

Greater Vancouver Regional District

Boilers and Process Heaters Emission Regulation Amending Bylaw No. 1190, 2013

A Bylaw to Amend "Greater Vancouver Regional District Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008."

WHEREAS:

- A. The Board of Directors of the Greater Vancouver Regional District has adopted Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008; and
- B. That Bylaw contemplates that the Board of the Greater Vancouver Regional District may establish emission regulations.

NOW THEREFORE the Board of Directors of the Greater Vancouver Regional District in open meeting duly assembled enacts as follows:

- 1. "Greater Vancouver Regional District Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008" is hereby amended as follows:

- (a) The definition of biomass in Section 4 is deleted in its entirety and replaced with the following:

"biomass" means:

- (a) wood or wood products;
- (b) uncontaminated wood waste, such as mill ends, wood chips, shavings, sawdust, sander dust, clean construction waste, hog fuel, and clean dimensional lumber from deconstruction;
- (c) manufactured wood fuel;
- (d) vegetative or agricultural products as specifically authorized by the district director;
- (e) organic matter used as fuel that has been demonstrated to the satisfaction of the district director to burn as cleanly as wood or uncontaminated wood waste;

but, unless otherwise authorized by the district director, does not include substances that contain any of the following:

- (f) glue, paint or preservative, or foreign substances harmful to humans, animals or plants when combusted;
- (g) wood, wood products, or wood waste with chloride content greater than 0.05 percent dry basis;
- (h) wood, wood products, or wood waste with moisture content greater than 60

percent dry basis;

- (i) manure;
- (j) recyclable post consumer waste;
- (k) paper or paper products; or
- (l) demolition waste other than clean dimensional lumber from deconstruction; or
- (m) other waste containing materials other than uncontaminated wood waste;

(b) The definition of deconstruction is added to Section 4 as follows:

“deconstruction” means demolition by systematic disassembly of a building or structure resulting in the reuse, recycling or recovery of a large proportion of the non-hazardous building materials;

(c) The definition of dimensional lumber is added to Section 4 as follows:

“dimensional lumber” means a wood product manufactured by sawing logs into rough size lumber or cants (square timbers) which are edged, resawn to final dimension and cut to length, and which is typically used in structural framing.

(d) The definition of performance tune-up is added to Section 4 as follows:

“performance tune-up” means the process of inspection, testing and maintenance procedures used to restore a boiler to its efficient state, given its age and other parameters;

(e) Section 20 is deleted in its entirety and replaced with the following:

20 In the event of an emergency or condition beyond the control of the operator which prevents the continuous use of any works required to meet the emission limits in sections 24 or 25, the operator must take appropriate remedial action, immediately notify Metro Vancouver at 604-436-6777, and take any other actions specified by the district director to protect the environment including stopping discharge of air contaminants.

(f) Section 21 is deleted in its entirety and replaced with the following:

21 (1) No operator of a boiler or process heater fuelled by biomass may discharge any air contaminant without submitting, for approval, a biomass fuel management plan as set out in Appendix 3.

(2) Every operator must adhere to the approved biomass fuel management plan at all times and provide records as may be required by the district director to demonstrate compliance with the plan.

(3) Biomass must be stored and handled in a manner that minimizes fugitive particulate matter emissions.

(g) Section 28 is deleted in its entirety and replaced with the following:

28 For boilers or process heaters fuelled by biomass, the minimum stack height must be 20 metres above ground level unless otherwise approved by the district director.

(h) Section 29 is deleted in its entirety and replaced with the following:

Air Quality Dispersion Modelling

29 (1) No operator of a boiler or process heater fuelled by biomass may discharge any air contaminant prior to conducting, at the operator's expense, dispersion modelling in accordance with the requirements set out in Appendix 4 .

(2) The district director may require any operator to conduct, at the operator's expense, dispersion modelling of boiler or process heater emissions.

(i) Section 31 is deleted in its entirety and replaced with the following:

31 (1) An operator of a boiler or process heater fuelled by biomass must conduct emission testing to determine concentrations of filterable particulate matter, carbon monoxide, nitrogen oxides, and total volatile organic compounds as provided in this section.

(2) Operators of new or modified boilers or process heaters fuelled by biomass must conduct emission testing required in subsection (1) within three months of commencing operation of the new or modified boiler or process heater, or as otherwise authorized by the district director, and at the intervals specified in subsection (4).

(3) Operators of existing boilers or process heaters fuelled by biomass must conduct emission testing required in subsection (1) within six months of the effective date of this Emission Regulation, and at the intervals specified in subsection (4).

(4) Operators of boilers or process heaters fuelled by biomass must conduct emission testing required in subsection (1) as follows:

(a) Once every calendar year with a minimum of 300 days and a maximum of 430 days between each emission test where facility capacity exceeds 1 MW.

(b) As may be required by the district director where facility capacity does not exceed 1 MW.

(5) The district director may vary the frequency of emission testing and the air contaminants to be tested for any operator.

(6) A minimum of three working days advance notice must be given prior to any emission testing. Notification must be given to Metro Vancouver at 604-436-6777.

(j) Section 32 is deleted in its entirety and replaced with the following:

32 (1) All emission testing under this Emission Regulation must be conducted while the boiler or process heater is operating at no less than 75% capacity and with operating conditions and fuel characteristics typical of the operations of that boiler or process heater over the preceding year, or as otherwise authorized by the district director.

(2) Operators must maintain a record of the type, source and amount of fuels burned during any emission test.

(k) Section 37 is deleted in its entirety and replaced with the following:

37 Emission test results under sections 30 or 31 must be submitted to the district director:

(1) within five working days of testing, if the test results indicate that any of the emission limits specified in Appendix 2 have been exceeded; or

(2) in any other case, within 60 days of testing.

(l) Section 38 is added as follows:

Continuous Emission Monitoring Requirements for boilers or process heaters fuelled by biomass

38 (1) An operator of a boiler or process heater fuelled by biomass where facility capacity exceeds 1 MW, must install and operate a Continuous Emission Monitoring System ("CEMS") at an appropriate location on any biomass boiler exhaust.

(2) The CEMS shall be installed, certified and operated in accordance with a Quality Assurance/Quality Control (QA/QC) plan approved by the district director.

(3) An operator of a boiler or process heater fuelled by biomass with a facility capacity that does not exceed 3 MW shall measure emissions of carbon monoxide and oxygen using the CEMS as required in this section.

(4) An operator of a boiler or process heater fuelled by biomass with a facility capacity exceeding 3 MW shall measure carbon monoxide, oxygen and opacity using the CEMS as required in this section.

(m) Section 39 is added as follows:

39 (1) An operator of a boiler or process heater fuelled by biomass where facility capacity does not exceed 1 MW, must install and operate a CEMS at an appropriate location on any biomass boiler exhaust.

(2) The CEMS shall be installed, certified and operated in accordance with a Quality Assurance/Quality Control (QA/QC) plan approved by the district director.

(3) An operator shall measure emissions of oxygen using the CEMS as required in this section.

(4) No operator of a boiler or process heater fuelled by biomass may discharge any air contaminants without adherence to a carbon monoxide monitoring plan approved by the district director.

(n) Section 40 is added as follows:

Tune-ups for boilers or process heaters fuelled by biomass

40 (1) An operator of a boiler or process heater fuelled by biomass must conduct a biennial performance tune-up according to procedures recommended by the boiler manufacturer and approved by the district director.

(2) Each biennial performance tune-up must be conducted no more than 26 months after the previous tune-up.

(o) Appendix 1 Table 1 is deleted in its entirety and replaced by the following:

Table 1 – Air Contaminant Emission Fees per Tonne of Air Contaminant

Column 1	Column 2
Air contaminant	Emission fee per tonne of air contaminant
Particulate Matter (filterable and condensable from combustion sources)	\$300
Nitrogen Oxides (NOx)	\$50
Total volatile organic compounds (photoreactive)	\$100
Total volatile organic compounds (non-photoreactive)	\$30

(p) Appendix 1 Subsection 2(2) is deleted in its entirety and replaced by the following:

2 (2) Unless otherwise specified by the district director, flue gases from boilers and process heaters fuelled by biomass are deemed to have the following concentrations of air contaminants for the purpose of emission fee calculations:

- a) Nitrogen oxides: 200 mg/m³;
- b) Condensable particulate matter: 15 mg/m³;
- c) Filterable particulate matter: 10 mg/m³;

- d) Total volatile organic compounds:
 - i) of which 9 mg/m³ are photoreactive, and
 - ii) 11 mg/m³ are non-photoreactive.

(q) Appendix 2 Section 2 is deleted in its entirety and replaced by the following:

Emission Limits for Boilers and Process Heaters Fuelled by Biomass

- 2 Operators of boilers or process heaters fuelled by biomass must not cause or allow the emissions from any boiler or process heater to exceed the emission limits specified in Table 2.

Table 2 – Emission Limits for Boilers and Process Heaters Fuelled by Biomass

Column 1	Column 2			
	Emission Limits			
Facility Capacity	Filterable Particulate Matter (mg/m ³)	Carbon monoxide (ppmv)	Total Volatile Organic Compounds (mg/m ³)	Opacity (%)
Greater than 3 MW	10	250	20	5
Less than or equal to 3 MW	18	250	20	5

(r) Appendix 3 is added as follows:

Appendix 3– Biomass Fuel Management Plan

A biomass fuel management plan must include but not be limited to the following:

- 1. Documented fuel specifications, including:
 - a. description of acceptable fuels (e.g., hog, sawdust, bark, clean woodwaste, etc),
 - b. acceptable fuel sizing (typical range), and
 - c. acceptable moisture content (typical range).

2. Quality assurance plan, including:
 - a. testing plan (including frequency and parameters),
 - b. visual inspection plan (i.e., inspection of pile, feed system), and
 - c. procedure for rejecting off-quality fuel.
3. Storage Plan, including:
 - a. maximum storage times, and
 - b. storage of off-quality materials.
4. Record Keeping Requirements, including:
 - a. fuel purchases (quantity, source),
 - b. fuel use (quantity, source), and
 - c. rejected loads and reason(s) for rejection.

(s) Appendix 4 is added as follows:

Appendix 4 – Dispersion Modelling for Boilers and Process Heaters Fuelled by Biomass

- 1 Any operator of a boiler or process heater fuelled by biomass must obtain district director approval and conduct air quality dispersion modelling prior to the discharge of any air contaminants.
- 2 Air quality dispersion modelling must be conducted according to the most recent version of the *Guidelines for Air Quality Dispersion Modelling in British Columbia* published by the British Columbia Ministry of Environment.
- 3 Any operator of a boiler or process heaters fuelled by biomass where facility capacity does not exceed 3 MW must determine the ambient concentrations of the air contaminants in Column 2 of Table 3 over the averaging time listed in Column 3 using, at minimum, a screening model assessment.
- 4 Any operator of a boiler or and process heater fuelled by biomass where facility capacity exceeds 3 MW must determine the ambient concentrations of the air contaminants in Column 2 of Table 3 over the averaging time listed in Column 3 using, at minimum, a refined model assessment.

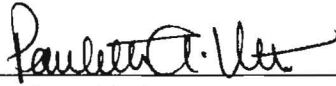
Table 3 – Ambient Air Quality Criteria for Dispersion Modelling

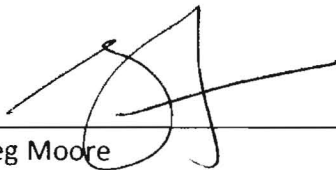
Column 1	Column 2	Column 3
Facility Capacity	Air contaminant	Averaging time(s)
≤ 3 MW	Nitrogen oxides (measured as NO ₂)	1-hour
	Inhalable particulate matter (PM ₁₀)	24-hour
	Fine particulate matter (PM _{2.5})	24-hour
>3 MW to 50 MW	Nitrogen oxides (measured as NO ₂)	1-hour and annual
	Inhalable particulate matter (PM ₁₀)	24-hour and annual
	Fine particulate matter (PM _{2.5})	24-hour and annual

2. This bylaw shall be cited as “Greater Vancouver Regional District Boilers and Process Heaters Emission Regulation Amending Bylaw No. 1190, 2013”.

READ A FIRST, SECOND AND THIRD TIME this 25 day of October, 2013.

RECONSIDERED, PASSED AND FINALLY ADOPTED this 25 day of October, 2013.


 Paulette Vetleson
 Corporate Officer


 Greg Moore
 Chair