

# STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION 17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

#### **DEPARTMENT ORDER**

Fiberight LLC and Municipal Review Committee, Inc. Penobscot County Hampden, Maine A-1111-71-B-A

Departmental
Findings of Fact and Order
Air Emission License
Amendment #1
After-the-Fact

#### FINDINGS OF FACT

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

#### I. REGISTRATION

## A. Introduction

Fiberight LLC (Fiberight) applied for an Air Emission License permitting the operation of emission sources associated with a Municipal Solid Waste (MSW) processing facility. Municipal Review Committee, Inc. also applied as a co-applicant. Sufficient documentation was provided to the Department to demonstrate Title, Right, or Interest for both companies. Therefore, wherever "Fiberight" is used throughout this document, it is intended to refer to both entities equally and jointly.

Fiberight was issued Air Emission License A-1111-71-A-N on July 14, 2016, for the operation of emission sources associated with their MSW processing facility.

The equipment addressed in this license is located on Bouchard Lane in Hampden, Maine.

Fiberight has requested an amendment to their license in order to address the phasing of the facility's construction and the installation of new equipment associated with the phased construction.

Additionally, this license amendment corrects and updates provisions of federal regulations applicable to Boilers #1 and #2.

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# B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

#### **Boilers**

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Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type	Sulfur Content	Date of Manuf.	Stack #
Da:1au #1	40	5.1 ton/hr*	Post-Hydrolysis Solids	varies	TBD	1
Boller #1	Boiler #1 48	783 scfm	Natural Gas	negligible	עפו	1
D - :1 #2	//a // //	5.1 ton/hr*	Post-Hydrolysis Solids	varies	TDD	
Boiler #2	48	783 scfm	Natural Gas	negligible	TBD	2
D = 11 #2	13.2	207 scfm	Natural Gas	negligible	2019	2
Boiler #3	both fuels combined	315 scfm	Digester Gas	25 ppmv H <sub>2</sub> S	2018	3

TBD - To Be Determined

# **Other Fuel Burning Equipment**

Equipment	Maximum Firing Rate	Fuel Type	Sulfur Content	Date of Manuf.
ZBRID TO	386 scfm	Tail Gas	1,600 ppmv H <sub>2</sub> S	TBD
ZBKID TO	209 scfm	Digester Gas	1,000 ppmv H <sub>2</sub> S	IBD
Flare #1	320 scfm	Digester Gas	1,000 ppmv H <sub>2</sub> S	2019

# **Process Equipment**

Equipment	Pollution Control Equipment
Tipping Floor	(2) scrubber trains
Pulpers	(2) scrubber trains
Wash Tunnels	(2) scrubber trains
Hydrolysis Reactors	N/A
PHS Dryers	multiclone &
	baghouse
Anaerobic Digesters	thermal oxidizer &
	flares
Ash Handling	N/A
Cooling Towers*	drift eliminators

<sup>\*</sup>The Cooling Towers are considered insignificant activities, but are included in this license for completeness purposes.

<sup>\*</sup>Assumes a moisture content of 41.5% and HHV of 8,100 Btu/lb on a dry basis.

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# C. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

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The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission" levels as defined in the Department's *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions.

This modification will not result in a change in annual licensed emissions for any pollutant. Therefore, the modification is determined to be a minor modification and has been processed as such.

# D. Facility Classification

With the licensed facility-wide annual emission limits, the facility is licensed as follows:

- · As a synthetic minor source of air emissions, because the licensed emissions are below the major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

Emissions of CO and HAP are licensed above 80% of the major source threshold. Therefore, this facility is classified as an "80% Synthetic Minor" for the purpose of determining the minimum required compliance inspection frequency in accordance with Maine's Compliance Monitoring Strategy.

# II. BEST PRACTICAL TREATMENT (BPT)

#### A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

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# B. Project Description

Since the issuance of their original license, Fiberight has developed a phased approach to the construction of the facility. Limited equipment will be installed and brought on-line as part of the initial phase. This equipment includes the Tipping Floor, Pulpers, and Wash Tunnels with the associated Scrubber Trains.

The initial phase also includes installation and operation of the Anaerobic Digesters and Flare #1, although gas produced will not be cleaned for sale off-site until the secondary phase. Therefore, the Thermal Oxidizer (ZBRID TO), and the Molecular Gate<sup>TM</sup> Pressure Swing Adsorption (PSA) units are also in the secondary phase. The Hydrolysis Reactors, Post-Hydrolysis Solids (PHS) Dryers, and Boilers #1 and #2 are also part of a secondary phase and will be installed at a later date.

Since the boilers and off-site sale of gas do not occur until the secondary phase, Fiberight has proposed the installation of a gas-fired boiler (Boiler #3) to provide facility heat and hot water and a flare (Flare #1) to control digester gas not used by Boiler #3. Flare #1 replaces the previously licensed (but not yet installed) flare.

Hydrogen sulfide (H<sub>2</sub>S) in the digester gas are proposed to be controlled by use of a SulfAx<sup>TM</sup> Iron Sponge prior to combustion in Boiler #3. After completion of the secondary construction phase, the SulfAx<sup>TM</sup> Iron Sponge and Boiler #3 are not expected to be used except for back-up purposes.

The following table summarizes which equipment will be installed and operated during each phase of construction.

Initial Phase	Secondary Phase		
Tipping Floor Hydrolysis Reactors			
Pulpers PHS Dryers			
Wash Tunnels	Boiler #1		
Scrubber Trains	Trains Boiler #2		
Anaerobic Digesters	ZBRID TO		
Boiler #3	Ash Handling		
Flare #1	Cooling Towers		
SulfAx <sup>TM</sup> Iron Sponge	Molecular Gate <sup>TM</sup> Pressure		
	Swing Adsorption		

Although equipment listed to be installed in the secondary phase are still included in Fiberight's air emission license, if construction is discontinued for a period of 18 months or more, approval to construct becomes invalid unless Fiberight receives written approval from the Department for an extension. (See Standard Condition (3) of air emission license A-1111-71-A-N.)

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## C. Boiler #3

Boiler #3 is a 300 boiler horse power (BHP) package boiler manufactured by Hurst in 2018. The boiler is designed to fire either natural gas or biogas produced by the Anaerobic Digesters (digester gas). The boiler has the capability to fire both fuels simultaneously but is limited to a maximum heat input of 13.2 MMBtu/hr by the heating surface within the boiler and the boiler control system. Boiler #3 will exhaust through its own dedicated stack (Stack #3).

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Boiler #3 will be the primary source of process heat for the waste processing operation until completion of the secondary construction phase. The primary fuel source for Boiler #3 will be digester gas with natural gas being used to supplement as necessary. Until completion of the secondary construction phase, Fiberight plans to manage production of biogas in the Anaerobic Digesters to attempt to closely match the fuel needs of Boiler #3. Fiberight does not have the ability to store digester gas. Therefore, any digester gas produced beyond what is used by Boiler #3 will be combusted in Flare #1.

# 1. Best Available Control Technology (BACT)

The following is a summary of the BACT determinations for Boiler #3 by pollutant.

## a. Particulate Matter: PM/PM<sub>10</sub>

The principal components of the particulate matter emissions from Boiler #3 include filterable and condensable particulate matter from incomplete combustion. Both natural gas and digester gas tend to have typically low emissions of filterable PM. Potential control technologies include baghouses, electrostatic precipitators (ESP), wet scrubbers, and multicyclones.

#### **Baghouses**

Baghouses consist of a number of fabric bags placed in parallel that collect particulate matter on the surface of the filter bags as the exhaust stream passes through the fabric membrane. The collected particulate is periodically dislodged from the bags' surface to collection hoppers via short blasts of high-pressure air, physical agitation of the bags, or by reversing the gas flow. Baghouse systems are capable of PM filterable collection efficiencies greater than 98%. A baghouse is a technically feasible option for control of PM from Boiler #3. However, due to the overall low PM loading in the exhaust gas of less than one ton per year, the reduction of annual PM emissions does not warrant the associated capital and operational costs of a baghouse. Therefore, operation of a baghouse for control of PM/PM<sub>10</sub> from Boiler #3 is determined to not be economically feasible.

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### ESPs/WESPs

ESPs work by charging particles in the exhaust stream with a high voltage, oppositely charging a collection surface where the particles accumulate, removing the collected dust by a rapping process, and collecting the dust in hoppers. In wet ESPs (WESPs), the collectors are either intermittently or continuously washed by a spray of liquid, usually water. Instead of collection hoppers, a drainage system is used. ESP/WESP systems are capable of PM filterable collection efficiencies up to 98%. An ESP/WESP is a technically feasible option for control of PM from Boiler #3. However, due to the overall low PM loading in the exhaust gas of less than one ton per year, the reduction of annual PM emissions does not warrant the associated capital and operational costs of an ESP or WESP. Therefore, operation of an ESP/WESP for control of PM/PM<sub>10</sub> from Boiler #3 is determined to not be economically feasible.

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## Multicyclones

Mechanical separators include cyclonic and inertial separators. In a multicyclone, centrifugal force separates larger PM from the gas stream. The exhaust gas enters a cylindrical chamber on a tangential path and is forced along the outside wall of the chamber at a high velocity, causing the PM to impact collectors on the outer wall of the unit and fall into a hopper for collection. Multicyclones have typical removal efficiencies of 40-90% for PM<sub>10</sub> and zero to 40% for smaller diameter particles. Since Boiler #3 is a gas-fired boiler, all particulate matter produced is expected to be less than 1.0 micron. Therefore, due to the particle size, the use of a multicyclone for control of PM/PM<sub>10</sub> from Boiler #3 is determined not to be technically feasible.

#### Wet Scrubbers

Wet scrubbers remove PM from gas streams primarily through impaction and, to a lesser extent, other mechanisms such as interception and diffusion. A scrubbing liquid (typically water) is sprayed countercurrent to the exhaust gas stream. Contact between the larger scrubbing liquid droplets and the suspended particulates removes the PM from the gas stream. Entrained liquid droplets then pass through a mist eliminator (coalescing filter) which causes the droplets to become heavier and fall out of the exhaust stream. Wet scrubbers typically have removal efficiencies of 90 – 99% for emissions of PM<sub>10</sub> and significantly lower efficiencies for smaller diameter particles. High-efficiency scrubbers such as venturi scrubbers can be used to achieve greater removal efficiencies for PM<sub>2.5</sub> of greater than 99% due to the high velocities and pressure drops at which they operate. A wet scrubber is a technically feasible option for control of PM from Boiler #3. However, due to the overall low PM loading in the exhaust gas of less than one ton per year, the reduction of annual PM emissions does not warrant the associated capital and operational costs of a wet scrubber. Therefore, operation of a wet scrubber for control of PM/PM<sub>10</sub> from Boiler #3 is determined to not be economically feasible.

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# **BACT Determination for Particulate Matter**

The Department finds the following emission limits to represent BACT for particulate matter emissions from Boiler #3. The emission limits are based on an emission factor of 7.6 lb/MMscf from AP-42, Table 1.4-2 dated 7/98.

Fuel	Units	PM	PM <sub>10</sub>
Natural Gas and/or	lb/MMBtu	0.012	
Digester Gas	lb/hr	0.14	0.14

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Compliance with the PM/PM<sub>10</sub> emission limits shall be demonstrated by conducting performance testing upon request by the Department.

## b. Sulfur Dioxide: SO<sub>2</sub>

Emissions of SO<sub>2</sub> from Boiler #3 are attributable to the oxidation of sulfur compounds contained in the fuel. Pollution control options to reduce SO<sub>2</sub> emissions include fuel desulfurization by means of an adsorption systems, flue gas desulfurization by means of wet scrubbing, and firing fuels with an inherently low sulfur content, such as natural gas.

#### Fuel Desulfurization

Fuel desulfurization is accomplished through the use of adsorption media which selectively captures sulfur-containing compounds. Fiberight has proposed the use of a SulfAx<sup>TM</sup> Iron Sponge manufactured by MV Technologies. The SulfAx<sup>TM</sup> Iron Sponge is a non-regenerative adsorption system which uses a proprietary iron oxide granular media to remove H<sub>2</sub>S from the digester gas fuel stream. Typically, 95%+ of the sulfur compounds found in digester gas are H<sub>2</sub>S. The digester gas produced by Fiberight is expected to have an H<sub>2</sub>S concentration of between 500 - 1,000 ppmv. The SulfAx<sup>TM</sup> Iron Sponge is guaranteed to deliver outlet concentrations of less than 25 ppmv, resulting in a control efficiency of 95% - 97.5%.

#### Flue Gas Desulfurization

Flue gas desulfurization by means of wet scrubbing works by injecting a caustic solution into the scrubber unit to react with the SO<sub>2</sub> in the flue gas to form a precipitate and either carbon dioxide or water. Flue gas desulfurization by means of wet scrubbing can have control efficiencies upwards of 90%. Flue gas desulfurization is a technically feasible option for control SO<sub>2</sub> from Boiler #3.

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# BACT Determination for SO<sub>2</sub>

The Department finds the use of natural gas, which inherently has a low sulfur content, and an emission limit of 0.01 lb/hr to represent BACT for SO<sub>2</sub> emissions from Boiler #3 when firing natural gas.

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Compliance with the SO<sub>2</sub> emission limit when firing natural gas shall be demonstrated by conducting performance testing upon request by the Department.

The Department finds an emission limit of 0.08 lb/hr based and the use of the SulfAx<sup>TM</sup> Iron Sponge to meet a fuel H<sub>2</sub>S limit of 25 ppmv to be BACT for SO<sub>2</sub> emissions from Boiler #3 when firing digester gas.

Compliance with the SO<sub>2</sub> emission limit when firing digester gas shall be demonstrated by monthly sampling of the SulfAxTM Iron Sponge inlet and outlet H<sub>2</sub>S concentration.

## c. Nitrogen Oxides: NO<sub>x</sub>

 $NO_x$  from combustion is generated through one of three mechanisms: fuel  $NO_x$ , thermal  $NO_x$ , and prompt  $NO_x$ . Fuel  $NO_x$  is produced by the oxidation of nitrogen in the fuel source, with low nitrogen content fuels such as distillate fuel and natural gas producing less  $NO_x$  than fuels with higher levels of fuel-bound nitrogen. Thermal  $NO_x$  forms in the high temperature area of the combustor and increases exponentially with increases in flame temperature and linearly with increases in residence time. Flame temperature is dependent upon the ratio of fuel burned in a flame to the amount of fuel needed to consume all the available oxygen, also known as the equivalence ratio. The lower this ratio is, the lower the flame temperature; thus, by maintaining a low fuel ratio (lean combustion), the potential for  $NO_x$  formation can be reduced. In most modern burner designs, the high temperature combustion gases are cooled with dilution air. The sooner this cooling occurs, the lower the formation of thermal  $NO_x$ . Prompt  $NO_x$  forms from the oxidation of hydrocarbon radicals near the combustion flame; this produces an insignificant amount of  $NO_x$ .

Control of  $NO_x$  emissions can be accomplished through one of three methods: the use of add-on controls, such as selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR), the use of combustion control techniques, such as low  $NO_x$  burners (LNBs), and the combustion of clean fuel, such as natural gas.

#### **SCR**

SCR employs the reaction of NO<sub>x</sub> with ammonia in the presence of a catalyst to produce nitrogen and water. The reduction is considered "selective" because the catalyst selectively targets NO<sub>x</sub> reduction in the presence of ammonia within a temperature range of approximately 480 °F to 800 °F. One mole of ammonia is

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required to reduce one mole of NO, and two moles are required to reduce one mole of NO<sub>2</sub> as shown in the following reactions:

$$4NO + 4NH_3 + O_2 \rightarrow 4N_2 + 6H_2O$$
  
 $2NO_2 + 4NH_3 + O_2 \rightarrow 3N_2 + 6H_2O$ 

SCR systems have typical control efficiencies between 70 – 90%.

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However, SCR systems function best on systems with steady operational loads. Load fluctuations, which can be expected at Fiberight, can cause variation in exhaust temperature and flowrate which can limit the effectiveness of the SCR system. In addition, not all of the ammonia is used by the system resulting in added environmental impacts associated with increased emissions of ammonia. Therefore, operation of an SCR system for control of NO<sub>x</sub> emissions from Boiler #3 is determined to not be economically feasible or environmentally justifiable.

## **SNCR**

SNCR is a method of post combustion control that selectively reduces  $NO_x$  into nitrogen and water vapor by reacting the exhaust gas with a reagent such as ammonia or urea, similar to SCR. However, in SNCR, a catalyst is not used to lower the activation temperature of the  $NO_x$  reduction reaction. Therefore, SNCR is used when flue gas temperatures are between 1600 °F and 2100 °F. The  $NO_x$  reduction efficiency decreases rapidly at temperatures outside this optimum temperature window which results in excessive unreacted ammonia slip and increased  $NO_x$  emissions.

The reagent solution (either ammonia or urea) is typically injected along the post-combustion section of the boiler. Injection sites must be optimized for reagent effectiveness and must balance residence time with flue gas stream temperature. The potential for unreacted ammonia slip emissions is greater with SNCR than with SCR and the overall  $NO_x$  reduction is less. SNCR systems have typical control efficiencies between 30-75%.

Due to the small size of Boiler #3, the physical location of the required temperature range is very small. In addition, SNCR requires area and time for mixing of the reagent and gases to occur. Again, the size of the boiler make this unlikely to be possible. Due to these technical limitations, an SNCR system for Boiler #3 is determined to not be technically feasible.

#### **LNBs**

LNBs reduce  $NO_x$  by accomplishing combustion in stages which delays the combustion process resulting in a cooler flame that suppresses thermal  $NO_x$  formation. LNBs can achieve reductions in  $NO_x$  between 40-85% (relative to uncontrolled emission levels).

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LNBs are technically feasible for the control of NO<sub>x</sub> emissions from Boiler #3 and have been proposed as part of the boiler's control strategy.

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## BACT Determination for NO<sub>x</sub>

The Department finds the following emission limits and the use of LNBs to represent BACT for NO<sub>x</sub> emissions from Boiler #3. The emission limits are based on the manufacturer's guaranteed emission rate of 30 ppm at 2.5% oxygen.

Fuel	Units	NOx
Natural Gas and/or	lb/MMBtu	0.043
Digester Gas	lb/hr	0.55

Compliance with the NO<sub>x</sub> emission limits shall be demonstrated by conducting performance testing upon request by the Department.

## d. Carbon Monoxide and Volatile Organic Compounds: CO & VOC

CO and VOC emissions are attributable to the incomplete combustion of organic compounds in the fuel. Emissions result when there is insufficient residence time or when there is insufficient oxygen available near the hydrocarbon molecule during combustion to complete the final step in oxidation. Combustion modifications taken to reduce NO<sub>x</sub> emissions may result in increased emissions of CO. Pollution control options to reduce CO and VOC emissions include add-on technologies such as catalytic oxidation and thermal oxidizers as well as combustion controls.

#### Catalytic Oxidation

Catalytic oxidation is a post combustion control technology that has been used extensively with gas turbines and internal combustion engines. Catalysts are typically based on a noble metal and operate by decreasing the temperature at which oxidation of CO will occur. The catalyst lowers the activation energy necessary for CO to react with available oxygen in the exhaust to produce CO<sub>2</sub>. Despite the decreased oxidation temperature, process exhaust gas must typically be preheated prior to contact with the catalyst bed. An oxidation catalyst is located within the heat recovery section of the system, or in a downstream location where the exhaust gases are reheated to meet the proper temperature environment. The operating temperature window of an oxidation catalyst is between approximately 600 °F and 700 °F.

Emissions of CO from Boiler #3 are expected to be less than 1.0 ton/year. Due to the overall low CO emissions in the exhaust gas, the reduction of annual CO

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emissions does not warrant the associated capital and operational costs of a catalytic oxidizer. Therefore, operation of catalytic oxidation system for control of CO from Boiler #3 is determined to not be environmentally nor economically feasible.

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#### Thermal Oxidation

Thermal oxidizers reduce CO and VOC emissions by completing combustion and converting CO and other organic compounds to CO<sub>2</sub>. Thermal oxidation has been reported to achieve up to 95% reduction of CO in the exhaust gas in some types of industrial facilities. Regenerative thermal oxidizers (RTOs) are designed to preheat the inlet emission stream with heat recovered from the incinerated exhaust gases. Gases entering the RTO are heated by passing through preheated beds packed with a ceramic media. A gas burner brings the preheated emissions up to an incineration temperature between 788 °C and 871 °C (1450 °F – 1600 °F) in a combustion chamber with sufficient gas residence time to complete the combustion. Combustion gases then pass through a cooled ceramic bed where heat is extracted. By periodically reversing the flow through the beds, the heat transferred from the combustion exhaust air preheats the gases to be treated, thereby reducing auxiliary fuel requirements.

Emissions from Boiler #3 are expected to be less than 1.0 ton/year each for CO and VOC. Due to the overall low emissions in the exhaust gas, the reduction of annual CO and VOC emissions does not warrant the associated capital and operational costs of a thermal oxidizer. Therefore, operation of thermal oxidation system for control of CO and VOC from Boiler #3 is determined to not be environmentally nor economically feasible.

#### Oxygen Trim

Oxygen trim systems monitor the amount of oxygen in the exhaust gas and adjust the inlet flow of combustion air in order to achieve an optimum air-to-fuel ratio. By monitoring the oxygen level in the exhaust gas, fine adjustments can be applied to the combustion air ratio to compensate for combustion variables such as barometric pressure change, air humidity, and variances in fuel quality. If insufficient combustion air is available in the combustion chamber, incomplete combustion occurs, resulting in increased CO and VOC emissions. An oxygen trim system ensures adequate combustion air is present for complete combustion. Use of an oxygen trim system is considered technically feasible for control of CO and VOC emissions from Boiler #3 and is included as part of the boiler's control strategy.

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## BACT Determination for CO and VOC

The Department finds the following emission limits and the use of an oxygen trim system to represent BACT for CO and VOC emissions from Boiler #3. The CO emission limits are based on the manufacturer's guaranteed emission rate of 20 ppm at 2.5% oxygen. The VOC emission limits are based on AP-42, Table 1.4-2 dated 7/98.

Fuel	Units	CO	VOC
Natural Gas	lb/MMBtu	0.017	_
and/or Digester Gas	lb/hr	0.21	0.10

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Compliance with the CO and VOC emission limits shall be demonstrated by conducting performance testing upon request by the Department.

#### e. Visible Emissions

Visible emissions from Boiler #3 shall not exceed 10% opacity on a six-minute block average basis.

# 2. Periodic Monitoring

Periodic monitoring for Boiler #3 shall include the following:

- a. Hours of operating time on a monthly and calendar year total. [06-096 C.M.R. ch. 137]
- b. The amount of each fuel combusted on both a monthly and 12-month rolling total basis. [06-096 C.M.R. ch. 115, BACT, 06-096 C.M.R. ch. 137, and 40 C.F.R. § 60.48c(g)(2)]
- c. Emissions of each regulated pollutant on a monthly basis for use in calculating compliance with the facility's annual emission limits. [06-096 C.M.R. ch. 115, BACT]

## 3. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Boiler #3 is subject to Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

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Fiberight shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boiler #3 including, but not limited to, the following:

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# a. Notifications

Fiberight shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up. This notification shall include the design heat input capacity of the boiler and the type of fuel to be combusted. [40 C.F.R. § 60.48c(a)]

- b. Reporting and Recordkeeping Fiberight shall maintain records of the amounts of each fuel combusted during each calendar month. [40 C.F.R. § 60.48c(g)(2)]
- 4. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJJ

National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources, 40 C.F.R. Part 63, Subpart JJJJJJ is not applicable to gas-fired boilers.

## D. Flare #1

The Anaerobic Digesters produce biogas (digester gas) heavily laden with methane from digestion of the organic material in the wash water from the pulping operation. In license A-1111-71-A-N, Fiberight licensed the installation of a 1,200 scfm flare for control/destruction of digester gas when used in the boilers or sale off-site was not available. Fiberight has proposed replacing the previously licensed flare with Flare #1.

Flare #1 is an Elevated ZEF<sup>TM</sup> Flare manufactured by John Zink Company LLC. Flare #1 is sized to control up to 320 scfm of digester gas equivalent to approximately 12.5 MMBtu/hr of heat input assuming a heating value of 650 Btu/scf for digester gas. Flare #1 is smaller than the previously licensed flare because the size of the Anaerobic Digester plant has been scaled back. Additionally, until the Hydrolysis Reactors come online, industrial sugars will not be added to the material to be digested, and therefore, less digester gas will be produced. As part of the secondary construction phase, Fiberight will reexamine expected gas production and flare requirements.

Until the Molecular Gate<sup>TM</sup> PSA units and ZBRID TO are constructed, gas will not be able to be sold off-site. Until that time, the digester gas will be fired in Boiler #3 after H<sub>2</sub>S removal by the SulfAx<sup>TM</sup> Iron Sponge.

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Fiberight has proposed the use of Flare #1 to destroy digester gas produced either:

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- In excess of the level that can be utilized by Boiler #3; or
- During periods of time when Boiler #3 and/or the SulfAx<sup>TM</sup> Iron Sponge are off-line.

The second scenario would occur when the Anaerobic Digesters were operating and either the boiler was unavailable or the SulfAx<sup>TM</sup> Iron Sponge is unavailable to treat the raw digester gas. The SulfAx<sup>TM</sup> Iron Sponge is expected to be down 1-2 times per year to change out the media and Flare #1 would be utilized during these periods.

The BACT emission limits for Flare #1 are based on the following:

$PM/PM_{10}$	_	17 lb/MMscf based on AP-42 Table 2.4-5 dated 11/98 for flare
		emissions from municipal solid waste landfills
$SO_2$	_	based on the SulfAx <sup>TM</sup> Iron Sponge being off-line and the worst-case
		H <sub>2</sub> S concentration of 1,000 ppm
$NO_x$	_	0.068 lb/MMBtu based on manufacturer supplied data
CO	_	0.31 lb/MMBtu based on manufacturer supplied data
VOC	_	0.66 lb/MMBtu based on manufacturer supplied data
Visible	_	06-096 C.M.R. ch. 115, BACT
<b>Emissions</b>		

The BACT emission limits for Flare #1 are the following:

Unit	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Flare #1	0.33	0.33	3.25	0.85	3.87	8.24

Compliance with the emission limits for the flare shall be demonstrated by use of standardized emission factors, monthly recordkeeping of the amount of digester gas fired, and testing of the digester gas H<sub>2</sub>S concentration.

Visible emissions from the Flare #1 shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated by testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department.

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# E. Boilers #1 & #2

In this license amendment, the Department has updated some of the federal requirements applicable to Boilers #1 and #2.

1. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Boilers #1 and #2 are subject to Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

Requirements for demonstrating compliance with the opacity limit were inadvertently omitted from air emission license A-1111-71-A-N. The following is an updated summary of the currently applicable requirements for Boilers #1 and #2 under 40 C.F.R. Part 60, Subpart Dc.

#### a. Notifications

Fiberight shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up of Boilers #1 and #2. This notification shall include the design heat input capacity of the boiler and the type of fuel to be combusted. [40 C.F.R. § 60.48c(a)]

#### b. Standards

(1) Particulate Matter (PM)

Boilers #1 and #2 shall each not exceed an emission limit of 0.10 lb/MMBtu. [40 C.F.R. § 60.43c(e)(3)]

Fiberight is subject to a more stringent emission limit under 40 C.F.R. Part 63, Subpart JJJJJJ. The PM limit has been streamlined to the more stringent limit.

# (2) Opacity

Visible emissions from Boilers #1 and #2 shall each not exceed 20% opacity on a 6-minute block average, except for one 6-minute block average per hour of not more than 27% opacity. [40 C.F.R. § 60.43c(c)]

## c. Initial Compliance Requirements

For each of Boilers #1 and #2, Fiberight shall perform the following within 30 days after achieving the maximum production rate at which the boiler will be operated but not later than 180 days after the initial start-up of the boiler:

(1) Fiberight shall conduct an initial performance test for PM for each boiler in accordance with 40 C.F.R. § 60.45c.

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(2) Fiberight shall conduct an initial performance test for opacity for each boiler using 40 C.F.R. Part 60, Appendix A, Method 9 in accordance with 40 C.F.R. § 60.45c.

# d. Monitoring Requirements

- (1) Except as provided in paragraph (3) below, Fiberight shall conduct performance tests on Boilers #1 and #2 (each) for opacity using 40 C.F.R. Part 60, Appendix A, Method 9 according to the following schedule: [40 C.F.R. § 60.47c(a)]
  - (i) If no visible emissions were observed in the most recent Method 9 performance test, the next performance test shall be completed within 12 calendar months or within 45 days of firing oil in the boiler, whichever is later.
  - (ii) If visible emissions were observed in the most recent Method 9 performance test, and the maximum 6-minute block average was less than or equal to 5% opacity, the next performance test shall be completed within 6 calendar months or within 45 days of firing oil in the boiler, whichever is later.
  - (iii) If visible emissions were observed in the most recent Method 9 performance test, and the maximum 6-minute block average was greater than 5% but less than or equal to 10% opacity, the next performance test shall be completed within 3 calendar months or within 45 days of firing oil in the boiler, whichever is later.
  - (iv) If visible emissions were observed in the most recent Method 9 performance test, and the maximum 6-minute block average was greater than 10% opacity, the next performance test shall be completed within 45 days.
- (2) The observation period for the Method 9 performance test may be reduced from 3 hours to 60 minutes if all 6-minute block averages are less than 10% opacity and all individual 15-second observations are less than or equal to 20% opacity during the initial 60 minutes of observation.
- (3) If the visible emission observed in the most recent Method 9 performance test were less than 10% opacity, Fiberight may elect to perform subsequent performance tests using 40 C.F.R. Part 60, Appendix A, Method 22 as follows:
  - (i) Fiberight shall conduct 10-minute observations each operating day Boiler #1 and/or #2 fires PHS using Method 22.
  - (ii) If no visible emissions are observed for 10 operating days, Fiberight may reduce observations to once every 7 operating days. If any visible emissions are observed, daily observations shall be resumed.

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- (iii)If the sum of the occurrence of any visible emissions is greater than 30 seconds per 10-minute observation, Fiberight shall immediately conduct a 30-minute observation.
- (iv) If the sum of the occurrence of any visible emissions is greater than 90 seconds per 30-minute observation, Fiberight shall either document the adjustments made to the boiler and demonstrate within 24 hours that the sum of the occurrence of any visible emissions is not greater than 90 seconds per 30-minute observation or conduct a Method 9 performance test within 45 days.

# e. Reporting and Recordkeeping

- (1) For each opacity performance test performed, Fiberight shall maintain records of the following:
  - (i) Dates and time intervals of all opacity or visible emissions observation periods;
  - (ii) Name and affiliation for each visible emission observer participating in the performance test. For Method 9 performance tests, include a copy of the current visible emission reading certification for each visible emission observer.
  - (iii)Copies of all visible emission observer opacity field data sheets; and
  - (iv)Documentation of any adjustments made and the time the adjustments were completed to demonstrate compliance with the applicable monitoring requirements (Method 22 observations only).
- (2) Fiberight shall submit excess emission reports to EPA and to the Department for any excess emissions that occur during each six-month period. Fiberight shall maintain the records specified in §§ 60.48c(c)(1) through (3) as applicable to the visible emission monitoring method used. [40 C.F.R. § 60.48c(c)]
- 2. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJJ

Boilers #1 and #2 are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 C.F.R. Part 63 Subpart JJJJJJ). The units are considered new biomass-fired boilers rated greater than 10 MMBtu/hr.

Subpart JJJJJJ was updated in September 2016, after A-1111-71-A-N was issued. Following is an updated summary of the currently applicable requirements for Boilers #1 and #2 under 40 C.F.R. Part 63, Subpart JJJJJJ.

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a. General Requirements

Fiberight shall operate and maintain Boilers #1 and #2, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

[40 C.F.R. § 63.11205(a)]

- b. Emission Limits and Work Practice Requirements
  - (1) Boilers #1 and #2 are each subject to the following limits:
    - i. Limit emissions of PM (filterable) to less than or equal to 0.030 lb/MMBtu except for periods of startup and shutdown. [40 C.F.R. Part 63, Subpart JJJJJJ, Table 1]
    - ii. Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. [40 C.F.R. § 63.11214(d) and Table 2]
    - iii. Install and operate a bag leak detection system according to § 63.11224 and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5% of the unit operating time during each 6-month period. [40 C.F.R. Part 63, Subpart JJJJJJ, Table 3 and § 63.11211(b)(4)]
    - iv. Maintain the 30-day rolling average operating load of the boiler such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test. [40 C.F.R. Part 63, Subpart JJJJJJ, Table 3]
    - v. These standards apply at all times the boiler is operating, except during periods of startup and shutdown as defined in 40 C.F.R. §63.11237, during which time Fiberight must comply only with work practice standards. [40 C.F.R. § 63.11201(d)]

# (2) Boiler Tune-Up Program

- (i) A boiler tune-up program shall be implemented. The first tune-up is due no later than 61 months after the initial startup of each boiler. [40 C.F.R. §§ 63.11210(g) and 63.11223]
- (ii) Tune-ups for Boilers #1 and #2 shall be conducted every five years with no more than 61 months between tune-ups. [40 C.F.R. § 63.11223(c) and 40 C.F.R. Part 63, Subpart JJJJJJ, Table 2]
- (iii) The boiler tune-up program shall be performed as specified below:
  - 1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection. [40 C.F.R. §§ 63.11223(b)(1) & (c)]

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- 2. Inspect the flame pattern, <u>as applicable</u>, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 C.F.R. § 63.11223(b)(2)]
- 3. Inspect the system controlling the air-to-fuel ratio, <u>as applicable</u>, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection.

  [40 C.F.R. §§ 63.11223(b)(3) & (c)]
- 4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 63.11223(b)(4)]
- 5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 C.F.R. § 63.11223(b)(5)]
- 6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up.

  [40 C.F.R. § 63.11223(b)(7)]
- (iv) <u>Tune-Up Report</u>: A tune-up report shall be maintained onsite and, if requested, submitted to EPA and the Department. The report shall contain the following information:
  - 1. The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
  - 2. A description of any corrective actions taken as part of the tune-up of the boiler; and
  - 3. The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

[40 C.F.R. § 63.11223(b)(6)]

- c. Continuous Monitoring System (CMS) and Continuous Parameter Monitoring System (CPMS)
  - (1) Fiberight shall install, operate, and maintain a CPMS for Boilers #1 and #2. The CPMS for Boilers #1 and #2 includes operating load data (fuel feed rate or steam generation data for each boiler) and a bag leak detection system for each baghouse. [40 C.F.R. § 63.11222(a)]

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- (2) Fiberight shall install, calibrate, maintain, and continuously operate a bag leak detection system on each baghouse that meets the requirements of § 63.11224(f) per 40 C.F.R. Part 63, Subpart JJJJJJ, Table 3.
- (3) Fiberight shall initiate corrective action within 1 hour of a bag leak detection system alarm and operate and maintain the fabric filter system such that the alarm does not sound more than 5% of the operating time during a 6-month period. In calculating the operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. If more than 1 hour is taken to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action. [40 C.F.R. § 63.11222(a)(4)]
- (4) Fiberight shall establish a unit-specific limit for maximum operating load (fuel feed rate or steam generation data) per 40 C.F.R. Part 63, Subpart JJJJJJ, Table 6.
- (5) Fiberight shall continuously monitor the boiler operating load and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the maximum operating load per 40 C.F.R. Part 63, Subpart JJJJJJ, Table 7.
- (6) Fiberight shall not operate either boiler above 110% of the operating load (30-day rolling average) established at the most recent successful performance stack test, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests. Operation above 110% of the established operating load constitutes a deviation from operating limits. [40 C.F.R. § 63.11222(a)(1)]
- (7) Fiberight shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. § 63.11224(c).
- (8) The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that the boiler is operating except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in the site-specific monitoring plan. Failure to collect required data, except for the periods described above, is a deviation of the monitoring requirements. [40 C.F.R. § 63.11221(b)&(d)]
- (9) The CPMS shall complete a minimum of one cycle of operation every 15 minutes. Fiberight shall have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data. [40 C.F.R. § 63.11224(d)(1)]

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- (10) Fiberight shall calculate hourly arithmetic averages from each hour of CPMS data and determine the 30-day rolling average of all recorded readings. [40 C.F.R. § 63.11224(d)(2)]
- d. Performance Tests (for Subpart JJJJJJ only)
  - (1) Fiberight shall conduct an initial performance test for PM on each boiler in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 4 within 180 days of startup. [40 C.F.R. §§ 63.11210(a) & (d)]
  - (2) Fiberight shall conduct performance stack tests at the representative operating load conditions while burning the type of fuel (or mixture of fuels) that have the highest emissions potential. [40 C.F.R. § 63.11212(c)]
  - (3) Fiberight shall conduct a minimum of three separate test runs for each performance stack test. [40 C.F.R. § 63.11212(d)]
  - (4) Fiberight shall establish operating load limits for each boiler during the performance test. Fiberight shall collect operating load data (fuel feed rate or steam generation data) every 15 minutes during the entire period of the performance test. Fiberight shall determine the average operating load for each run using all of the 15-minute readings taken during that run. The three runs shall be averaged together and multiplied by 1.1 (110%) to determine the operating load limit. [40 C.F.R. § 63.11211(a) and Table 6]
  - (5) If the results of the initial performance stack test demonstrate emissions equal to or less than half of the PM emission limit (i.e. ≤0.015 lb/MMBtu), Fiberight shall conduct performance tests every five years with no more than 61 months between tests except as provided for below. [40 C.F.R. § 63.11220(c)]
  - (6) If the results of any performance stack test demonstrate emissions greater than half of the PM emission limit (i.e. >0.015 lb/MMBtu), Fiberight shall conduct all subsequent performance tests on a triennial basis with no more than 37 months between tests. [40 C.F.R. §§ 63.11220(a) and (c)(3)]

## e. Notifications and Reports

Fiberight shall submit to EPA and the Department all reports required by 40 C.F.R. Part 63, Subpart JJJJJJ including, but not limited to, the following:

- (1) An Initial Notification submittal is due within 120 days after the source becomes subject to the standard. [40 C.F.R. § 63.11225(a)(2)]
- (2) A Notification of Intent to conduct a performance test shall be submitted to EPA at least 60 days before the performance stack test is scheduled to begin. [40 C.F.R. § 63.11225(a)(3)] Fiberight shall also notify the Department of their intent to conduct a performance test at the same time notification is given to EPA.
- (3) Within 60 days after the date of completing each performance test, Fiberight shall submit the results of the performance test to EPA's Electronic Reporting

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Tool (ERT) using the Compliance and Emissions Data Reporting Interface (CEDRI). Data collected using test methods not supported by EPA's ERT shall be submitted through hard-copy. [40 C.F.R. § 63.11225(e)(1)] Fiberight shall also submit results to the Department in accordance with Standard Condition (11)(C) of this air emission license.

- (4) A Notification of Compliance Status shall be submitted to EPA no later than 60 days following the completion of the performance stack test. The Notification of Compliance Status must contain a signed statement that indicates that startups and shutdowns were conducted according to the manufacturer's recommended procedures. [40 C.F.R. §§ 63.11214(d), 63.11223(g), and 63.11225(a)(4)] EPA requires submission of Notification of Compliance Status reports through their electronic reporting system. [40 C.F.R. § 63.11225(a)(4)(vi)]
- (5) Compliance Reports

A compliance report shall be prepared by March 1<sup>st</sup> of each year. The report shall be maintained by the source and submitted to the Department and to the EPA upon request, unless the source experiences any deviations from the applicable requirements of this Subpart during the previous calendar year, then the report must be submitted to the Department and to the EPA by March 15<sup>th</sup>. The report must include the items contained in §§ 63.11225(b)(1) through (4), including the following: [40 C.F.R. § 63.11225(b)]

- Company name and address;
- ii. A statement of whether the source has complied with all the relevant requirements of this Subpart;
- iii. A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- iv. The following certifications, as applicable:
  - 1. "This facility complies with the requirements in 40 C.F.R. § 63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
  - 2. "No secondary materials that are solid waste were combusted in any affected unit."
  - 3. "This facility complies with the requirement in 40 C.F.R. §§63.11214(d) to conduct a tune-up of each applicable boiler according to 40 C.F.R. § 63.11223(b)."
- v. If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken; and
- vi. The total fuel use by each boiler for each calendar month within the reporting period, including a description of the fuel, whether the fuel has received a non-waste determination by Fiberight or EPA through a petition

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process to be a non-waste under 40 C.F.R. § 241.3(c), whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of 40 C.F.R. § 241.3, and the total fuel usage amount with units of measure.

# f. Recordkeeping

Records shall be in a form suitable and readily available for expeditious review. Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJJ including the following [40 C.F.R. §§ 63.11225(c) and (d)]:

- (1) Copies of notifications and reports with supporting compliance documentation;
- (2) Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
- (3) Records which document how the non-hazardous secondary material combusted in the boilers meets each of the legitimacy criteria under 40 C.F.R. § 241.3(d)(1) and how the operations that produced the fuel satisfies the definition of processing in 40 C.F.R. § 241.2. If Fiberight receives a non-waste determination from EPA pursuant to the petition process, records must be kept that document how the fuel satisfies the requirements of the petition process.;
- (4) Records of monthly fuel use including the type(s) of fuel and amount(s) used;
- (5) Records of the occurrence and duration of each malfunction of each applicable boiler or of the associated air pollution control and monitoring equipment;
- (6) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation;
- (7) Records of all inspection and monitoring data; and
- (8) Records associated with each bag leak detection system including:
  - i. Records of bag leak detection system output;
  - ii. Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and
  - iii. The date and time of all bag leak detection system alarms, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed.

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## F. Facility-Wide Emission Limits

Boiler #3 is not expected to be operated once equipment associated with the secondary construction phase comes on-line other than for back-up purposes. Since Fiberight does not anticipate any significant overlap in equipment use, they have requested no increase in the facility's annual emission limits. Instead of setting fuel limits for individual pieces of equipment, Fiberight instead wishes to demonstrate compliance with facility-wide annual emission limits for all combustion sources through monthly recordkeeping of emissions from each unit.

Therefore, Fiberight shall be limited to the following annual emissions for Boilers #1, #2, and #3, the ZBRID TO, and Flare #1 (all units combined) based on a 12-month rolling total basis:

Pollutant	Ton/Year
PM	13.7
PM <sub>10</sub>	13.7
$SO_2$	49.9
NO <sub>x</sub>	41.0
CO	93.3
VOC	7.1

Compliance shall be demonstrated by monthly calculations of emissions based on the following:

- 1. Amount of each fuel fired in Boilers #1, #2, and #3;
- 2. Moisture content of the PHS fired in Boilers #1 and #2;
- 3. Amount of gas burned in the ZBRID TO and Flare #1;
- 4. H<sub>2</sub>S concentration of the gas burned in Boiler#3, ZBRID TO, and Flare #1; and
- 5. Emission factors based on the equipment's licensed emission limits or performance test results.

Updated calculations of facility-wide monthly and 12-month rolling total emissions shall be completed by the 20<sup>th</sup> of each month and made available to the Department upon request.

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## G. Annual Emissions

Fiberight shall be restricted to the following annual emissions, based on a 12-month rolling total. The tons per year limits are based on federally-enforceable emission limits contained in the Order section of this license and maximum VOC emissions of 2.9 ton/year from each scrubber train.

# Total Licensed Annual Emissions for the Facility Tons/year

(used to calculate the annual license fee)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NOx	CO	VOC
Combustion Equipment	13.7	13.7	49.9	41.0	93.3	7.1
Scrubber Trains (2)			_	_	_	5.8
Total TPY	13.7	13.7	49.9	41.0	93.3	12.9

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

Pollutant	lb/year		
Mercury	10.0		

# III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year		
$PM_{10}$	25		
$SO_2$	50		
NO <sub>x</sub>	50		
CO	250		

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license amendment.

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Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-1111-71-B-A subject to the conditions found in Air Emission License A-1111-71-A-N and the following conditions.

<u>Severability</u>. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

## **SPECIFIC CONDITIONS**

The following replaces Conditions (16)(M) and (N) of Air Emission License A-1111-71-A-N.

## (16) **Boilers #1 and #2**

M. Requirements of 40 C.F.R. Part 60, Subpart Dc for Boilers #1 and #2 Not Covered Elsewhere

Fiberight shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boilers #1 and #2 including, but not limited to, the following:

- 1. Fiberight shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up. This notification shall include the design heat input capacity of each boiler and the type of fuel to be combusted. [40 C.F.R. § 60.48c(a)]
- 2. Fiberight shall conduct an initial performance test for opacity using 40 C.F.R. Part 60, Appendix A, Method 9 in accordance with 40 C.F.R. § 60.45c.

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# 3. Monitoring Requirements

- a. Except as provided in paragraph (c) below, Fiberight shall conduct performance tests on Boilers #1 and #2 (each) for opacity using 40 C.F.R. Part 60, Appendix A, Method 9 according to the following schedule:
   [40 C.F.R. § 60.47c(a)]
  - (1) If no visible emissions were observed in the most recent Method 9 performance test, the next performance test shall be completed within 12 calendar months or within 45 days of firing oil in the boiler, whichever is later.
  - (2) If visible emissions were observed in the most recent Method 9 performance test, and the maximum 6-minute block average was less than or equal to 5% opacity, the next performance test shall be completed within 6 calendar months or within 45 days of firing oil in the boiler, whichever is later.
  - (3) If visible emissions were observed in the most recent Method 9 performance test, and the maximum 6-minute block average was greater than 5% but less than or equal to 10% opacity, the next performance test shall be completed within 3 calendar months or within 45 days of firing oil in the boiler, whichever is later.
  - (4) If visible emissions were observed in the most recent Method 9 performance test, and the maximum 6-minute block average was greater than 10% opacity, the next performance test shall be completed within 45 days.
- b. The observation period for the Method 9 performance test may be reduced from 3 hours to 60 minutes if all 6-minute block averages are less than 10% opacity and all individual 15-second observations are less than or equal to 20% opacity during the initial 60 minutes of observation.
- c. If the visible emission observed in the most recent Method 9 performance test were less than 10% opacity, Fiberight may elect to perform subsequent performance tests using 40 C.F.R. Part 60, Appendix A, Method 22 as follows:
  - (1) Fiberight shall conduct 10-minute observations each operating day Boiler #1 and/or #2 fires PHS using Method 22.
  - (2) If no visible emissions are observed for 10 operating days, Fiberight may reduce observations to once every 7 operating days. If any visible emissions are observed, daily observations shall be resumed.
  - (3) If the sum of the occurrence of any visible emissions is greater than 30 seconds per 10-minute observation, Fiberight shall immediately conduct a 30-minute observation.
  - (4) If the sum of the occurrence of any visible emissions is greater than 90 seconds per 30-minute observation, Fiberight shall either document the adjustments made to the boiler and demonstrate within 24 hours that the

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sum of the occurrence of any visible emissions is not greater than 90 seconds per 30-minute observation or conduct a Method 9 performance test within 45 days.

# 4. Reporting and Recordkeeping

- a. For each opacity performance test performed, Fiberight shall maintain records of the following:
  - (1) Dates and time intervals of all opacity or visible emissions observation periods;
  - (2) Name and affiliation for each visible emission observer participating in the performance test. For Method 9 performance tests, include a copy of the current visible emission reading certification for each visible emission observer.
  - (3) Copies of all visible emission observer opacity field data sheets; and
  - (4) Documentation of any adjustments made and the time the adjustments were completed to demonstrate compliance with the applicable monitoring requirements (Method 22 observations only).
- b. Fiberight shall submit excess emission reports to EPA and to the Department for any excess emissions that occur during each six-month period. Fiberight shall maintain the records specified in §§ 60.48c(c)(1) through (3) as applicable to the visible emission monitoring method used. [40 C.F.R. § 60.48c(c)]

## N. Requirements of 40 C.F.R. Part 63, Subpart JJJJJJ for Boilers #1 and #2

Fiberight shall comply with all requirements of 40 C.F.R. Part 63, Subpart JJJJJJ applicable to Boilers #1 and #2 including, but not limited to, the following: [incorporated under 06-096 C.M.R. ch. 115, BACT]

#### 1. General Requirements

Fiberight shall operate and maintain Boilers #1 and #2, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. [40 C.F.R. § 63.11205(a)]

- 2. Emission Limits and Work Practice Requirements
  - a. Boilers #1 and #2 are each subject to the following limits:
    - (1) Limit emissions of PM (filterable) to less than or equal to 0.030 lb/MMBtu except for periods of startup and shutdown.

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[40 C.F.R. Part 63, Subpart JJJJJJ, Table 1]

- (2) Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. [40 C.F.R. Part §63.11214(d) and Table 2]
- (3) Install and operate a bag leak detection system according to §63.11224 and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5% of the unit operating time during each 6-month period. [40 C.F.R. Part 63, Subpart JJJJJJ, Table 3 and § 63.11211(b)(4)]
- (4) Maintain the 30-day rolling average operating load of the boiler such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test.

  [40 C.F.R. Part 63, Subpart JJJJJJ, Table 3]
- (5) These standards apply at all times the boiler is operating, except during periods of startup and shutdown as defined in 40 C.F.R. §63.11237 during which time Fiberight must comply only with work practice standards. [40 C.F.R. §63.11201(d)]

# b. Boiler Tune-Up Program

- (1) A boiler tune-up program shall be implemented. The first tune-up is due no later than 61 months after the initial startup of each boiler. [40 C.F.R. §§ 63.11210(g) and 63.11223]
- (2) Tune-ups for Boilers #1 and #2 shall be conducted every five years with no more than 61 months between tune-ups. [40 C.F.R. Part 63.11223(c) and 40 C.F.R. Part 63, Subpart JJJJJJ, Table 2]
- (3) The boiler tune-up program shall be performed as specified below:
  - i. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection. [40 C.F.R. Part 63.11223(b)(1) & (c)]
  - ii. Inspect the flame pattern, <u>as applicable</u>, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 C.F.R. Part 63.11223(b)(2)]
  - iii. Inspect the system controlling the air-to-fuel ratio, <u>as applicable</u>, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection.

    [40 C.F.R. Part 63.11223(b)(3) & (c)]
  - iv. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. Part 63.11223(b)(4)]
  - v. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet

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basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 C.F.R. Part 63.11223(b)(5)]

- vi. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up.
  [40 C.F.R. Part 63.11223(b)(7)]
- (4) <u>Tune-Up Report</u>: A tune-up report shall be maintained onsite and, if requested, submitted to EPA and the Department. The report shall contain the following information:
  - i. The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
  - ii. A description of any corrective actions taken as part of the tune-up of the boiler; and
  - iii. The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

[40 C.F.R. §63.11223(b)(6)]

- 3. Continuous Monitoring System (CMS) and Continuous Parameter Monitoring System (CPMS)
  - a. Fiberight shall install, operate, and maintain a CPMS for Boilers #1 and #2. The CPMS for Boilers #1 and #2 includes operating load data (fuel feed rate or steam generation data for each boiler) and a bag leak detection system for each baghouse. [40 C.F.R. §63.11222(a)]
  - b. Fiberight shall install, calibrate, maintain, and continuously operate a bag leak detection system on each baghouse that meets the requirements of §63.11224(f) per 40 C.F.R. Part 63, Subpart JJJJJJ, Table 3.
  - c. Fiberight shall initiate corrective action within 1 hour of a bag leak detection system alarm and operate and maintain the fabric filter system such that the alarm does not sound more than 5% of the operating time during a 6-month period. In calculating the operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. If more than 1 hour is taken to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action. [40 C.F.R. §63.11222(a)(4)]
  - d. Fiberight shall establish a unit-specific limit for maximum operating load (fuel feed rate or steam generation data) per 40 C.F.R. Part 63, Subpart JJJJJJ, Table 6.

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- e. Fiberight shall continuously monitor the boiler operating load and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the maximum operating load per 40 C.F.R. Part 63, Subpart JJJJJJ, Table 7.
- f. Fiberight shall not operate either boiler above 110% of the operating load (30-day rolling average) established at the most recent successful performance stack test, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests. Operation above 110% of the established operating load constitutes a deviation from operating limits. [40 C.F.R. §63.11222(a)(1)]
- g. Fiberight shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. §63.11224(c).
- h. The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that the boiler is operating except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in the site-specific monitoring plan. Failure to collect required data, except for the periods described above, is a deviation of the monitoring requirements. [40 C.F.R. §63.11221(b)&(d)]
- i. The CPMS shall complete a minimum of one cycle of operation every 15 minutes. Fiberight shall have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data. [40 C.F.R. §63.11224(d)(1)]
- j. Fiberight shall calculate hourly arithmetic averages from each hour of CPMS data and determine the 30-day rolling average of all recorded readings. [40 C.F.R. §63.11224(d)(2)]

# 4. Performance Tests (for Subpart JJJJJJ only)

- a. Fiberight shall conduct an initial performance test for PM on each boiler in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 4 within 180 days of startup. [40 C.F.R. §63.11210(a) & (d)]
- b. Fiberight shall conduct performance stack tests at the representative operating load conditions while burning the type of fuel (or mixture of fuels) that have the highest emissions potential. [40 C.F.R. §63.11212(c)]
- c. Fiberight shall conduct a minimum of three separate test runs for each performance stack test. [40 C.F.R. §63.11212(d)]
- d. Fiberight shall establish operating load limits for each boiler during the performance test. Fiberight shall collect operating load data (fuel feed rate or steam generation data) every 15 minutes during the entire period of the

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performance test. Fiberight shall determine the average operating load for each run using all of the 15-minute readings taken during that run. The three runs shall be averaged together and multiplied by 1.1 (110%) to determine the operating load limit. [40 C.F.R. §63.11211(a) and Table 6]

- e. If the results of the initial performance stack test demonstrate emissions equal to or less than half of the PM emission limit (i.e. ≤0.015 lb/MMBtu), Fiberight shall conduct performance tests every five years with no more than 61 months between tests except as provided for below. [40 C.F.R. §63.11220(c)]
- f. If the results of any performance stack test demonstrate emissions greater than half of the PM emission limit (i.e. >0.015 lb/MMBtu), Fiberight shall conduct all subsequent performance tests on a triennial basis with no more than 37 months between tests. [40 C.F.R. §§ 63.11220(a) and (c)(3)]

# 5. Notifications and Reports

Fiberight shall submit to EPA and the Department all reports required by 40 C.F.R. Part 63, Subpart JJJJJJ including, but not limited to, the following:

- a. An Initial Notification submittal is due within 120 days after the source becomes subject to the standard. [40 C.F.R. Part 63.11225(a)(2)]
- b. A Notification of Intent to conduct a performance test shall be submitted to EPA at least 60 days before the performance stack test is scheduled to begin. [40 C.F.R. §63.11225(a)(3)] Fiberight shall also notify the Department of their intent to conduct a performance test at the same time notification is given to EPA.
- c. Within 60 days after the date of completing each performance test, Fiberight shall submit the results of the performance test to EPA's Electronic Reporting Tool (ERT) using the Compliance and Emissions Data Reporting Interface (CEDRI). Data collected using test methods not supported by EPA's ERT shall be submitted through hard-copy. [40 C.F.R. §63.11225(e)(1)] Fiberight shall also submit results to the Department in accordance with Standard Condition (11)(C) of this air emission license.
- d. A Notification of Compliance Status shall be submitted to EPA no later than 60 days following the completion of the performance stack test. The Notification of Compliance Status must contain a signed statement that indicates that startups and shutdowns were conducted according to the manufacturer's recommended procedures. [40 C.F.R. §§ 63.11214(d), 63.11223(g), and 63.11225(a)(4)] EPA requires submission of Notification of Compliance Status reports through their electronic reporting system. [63.11225(a)(4)(vi)]

# e. Compliance Reports

A compliance report shall be prepared by March 1<sup>st</sup> of each year. The report shall be maintained by the source and submitted to the Department and to the EPA upon request, unless the source experiences any deviations from the applicable requirements of this Subpart during the previous calendar year, then

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the report must be submitted to the Department and to the EPA by March 15<sup>th</sup>. The report must include the items contained in §63.11225(b)(1) through (4), including the following: [40 C.F.R. §63.11225(b)]

- (1) Company name and address;
- (2) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (3) A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- (4) The following certifications, as applicable:
  - i. "This facility complies with the requirements in 40 C.F.R. §63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
  - ii. "No secondary materials that are solid waste were combusted in any affected unit."
  - iii. "This facility complies with the requirement in 40 C.F.R. §§63.11214(d) to conduct a tune-up of each applicable boiler according to 40 C.F.R. §63.11223(b)."
- (5) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken; and
- (6) The total fuel use by each boiler for each calendar month within the reporting period, including a description of the fuel, whether the fuel has received a non-waste determination by Fiberight or EPA through a petition process to be a non-waste under 40 C.F.R. §241.3(c), whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of 40 C.F.R. §241.3, and the total fuel usage amount with units of measure.

# 6. Recordkeeping

Records shall be in a form suitable and readily available for expeditious review. Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJJ including the following [40 C.F.R. §§ 63.11225(c) and (d)]:

- a. Copies of notifications and reports with supporting compliance documentation;
- b. Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
- c. Records which document how the non-hazardous secondary material combusted in the boilers meets each of the legitimacy criteria under 40 C.F.R. §241.3(d)(1) and how the operations that produced the fuel satisfies the definition of processing in 40 C.F.R. §241.2. If Fiberight receives a non-waste

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determination from EPA pursuant to the petition process, records must be kept that document how the fuel satisfies the requirements of the petition process.;

- d. Records of monthly fuel use including the type(s) of fuel and amount(s) used;
- e. Records of the occurrence and duration of each malfunction of each applicable boiler or of the associated air pollution control and monitoring equipment;
- f. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation;
- g. Records of all inspection and monitoring data; and
- h. Records associated with each bag leak detection system including:

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- (1) Records of bag leak detection system output;
- (2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and
- (3) The date and time of all bag leak detection system alarms, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed.

# The following shall replace Condition (17) of Air Emission License A-1111-71-A-N:

# (17) Facility-Wide Emission Limits

A. Fiberight shall not exceed the following emission limits (12-month rolling total) for Boilers #1, #2, #3, Flare #1, and the ZBRID TO combined: [06-096 C.M.R. ch. 115, BACT]

Pollutant	Ton/Year		
PM	13.7		
PM <sub>10</sub>	13.7		
SO <sub>2</sub>	49.9		
NO <sub>x</sub>	41.0		
CO	93.3		
VOC	7.1		

Note: Emissions of VOC from the scrubber trains are not included in the VOC limit above.

- B. Fiberight shall not exceed facility-wide total annual emissions of 9.9 tpy of any single HAP and 24.9 tpy of any combination of HAPs based on a 12-month rolling total. [06-096 C.M.R. ch. 115, BACT]
- C. Fiberight shall not exceed a facility-wide total annual emission limit of 10.0 pounds per year of mercury based on a 12-month rolling total. [06-096 C.M.R. ch. 115, BACT]

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- D. Compliance with the annual emission limits shall be demonstrated by monthly calculations of emissions based on the following:
  - 1. Amount of each fuel fired in Boilers #1, #2, and #3;
  - 2. Moisture content of the PHS fired in Boilers #1 and #2;
  - 3. Amount of gas burned in the ZBRID TO and Flare #1;
  - 4. H<sub>2</sub>S concentration of the gas burned in Boiler#3, ZBRID TO, and Flare #1; and
  - 5. Emission factors based on the equipment's licensed emission limits or performance test results.
- E. Updated calculations of facility-wide monthly and 12-month rolling total emissions shall be completed by the 20<sup>th</sup> of each month and made available to the Department upon request. [06-096 C.M.R. ch. 115, BACT]

# The following shall replace Condition (18) of Air Emission License A-1111-71-A-N:

# (18) Anaerobic Digesters, ZBRID TO, and Flare #1

- A. Any digester gas produced that is not either combusted in one of the facility's boilers or sold for use off-site must be controlled by Flare #1 or the ZBRID TO. [06-096 C.M.R. ch. 115, BACT]
- B. Fiberight shall use flow meters to measure the amount (scf) of each type of gas (digester gas, tail gas, and sales gas) fired in each combustion unit (Boilers #1, #2, #3, Flare #1, and the ZBRID TO). Records of the amount of each gas combusted in each unit shall be kept on a monthly and 12- month rolling total basis.

  [06-096 C.M.R. ch. 115, BACT]

## C. H<sub>2</sub>S Sampling

- 1. On a monthly basis, Fiberight shall sample and record the H<sub>2</sub>S concentration of both the raw digester gas and the digester gas after the SulfAx<sup>TM</sup> Iron Sponge using a handheld analyzer, laboratory analysis by gas chromatograph, or other test method approved by the Department. The sampling results for each month along with the gas flow rates to each combustion device, shall be used to calculate the monthly SO<sub>2</sub> emissions and determine compliance with the ton per year (tpy) emission limit (on a 12-month rolling total basis) based on the assumption that the majority of sulfur compounds produced are H<sub>2</sub>S and that all sulfur is converted to SO<sub>2</sub> during combustion. [06-096 C.M.R. ch. 115, BACT]
- 2. Fiberight shall keep calibration records for any on-site monitor used to demonstration compliance with this condition. [06-096 C.M.R. ch. 115, BACT]

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D. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
ZBRID TO	0.42	0.42	6.40	0.37	0.73	0.14
Flare #1	0.33	0.33	3.25	0.85	3.87	8.24

E. Visible emissions from the ZBRID TO and Flare #1 shall each not exceed 20% opacity on a 6-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

# The following shall replace Condition (28) of Air Emission License A-1111-71-A-N:

# (28) Annual Emission Statement

- A. In accordance with *Emission Statements*, 06-096 C.M.R. ch. 137, Fiberight shall annually report to the Department, in a format prescribed by the Department, the information necessary to accurately update the State's emission inventory. The emission statement shall be submitted as specified by the date in 06-096 C.M.R. ch. 137.
- B. Fiberight shall keep the following records in order to comply with 06-096 C.M.R. ch. 137:
  - 1. The amount of each fuel fired in Boilers #1, #2, and #3 (each) on a monthly basis;
  - 2. The moisture content of the PHS fired in Boilers #1 and #2;
  - 3. The amount of gas burned in the ZBRID TO and Flare #1;
  - 4. The H<sub>2</sub>S concentration of the gas burned in Boiler#3, ZBRID TO and Flare #1;
  - 5. Calculations of the VOC and/or HAP emissions from the scrubber trains on a calendar year total basis; and
  - 6. Hours of operation for each emission unit on a monthly basis. [06-096 C.M.R. ch. 137]
- C. Beginning with reporting year 2020 and every third year thereafter, Fiberight shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). Fiberight shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

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# The following are New Conditions:

# (30) **Boiler #3**

- A. Boiler #3 is licensed to fire natural gas and digester gas. [06-096 C.M.R. ch. 115, BACT]
- B. The digester gas fired in Boiler #3 shall have an H<sub>2</sub>S concentration not to exceed 25 ppmv. Compliance shall be demonstrated by the H<sub>2</sub>S sampling required by Condition (18). [06-096 C.M.R. ch. 115, BACT]
- C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

<b>Emission Unit</b>	Pollutant	lb/MMBtu
Boiler #3	PM	0.012
(natural gas and/or	NO <sub>x</sub>	0.043
digester gas)	CO	0.017

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #3						
(natural gas and/or	0.14	0.14	0.01	0.55	0.22	0.10
digester gas)						

- D. Compliance with the SO<sub>2</sub> emission limits shall be demonstrated by firing only natural gas and digester gas with a H<sub>2</sub>S concentration of 25 ppmv or less. [06-096 C.M.R. ch. 115, BACT]
- E. Compliance with all other pollutant emission limits shall be demonstrated by conducting performance testing upon request by the Department. [06-096 C.M.R. ch. 115, BACT]
- F. Visible emissions from Boiler #3 shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated by performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department. [06-096 C.M.R. ch. 115, BACT]

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- G. Fiberight shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boiler #3 including, but not limited to, the following:
  - 1. Fiberight shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up. This notification shall include the design heat input capacity of the boiler and the type of fuel to be combusted. [40 C.F.R. § 60.48c(a)]
  - 2. Fiberight shall maintain records of the amounts of each fuel combusted during each calendar month in Boiler #3. [40 C.F.R. § 60.48c(g)]

DONE AND DATED IN AUGUSTA, MAINE THIS

DAY OF April

, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: GERALD D. REID, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-1111-71-A-N.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/19/19
Date of application acceptance: 2/19/19

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

