

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: **Scheduled Inspection**

N168549011

FACILITY: TES Filer City Station		SRN / ID: N1685
LOCATION: 700 Mee Street, FILER CITY		DISTRICT: Cadillac
CITY: FILER CITY		COUNTY: MANISTEE
CONTACT: Todd Guenthardt ,		ACTIVITY DATE: 05/01/2019
STAFF: Caryn Owens	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection and Records Review		
RESOLVED COMPLAINTS:		

**On Wednesday, May 1, 2019, Caryn Owens and Jeremy Howe of the Department of Environment, Great Lakes, and Energy (EGLE) – Air Quality Division (AQD) conducted a scheduled field inspection of TES Filer City Station (TES) (SRN: N1685) located at 700 Mee Street in Filer City, Manistee County, Michigan. This facility is a power generating plant that uses multiple fuel types such as, coal, shredded tires, and wood, in two separate stoker boilers that produce steam for a turbine to produce energy. The company produces approximately 60 megawatts of electricity per day, and additionally sends 50,000 pounds of steam to Packaging Corporation of America for operational purposes.**

The field inspection and records review were to determine compliance with the Renewable Operating Permit (ROP) MI-ROP-N1685-2015b. The site is currently a major source of hazardous air pollutants (HAPs), and is subject to the following: New Source Performance Standards (NSPS) Standards of Performance for Electric Utility Steam Generating Units promulgated in 40 CFR Part 60 Subpart Da; the National Emission Standard for Hazardous Air Pollutants (NESHAP) for: Stationary Reciprocating Internal Combustion Engines in 40 CFR Part 63 Subpart ZZZZ (RICE MACT); and the NESHAP for Coal and Oil Fired Electric Steam Utility Steam Generating Units promulgated in 40 CFR Part 63 Subparts A and UUUUU. The facility is also subject to the federal Compliance Assurance Monitoring (CAM) Rule in 40 CFR Part 64 for particulate matter. Emission limitations for sulfur dioxide meet the CAM exemption for Acid Rain monitoring requirements for EUBOILER01 and EUBOILER02.

Conditions for the NESHAP for Coal and Oil Fired Electric Steam Utility Steam Generating Units promulgated in 40 CFR Part 63 Subparts A and UUUUU (MATS) will be incorporated in the ROP at a later date, but I added a brief summary on how the facility is currently complying with the MATS at the end of this Inspection report.

Additionally, the facility is subject to the federal Acid Rain Program in 40 CFR Part 72 and the Cross-State Air Pollution Control Rule (CSAPR) in 40 CFR Part 97; however, the DEQ does not have delegation of the Acid Rain program and CSAPR, and these areas were not reviewed during the field inspection and records review.

**Summary:**

The activities covered during the field inspection and records review for the facility indicate the facility is in compliance with ROP MI-ROP-N1685-2015b. Specific permit conditions that were reviewed are discussed below.

**On-site Inspection:**

The facility currently operates two spreader stoker boilers. Each boiler is rated at 384 MMBTU per hour heat input and is currently combusting coal, wood, and tire derived fuel (TDF). Each boiler is equipped with a dry scrubber to control sulfur dioxide and acid gas emissions, and a baghouse to control particulate matter. Each boiler system uses a separate unit and contains their own exit points which are vented to the atmosphere through a single 250-foot tall main stack, which assists the site for maintenance work on the boiler systems. The steam from the boilers is used to power the onsite turbine and sold to the adjacent company for process operations. Other sources of emissions at the facility are fugitive dust from the coal pile and onsite truck traffic, an emergency natural gas fired generator, and a diesel fired emergency fire pump. The emissions from these are uncontrolled.

During the field inspection it was overcast, wet with on and off rain, and wind speeds about 5 to 10 miles per hour out of the northeast, and approximately 45 degrees Fahrenheit. The site was clean and well maintained, and no odors were present. A separated steam plume was observed from the stack. Mr. Howe and I met with Mr. Austin Swiatlowski, the CEMS Tech and Mr. Todd Guenthardt, the Sr. Maintenance Supervisor, for a facility inspection and records review, and Mr. Swiatlowski accompanied us through the facility to observe the permitted emission units and associated processes.

During the inspection both boilers were operating and the facility was filling the bunkers by conveyors with coal and wood. The source has two bunkers that each feed into the associated boiler. The bunkers are filled with coal and TDF from approximately 7:00am until 2:00pm, and then the bunkers are filled with wood once the TDF is finished, since the wood and TDF share the same conveyor to load into the bunkers.

The amount of tire material and wood are weighed off the conveyor loading the material into the bunkers, and the company monitors the amount based on scaled trucks when they are unloaded. The facility records non-verified visible emissions from the fuel storage piles and handling equipment at least once per day. The records are logged in a book with observations and any corrective actions taken. The log book is kept in the main control room of the facility.

Additionally, the electrical load through both boilers combined was 64.50 Mega Watts (MW) which includes the amount going to the grid and facility use, AQD observed 60.18 MW supplied to the grid for sales. During the inspection, I received copies of: the Plant and Boiler Master; Boiler Gas Schematics from the control room; and the current continuous emission monitoring system (CEMS) readouts.

I observed the raw data from the control room monitors, and the data recorded by AQD staff from the control room monitors were the following:

Turbine	Boiler 1 Year 2019	Boiler 2 Year 2019	Boiler 1 2017 Inspection	Boiler 2 2017 Inspection
Scrubber flow rate for SO2 Removal gallons per minute (gpm)	16.5 gpm	16.9 gpm	19.4 gpm	26.7 gpm
SO2 Reduction Rate (from Plant Master) %	99	99	93	97

AQD relies on the SO2 reduction rate versus the lime slurry rate since the lime slurry rate fluctuates throughout the day based on the type of fuel used in the boilers. Where the SO2 reduction rate is ran from the CEMS and is representative of the actual boiler operation.

During the 2017 Inspection completed on March 24, 2017, the outlet temperature was 172.9 degrees Fahrenheit and the flow was 1.28 inches of water column ("wc) for Boiler 1. The outlet temperature was 163.2 degrees Fahrenheit and the flow was 1.48" wc for Boiler 2. During the current inspection the outlet temperature was 169.0 degrees Fahrenheit and the flow was 1.18" wc for Boiler 1, and the outlet temperature was 160.0 degrees Fahrenheit and the flow was 1.73" wc for Boiler 2. AQD looked at previous stack testing data from January 14, 2019, while testing for particulate matter from both boilers to show compliance with 40 CFR Part 63 Subpart UUUUU which indicated the outlet stack temperature was 168.2 degrees Fahrenheit and a flow of 1.12" wc for Boiler 1, and outlet stack temperature of 157.3 degrees Fahrenheit and a flow of 1.59" wc for Boiler 2. The operational parameters from previous inspection reports and stack testing compared to current field operational parameters appear to be similar.

### **Records Review:**

**Source-Wide Conditions:** Includes all process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

#### **I. Emission Limits:**

Emission Limits are not applicable for Source-wide Conditions.

#### **II. Material Limits:**

Material Limits are not applicable for Source-wide Conditions.

#### **III. Process/Operational Restrictions:**

The permittee must implement and maintain a fugitive dust plan. The facility has a fugitive dust plan that is followed on a daily basis. AQD received and approved a copy of the facility's plan dated August 2012. TES should be submitting a ROP Renewal Application which should include an updated fugitive dust plan and will be reviewed by AQD upon receipt of the new plan.

**IV. Design/Equipment Parameters:**

Design/Equipment Parameters are not applicable for Source-wide Conditions.

**V. Testing/Sampling:**

Testing/Sampling is not applicable for Source-wide Conditions.

**VI. Monitoring/Recordkeeping:**

A logbook in the maintenance area maintains records of dust suppressant applied to storage piles and roadways as well as dates in which the roadways and parking areas are swept. During the inspection the roadways were clean, roads and areas around the plant are paved. Sprinklers are installed in the coal storage area which provides complete coverage. At the time of the inspection there were no visible emissions from storage piles or from the plant yard and roads.

**VII. Reporting:**

The semi-annual reports and annual compliance reports for ROP certification were submitted to the DEQ in timely manner. During the reporting period the permittee reported all monitoring and associated recordkeeping requirements.

**VIII. Stack/Vent Restrictions:**

Stack/Vent Restrictions are not applicable for Source-wide Conditions.

**IX. Other Requirements:**

TES has a consent order from the EPA that states TES cannot accept any deliveries of petroleum coke unless the facility installs a continuous Federal Equivalent Method (FEM) real-time particulate matter (PM-10) monitor and at least one FRM PM-10 filter-based monitor operating every third day at the facility. As of this date, TES has not installed the required PM-10 monitors and does not currently have petroleum coke stored at the site, nor currently use petroleum coke as fuel for the boilers.

**EULIMESTORAGE:** The lime storage and handling system consists of all lime handling and storage equipment including blowers, augers, conveyors, silos, and slurry tank up to the lime scrubbers that is controlled by a lime silo bin vent filter. The lime is used in the scrubbers for the boilers to reduce sulfur dioxide (SO<sub>2</sub>) emissions.

**I. Emission Limits:**

Particulate matter emissions from the lime storage silo is limited to 0.03 grains per dry standard cubic foot of exhaust gases and the visible emission (VE) limit from the entire lime storage and handling system is 5% opacity based upon a six-minute average. The methods of compliance for the limits are non-certified VE observations. If any visible emissions are observed, facility personnel record its presence and takes corrective actions. During the field inspection, no VE's were observed from the lime storage and handling areas.

**II. Material Limits:**

Material Limits are not applicable for EULIMESTORAGE.

**III. Process/Operational Restrictions:**

Lime storage and handling bin vent filters must be installed, maintained and operated properly. The bin vent filters have been installed and operating for many years, proper operation is verified through VE observations, and during the inspection, no VEs were observed, and no VEs were noted in the entries reviewed in the daily logbook.

**IV. Design/Equipment Parameters:**

Design/Equipment Parameters are not applicable for EULIMESTORAGE.

**V. Testing/Sampling:**

Non-certified visible emission observations are required to be performed at least once each time the silo is being filled and stack testing may be required upon request of the AQD. The lime storage silo is filled

approximately 5 times per week. The logbook located in the control room contained adequate documentation to demonstrate that the observations are being performed when the silo is being filled. Logbook entries reviewed during the inspection indicate the filters operated properly.

Stack testing has not been requested by the AQD.

**VI. Monitoring/Recordkeeping:**

Monitoring/Recordkeeping requirements are not applicable for EULIMESTORAGE.

**VII. Reporting:**

The semi-annual reports and annual compliance reports for ROP certification were submitted to the DEQ in timely manner. During the reporting period the permittee reported all monitoring and associated recordkeeping requirements.

**VIII. Stack/Vent Restrictions:**

Stack/Vent Restrictions are not applicable for EULIMESTORAGE.

**IX. Other Requirements:**

Other Requirements are not applicable for EULIMESTORAGE.

**EUASHUNLOAD:** The ash/by-products unloading system consists of all fly ash collection and transfer equipment conveyors, augers, piping, and silos along with an unloading baghouse. It also includes all bottom ash handling equipment including augers, conveyors and silos on EUBOILER01 and EUBOILER02. A rotary unloader adds moisture to the ash/by-products from the silo and loads ash/by-products into dump trucks through an enclosed tube. This emission unit is controlled by the ash silo bin vent filter, ash unloading baghouse, fly ash removal system baghouse, bottom ash system cyclone, and bottom ash removal system baghouse.

**I. Emission Limits:**

Particulate matter emissions from EUASHUNLOAD storage silo is limited to 0.03 grains per dry standard cubic foot of exhaust gases and the VE limit from the entire ash/by-products unloading system is 5% opacity based upon a six-minute average. The methods of compliance for the limits are non-certified VE observations. If any visible emissions are observed, facility personnel record its presence and takes corrective actions. Based on the records I reviewed, VE checks indicated compliance with the 5% opacity limit.

**II. Material Limits:**

Material Limits are not applicable for EUASHUNLOAD.

**III. Process/Operational Restrictions:**

The control equipment for EUASHUNLOAD must be installed, maintained and operated properly. During the inspection, the ash silo bin vent filter, ash unloading baghouse, fly ash removal system baghouse, bottom ash system cyclone, and bottom ash removal system baghouse appeared to be installed and operating properly. Proper operation is verified through VE observations, and during the inspection no VEs were observed, and no VEs were noted in the entries reviewed in the daily logbook.

**IV. Design/Equipment Parameters:**

Design/Equipment Parameters are not applicable for EUASHUNLOAD.

**V. Testing/Sampling:**

Non-certified visible emission observations are required to be performed at least once each time the silo is being filled and stack testing may be required upon request of the AQD. The logbook located in the control room contained adequate documentation to demonstrate that the observations are being performed when the silo is being filled. The Logbook entries reviewed during the inspection indicate the control equipment was operated properly.

Stack testing has not been requested by the AQD.

**VI. Monitoring/Recordkeeping:**

Monitoring/Recordkeeping requirements are not applicable for EUASHUNLOAD.

**VII. Reporting:**

The semi-annual reports and annual compliance reports for ROP certification were submitted to the DEQ in timely manner. During the reporting period the permittee reported all monitoring and associated recordkeeping requirements.

**VIII. Stack/Vent Restrictions:**

Stack/Vent Restrictions are not applicable for EUASHUNLOAD.

**IX. Other Requirements:**

Other Requirements are not applicable for EUASHUNLOAD.

**EUEMERGEN:** A 175 kW (275 HP) existing natural gas-fired emergency generator. The EUEMERGEN is uncontrolled and is subject to 40 CFR Part 63 Subpart ZZZZ.

**I. Emission Limits:**

Emission Limits are not applicable for EUEMERGEN.

**II. Material Limits:**

Material Limits are not applicable for EUEMERGEN.

**III. Process/Operational Restrictions:**

According to Mr. Swiatlowski, EUEMERGEN is operated about 30 minutes per week. Based on the records reviewed, the usage is well below the permit limit of 100 hours per 12-month rolling time period.

TES completes a weekly preventative maintenance plan for EUEMERGEN that inspects the battery water, engine oil, oil in the governor, and the water in the radiator. Additionally, TES completes a yearly maintenance plan that inspects the battery, belts, hoses and spark plugs and changes them if necessary. Additionally, TES changes the air filter, coolant filter, oil filter, engine oil and governor oil on an annual basis. The most recent oil change was completed July 17, 2018. The facility completes weekly preventative maintenance checks, that inspects the battery water, the engine oil, oil in Governor, and the water level in the radiator.

The monthly usage for EUEMERGEN is stored in the control room. Based on the records from April 1, 2018 through March 31, 2019, EUEMERGEN operated a total of 26.2 hours. The maintenance records are attached to this report.

**IV. Design/Equipment Parameters:**

At the time of the inspection EUEMERGEN was equipped with a non-resettable hours meter and had operated for a total of 1102.2 hours since it was installed.

**V. Testing/Sampling:**

Testing/Sampling is not applicable for EUEMERGEN.

**VI. Monitoring/Recordkeeping:**

According to 40 CFR 63.6645(a)(5), the facility is not required to submit notifications for EUEMERGEN, since it is an emergency engine with no applicable emission limits.

There have been no malfunctions of EUEMERGEN.

The facility inspects the EUEMERGEN on a weekly and annual basis in accordance with manufacturer's recommendations. The facility chooses to change the oil on EUEMERGEN on an annual basis, or earlier if determined necessary. A oil analysis has not been performed on EUEMERGEN.

**VII. Reporting:**

The semi-annual reports and annual compliance reports for ROP certification were submitted to the DEQ in timely manner. During the reporting period the permittee reported all monitoring and associated recordkeeping requirements.

**VIII. Stack/Vent Restrictions:**

Stack/Vent Restrictions are not applicable for EUEMERGEN.

**IX. Other Requirements:**

The facility appears to comply with 40 CFR Part 63 Subpart ZZZZ requirements for EUEMERGEN.

**EUFIREPUMP:** A 139 kW (187 HP) existing diesel-fired emergency fire pump used to power the emergency fire water pump. The diesel engine is uncontrolled and is subject to 40 CFR Part 63 Subpart ZZZZ.

**I. Emission Limits:**

Emission Limits are not applicable for EUFIREPUMP.

**II. Material Limits:**

Material Limits are not applicable for EUFIREPUMP.

**III. Process/Operational Restrictions:**

According to Mr. Swiatlowski, EUFIREPUMP is operated about 30 minutes per month to test the engine. Based on the records reviewed, the usage is well below the permit limit of 100 hours per 12-month rolling time period.

TES completes a monthly preventative maintenance plan for EUFIREPUMP that inspects the coolant levels, battery fluid levels and electrolyte levels, air filter (and changes it if needed), and all the hoses and belts. The most recent oil change was completed November 19, 2018. The facility does not utilize the oil analysis program at this time.

The monthly usage for EUFIREPUMP is stored in the control room. Based on the records from April 1, 2018 through March 31, 2019, EUFIREPUMP operated a total of 5.5 hours. The maintenance records are attached to this report.

**IV. Design/Equipment Parameters:**

At the time of the inspection EUFIREPUMP was equipped with a non-resettable hours meter and had operated for a total of 594.2 hours since it was installed.

**V. Testing/Sampling:**

Testing/Sampling is not applicable for EUFIREPUMP.

**VI. Monitoring/Recordkeeping:**

According to 40 CFR 63.6645(a)(5), the facility is not required to submit notifications for EUFIREPUMP, since it is an emergency engine with no applicable emission limits.

There have been no malfunctions of EUFIREPUMP.

The facility inspects the EUFIREPUMP on a monthly basis in accordance with manufacturer's recommendations. The facility chooses to change the oil on EUFIREPUMP on an annual basis, or earlier if determined necessary. An oil analysis has not been performed on EUFIREPUMP.

**VII. Reporting:**

The semi-annual reports and annual compliance reports for ROP certification were submitted to the DEQ in timely manner. During the reporting period the permittee reported all monitoring and associated recordkeeping requirements.

**VIII. Stack/Vent Restrictions:**

Stack/Vent Restrictions are not applicable for EUFIREPUMP.

**IX. Other Requirements:**

The facility appears to comply with 40 CFR Part 63 Subpart ZZZZ requirements for EUFIREPUMP.

**FGBOILERS:** Boiler #1 and #2 and their associated dry scrubbing system and baghouse. Each boiler is a spreader-stoker firing configuration. The primary fuel is coal with the following supplemental fuels: wood, TDF, and natural gas. The facility also has the options to use construction/demolition material and petroleum coke, but the facility has not used these fuel types at least since at least January 2016. The nominal heat input rating of each boiler is 384 MMBTU/hr including two low nitrogen oxide (NOx) natural gas-fired burners per boiler, with each burner rated at 100 MMBTU/hr. FGBOILERS is controlled by a scrubber and baghouse for each boiler. Additionally, each boiler has low NOx natural gas-fired burners.

**I. Emission Limits:**

Compliance with the SO<sub>2</sub>, NO<sub>x</sub>, and CO, emissions from the FGBOILERS are demonstrated by CEMS. Particulate matter (PM) and Total non-methane hydrocarbons (NMHC) are demonstrated by stack testing. Records of the emission limits are kept electronically and calculated through the source Data Acquisition System (DAS). The emissions identified below were within the permitted emission limits.

Opacity from the FGBOILERS is limited to 10% and is continuously recorded using a continuous opacity monitor system (COMS). Based on the records during the inspection, opacity was 1.34% for EUBOILER01 and 0.77% for EUBOILER02, well below the 10% emission limits.

PM emissions for FGBOILERS are limited to 0.03 pounds per million BTU (lb/MMBtu) heat input and 11.5 pounds per hour. Demonstration of compliance with the limits is performed via stack testing. Stack testing for ROP compliance was last performed in March 2018 and indicated that the PM emissions from EUBOILER01 were 0.014 lb/MMBtu heat input and 5.68 pounds per hour. EUBOILER02 emissions were 0.003 lb/MMBtu heat input and 1.47 pounds per hour.

SO<sub>2</sub> emissions from each boiler are limited to 0.5 lb/MMBtu heat input (based upon a 30-day average) and 0.7 lb/MMBtu heat input (based upon a 24 hour daily average). Total SO<sub>2</sub> emission limits from both boilers combined are 6.45 tons per day and 1681.9 tons per year (based upon a 12 month rolling time period). Furthermore, SO<sub>2</sub> emissions must be 10% of the potential SO<sub>2</sub> emission rate, based upon a 30 day rolling average. In other words, the facility must reduce the SO<sub>2</sub> emissions from each boiler by at least 90%. The facility implements CEMS to demonstrate compliance with the numerous emission limits. At the time of the inspection, the facility was determined to be in compliance with the SO<sub>2</sub> emission limits based upon an observation of the DAS records. Records indicated the SO<sub>2</sub> reduction was at 99%. Based on review of the 1<sup>st</sup> Quarter 2019 emission data, the highest reported emissions from EUBOILER01 were 0.062 lb/MMBtu based on a 30-day rolling average, and 0.091 lb/MMBtu based on a 24-hour rolling average. The highest reported emissions from EUBOILER02 were 0.054 lb/MMBtu based on a 30-day rolling average, 0.075 lb/MMBtu based on a 24-hour rolling average. Records reviewed at the time of the inspection indicated SO<sub>2</sub> emissions from EUBOILER01 were 0.025 lb/MMBtu and EUBOILER02 were 0.018 lb/MMBtu. Based on records from April 1, 2018 through March 31, 2019, SO<sub>2</sub> emissions were reported as 0.75 tons per day from both boilers combined. The records also indicated the highest SO<sub>2</sub> emissions reported were 406.0 tons per year based on a 12-month rolling time period for both boilers combined. The SO<sub>2</sub> emissions were reported below the permitted emission limits.

NO<sub>x</sub> emissions from each boiler is limited to 0.60 lb/MMBtu heat input, based upon a 30 day rolling average. NO<sub>x</sub> emissions are also limited to 2,018 tons per 12 month rolling time period from both boilers combined. Similar to SO<sub>2</sub>, the NO<sub>x</sub> emissions are monitored and recorded via CEMS to demonstrate compliance with the emission limits. Records reviewed at the time of the inspection indicated NO<sub>x</sub> emissions from both boilers were 0.4 lb/MMBtu. Based on review of the 1<sup>st</sup> Quarter 2019 emission data, the highest reported NO<sub>x</sub> emissions from EUBOILER01 were 0.417 lb/MMBtu based on a 30-day rolling average. The highest reported NO<sub>x</sub> emissions from EUBOILER02 were 0.377 lb/MMBtu based on a 30-day rolling average. Records reviewed at the time of the inspection indicated NO<sub>x</sub> emissions from EUBOILER01 were 0.417 lb/MMBtu and EUBOILER02 were 0.415 lb/MMBtu. Based on records from April 1, 2018 through March 31, 2019, NO<sub>x</sub> emissions were reported as 1,272.3 tons per year based on a 12-month rolling time period for both boilers combined. The NO<sub>x</sub> emissions were reported below the permitted emission limits.

Carbon monoxide (CO) emissions from each boiler is limited to 0.3 lb/MMBtu heat input, based upon a 24-hour rolling average and 115.2 pounds per hour based upon a 24 hour rolling average. Total CO emission limits from the boilers are limited to 1,009.2 tons per 12 month rolling time period. As with SO<sub>2</sub> and NO<sub>x</sub>, CO emissions are also monitored and recorded by the CEMS. Records of CO emissions from EUBOILER01 reviewed during the inspection were 0.089 lb/MMBtu and 30.9 pounds per hour. CO emissions from EUBOILER02 reviewed during the inspection were 0.037 lb/MMBtu and 14.7 pounds per hour. Based on records from April 1, 2018 through March 31, 2019, CO emissions were reported as 278.8 tons per year based on a 12-month rolling time period for both boilers combined. The CO emissions were reported below the permitted emission limits.

Total non-methane hydrocarbons (NMHC) emissions from each boiler are limited to 4.6 pounds per hour. The method used to determine compliance with the limit is stack testing. Stack testing was last performed in August 2017 and indicated that NMHC emissions were 0.18 pounds per hour from EUBOILER01 and -

0.02 pounds per hour from EUBOILER02. The measured NMHC concentrations for EUBOILER02 adjusted for analyzer bias resulting in the negative value, indicating NMHC concentrations were near or below the detection limit of the analyzer.

## **II. Material Limits:**

The maximum sulfur content of the coal is 3% based upon a heating value of 12,200 BTU per pound of coal. Records submitted by the company indicate that the sulfur content of coal delivered in April 2019 was 1.32% with a heating value of 11,439 BTU per pound. Another record submitted for the company was from May 2, 2019 which indicated the sulfur content of the coal was 0.42% with a higher heating value of 10,191 BTU per pound. The sulfur content in the coal was within the material limits.

The charge rate of wood to the boilers cannot exceed 820,000 pounds (410 tons) per day. Records reviewed (attached) indicate that the material limit has not been exceeded. The highest daily average value was 187 tons from April 1, 2018 through March 31, 2019.

The TDF feed rate is limited to 2 tons per hour, based upon a daily average per boiler. Records reviewed indicate the highest average TDF feed rate to Boiler #1 was 1.41 tons per hour and 1.43 tons per hour to Boiler #2.

Construction and demolition material (C/D material) is limited to 200,000 pounds per day and 18,282 tons per 12 month rolling time period per boiler. The facility has not burned C/D material since initial testing and records show that no material has been burned.

Petroleum coke is limited to 130,800 pounds (65.4 tons) per day per boiler. Records show that the facility removed all the petroleum coke from the site by March 31, 2016, and the facility does not plan to store or combust petroleum coke in the future.

## **III. Process/Operational Restrictions:**

The facility is not allowed to operate the boilers unless a maintenance and malfunction abatement management plan (MMP) is implemented and maintained. An amended MMP was previously submitted to and approved by AQD staff. TES appears to be following the MMP.

The facility is also not allowed to operate the boilers unless the baghouses and scrubbers are installed and operating properly. Based on the low opacity readings, it can be assumed that the baghouses are operating properly. Based on the SO<sub>2</sub> reduction efficiency of greater than 90% it appears that the scrubbers are operating properly. At the time of the inspection, EUBOILER01 had opacity of 1.3% and a SO<sub>2</sub> reduction of 99%, and EUBOILER02 had opacity of 0.77% and a SO<sub>2</sub> reduction of 99%.

COMS and CEMS are required to be operated and data recorded during all periods of operation. This is addressed in the quarterly excess emission reports which have been reviewed by AQD at the time the reports were received.

## **IV. Design/Equipment Parameters:**

There are design/Operational requirements for the COMS and CEMS. These requirements are addressed in the excess emission reports, during stack testing, and RATAs).

## **V. Testing/Sampling:**

Stack testing is required for particulate matter and total non-methane hydrocarbon emission rates. The testing was performed in March 2018 and August 2017, respectively, and demonstrated compliance with the emission limits.

## **VI. Monitoring/Recordkeeping:**

Visible emissions, SO<sub>2</sub>, NO<sub>x</sub>, and CO are all continuously monitored and recorded using a COMS and CEMS as required by the ROP. The monitors operate at all times with the exception of monitor system breakdowns, repairs, calibration checks and zero spam gas, except for COMS which is operated at all times including downtimes calibration checks and zero spam gas. The COMS and CEMS are reported to AQD on a quarterly basis.

The COMS are used as a Compliance Assurance Monitoring (CAM) indicator for proper functioning of the baghouses. CAM reports have been submitted and reviewed.



The boilers are equipped with exhaust gas flow rate monitors and records are maintained in the daily summaries provided by the DAS.

#### **VII. Reporting:**

The semi-annual reports and annual compliance reports for ROP certification were submitted to the DEQ in timely manner. During the reporting period the permittee reported all monitoring and associated recordkeeping requirements. Exceedances of the limit, when they occur are reported throughout the year and in quarterly excess emission reporting. Semi-annual reporting of CAM excursion/exceedances, and monitor downtime were submitted to the DEQ in timely manner. During the reporting period from April 1, 2018 through March 31, 2019, the permittee reported no CAM excursion/exceedances for opacity and 19 incidents of monitor downtime. Testing protocols and test reports, established in the ROP, were submitted within appropriate time frames. NSPS Subpart Da required reports were submitted quarterly with EER.

#### **VIII. Stack/Vent Restrictions:**

Stack/Vent Restrictions for FGBOILERS have not changed from the previous inspection and appear to be accurate.

#### **IX. Other Requirements:**

The facility appears to comply with the CAM and the NSPS 40 CFR Part 60 Subpart Da. The facility is subject to CSAPR (40 CFR Part 96), formerly known as CAIR. However, the state of Michigan does not have delegation over CSAPR, and therefore, these portions of the ROP were not reviewed at this time.

A C/D Waste Wood Monitoring Plan has been approved by the AQD and is implemented to determine acceptable C/D wood fuel for the boilers. However, as previously stated, no C/D material is currently stored or used at the site.

The facility has submitted an initial notification and a Notification of Compliance Status with regards to 40 CFR Part 63 Subpart UUUUU (MATS). This is discussed further below in FGMATS.

**FGFUELSTORAGE:** Coal and coal/petroleum coke piles (EUACOALPETCKSTORAGE), wood piles (EUWOODSTORAGE), construction demolition material piles (EUCDMTSTORAGE), as applicable, and all fuel handling equipment including augers, conveyors, and hopper up to EUBOILER01 and EUBOILER02. The wood handling area contains a baghouse for particulate control.

#### **I. Emission Limits:**

Particulate matter emissions from the EUWOODSTORAGE area is limited to 0.10 pounds per 1,000 pounds of exhaust gases and the visible emission (VE) limit from EUACOALPETCKSTORAGE area is 5% opacity based upon a six minute average. The methods of compliance for the limits are non-certified VE observations. If any visible emissions are observed, facility personnel record its presence and takes corrective actions. Based on the records I reviewed, VE checks indicated compliance with the 5% opacity limit.

#### **II. Material Limits:**

Material Limits are not applicable for FGFUELSTORAGE.

#### **III. Process/Operational Restrictions:**

Process/Operational Restrictions are not applicable for FGFUELSTORAGE.

#### **IV. Design/Equipment Parameters:**

Design/Equipment Parameters are not applicable for FGFUELSTORAGE.

#### **V. Testing/Sampling:**

As mentioned previously, non-certified VE observations from the coal storage pile and the wood handling baghouse are performed at least once per day. The observations are noted in the daily logbook in the control room as well as any corrective actions, if performed. The C/D material storage and petroleum coke is included in the VE requirement but there is currently not any C/D or petroleum coke material on site.

As of the date of this report, AQD has not requested TES to determine compliance with 40 CFR Part 60 Subpart Y opacity standards, since there have not been VEs observed from FGFUELSTORAGE piles.

**VI. Monitoring/Recordkeeping:**

Monitoring/Recordkeeping requirements are not applicable for FGFUELSTORAGE.

**VII. Reporting:**

The semi-annual reports and annual compliance reports for ROP certification were submitted to the DEQ in timely manner. During the reporting period the permittee was compliant with all monitoring and associated recordkeeping requirements in FGFUELSTORAGE.

**VIII. Stack/Vent Restrictions:**

Stack/Vent Restrictions are not applicable for FGFUELSTORAGE.

**IX. Other Requirements:**

As previously stated, no C/D material is currently stored or used at the site.

The facility appears to comply with 40 CFR Part 60 Subpart Y requirements for FGFUELSTORAGE.

**FGMATS:** TES is subject to 40 CFR Part 63 Subpart UUUUU, also known as Mercury Air Toxic Standards (MATS) for existing coal fired electric utility steam generating unit(s) rated more than 25 MW. The specific Conditions on how TES will be following the MATS have not been incorporated into the ROP as of the date of this report. The ROP is up for Renewal by October 27, 2019 and the Renewal will have MATS Conditions included. TES has been stack testing to show compliance with the mercury and particulate matter emission limits in the MATS, and they use the SO2 CEMS as a surrogate for hydrogen chloride (HCl). The most recent testing was performed on in February 2019 and was the 10<sup>th</sup> compliant test to meet the Low Emitting Electrical Generating Unit (LEE) status. The most recent Mercury testing was performed from October 4, 2018 through November 12, 2018. The source has submitted the following notifications and/or reports: An Initial Notification on April 12, 2012; A Notification of Compliance Status on July 15, 2016; MATS Semi-Annual Periodic Reports on August 27, 2018 and March 8, 2019; and a Tune-up last conducted January 5, 2018 for both Units. The notifications and Reports were submitted within appropriate time frames, and reviewed by AQD at the time they were received.

NAME Caryn Owens DATE 5/1/19 SUPERVISOR SN