

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

M203246603

FACILITY: SPECTRUM HEALTH-BUTTERWORTH CAMPUS		SRN / ID: M2032
LOCATION: 100 MICHIGAN ST NE, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Howard Hehrer , Senior Facilities Engineer		ACTIVITY DATE: 10/09/2018
STAFF: David Morgan	COMPLIANCE STATUS: Compliance	
SUBJECT:		SOURCE CLASS: MINOR
RESOLVED COMPLAINTS:		

At 10:45 A.M. on October 9, 2018, Air Quality Division (AQD) staff Dave Morgan conducted stack test observations and a scheduled inspection at Spectrum Health Butterworth Campus located at 25 Michigan Avenue in Grand Rapids. The purpose of the inspection was to determine the facility's compliance with state and federal air pollution regulations as well as Permit to Install (PTI) Nos. 351-08, 42-10, and 72-11 and to observe stack testing being conducted on an emergency generator. Accompanying AQD staff on the inspection was Howard Hehrer, Senior Facilities Engineer; and Jill Koebbe, of Air Waste and Water Compliance Inc.

FACILITY DESCRIPTION

Spectrum Health Butterworth Campus consists of various medical buildings spread over multiple addresses including 25 and 35 Michigan Avenue, the Lemmen-Holton Cancer Center, Helen Devos Children's Hospital, and the Butterworth Hospital complex. The primary air pollution sources are from utility equipment including boilers, emergency electric generators, and two aboveground fuel storage tanks. The facility has actual and potential emissions that would make it a true minor source and is considered an area source. The source is subject to the New Source Performance Standards (NSPS) under 40 CFR Part 60, Subparts Dc, IIII and JJJJ and the area source National Emission Standards for Hazardous Pollutants (NESHAP) under 40 CFR Part 63, Subpart DDDDD and ZZZZ.

COMPLIANCE EVALUATION

Equipment at the Spectrum Health Butterworth campus is summarized in the following table. AQD staff observed all equipment during the inspection and noted no issues or compliance problems.

Location	Emission Unit	Description	Fuel	Rating	Permitting Status*	Install Date	Fed Reg	Operat- ing	Total Hours
Tower 35	EUCOMBLAB#1-BOIL	Fulton Pulse Hot Water Boiler	natural gas	2.0mmBtu/hr	R282(2)(b)	3/18/2011		N	
	EUCOMBLAB#2-BOIL	Fulton Pulse Hot Water Boiler	natural gas	2.0mmBtu/hr	R282(2)(b)	9/18/2011		Y	
	EUCOMBLAB#3-BOIL	Fulton Pulse Hot Water Boiler	natural gas	2.0mmBtu/hr	R282(2)(b)	9/18/2011		N	
	EUCOMBLAB#4-BOIL	Fulton Pulse Hot Water Boiler	natural gas	2.0mmBtu/hr	R282(2)(b)	9/18/2011		N	
	EUCOMBLAB#5-BOIL	Fulton Pulse Hot Water Boiler	natural gas	2.0mmBtu/hr	R282(2)(b)	9/18/2011		N	
	EUCOMBLAB#6-BOIL	Fulton Steam Boiler	natural gas	1.26 mmBtu/hr	R282(2)(b)	9/18/2011		N	
	EUCOMBLAB#7-BOIL	Fulton Steam Boiler	natural gas	1.26 mmBtu/hr	R282(2)(b)	9/18/2011		N	
	EUCOMBLABGEN	Emergency Generator, Cat. 3516LE (Certified)	natural gas	1,040kW	PTI 72-11	9/22/2011	JJJJ ZZZZ	Y	79

Lemmen-Holton	EULH00428	Fulton Snow Melt Boiler	natural gas	1.26 mmBtu/hr	R282(2)(b)	6/1/2008		N	
	EULH00429	Fulton Snow Melt Boiler	natural gas	1.26 mmBtu/hr	R282(2)(b)	6/1/2008		N	
	EULH00434	#1 Fulton Boiler	natural gas/#2 diesel	3.0 mmBtu/hr	R282(2)(b)	6/1/2008		N	
	EULH00435	#2 Fulton Boiler	natural gas/#2 diesel	3.0 mmBtu/hr	R282(2)(b)	6/1/2008		Y	
	EULH00436	#3 Fulton Boiler	natural gas/#2 diesel	3.0 mmBtu/hr	R282(2)(b)	6/1/2008		N	
	EULH00437	#4 Fulton Boiler	natural gas/#2 diesel	3.0 mmBtu/hr	R282(2)(b)	6/1/2008		N	
	EULH00440	#5 Fulton Boiler	natural gas	1.67 mmBtu/hr	R282(2)(b)	6/1/2008		N	
	EULH00441	#6 Fulton Boiler	natural gas	1.67 mmBtu/hr	R282(2)(b)	6/1/2008		N	
	EULHCPGENSET	Kohler Emergency Generator	natural gas	1,600kW	PTI 351-08	6/1/2008		N	150
Butterworth Energy Center	EUBH6HN00382	#4 Emergency Generator, Cat. 3561B	#2 diesel	2,000kW	PTI 351-08	1/1/2000		N	886
	EUBH6HN00383	#5 Emergency Generator, Cat. 3561B	#2 diesel	2,000kW	PTI 351-08	1/1/2000		N	856
	EUBH6HN01650	#6 Emergency Generator, Cat. 3561B	#2 diesel	2,000kW	PTI 351-08	6/30/2003		N	976
	EUBOILER01	Johnson Boiler w/O2 trim control	natural gas/#2 diesel	32.5mmBtu/hr	PTI 42-10	7/1/1993	Dc	N	
	EUBOILER02	Johnson Boiler w/O2 trim control	natural gas/#2 diesel	32.5 mmBtu/hr	PTI 42-10	10/25/1993	Dc	N	
	EUBOILER03	Clever Brooks Boiler w/O2 trim control	natural gas/#2 diesel	32.65 mmBtu/hr	PTI 42-10	7/18/2010	Dc	Y	
	EUGENSET1	#1 Emergency Generator, Cat. 3561B	#2 diesel	2,000kW	PTI 351-08	7/1/2010	IIII	N	454
	EUGENSET2	#2 Emergency Generator, Cat. 3561B	#2 diesel	2,000kW	PTI 351-08	7/1/2010	IIII	N	414

North Office Bldg	EUOBGENSET	Kohler Emergency Generator	#2 diesel	125kW	R285(2)(g)	9/1/2007		N	NA
Women & Children's Parking Ramp	EUWACGENSET	Cat. Emergency Generator	#2 diesel	150kW	R285(2)(g)	6/1/2008		N	NA

* It is noted that PTI No. 112-18 is pending and will incorporate existing permitted equipment into one permit. PTI No. 112-18 will also make the source an synthetic minor source of NOx emissions.

Emergency Generator:EUENGINE1 (PTI No. 72-11):

At the time of the inspection EUENGINE1 covered under PTI No. 72-11 was under going stack testing as required every three years or 8,756 hours of operation by NSPS Subpart JJJJ. Stack testers from Network Environmental including Steve Byrd, Scott Cargill and Dave Englehardt were on site as well as AQD Technical Programs Unit staff, Dave Patterson. Testing began at 9:30 AM.

According to the Caterpillar technician on site, the engine load during the first test run ranged from 945 kW to 955 kW which was within an acceptable maximum load of 10%. It is noted that after the first test run Network kept losing power to their trailer. This delayed the second run until after 12:00 P.M.. According to Dave Patterson all testing was able to be completed. No issues were identified with the testing. Test results are pending.

From October 2017 through September 2018, EUENGINE1 operated for 7 hours which is well below the 250 hour limit under PTI No. 72-11. The non-resettable hours meter, observed on the unit, had total cumulative operating hours of 79 hours.

The engine is maintained and operated in accordance with manufacturer recommendations.

Other Emergency Generators (PTI No. 351-08):

There are six, diesel-fired, emergency generators permitted under PTI No. 351-08. All units burn only ultra low sulfur diesel (ULSD) fuel with a sulfur content of 15ppm. Documentation provided by Spectrum show that USLD has been purchased and received from Crystal Flash. Total fuel usage for all units from October 2017 through September 2018 was 16,747 gallons which is below the 12-month rolling permit limit of 136,000 gallons.

No electricity generated by these units is sold and total capacity from each unit does not exceed 5 MW, all in accordance with the permit.

All engines are operated and maintained in accordance with manufacturer specifications.

It is noted that emergency generators EUGENSET1 and EUGENSET2 are subject to 40 CFR Part 60, Subpart IIII. The engines are also certified engines and therefore meet the emission requirements of Subpart IIII.

Boilers (PTI No. 42-10):

PTI No. 42-10 covers the three steam boilers used for heating, cooling, and central sterilization. These boilers are subject to NSPS, Subpart Dc and all notifications and performance testing has already been conducted.

Records of natural gas and diesel fuel usage and corresponding hours of operation are maintained on a daily and monthly basis in accordance with the permit. It is noted that PTI No. 42-10 does not have specific fuel amount or hours limitations. Records of fuel usage obtained as part of this evaluation are attached to this report. The boilers primarily burn natural gas, however, according to Jill Koebbe, the boilers are tested one day per year using diesel fuel. This testing was last done in November 2017 and the next test is planned for November 2018.

The fuel is limited to a sulfur content of 15 ppm which is considered USLD. Documentation provided by Spectrum show that USLD has been purchased and received from Crystal Flash.

Also, each unit is meeting the oxygen trim requirements, automated fuel monitoring, low-NOx burner on Boiler 3. All boilers are operated and maintained in accordance with manufacturer specifications and a malfunction abatement plan is implemented.

Note, as an area source of hazardous air pollutants, these boilers qualify as "Gas-1" units based on limited use of

oil and so these boilers are not subject to any further requirements of Subpart DDDDD.

Exempt Boilers:

All 15 boilers exempt from permitting under Rule 282(2)(b) have a heat input capacity of less than 10 million Btu/hour. Also, because they have a heat input capacity less than 10 MMBtu/hour, they are not subject to NSPS Subpart Dc. Because ULSD is used at the facility, those boilers burning diesel fuel meet the sulfur content requirements in Rule 282(2)(b).

Fuel Storage Tanks:

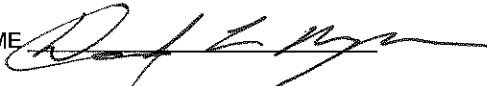
There are two 20,000 gallon, above ground storage tanks for diesel fuel. These tanks are exempt from air use permitting under Rule 284(2)(d).

Miscellaneous:

No visible emissions were observed from any of the emission units.

SUMMARY

Spectrum Health Butterworth campus appears to be in compliance with all applicable requirements at this time. Records obtained during the inspection are attached.

NAME  DATE 11/8/18 SUPERVISOR 