under section 60.5200 of Subpart MMMM. The inspectors indicated that, without an approved petition, it appears that the initial testing and current SSMP were incomplete. The facility representatives said they had not submitted a petition to EPA regarding control and monitoring of Hg, d/f, or NOx, because they believed NOx was controlled by the amount of excess air in the combustion chamber, Hg by the scrubber, and d/f by temperature.

The inspectors explained that other MHIs have developed, and EPA has approved, petitions regarding Hg, d/f, and NOx because the presumptive control for Hg and d/f in Subpart MMMM is an activated carbon (or other sorbent) injection system. Regarding Hg, other MHI's petitions have included periodic comparison of the metals analysis of sludge to a maximum theoretical emission concentration (MTEC) of Hg calculated using the Subpart MMMM emission limit and the stack gas flow rate for the specific SSI. They noted that MTEC is described at 40 C.F.R. Part 63, section 63.1201 and 40 C.F.R. Part 63, Subpart EEE, "National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors" and noted that most SSIs already sample sludge for Hg under 40 C.F.R. Part 503, Subpart E. Additionally, the approved petitions describe steps that the SSI owner will take when the MTEC is exceeded, such as increased sludge sampling and analysis, outreach to significant industrial users, and other types of upstream reduction programs. The facility representatives noted that under the Clean Water Act permit, the facility samples the sludge every two months as a 24-hour composite to test for arsenic, cadmium, chromium, lead, nickel, and zinc, but not mercury. Further, the representatives said it was their understanding that Hg sticks to PM and therefore, believe that it would be controlled in the scrubber or be removed as ash.

Regarding d/f, the inspectors said similar facilities control the pollutant by using a combination of sufficient temperature and oxygen and noted that ACWPD's "Biosolids Furnace Operator Certification Technical Reference Document" and SSMP Appendices for the North and South Plants state that such compounds are controlled by oxidation temperature in Hearth 1, yet it appeared that only Hearths 3 and 4 had minimum temperature requirements in the permit.

Regarding NOx, the inspectors noted that similar facilities control NOx using a combination of controlling for maximum combustion temperature, feed rate, and oxygen. They noted that ACWPD's reference document states that to control NOx, the operators should reduce oxygen levels and Hearth 1 exit temperature to the extent possible, yet it appeared that only Hearths 3 and 4 had minimum temperature requirements in the permit.

The inspectors noted that the general SSMP was the same for both the North and South Plants, but each had a site-specific appendix. The inspectors said that the current SSMP should be revised to provide additional detail regarding the specific locations of the monitors and how the monitors meet the performance criteria required by Section 60.5200 of Subpart MMMM. The inspectors asked if ACWPD conducted performance evaluations of its parameter monitoring

devices around the time of the emissions testing. The facility representatives explained that the performance testing of the monitors is typically done prior to testing.

Emissions Testing:
Based on a review of the North Plant's emissions test reports, the inspectors noted several concerns with the emissions testing, including tests conducted at less than 85% of the maximum capacity as required by Subpart MMMM (section 60.5220(a)(11)). They noted that Item 36.1 of the permit authorized a design capacity of 26.3 dry tons per day (dtpd) per MHI, but it was not clear whether the feed rate during testing represented 85% of the hourly or 4-hour maximum of the unit.

They expressed concern that several of the tests, including 2017, 2018, and 2022, used three one-hour runs for O_2, CO_2, CO, and NOx. Similarly, the test report from 2020 indicates that testing for O_2, CO_2, SO_2 and NOx consisted of three one-hour runs. They noted that Section 60.5190(e) of Subpart MMMM requires SSIs to set a parameter limit for minimum temperature equal to the lowest 4-hour average combustion chamber operating temperature (or afterburner temperature) which is important for pollutants controlled by a minimum combustion temperature. They noted that while the regulations do not specify parameters that must be monitored for ensuring continuous compliance with the NOx emission limit, ACWPD needs to explain how they control NOx and how they will set related parameter limits during testing in the future.

The inspectors noted concern regarding the results of the 2022 stack test for d/f which was more than 200% of the emission limit. The facility representatives said that they are planning to analyze sludge samples in the future to investigate the potential causes of the high d/f emissions. The inspectors expressed concern that this could be part of a broader problem with the unit's ability to maintain good combustion consistently, which affects all combustion related pollutants, including d/f, CO, NOx, and PM. They expressed concern that the lack of an approved petition for control and parameter monitoring of d/f and NOx meant that prior emissions testing may not have been conducted under conditions comprehensive enough for setting parameters limits for all the combustion related pollutants which may need opposite values of the same parameters, for example a maximum combustion oxygen and temperature for NOx but a minimum combustion oxygen and temperature for d/f, CO, and PM.

Regarding reporting of testing reports, the inspectors noted that although NYSDEC may require reports be submitted through a state system, ACWPD is required by Subpart MMMM (section 60.5235) to submit test reports to EPA through its "Compliance and Emissions Data Reporting Interface" (CEDRI), specifically the electronic reporting tool (ERT) accessed through EPA's central data exchange (CDX). They noted that ACWPD likely currently submits discharge monitoring reports (DMRs) under the Clean Water Act through CDX which should facilitate the process.

Operating Parameter Limits (OPLs) and Deviation Reports:
The inspectors expressed concern that the deviations reported for scrubber flow, scrubber pressure drop, and combustion temperature appeared to be based on values from various historic tests, rather than the most recent required test for the applicable pollutants controlled by those parameters, as required by Subpart MMMM, section 60.5210(d)(1). For example, for pH, it

appeared that deviations were determined using the permit limit of 4.5, based on the July 2018 Order on Consent with NYSDEC, rather than on the most recent test for SO_2 in 2022 or HCl in 2021. They noted that Subpart MMMM, section 60.5210(d)(1) requires operating limits be based on operating data recorded during any performance test required by section 60.5205(a) which requires an annual performance test for each pollutant, unless the provisions for conducting the testing less frequently apply under section 60.5205(a)(3). They also pointed to section 60.5190, which requires that operating limits be re-established using operating data recorded during any tests required in section 60.5205. The inspectors expressed concern that the deviation reports may not be complete and, based on the hourly data in the reports, the facility could have difficulty meeting the OPLs for pH, temperature, scrubber pressure drop, and scrubber flow continuously if set based on the most recent test data for applicable pollutants.

The facility representatives said that their understanding was Subpart MMMM requires re-establishing parameter limits only when emissions testing was required for "all" of the pollutants simultaneously. The inspectors expressed concern with that interpretation of the regulations and again noted the requirements of sections 60.5210(d)(1) and 60.5205(a). Additionally, the inspectors pointed out section 60.5210(d)(1) requires operating limits to be based on operating data recorded during any performance test required in Section 60.5205(a) and that new values for operating limits be applied from that point forward. The inspectors expressed concern that, based on review of deviation reports and hourly data, it appears the facility would have difficulty meeting the parameter limits continuously if they were set based on recent test data.

The inspectors asked how temperature was monitored because several of ACWPD's documents, including the "Biosolids Furnace Operator Certification Technical Reference Document" and SSMP Appendices, stated that ACWPD relies on Hearth 1 temperatures as a means of pollutant control, yet the permit required a minimum temperature only for Hearths 3 and 4. The facility representatives explained that initially, ACWPD had monitored Hearth 1 temperatures. However, they now believe that combustion temperature measured in Hearths 3 and 4 are the critical parameters and are monitoring them as required by the permit. The inspectors asked how many thermocouples were used per hearth and how the operators knew if a thermocouple was malfunctioning. They noted that the technical reference document pointed out that there could be a 300-degree Fahrenheit (°F) difference in temperature from the hearth wall to the center shaft. The facility representatives explained that there are two probes in both Hearths 3 and 4, located near the walls, and that each of those probes has two thermocouples that allow comparison for quality assurance purposes. If there is a significant difference in the temperature readings from the two thermocouples, they check both the electronic output and the device itself for possible malfunction. They also noted that they periodically use a hand-held device to check on the comparative accuracy of the installed probes.

pH Data:

Regarding pH, the facility representatives noted that the scrubbers use effluent from the wastewater treatment process and that the water discharge permit includes a pH limit as a range from 6 to 9. They explained that the scrubber does not use any chemical adjustment of pH and they rely on flow through the scrubber for acid gas control. They had analyzed parameter and test data to determine a correlation between other operating conditions, such as sludge feed rate and combustion temperature, but had not observed any strong correlation. They believe that

since the SO_2 and HCl emission rates during testing were well below the emission limits of Subpart MMMM, the variability of the ongoing 3-hour averages of the pH was not likely to cause those pollutant emissions to go above the emissions limits. The inspectors noted that because of the range allowed by the water discharge permit pH limit, the pH of the water flowing to the inlet of the scrubber could fluctuate significantly and that ACWPD could check the scrubber inlet pH more frequently than every 4 hours to help determine the effect of that variable on pH at scrubber outlet.

The facility representatives asked if other MHIs had experienced a similar problem and how others had approached it. The inspectors explained that several other MHIs had experienced similar challenges staying continuously above the average pH value established during the most recent required testing. The inspectors noted that several MHIs had analyzed historical parameter data for sludge solids and feed rate, temperature, oxygen or excess combustion air, and scrubber flow, to develop emissions testing plans that were representative of typical operating conditions to set parameters that would allow continuous compliance with Subpart MMMM. They noted that some facilities conducted additional testing and monitoring of SO_2 and HCl emissions to investigate correlations between typical operating parameters and emissions, for example, around testing events when the testing companies would already be at the site. The facility representatives said that they would be concerned about costs of additional testing or monitoring. The inspectors said that, where this was not possible or did not produce parameter values that could be met continuously, several MHIs had installed systems to adjust chemically the pH of the liquid going into the scrubber, for example, by adding a caustic like sodium hydroxide to the inlet of the scrubber, rather than treating a large volume of water upstream at the water treatment facility.

The facility representatives said that they were currently considering moving the pH probe from the current position at the bottom of the scrubber, just prior to the mixing of scrubber effluent and bottom ash, to a position near the exit of the second impingement tray scrubber. The inspectors noted that such a change would need to be submitted to, and approved by, EPA as an alternative monitoring plan request under Subpart MMMM, section 60.5200(e), including information regarding why the change would be more representative than the monitoring required by Subpart MMMM.

Systems Controls and Data:
The facility representatives showed the inspectors how operating parameter data was monitored and recorded. They explained that parameters are monitored by the SSI operator in the control room who records the data first manually on a clipboard and then electronically in a Microsoft Excel spreadsheet. The inspectors asked how the operator can note potential problems and make corrections before there is a deviation. The representatives showed that the spreadsheet color-codes short-term values that are not above or below the required limit, allowing the operator to make corrections before the 12-hour average value becomes a deviation. The inspectors noted that such a manual system does not appear to allow the operator to observe easily trends in parameters over multiple 12-hour periods that may indicate longer term equipment issues. They noted that a graphical representation of the data is often used at SSIs to assist the operators in maintaining continuous compliance. The facility representatives noted that the existing SCADA system, “Prophecy,” was an older system and they were planning on an upgrade as part of future

changes to the facility. They noted, however, that all the pollution control systems could be operated independently of the SCADA, so even if the system was down, the plant was still operational. They noted that the oxygen (O_2) and total hydrocarbon (THC) continuous monitors were not tied into the SCADA but that the displays for those parameters were in the control room as well.

Feed Rate:
The facility representatives expressed concern with the requirement to test and set operating parameter limits at a minimum of 85% of the facility's maximum permitted feed rate capacity. They said typically the plant's sludge feed rate was seven to eight wet tons per hour with a solids content in the mid-twenties percent. They noted that the maximum feed rate was limited by the pump capacity at approximately 200 gallons per minute, as well as the capacity of the belt press for dewatering but that the highest feed rate varied from day to day depending on conditions at the wastewater treatment plant. They said they did not believe that the permitted design capacity should be considered limiting the plant's hourly feed rate.

The inspectors asked how many days of sludge storage capacity the facility has. The facility representatives explained that they currently have four tanks with capacity of approximately 250,000 gallons per tank. However, currently, only three are available. They have replaced one so far and they are currently looking to upgrade the storage vessels with new blowers and diffusers, rather than the current Dorr Oliver units that mix the sludge mechanically.

The inspectors noted that Subpart MMMM, section 60.5220(a)(2), requires SSIs to document that the dry sludge burned during the performance test is representative of the sludge burned under normal operating conditions by maintaining a log of sewage sludge burned during the performance test by continuously monitoring and recording the average hourly rate that sewage sludge is fed to the incinerator. Additionally, they noted that even if an SSI typically only monitors its hourly wet feed rate, Subpart MMMM, section 60.5220(a)(2)(ii) requires SSIs to monitor and record moisture content. The inspectors suggested that given the four hours of parameter data needed to set operating parameters, the facility could look at its historical one-hour and four-hour average maximum feed rates to determine a maximum feed rate for future emissions testing that was representative of the upper range of the facility's operation.

The inspectors related that several other SSIs looked at historical feed rate data on an hourly and four-hour average basis to determine a representative feed rate for emissions testing, as is required in section 60.5220(a)(2). They noted that other SSIs had then limited their feed rates to below 115% of the average rate during testing or had to retest if the feed rate went above the 115%. The facility representatives said that they were concerned that if the project to combine the sludges from the South Plant with the North Plant moved forward, the feed rate at the North Plant would likely increase from the current average. However, they noted that, even if approved, the project may not be complete for two to three years.

The inspectors related that several MHIs had also conducted additional emissions monitoring and testing to gather data on how emissions of pollutants, such as NOx, CO, and SO_2, varied with changes to operating parameters such as feed rate, combustion temperature, combustion oxygen (e.g., as excess air), scrubber flow, and scrubber pressure drop.

Operator Training:
The inspectors asked about the facility's operator training program. The facility representatives described the initial and refresher training program and explained that they had nine operators and staff that had taken the initial training as well as the annual refresher training.

Emergency Engines:
The inspectors asked if the facility had any stationary internal combustion engines. The facility representatives explained that there are two diesel-fired Caterpillar engines at the site that serve as backup power in an emergency. Further, although the engines had been nominally part of a demand-management program with the power utility previously, they never ran as part of that program and have since discontinued their contract to participate in the program.

At approximately 12:45 p.m., the group went to lunch and returned at approximately 1:45 p.m.

5. Facility Tour/Walkthrough:

At approximately 2:00 p.m., facility representatives, joined by incinerator operator, Jason Stevens, led the inspectors on a walk through the facility. The walk through started at the solids handling and processing and proceeded to incineration to ash handling and the ash lagoons.

The tour included a stop at the control room to observe operating parameters of MHF02, which was running. At approximately 2:40 p.m., the inspectors noted the following values of instantaneous pressure drop across the scrubber: 18.2, 18.3, and 18.7 inches of water column. Similarly, the inspectors noted instantaneous pH values at approximately 2:40 p.m. as: 5.56, 5.54, 5.58, and 5.53.

At approximately 2:50 p.m., the inspectors entered the continuous monitoring system (CEMS) shed and noted the following instantaneous values for THC: 33.71, 31.72, 32.31 parts per million (ppm), and O_2 values of: 6.5, 6.52, and 6.52.

During the walk-through, the facility representatives pointed out that only MHF02 was operating and that MHF01 would need significant repair to be viable. They noted that they have deferred regular maintenance on both MHIs while the long-term sludge disposal plan was being developed. They said, generally, they can repair any equipment issues within one week and that they have been using parts from MHF01 to keep MHF02 running.

The inspectors noted that several observation doors on the maintenance hatches of each hearth were open and observed air being pulled into the MHI through these openings. Later, outside the solids building, the inspectors observed yellowish smoke coming from the stack of MHF02 with an estimated opacity of 15 - 20%. The inspectors expressed concern that the yellowish color of stack gas observed during the walk through could indicate an exceedance of emission limits, such as NOx. The inspectors noted that it appeared that the open observation doors of the hearths could be adding too much excess combustion air to the process, causing an increase in NOx emissions and a yellowish plume. They explained that other SSIs typically monitored combustion temperature and excess air, often as fan speed, voltage, or damper position, to ensure continuous compliance with the NOx limit. They expressed concern that, although the plant had

been able to meet the NOx limits during past tests, it was not clear from reports that operating conditions during testing included open observation doors. They noted that because ACWPD had not yet set control parameters to monitor for NOx, it appeared that the operators could not know if they were continuously complying with the NOx emission limit.

Outside the solids handling building, the inspectors observed the facility's combined heat and power unit that has been shut down due to clogging of the heat exchanger. The inspectors also observed emergency engines and related diesel fuel tank near the administration building.

6. Exit Conference:

At approximately 3:15 p.m., the group returned to the conference room for a closing conference. The inspectors explained that they would recap areas of concern as noted during the inspection and that they would be writing an inspection report within the next 60 days that they would share with the facility.

Areas of Concern:
The inspectors noted the following areas of concern that were discussed during the inspection, including but not limited to:

- The visible, yellowish emissions from MHF02's stack observed during the plant walk through.
- The reported emission rate of MHF02 significantly above the emission limit for dioxin/furans during the 2022 emissions test.
- The lack of a petition to EPA regarding control of Hg, d/f, and NOx, and associated ongoing compliance monitoring.
- An incomplete SSMP due to the lack of an approved petition for Hg, d/f, and NOx, as well as the facility's changes to temperature monitoring locations.
- The need for a comprehensive test for all pollutants after the petition and revised SSMP have been approved.
- Ongoing pH deviations at the scrubber.
- Insufficient data from testing combustion related pollutants in 2017, 2018, 2020, and 2022, needed to establish a minimum combustion temperature operating parameter based on a four-hour average.
- The lack of re-established operating parameter limits after annual or triennial performance tests for applicable pollutants.
- The lack of clarity regarding maximum feed rates and whether initial compliance and subsequent performance tests have been conducted above 85% of the maximum.
- The lack of test reports submitted to CEDRI/ERT from 2015 to 2022.
- The need for an ash handling fugitive emissions plan that includes how fugitive emissions are minimized and monitored at the ash lagoons, including during periods when lagoons are being emptied.
- The lack of a monitoring system for bypass events.

The inspectors thanked the facility representatives for their time and assistance in understanding the operation of the facility. The inspectors departed the facility at approximately 4:30 PM.

Inspection Plan Sign-Off

Assisting Inspector's Name: Steve Rapp, ERG

X Steve Rapp Digitally signed by Steve Rapp Date: 2023.03.30 16:33:19 -04'00'

Assisting Inspector

EPA Lead Inspector's Name: Phillip Ritz

X PHILLIP RITZ Digitally signed by PHILLIP RITZ Date: 2023.04.13 10:12:26 -04'00'

Lead Inspector

EPA Assisting Inspector's Name: Joseph Cardile

X JOSEPH CARDILE Digitally signed by JOSEPH CARDILE Date: 2023.04.13 10:16:51 -04'00'

Assisting Inspector

Supervisor's Name: Harish Patel

X HARISH PATEL Digitally signed by HARISH PATEL Date: 2023.04.13 10:19:43 -04'00'

Supervisor