

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

G712663675

FACILITY: GRAND VALLEY STATE UNIVERSITY		SRN / ID: G7126
LOCATION: 1221 Service Building, ALLENDALE		DISTRICT: Grand Rapids
CITY: ALLENDALE		COUNTY: OTTAWA
CONTACT: Jim Seufert , Director of Laboratory Safety		ACTIVITY DATE: 07/19/2022
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY '22 on-site inspection to determine the facility's compliance status with PTI no. 182-84B and any other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

### I – Introduction

Chris Robinson (CR) from the Department of Environment, Great Lakes, and Energy's (EGLE) Air Quality Division (AQD) was on site to conduct an inspection of Grand Valley State University (GVSU, SRN G7126) on July 19, 2022. The facility is located at 1 Campus Drive in Allendale, Ottawa County, Michigan. Prior to entry CR surveyed the perimeter of the facility for odors and visible emissions. None were observed. Weather conditions were fair with a temperature of approximately 79°F and westerly winds at 9 mph ([www.weatherunderground.com](http://www.weatherunderground.com)).

CR met with Todd, boiler operator. Proper identification was provided, and Todd was informed by CR that the purpose of the visit was to conduct a routine inspection. Joel Van Ravenswaay, Director of Maintenance was informed of the inspection and Todd provided a walkthrough of the Facilities Department for the boiler inspections as well as one of the new generators (400kw). CR later spoke with Joel, who provided a list of the facility's emergency generators. CR spoke with Jim Seufert, Director of Laboratory Safety, by phone who will be the new environmental contact.

### II - Facility Description

Grand Valley State University is a college university campus. The facility's main emissions are generated by the facility boilers, which are used to provide heat to the campus buildings.

### III - Compliance Evaluation

Grand Valley State University operates under Opt-out PTI No. 182-84B and Rule 201 permit exemptions. The facility had been a Title V opt-out for HAPs but during the recent permit mod to add the new boiler (Unit 3) it was determined that the facility was a true minor source for HAPs, but the installation of Boiler 3 raised the facility's potential to emit (PTE) for NOx above the 100 ton per year (tpy) applicability threshold. Therefore, GVSU took enforceable restrictions to limit their NOx PTE to below Title V.

#### **1) PTI No. 182-84B**

Grand Valley State University's main emission sources are the three large building heat boilers. Boilers 1 and 3 are capable of firing both natural gas and #2 fuel oil. Nameplate capacities were reviewed. No changes since the last inspection have occurred to units 1 or 2. Unit 3 was permitted in 2021 but has been down due to issues with the heat transfer media.

Stacks were not measured but no changes have been made and they appeared to meet the height and diameter requirements specified in the permit. All stacks were vented unobstructed vertically.

#### **EUBOILERS3**

Boiler 3 capacity is less than 75 MMBtu/hr., is subject to a NOx emission limit of 14 tons per year (tpy), and a CO emission limit of 27 tpy, both based on a 12-month rolling time period. Compliance with the emission limits is demonstrated by complying with the material limits specified in section II of the PTI. Which are listed in the table below.

Material	Limit	Time Period	Compliance Demonstration
1. Sulfur in Distillate Fuel Oil	0.05 percent	Instantaneous	Delivery invoice showing Ultra LS.
2. Distillate Fuel Oil	271,739 gallons/yr.	12-month rolling	900 gallons used for all three boilers from 7/1/2022 – 6/30/2022, which is well under the limit just for unit 3.
3. Distillate Fuel Oil	48 hours/yr.	Calendar Year	Boiler 1 operated for 5.93 hours on 11/24/2021.
4. Natural gas	640.35 million cubic feet/yr.	12-month rolling	2.5 million Cubic feet used for all three boilers from 7/1/2022 – 6/30/2022, which is well under the limit just for unit 3.

Per discussions with the operator Boiler 3 only burns liquid fuel during testing and power outages. Based on observations and discussions this unit is equipped with low NOx burners and flue gas recirculation system that is operated and maintained in a satisfactory manner. A Malfunction Abatement Plan (MAP) is on file and appears to be appropriate and complete. The facility appears to be in compliance with the requirements of this MAP.

Records of monthly fuel use and type are being maintained as well as delivery records for distillate fuel. A log specifying when fuel oil was used along with NOx and CO emission calculations are being maintained. Time spent on fuel oil is less than the 48 hour/yr. requirements keeping the boiler classified as a natural gas-fired unit per 40 CFR Part 63 Subpart JJJJJ. Fuel usage meters are installed and maintained as required.

**FGBOILERS (EUBOILER1 & EUBOILER2)**

This flex Group includes boilers 1 and 2. Boiler 2 is natural gas fired-only while boiler 1 primarily operates on natural gas but can operate on #2 fuel oil as backup.

Both natural gas usage and #2 fuel oil usage is tracked on a monthly and 12-month rolling annual basis. Records were provided. Usage of #2 fuel oil is limited to 300,000 gallons per 12-month rolling time period and a sulfur content of 0.05 percent by weight. Fuel oil used from 7/1/2021 through 6/30/2022 was 900 gallons with none being used from 6/30/2022 to present. The amount used is well under the limit. Per the most recent fuel oil delivery invoice (6/8/16) the fuel received is listed as "Ultra LS Diesel", which meets the requirement of 0.05 percent sulfur.

**FGFACILITY**

GVSU is a Title V opt-out source for Nitrogen Oxides (NOx). PTI No. 182-84B establishes a facility wide (FGFACILITY CONDITIONS) NOx limit of 89 tons per year (tpy) per 12-month rolling time period and a natural gas usage of 1,303 million cubic feet (MMCF)/yr., also based on a 12-month rolling time period. FGFACILITY applies to all processes at GVSU which emit air contaminants including both permitted, exempt and grandfathered processes. Compliance with the natural gas usage

demonstrates compliance with the NOx emission limit. Based on provided records the 12-month rolling total usage of natural gas from 7/1/2021 through 6/30/2022 was 2.5 MMCF, which is well below the limit.

## 2) Federal Regulations

### - 40 CFR Part 63 Subpart JJJJJ:

EUBOILER1 and EUBOILER3 have the capability of firing #2 fuel oil. The facility is an Area Source of hazardous air pollutants (HAPs) and is potentially subject to 40 CFR Part 63, Subpart JJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (6J). 6J defines a gas-fired boiler as the following:

*... "Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year.*

Boilers 1 and 2 are considered gas-fired if they burn fuel oil for less than 48 hours per year, which GVSU appears to be complying with. A log of time operated while combusting fuel was provided indicating that in the last year boiler 1 operated for 5.93 hours and consumed 900 gallons of fuel oil during an annual test and boiler 2 has not operated on fuel oil since the annual test has not been conducted.

### - 40 CFR Part 60, Subpart Dc:

Boilers one and 2 are potentially subject to 40 CFR Part 60, Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Previous inspection reports indicate that these boilers were installed in 1965 and may predate the NSPS; it should be noted that the facility applied for a permit modification in 2008 due to modifying the boilers fuel usage capabilities as well as derating the boilers by lowering the fuel burning capacity. If the modification of the fuel orifices and changing of boiler capacity constitutes a modification as defined by 40 CFR Part 60 the equipment would be subject to the requirements of Subpart Dc. GVSU should determine if the modification would make the boilers subject to 40 CFR Part 60, Subpart Dc.

Boiler 3 is subject since it was installed after June 9, 1989, and has a max heat rating of greater than 10 MMBtu/hr. Fuel type and usage is being monitored as required. An Initial Notification has not been received by the AQD. CR will discuss this with Mr. Seufert and provide a form for completion and submittal.

### - NSPS 40 CFR Part 60, Subpart JJJ/IIII & 40 CFR Part 63, Subpart ZZZZ

GVSU has multiple emergency generators that appear to be subject to NSPS 40 CFR Part 60, Subpart JJJ (4J) Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and/or NSPS 40 CFR Part 60 Subpart IIII (4I) Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. 4J states that one method of complying with the standard is maintain a certified engine per manufacturer's specifications as described by the following:

*(a) If you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in §60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in §60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.*

*(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.*

Subpart IIII state that one requirement of the CFR is that the fuel meets a 1000 ppm maximum sulfur content limit. 4I also requires that the facility follow the manufacture’s specifications.

A list of generators was provided which is summarized below. The diesel fuel used is Ultra Low sulfur diesel which meets the requirement of 1,000 ppm sulfur per Subpart IIII.

Manufacturer	Model #	Size	Fuel Type	Location	Install Date
Generac		68 kw	DSL	Portable	*Prior to 2004
Wacker	LTN6L	6 kw	DSL	Light Tower Portable	
Caterpillar	--	250 kw	DSL	Manitou	
Kohler	500REOZV	500 kw	DSL	TV 35 Tower	
Cummins	DQCA-10737839	600 kw	DSL	PEW Library	
Kohler	125REOZJG	125 kw	DSL	JHZ Admin	
Cummins	--	500 kw	DSL	KHS Kindschi Hall	
Cummins	--	30 kw	DSL	SER	
Generac	--	20 kw	NG	South Utility Bld.	
Onan	100ENBA	100 kw	NG	PAD Life Science	
Onan	100.OGGHH	--	NG	Niemeyer Honors	
Onan	100.OGGHH	--	NG	Lake Ontario Hall	
Onan	150.00GGLB	--	NG	Central Utilities Bld	
Onan	--	80 kw	NG	MUR/VLC Housing	2004
Onan	100.OGGHH		NG	Mackinac B	2008
Cummins	GGHE-1134047	60 kw	NG	SAC 2010 housing	2010
Cummins	60GGHE	60 kw	NG	SAD 2010 housing	2010
Cummins	60.GGHE	60 kw	NG	SAE 2010 housing	2010
MTU	3R0096DS30	30 kw	DSL	Kistler Hall	2016
Generac	SD300	300 kw	DSL	Housing 2016	2016
Kohler	400REZXD	400 kw	NG	CUB	2022

\*Per call with Jim Seufert on 8/19/2022 these were installed prior to 2004.

AQD does not have delegation of authority for Area Source NESHAP 40 CFR Part 63, Subpart ZZZZ (RICE MACT). However, only the engines installed after 6/12/2006 appear to be subject to this Federal Standard with a single requirement of complying with 40 CFR Part 60 Subpart IIII

(Compression ignition - Diesel) or JJJ (Spark Ignition - Natural Gas). Also, the list above includes two (2) portable emergency generators. The AQD does not regulate portable sources.

The applicability date for 40 CFR Part 60 Subparts IIII is 7/11/2005 and for 40 CFR Part 60 Subpart JJJ it is 6/12/2006. Therefore, the emergency generators installed in 2004 or earlier do not appear to be subject to either of these standards. Since the Onan Generator is for emergency use, greater than 25 hp and was not manufactured on or after 1/1/2009 it also does not appear to be subject.

The remaining emergency generators are subject to the emission limitations specified in Table 1 of 40 CFR Part 60 Subparts JJJ for Spark Ignition and 60.4202 and 60.4207 of 40 CFR Part 60 Subpart IIII. GVSU purchased EPA certified engines that meet these requirements. Manufacturer Specifications are attached.

**3) Rule 201 Permitting Exemptions Claimed**

Grand Valley’s art building has a single spray booth with a fabric filter installed. The process appears to be exempt from requiring a permit Per Rule 287(2)(c) for having a usage of less than 200 gallons. Filters are installed and maintained properly.

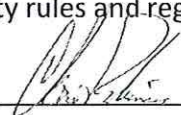
**4) MAERS**

Emissions for calendar year 2021 was submitted on time (March 22, 2022) by the facility and reviewed by AQD on May 17, 2022. Emission unit EUBOILER3 was not reported, however, installation was not completed until January 2022. Therefore, EUBOILER3 will need to be reported next year. A summary of the 2021 emissions data is below.

Pollutant	Amount (Tons)
AMMONIA	0.05
CO	9.61
LEAD	0.0001
NOX	12.08
PM10, FLTRBLE	0.06
PM10, PRIMARY	0.85
PM2.5, FLTRBL	0.06
PM2.5, PRIMRY	0.85
SO2	0.12
TNMOC	0.0002
TOC	0.07
VOC	0.69

**IV - Compliance Determination**

Based on the observations and discussions made during the inspection and a subsequent records review GVSU appears to be operating in compliance with PTI No. 182-84B and other applicable air quality rules and regulations.

NAME 

DATE 8/23/2022

SUPERVISOR 