

DEPARTMENT OF ENVIRONMENTAL QUALITY  
 AIR QUALITY DIVISION  
**ACTIVITY REPORT: On-site Inspection**

B283560274

<b>FACILITY:</b> J. H. Campbell Plant		<b>SRN / ID:</b> B2835
<b>LOCATION:</b> 17000 Croswell, WEST OLIVE		<b>DISTRICT:</b> Grand Rapids
<b>CITY:</b> WEST OLIVE		<b>COUNTY:</b> OTTAWA
<b>CONTACT:</b> Kevin Starken , Senior Engineer II		<b>ACTIVITY DATE:</b> 09/17/2021
<b>STAFF:</b> Kaitlyn DeVries	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> The purpose of this inspection was to determine compliance with the facility's renewable operating permit (ROP) MI-ROP-B2835-2020b.		
<b>RESOLVED COMPLAINTS:</b>		

On September 16, 2021, Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) staff Kaitlyn DeVries conducted a scheduled on-site inspection of the Consumers Energy, JH Campbell Coal Fired electric generating facility located at 17000 Croswell, Port Sheldon, Michigan. The purpose of this inspection was to determine compliance with the facility's renewable operating permit (ROP) MI-ROP-B2835-2020b. In addition to the on-site inspection a follow-up virtual inspection was conducted on September 23, 2021. The virtual inspection consisted primarily of screen sharing to view the operational parameters of Unit 3 that was not in operation at the time of the on-site inspection.

For both the on-site portion and the virtual portion of the inspection, KD met with Mr. Kevin Starken, Senior Engineer II, who is the primary contact for on-site activities at the facility and Mr. Michael Gruber, from Consumers Energy's Corporate office who is the primary contact for permitting.

**Facility Description**

Consumers Energy JH Campbell (JHC) plant is a coal fired electric generating station. There are three (3) units, which use primarily pulverized Western Coal, but with the capability of utilizing Eastern Coal as well. The facility is located adjacent to Lake Michigan, across from Pigeon Lake.

The three (3) units were installed in 1958, 1963, and 1974. Table 1 outlines each of the three (3) boiler designs and the control equipment associated with each respective unit.

**Table 1: JHC Boiler Design and Specifications as of August 2018**

	<b>Unit 1<sup>A</sup></b>	<b>Unit 2<sup>A</sup></b>	<b>Unit 3</b>
<b>Capacity and Description</b>	2490 MMBtu per hour dry bottom tangential fired boiler with fuel oil startup capabilities	3560 MMBtu per hour wall-fired boiler with fuel oil startup capability	8420 MMBtu per hour dry bottom, wall-fired boiler with fuel startup capability.
<b>Coal Type Capability</b>	100% Western Coal	0 – 100% Western Coal 0-100% Eastern Coal	100% Western Coal
<b>Pollution Control Equipment</b>	ACI <sup>B</sup> DSI <sup>C</sup> PJFF <sup>E</sup> Low NOx Burners	ACI <sup>B</sup> DSI <sup>C</sup> PJFF <sup>E</sup> SCR <sup>F</sup> Low NOx Burners	ACI <sup>B</sup> SDA <sup>D</sup> PJFF <sup>E</sup> SCR <sup>F</sup> Low NOx Burners

- A Units 1 and 2 exhaust through a common stack
- B ACI – Activated Carbon Injection
- C DSI – Dry Sorbent Injection
- D SDA – Spray Dry Absorption
- E PJFF – Pulse Jet Fabric Filter
- F SCR – Selective Catalytic Reduction

## Regulatory Analysis

JHC is currently operating under Title V permit MI-ROP-B2835-2020b. The most recent modification to the permit was to address the termination of the Consent Decree that was formerly held with USEPA; the consent decree was terminated as of September 2, 2020. The provisions of the Consent Decree had been incorporated into the ROP via PTI's and with the termination of that decree some items could be updated and were done so via a PTI and modification of the ROP.

JHC is also subject to Title IV (Acid Rain). In addition to the applicable Michigan air quality rules, JHC is subject to the provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subparts UUUUU, for Coal – and – Oil – Fired Electric Utility Steam Generating Units, ZZZZ, for Stationary Reciprocating Internal Combustion Engines, DDDDD, for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Sources, and Subpart YYYYY for Stationary Combustion Turbines. JHC is also subject to the provisions of the New Source Performance Standards (NSPS) 40 CFR Part 60 Subparts Y for Coal Preparation and Processing Plants, IIII for Stationary Reciprocating Internal Compression Ignition Engines. Additional applicable Federal Regulations include: 40 CFR Part 64, Compliance Assurance Monitoring (CAM), and 40 CFR Part 96 for NOx trading. Each of the three (3) units are also subject to the provisions of the Cross-State Air Pollution Rules (CSAPR).

## Compliance Evaluation

### *EUBOILER1*

Unit 1 is a 2490 MMBTU tangential fired boiler with fuel oil startup capabilities. The emissions from this unit are controlled by low-NOx burners, ACI, DSI, and a PJFF baghouse. All control equipment was installed and properly operating. This unit is subject to the provisions of 40 CFR Part 63 Subpart UUUUU for Coal and Oil-fired Electric Utility Steam Generating Units, also known as the Mercury and Air Toxics Standards (MATS), and 40 CFR Part 64, Compliance Assurance Monitoring (CAM). The CAM requirements are located in FGBOILER12, and the MATS requirements are located in FGMATS\_U12.

PM emissions are limited to 0.16 pounds per 1,000 pounds exhaust gas, corrected to 50% excess air and to 0.015 pounds per MMBtu heat input. The most recent stack testing, conducted in October 2020, resulted in a three (3) run average PM emission rate of 0.0013 lb./MMBtu and 0.001 lb./1000 lbs. for Filterable PM as well as 0.0097 lb./MMBTU for Condensable PM.

Table 2, below, outlines emission limitations for the unit; Table 3 and 4 outline operational parameters of the boilers, and the observations made during the September 16, 2021, on-site inspection.

**Table 2: Emissions data for EUBOILER1**

Unit Number	Pollutant	Limit	Observed Value	Averaging time
1	PM	0.16 pound per 1,000 pounds exhaust gas, corrected to 50% excess air	Verifiable throughs stack testing	Hourly
1	NO <sub>x</sub>	0.220 lbs./MMBtu	0.179lbs/MMBtu	365 Day Rolling Average
1	SO <sub>2</sub>	0.350 lbs./MMBtu	0.279 lbs./MMBtu	30 Day Rolling Average
1	SO <sub>2</sub>	0.290 lbs./MMBtu	0.280 lbs./MMBtu	90 Day Rolling Average
1	PM	0.015 lbs./MMBTU	0.0013 lbs./MMBtu	Based upon stack testing
1	Opacity	20%	2.0%	Per 6-minute period except for one 6-minute period per hour of not more than 27%
1	SO <sub>2</sub>	1.67 lbs./MMBTU	0.280 lbs./MMBTU	Monthly average based on the average of the 31 previous operating days
1	Hg	1.2 lbs./TBTU <sup>A</sup>	1.099 lbs./TBTU	30 Day Rolling Average

<sup>A</sup> This limit is a MATS limit

JHC uses a Part 75 Certified CEMS to continuously monitor SO<sub>2</sub> emissions. In addition to the SO<sub>2</sub> CEMS, JHC also has a NO<sub>x</sub>, and a mercury CEMS along with a COMS unit.

**Table 3: Boiler 1 Operating Parameters**

Process Parameter	Observed Information	Operating Time <sup>A</sup>
Gross MW	272	
Net MW	255	
Total Coal Flow	287,000 pph <sup>B</sup>	
Coal Type	100% Western Subbituminous Coal	
DSI	5762 pph	pph of Lime Injected
ACI	178 pph	pph of carbon injected
Opacity <sup>C</sup>	2.3 %	6-Minute Average
SO <sub>2</sub>	0.349 lbs./ MMBtu	1 Hour Rolling Average
Hg	0.85 lbs./TBTU	Instantaneous

<sup>A</sup> Operating time for appropriate parameters only

<sup>B</sup> pph – pounds per hour

<sup>C</sup> EUBOILER1 and EUBOILER2 share a common stack, however each boiler has their own COMS unit.

JHC burns western coal, as mentioned in Table 3, and the sulfur content of the coal is limited to 1.0% by weight at a heat content of 12,000 BTU/lb. based upon a monthly average based on the average of the 31 previous operating days. Records indicate the sulfur content of the coal is compliant with the limit.

**Table 4: Pulse Jet Fabric Filter Baghouse Operating Parameters**

Process Parameter/Description	Observed Information
Fields in Service	8 Out of 8 fields
Differential Pressure	6.4 Inches of Water Column (WC)
Temperature Drop	3°F
Opacity	2.3% - 6-minute average
Cleaning Air Pressure	8.2 Pounds per Square Inch (PSI)
System Drag	1.90

JHC is required to have a malfunction abatement plan (MAP) for this unit, which has been successfully implemented. JHC recently submitted an updated version of this plan and is complying with it. This unit is also subject to 40 CFR Part 64 – Compliance Assurance Monitoring (CAM), for which the provisions are addressed in FGBOILER12 for both boilers 1 and 2. Please reference FGBOILER12 for further evaluation of CAM.

This unit is subject to the Cross-State Air Pollution Rules (CSAPR) and Acid Rain programs. Compliance demonstrations for both are reported directly to USEPA. The facility also has system-wide Annual NO<sub>x</sub> tonnage limitations and System-Wide Annual SO<sub>2</sub> tonnage limitations; however, these limits are combined with other fleetwide emissions and was not evaluated as part of this Full Compliance Evaluation. However, since the Consent Decree with EPA has been terminated, the AQD will consult with EPA about the compliance demonstration with this fleetwide limit.

The stack dimensions were not explicitly measured, but there was no evidence of change, and the dimensions appeared to be correct; EUBOILER1 shares a stack with EUBOILER2.

### *EUBOILER2*

Unit 2 is a 3560 MMBTU wall-fired boiler with fuel start-up capability. Emissions are controlled by low-NO<sub>x</sub> burners, a SCR, ACI, DSI, and a PFJJ baghouse. This unit is also subject to MATS and to CAM. CAM requirements can be found in FGBOILER12, and MATS requirements can be found in FGMATS\_U12.

Unit 2 was down on the date of the inspection. Per Mr. Starken, the unit was taken down on September 12, 2021 for its normal periodic outage and was expected to be a 94-day outage. Emission limitations are outlined in Table 5, and operational parameters are outlined in Table 6 and 7. The data for Tables 5, 6, and 7 were provided by Mr. Starken through obtaining trends from the unit just prior to shut down.

**Table 5: Emissions data for Boiler 2**

Unit Number	Pollutant	Limit	Observed Value	Averaging time
2	PM	0.15 lb./1,000 lb. exhaust gas, corrected to 50% excess air	Verifiable through stack testing	Hourly
2	NO <sub>x</sub>	0.100 lbs./MMBtu	0.050 lbs./MMBtu	30 Day Rolling Average
2	NO <sub>x</sub>	0.080 lbs./MMBtu	0.055 lbs./MMBtu	90 Day Rolling Average
2	SO <sub>2</sub>	0.320 lbs./MMBtu	0.291 lbs./MMBtu	365 Day Rolling Average
2	PM	0.015 lb./MMBTU	0.0015 lb./MMBtu	Hourly
2	Opacity	20%	0.0%	Per 6-minute period except for one 6-minute period per hour of not more than 27%
2	Mercury (Hg)	1.2 lbs./TBTU <sup>A</sup>	0.819 lbs./TBTU	30 Day Rolling Average

<sup>A</sup> This limit is a MATS limit

JHC uses a Part 75 Certified continuous emissions monitoring system (CEMS) to continuously monitor SO<sub>2</sub> emissions, as required by the Consent Decree. In addition to the SO<sub>2</sub> CEMS, JHC also has a NO<sub>x</sub>, and a mercury CEMS along with a COMS unit.

**Table 6: Boiler 2 Operating Parameters**

Process Parameter	Observed Information	Operating Time <sup>A</sup>
Gross Mw	392 Mw	
Net Mw	378 Mw	
Coal Type	100% Western Coal <sup>B</sup>	
DSI	7,662 pph	pph of lime Injected
ACI	122 pph	pph of carbon injected
Opacity <sup>C</sup>	0.0%	6-Minute Average

<sup>A</sup> Operating time for appropriate parameters only

<sup>B</sup> This unit has the capability to burn a blend of eastern and western coal.

<sup>C</sup> EUBOILER1 and EUBOILER2 share a common stack; each unit has their own COMS.

As mentioned in footnote B of Table 6, Unit 2 can use any blend between 100% Western Coal and 100% Eastern Coal. Per Mr. Starken, Unit 2 had recently burned Eastern coal, but since that was increasing the sulfur emissions, they have burned most of it and stopped using for the time being. Mr. Starken went on to say that the emissions data is driving the operations of the unit. In this unit, JHC has burned western bituminous coal and subbituminous coal that contained a different chlorine, heat content and moisture content compared to the western subbituminous or mixtures of subbituminous and eastern bituminous coals that were normally combusted in this unit in the past. The sulfur content of the coal is limited to 1.0% by weight at a heat content of 12,000 BTU/lb. based upon a monthly average based on the average of the 31 previous operating days. Records indicate the sulfur content of the coal is compliant with the limit.

**Table 7: Pulse Jet Fabric Filter Baghouse Operating Parameters**

Process Parameter/Description	Observed Information
Differential Pressure	Ranging from 3.1 – 4.7 Inches of Water Column (WC)
Fields in Service	10 of 10 fields

JHC is required to have a malfunction abatement plan (MAP) for this unit, for which the facility has implemented. This unit is also subject to 40 CFR Part 64 – Compliance Assurance Monitoring (CAM), for which the provisions are addressed in FGBOILER12 for both boilers 1 and 2. Please reference FGBOILER12 for further evaluation of CAM.

This unit is subject to Acid Rain and the CSAPR programs. Compliance demonstrations for both are reported directly to USEPA.

The stack dimensions were not explicitly measured, but there was no evidence of change, and the dimensions appeared to be correct; EUBOILER2 shares a stack with EUBOILER1.

### *EUBOILER3*

Boiler 3 is an 8240 MMBtu/hr. dry bottom, wall-fired boiler with fuel oil startup capability. Emissions are controlled by low-NOx burners, a SCR, ACI, SDA, and a PJFF baghouse. On the day of the on-site inspection this unit was not in operation, as Mr. Starken indicated

it had tripped, but was planned to be back in service the following week. KD requested that we meet virtually so KD could see the operational parameters of the unit the following week. Mr. Starken obliged and the operational parameters for this emission unit were observed virtually on September 23, 2021. No issues were noted for this unit at the time of the virtual inspection, or in any of the records. This unit is also subject to the requirements of 40 CFR Part 63 Subpart UUUUU, MATS and the evaluation of that regulation can be found in FGMATS\_U3.

PM emissions are limited to 0.030 lbs./ MMBtu heat input, 0.10 lbs./MMBtu heat input, and 0.015 lbs./MMBtu heat input. JHC uses a PM CEMS to demonstrate compliance with PM limitations. Additionally, in a letter dated January 30, 2020, USEPA granted the permission of the use of the PM CEMS to demonstrate compliance with the filterable PM emission limits on a 3-hour rolling average basis in lieu of stack testing for filterable and condensable PM. This change was subsequently updated in the ROP through a PTI and rolled into the ROP during the most recent ROP modification.

The Part 75 Certified CEMS for SO<sub>2</sub> is used to demonstrate compliance with the HCl limit, as allowed under MATS. The rolling 30-day SO<sub>2</sub> limit is 0.20 lb./MMBtu. On the date of the inspection, the 30-day rolling average for SO<sub>2</sub> was 0.057 lbs./ MMBtu.

Table 8 shows the remaining emission limitations for Boiler 3.

**Table 8: Emissions data for Boiler 3**

Unit Number	Pollutant	Limit	Observed Value	Averaging time
3	NO <sub>x</sub>	0.70 lb./MMBtu	0.113 lbs./MMBtu	3 Hour Rolling Average
3	NO <sub>x</sub>	6,130 pph	416.8 pph	Daily Average
3	NO <sub>x</sub>	18,750 tpy	1,477 tpy <sup>A</sup>	12 Month Rolling Average
3	NO <sub>x</sub>	0.100 lbs./MMBtu	0.054 lbs./MMBtu	30 Day Rolling Average
3	NO <sub>x</sub>	0.080 lbs./MMBtu	0.052 lbs./MMBtu	90 Day Rolling Average
3	SO <sub>2</sub>	1.2 lbs./MMBtu	0.051 lbs./MMBtu	3 Hour Rolling Average
3	SO <sub>2</sub>	31,650 tpy	1,534 tpy <sup>A</sup>	12 Month Rolling Average
3	SO <sub>2</sub>	10,500 pph	346.2 pph	Daily Average
3	SO <sub>2</sub>	1.00 lbs./MMBTU	0.057 lbs./MMBtu	30 Day Rolling Average
3	SO <sub>2</sub>	0.085 lbs./MMBtu	0.057lbs/MMBtu	30 Day Rolling Average
3	SO <sub>2</sub>	0.070 lbs./MMBtu	0.059 lbs./MMBtu	365 Day Rolling Average
3	Opacity	20 %	0.9 %	6 Minute Average
3	PM	1,080 tpy	16 tpy <sup>A</sup>	12 Month Rolling Average

<sup>A</sup> The 12-month rolling value is through August 2021

JHC uses a Part 75 Certified continuous emissions monitoring system (CEMS) to continuously monitor NO<sub>x</sub>, CO<sub>2</sub>, and SO<sub>2</sub> emissions.

**Table 9: Boiler 3 Operating Parameters**

Process Parameter	Observed Information	Operating Time <sup>A</sup>
Gross MW	901	
Net MW	847	
Coal Type	100% Western Coal	
Coal Flow	927 Kpph	
SDA	197-217	gpm of Lime Injected
ACI	131 pph for Side A 80 pph for Side B	pph of Carbon Injected
Opacity	0.9%	6-Minute Average
Hg	1.44 lbs./TBTU	Instantaneous

<sup>A</sup> Operating time for appropriate parameters only

**Table 10: Pulse Jet Fabric Filter Baghouse Parameters**

Process Parameter/Description	Observed Information
<i>Pulse Jet Fabric Filter</i>	
Fields in Service	12 Out of 12 fields
Differential Pressure	Ranging from 4.8-5.9 Inches of Water Column (WC) for Side A Ranging from 5.1 – 5.9 Inches of WC for Side B
Opacity	0.8 % - 6-minute average
Temperature Drop	3° F for Side A 3° F for Side B
Cleaning Air Pressure	7.0 PSI for Side A 2.9 PSI for Side B
System Drag	1.41

JHC is required to have a MAP for this unit, for which the facility maintains and has implemented. This unit is also subject to 40 CFR Part 60 Subpart Da, the NSPS for Electric Utility Steam Generating Units.

This unit is subject to Acid Rain and the CSAPR programs. Acid rain compliance demonstrations are reported directly to USEPA on a quarterly basis.

The stack dimensions were not explicitly measured, but there was no evidence of change, and the dimensions appeared to be correct.

### ***EU COALHAND***

This emission unit consists of all the coal handling operations throughout the facility and is comprised of two (2) dumper buildings, transfer conveyors, a transfer building, a breaker house, bunker rooms, and the coal pile storage area itself. KD noted that there was very little coal in the yard, in comparison to previous site visits. Mr. Starken indicated that they have been receiving less coal due to issues with the supply chain. He went on to say that



that JHC has burned the pile of eastern coal that was on site and had not received more eastern coal.

To control emissions from the processes just mentioned, JHC uses various enclosures, baghouses, and dust suppression measures. The dust collectors serving the breaker house, bunker houses, and the reclaim hopper (DC #4, #5, #6, #7, and #9) are subject to the provisions of the New Source Performance Standards 40 CF Part 60 Subpart Y for Coal Preparation and Processing Plants. Initial Performance testing for these baghouses has already been completed.

JHC typically receives at least one (1) train full of coal per day, and they had received one train full of coal on the day of the inspection. JHC regularly grooms the coal pile and implements their fugitive dust plan, to minimize dust. JHC has been submitting fugitive dust reports indicating the control measures they have taken. JHC has also implemented a MAP for this emission unit, and

PM emissions are limited to 0.10 pounds per 1,000 pounds exhaust gas, on a dry basis from each discharge point, as verifiable through any requested stack testing. No testing is being requested at this time. Each discharge point also has an opacity limit of 20%; all baghouses were properly operating during the inspection, and no opacity was observed, and JHC is monitoring visible emissions from the dust collectors once per day when operating. Each of the baghouses are equipped with pressure drop indicators and were operating within the specified range of 1-7" WC.

Dust Collectors #1, #10, and #11 which serve the dumper houses, the coal yard hopper, and Units 1 and 2 are also subject to the provisions of 40 CFR Part 64 for Compliance Assurance Monitoring (CAM). JHC is properly submitting all CAM compliance forms.

### *EUSDA\_U3*

This emission unit covers the lime preparation operations that support the SDA for Boiler 3, and include the storage silos, vertical ball mills, and lime slurry transfer and product tanks. The storage silos are controlled by bin vent filters, the ball mill emissions are controlled by spray scrubbers, and the recycle mix tank emissions are controlled by a spray scrubber. The two (2) recycle silos are subject to the provisions of 40 CFR Part 64 for Compliance Assurance Monitoring.

There is a 5% opacity limit for each of the bin vent filters and each spray scrubber. PM emissions are limited to 0.004 gr/dscf of exhaust gas from the bin filters and 0.01 gr/dscf of exhaust gas for the spray scrubber. Additional PM<sub>10</sub> limits for EUSDA\_U3 are 0.021 pph and 0.024 pph for various spray scrubber emission points, and 0.02 pph or 0.03 pph for the bin vent filter emission points. The PM<sub>2.5</sub> limit for the bin vent filters is 0.02 pph or 0.03 pph; while the PM<sub>2.5</sub> limits for the various spray scrubber emission points are 0.024 pph, and 0.021 pph. Testing may be requested to verify emission rates from this emission unit; however, testing is not being requested at this time.

JHC had previously reported an issue with the recycle mix tank associated with this process. KD was able to see the vent that had some reported emissions. Since this issue, Mr. Starcken indicated that JHC has taken several actions in order to prevent reoccurrences. The solution that is currently in place, which will be further reported on the ROP

deviation Report due in March, 2022, is to re-route the emissions back into the slurry storage tank. Mr. Starken indicated that they had discussed this with the manufacturer, and this was being done in other locations as well. The ductwork to exhaust the air is still available but is presently disconnected, capped, and sealed.

As previously mentioned, the recycle silos are subject to CAM. JHC uses opacity as the indicator for compliance with the PM limits, in respect to CAM. JHC conducts non-certified visible emissions observations to demonstrate compliance. During the inspection, another emission events from this emission unit was discussed that was caused from a broken bag resulting in emissions from the bin vent servicing one of the recycle silos. This event will be reported win the upcoming CAM reports.

Additionally, JHC has properly implemented and maintains a MAP for this unit to ensure proper operation. Indicators from the MAP include monitoring differential pressure for the lime storage silos, recycle ash silos, and the filter separators. JHC is also monitoring and recording visible emissions from the appropriate points for this emission unit. The aforementioned Campbell Complex fugitive dust plan also helps ensure minimal fugitive dust.

### *EUSDI\_U12*

This emission unit is for the dry sorbent injection (DSI) material handling for Boilers 1 and 2. The emission unit includes the sorbent silos (hydrated lime or other sorbent) and pneumatic transfer. KD noted that the DSI tank for unit 1 was being unloaded during the inspection. No visible emissions were noted during the transfer from the silo the truck.

Each bin vent filter in EUSDI\_U12 has an opacity limit of 5%. The bin vent filters also have a PM limit of 0.004 gr/dscf of exhaust gases, a PM<sub>10</sub> limit of 0.08 pph, and a PM<sub>2.5</sub> limit of 0.08 pph. JHC has implemented and maintains a MAP to ensure proper operation. Indicators from the MAP include monitoring the differential pressure and the lime injection rate. JHC is also monitoring visible emissions from the appropriate bin vent filters, via non-certified visible emissions observations.

JHC also employs the Campbell Complex Fugitive dust plan for this emission unit to minimize fugitive emissions. Per the most recent quarterly fugitive dust report, appropriate measures have been taken to minimize fugitives.

### *EUACI\_U123*

All three (3) units activated carbon (or other sorbent) material handling, including the silos, are covered under this emission unit. Each bin vent filter has a PM emission limit of 0.004 gr/dscf of exhaust gas. Other various bin vent filters have additional PM emission limits, including PM<sub>10</sub> limits of 0.45 pph and 0.41 pph, and PM<sub>2.5</sub> limits of 0.045 pph and 0.041 pph, depending on the emission point.

The Campbell Complex fugitive dust plan and the MAP, both of which been implemented and maintained, help to minimize fugitive emissions, and ensure proper operation of the bin vent filters. Indicators in the MAP include monitoring the differential pressure and the injection rates, and the fill level. JHC is also monitoring and recording the visible emissions from the appropriate bin vent filters.

## *EUBYPRODUCT*

The emission unit covers the ash and byproduct handling system that transports ash and byproduct from the plant to the disposal silos. Equipment included in this emission unit is transfer tanks, (2 for the Unit 3 system and 2 for the Unit 1 and 2 system) with associated vacuum exhausters, and common disposal silos and truck loading. Some of the transfer tanks, and the landfill silos in this emission unit are subject to 40 CFR Part 64, Compliance Assurance Monitoring.

There is an opacity limit of 5% from various bin vent filter emission points, as well as a PM limit of 0.004 gr/dscf of exhaust gas. The transfer tanks also have the PM emission limit of 0.004 gr/dscf of exhaust gases. Additional emission limits for the transfer tank vacuum exhausters include PM<sub>10</sub> limits of 0.03 pph and PM<sub>2.5</sub> limits of 0.03 pph. The various bin vent filters have PM<sub>10</sub> limits of 0.03 pph, 0.55 pph or 0.05 pph and PM<sub>2.5</sub> limits of 0.03 pph or 0.55 pph or 0.05 pph, depending on the vent.

Each byproduct transfer tanks vacuum exhaust is discharged to a PJFF baghouse for one of the three (3) boilers except when EUBOILER1 is not operating. In that instance, the exhaust from the filter/separator associated with EUBOILER2 may be exhausted to atmosphere. JHC is tracking where the exhaust is going, and when it is being exhausted to atmosphere. JHC is also noting if there are any visible emissions during the time the transfer tanks are being exhausted to atmosphere. Visible emissions are used as the indicator of the proper functioning of the PM control devices, for the CAM subject emission points.

JHC has implemented and maintains a MAP for this emission unit as well as utilizing fugitive dust control measures as outlined in the Campbell Complex fugitive dust plan. JHC has been submitting fugitive dust reports indicating the actions taken to minimize dust.

## *EUAUXBLR12*

This emission unit is one (1) common auxiliary boiler for Units 1 and 2, which is a 17 MMBtu/Hr. limited use oil-fired tube boiler and has been identified as a limited use boiler. This boiler is subject to the provisions of 40 CFR Part 63 Subpart DDDDD for Industrial, Commercial, and Institutional Boilers and Process Heaters. Since this is a limited use boiler, the oil used in this boiler has a 10% annual capacity factor on the oil. This annual capacity factor means the ratio between the actual heat input to a boiler from the fuels burned during a calendar year to the potential heat input to the boiler had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity. The fuel burned in this boiler is limited to a sulfur content of 0.5% sulfur by weight based on a higher heating value of 18,000 btu/lb. Fuel records indicate the sulfur content is compliant with this limit.

Tune-ups are required ever five years, and records indicate the most recent tune-up was done on August 27, 2020, with all the required item checked and appropriate adjustments made including adjustments made to the high fire to lower the CO emissions. The Annual Compliance Report was properly submitted.

## *EUCAT3DIESEL*

This emission unit is a 9.4 MMBTU emergency diesel-fired stationary internal combustion engine subject to the provisions of 40 CFR Part 63 Subpart ZZZZ for Reciprocating Internal Combustion Engines. This engine burns diesel fuel only, and the sulfur content of the fuel is below the 1.0% allowed by weight at 18,000 btu/lb. The engine is equipped with an hour meter and was not in use during the time of the inspection. Records indicate a total of 4.2 hours of operation thus far during 2021.

#### *EUCATDIESEL12*

This emission unit is a 2,000-kilowatt (kW) diesel-fueled emergency generator installed in 2012. This unit is subject to the provisions NSPS Subpart 40 CFR Part 60 Subpart IIII for Reciprocating Compression Ignition Internal Combustion Engines as well as 40 CFR Part 63 Subpart ZZZZ for Reciprocating Internal Combustion Engines. Compliance with Subpart ZZZZ is demonstrated via compliance with Subpart IIII. This is a Certified engine, thus meeting the emission limits of 6.4 g/kW-hr for NMHC+ NO<sub>x</sub>, 3.5 g/kW-hr for CO, and 0.2 g/kW-hr for PM. The engine is equipped with an hour meter, and records indicate a total of 5.5 hours of operation thus far during 221. Additionally, the fuel used for this engine has a sulfur content of less than 0.0015 % by weight.

#### *EUGUARDSHK\_ENG*

This emission unit is for one (1) natural gas internal combustion engine rated at 40 HP that is exempt from Rule 201 permitting under Rule 285(2)(g) but is subject to the provisions of 40 CFR Part 63 Subpart ZZZZ and 40 CFR Part 60 Subpart JJJJ. Compliance with 40 CFR Part 63 Subpart ZZZZ is demonstrated via compliance with 40 CFR Part 60 Subpart JJJJ. This is a Certified engine, and has emission limits of 10 g/hp-hr. for NO<sub>x</sub>+Hc and 387 g/hp-hr. for CO. JHC is properly tracking the hours of operation of this engine, and it is equipped with an hour meter. As of August 2021, the engine has operated a total of 3.4 hours for calendar year 2021.

#### *FGBOILER12*

This flexible group covers the common Compliance Assurance Monitoring (CAM) requirements for EUBOILER1 and EUBOILER2 pursuant to 40 CFR Part 64. These boilers exhaust through a common stack, however, each boiler has its own CEMS and COMS units.

Both units utilize separate continuous opacity monitoring system (COMS) that are used as the indicator for compliance with the PM limits. The PM limits are described in EUBOILER1 and EUBOILER2. JHC continually monitors the opacity of the units and conducts daily calibrations and maintenance for the monitors. JHC also does annual monitor audits. JHC has been properly submitting all required CAM reports to the AQD

#### *FGMATS\_U12*

This flexible group houses the requirements of 40 CFR Part 63 Subpart UUUUU (Mercury and Air Toxics Standard or MATS) for Units 1 and 2.

The MATS requirements have emission limits of 0.030 lb./MMBTU for filterable PM, 0.0020 lb./MMBTU for HCl (both based upon stack testing), and 1.2 lb./TBTU, based upon a 30-day boiler operating day arithmetic average, for Mercury. Low Emitting EGU (LEE) status

for any pollutant, except for mercury, requires the performance testing data to be less than 50% of the applicable standard.

As mentioned in EUBOILER2, JHC conducted additional testing on EUBOILER2 for HCl emissions due to a change in fuel, as required under the MATS regulation. The change was a different blend of coal than normally combusted, as stated in EUBOILER2. The HCl emissions from this test indicated compliance with both the MATS limit and the LEE limit.

In a letter dated July 11, 2019, Consumers Energy submitted an updated Notice of Compliance Status (NOCS) pursuant to the MATS rules for Boiler 1. In a letter dated August 8, 2019, Consumers Energy submitted an updated Notice of Compliance Status (NOCS) pursuant to the MATS rules for Boiler 2. These units have successfully completed the three (3) years of consecutive quarterly testing for PM and HCl, as required, and meets the LEE criteria as defined in 63.1005(h)(1)(i). Therefore, future stack testing is now required every three (3) years to demonstrate compliance with the MATS regulation.

Tune-ups of Units 1 and 2 were most recently conducted in August 2018, and June 2021, and all notifications and reports have been submitted to both the AQD and to CEDRI, as required. No emergency bypass having been used for either unit; there has so not been any deviations from work practice standards.

### *FGMATS\_U3*

This flexible group covers the requirements of 40 CFR Part 63 Subpart UUUUU (Mercury and Air Toxics Standard or MATS) for Unit 3. Unit 3 relies on the use of a Continuous Emission Monitoring System (CEMS) to demonstrate compliance with the emission limits for PM, SO<sub>2</sub>, and Hg. These limits are: 0.030 lb./MMBTU for PM, 0.20 lb./MMBTU for SO<sub>2</sub>, and 1.2 lb./TBTU for Hg. Semi-Annual and Annual reports have been successfully submitted including the demonstration of compliance with these emission limits at 0.000546 lb./MMBTU for PM, 0.896 lb./MMBTU for Hg, and 0.057 lb./MMBTU for SO<sub>2</sub>.

The most recent tune-up of the boiler was conducted in December 2019. No emergency bypass having been used, and there have been no deviations from work practice standards. The most recent Semi-Annual Compliance report was submitted on September 15, 2021.

### *FGEXISTINGRICE*

This flexible group is comprised of four (4) diesel fired emergency reciprocating internal combustion engines that are subject to the provisions of 40 CFR Part 63 Subpart ZZZZ for reciprocating internal combustion engines. All engines burn ultra-low sulfur diesel fuel, that has a maximum sulfur content of 0.0015% by weight. Each of the units is equipped with an hour meter, and hours of operation are properly being tracked. JHC is properly complying with all provisions of ZZZZ, including conducting all inspections and changing the oil and filters.

JHC is properly tracking the hours of operation for each of the four (4) engines, all of which having operated under 7 hours thus far in calendar year 2021.

### *FGNEWCIRICE*

This flexible group covers two (2) compression ignition reciprocating internal combustion engines. Both of these engines are diesel fired. Both of these engines are subject to the NSPS provisions of 40 CFR Part 60 Subpart IIII and to the MACT standard 40 CFR Part 63, Subpart ZZZZ. Compliance with the requirements of 40 CFR Part 63 Subpart ZZZZ are demonstrated through compliance with 40 CFR Part 60 Subpart IIII.

One of the engines, EUWPDIESEL is a 130 Horsepower (HP) emergency water pump for fire suppression that is certified to the Tier 3 requirements. Since this is a certified engine, it is compliant with the NMHC+ NOx limit of 4.0 g/kW-hr, CO limit of 5.0 g/kW-hr, and the PM limit of 0.30 g/kW-hr. The other emission unit, EUTRNCNTRDIESL, is an emergency generator at the training center, rated at 1,193 bhp. This emission unit, while also certified, has slightly different emission limits at 6.4 g/kW-hr for NMHC+NOx, 3.5 g/kW for CO and 0.2 g/kW-hr.

Fuel records indicate both engines are compliant with the maximum sulfur content of less than 15 ppm by weight and a minimum cetane index of 40 or a maximum aromatic content of 35 % by volume. The engines are equipped with an hour meter, and records indicate the fire pump runs 2 or less hours per month, for routine maintenance and readiness testing and the training center engine having run a total of 46.8 hour thus far in 2021. The engine ran for 35.9 hours in August 2021 due to some power outages. That was the highest month of usage for 2021.

#### *FGAUXBLRS3*

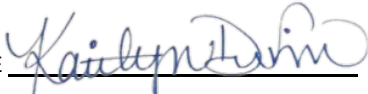
There are two (2) 9.8 MMBtu distillate oil fired boilers that provide heat to building 3 in this flexible group. The boilers are used primarily for comfort heat. These boilers are exempt from rule 201 permitting under Rule 282(2)(b)(ii) but are subject to the provisions of 40 CFR Part 63 Subpart DDDDD. The boilers burn fuel oil with a sulfur content of less than 0.4% by weight, at 18,000 btu/lb. All required notifications have been submitted, and tune-ups completed. Per Mr. Starken, while this boiler is only required to have biennial tune-ups, JHC conducts annual tune-ups. This boiler most recently had maintenance conducted on August 27, 2020, which included inspections of the burners, flame pattern, air-to fuel ration control system, optimization of the CO emission, and others. The tune-up also certifies that the boiler is complying with all provisions of 40 CFR Part 63, Subpart DDDDD.

#### *FGPARTSCLEANERS*

This flexible group covers all existing or future cold cleaners exempt from Rule 201 permitting under Rules 281(2)(h) and 285(2)(r)(iv). All parts cleaners were properly labeled and closed.

### **Compliance Determination**

Based on the observations made during the various site visits, and a review of the required records and reports, the facility appears to be in compliance with MI-ROP-B2835b-2020b.

NAME  DATE 10/5/2021 SUPERVISOR 