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SCHEDULE III
EVENING SHIFT, WEEKEND AND NIGHT SHIFT PREMIUMS (managers)

	Rates 2010-04-01 to 2011-03-31	Rates 2011-04-01 to 2012-03-31	Rates 2012-04-01 to 2013-03-31	Rates 2013-04-01 to 2014-03-31	Rates 2014-04-01 to 2015-03-31
Evening shift premium	$0.68/hour	$0.69/hour	$0.70/hour	$0.71/hour	$0.72/hour
Weekend premium	$2.78/hour	$2.80/hour	$2.83/hour	$2.88/hour	$2.94/hour
Night shift premium (years of seniority)					
0 to 5 years	11%	11%	11%	11%	11%
5 to 10 years	12%	12%	12%	12%	12%
10 years or more	14%	14%	14%	14%	14%

”.

4. This Regulation comes into force on the date of its publication in the *Gazette officielle du Québec*.

2242

M.O., 2012

Environment Quality Act
(R.S.Q., c. Q-2)

Mandatory reporting of certain emissions of contaminants into the atmosphere — Amendment

Regulation to amend the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere

THE MINISTER OF SUSTAINABLE DEVELOPMENT, ENVIRONMENT AND PARKS,

CONSIDERING section 2.2 of the Environment Quality Act (R.S.Q., c. Q-2), according to which the Minister of Sustainable Development, Environment and Parks may make regulations determining what information a person or a municipality is required to provide regarding an enterprise, a facility or an establishment that the person or municipality operates;

CONSIDERING section 46.2 of the Act which also allows the Minister to determine, by regulation, the emitters required to report their greenhouse gas emissions and the related information and documents that must be provided to the Minister;

CONSIDERING the publication in Part 2 of the *Gazette officielle du Québec* of 8 June 2012, in accordance with sections 10 and 11 of the Regulations Act (R.S.Q., c. R-18.1) as well as the fifth paragraph of section 2.2 and the second paragraph of section 46.2 of the Environment Quality Act, of a draft of the Regulation to amend the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere with a notice that it could be made by the Minister of Sustainable Development, Environment and Parks on the expiry of 60 days following that publication;

CONSIDERING that it is expedient to make the Regulation with amendments;

ORDERS AS FOLLOWS:

The Regulation to amend the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere, attached to this Order, is hereby made.

PIERRE ARCAND,
Minister of Sustainable Development, Environment and Parks

Regulation to amend the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere

Environment Quality Act
(R.S.Q., c. Q-2, ss. 2.2 and 46.2)

1. The Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (R.R.Q, c. Q-2, r. 15) is amended in section 6.1

(1) by replacing the second and third paragraphs by the following:

"Every person or municipality operating an enterprise that purchases electricity produced outside Québec for its own consumption or for sale in Québec must also report the emissions attributable to the production of that electricity, under the first paragraph. For such an emitter, and for an emitter that exports, transports or distributes electricity, an enterprise that transports or distributes natural gas, or an enterprise that carries on gas or oil exploration or production, the reporting threshold provided for in the first paragraph applies to the enterprise as a whole.

Every person or municipality operating an enterprise that, during a calendar year, distributes fuel and is referred to in section 85.33 of the Act respecting the Régie de l'énergie (R.S.Q., c. R-6.01) is required, if the greenhouse gas emissions attributable to the combustion or use of the fuel distributed, calculated in accordance with protocol QC.30 in Schedule A.2, are equal to or exceed 25,000 metric tons CO_2 equivalent, to report the emissions to the Minister in accordance with this Division until the emissions have been below the reporting threshold for 4 consecutive years.

For the purposes of this Division, an enterprise operated by an emitter referred to in the second and third paragraphs is considered to be an establishment.

When an establishment referred to in the first paragraph has more than one facility, the data for each facility must be identified separately.";

(2) by replacing "first or third" in the fifth paragraph by "first, second or third".

2. Section 6.2 is amended by inserting the following after subparagraph 2 of the first paragraph:

"(2.1) in the case of a person or municipality operating an establishment that distributes fuel, the quantity of greenhouse gas emissions attributable to the combustion or use of the fuel distributed;".

3. Section 6.3 is amended

(1) by replacing "using one of the calculation methods" in the first paragraph by "using the protocols";

(2) by replacing "calculation method" in subparagraph 2 of the second paragraph by "protocol";

(3) by replacing the third paragraph by the following:

"The emitter must use the same calculation method and perform 100% of the data sampling and measurement in accordance with that method for each report year.".

4. The following is inserted after section 6.3:

"**6.3.1.** When an emitter, as part of its sampling activities, is unable to obtain analytical data, it must replace the missing data.

For that purpose, the emitter must apply the applicable method for the estimation of missing data specified in the calculation method prescribed by the applicable protocol in Schedule A.2 or, if the emitter uses a method of calculation or assessment referred to in the second paragraph of section 6, the emitter must demonstrate that everything has been done to capture 100% of the data and then apply the following method:

(1) when the missing data concern carbon content, temperature, pressure or any other data that is sampled or analyzed, the emitter must analyze again, using the prescribed method, the original sample, a backup sample or a replacement sample for the same measurement and sampling period. If it is not possible to obtain valid data, the emitter must use replacement data established

(*a*) by determining the sampling or measurement rate using the following equation:

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter using the calculation or assessment method used by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required to be obtained by the emitter using that method;

(*b*) for data that require sampling or analysis, the emitter must

(i) if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data is available from before that period, the emitter must use the first available data from after the period for which the data is missing;

(ii) if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

(iii) if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(2) when the missing data concern a quantity of raw materials, such as fuel consumption, a quantity of material, a production quantity or a quantity of reference units, the replacement data must be estimated on the basis of all the data relating to the processes used;

(3) when the missing data are data from a continuous emission monitoring and recording system, the emitter must determine the replacement data using the procedure indicated in protocol SPE 1/PG/7 entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or applying to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6 of Schedule A.2.".

5. Section 6.6 is amended

(1) by replacing "An emitter" in the first paragraph by "An emitter referred to in section 2 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances (c. Q-2, r. 46.1)";

(2) by replacing "31 December 2012" in subparagraph 6 of the second paragraph by "31 December 2014";

(3) by inserting the following after subparagraph 3 of the second paragraph:

"(3.1) CO_2, CH_4 and N_2O emissions attributable to pulp and paper mill residual materials landfill;".

6. Section 6.9 is amended by inserting the following after paragraph 7:

"(7.1) the total quantity of reference units relating to the emitter's activities, referred to in Table B of Part I of Schedule C to the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances (c. Q-2, r. 46.1), for the report year;".

7. Section 7.1 is amended by adding the following paragraph at the end:

"In addition, unless otherwise provided for in one of the protocols in Schedule A.2, the equipment used to measure the parameters required to calculate greenhouse gas emissions or the quantity of reference units must be calibrated according to the manufacturer's instructions in order to maintain accuracy of plus or minus 5%.".

8. Schedule A.2 is amended

(1) by inserting, before QC.1, the following:

"**PROTOCOLS**";

(2) by replacing subparagraphs 1 and 2 of QC.1.5.6 by the following:

"(1) when, in sampling fuels, an emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period;

(2) when it is not possible to obtain valid data, the emitter must use replacement data established using the calculation method in QC.1.6.";

(3) by striking out QC.1.5.7;

(4) by replacing QC.1.6 by the following:

"**QC.1.6. Methods for estimating missing data**

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods specified in QC.1.3.1 to QC.1.3.3, QC.1.3.5, QC.1.3.6, QC.1.4.1, QC.1.4.2 and QC.1.4.3 must,

(*a*) when the missing data concern high heat value, carbon content, molecular mass, CO_2 concentration, water content or any other data sampled to calculate greenhouse gas emissions,

(i) determine the sampling or measurement rate using the following equation:

Equation 1-19

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.1.5;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern stack gas flow rate, fuel consumption or the quantity of sorbent used, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses one of the calculation methods specified in QC.1.3.4 and QC.1.4.4 must determine the replacement data for the CO_2 concentration using the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or applying to the missing parameters the following method:

(*a*) when the missing data are data measured by the continuous emission monitoring and recording system, determine the sampling or measurement rate using the following equation:

Equation 1-20

$$R = H_{S\,Act} \Big/ H_{S\,Required}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$H_{S\,Act}$ = Hours of actual samples or measurements obtained by the emitter during the year;

$H_{S\,Required}$ = Hours of samples or measurements required during the year to cover the period of operation;

(*b*) for data that require sampling or analysis,

(i) if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data from before that period are available, the emitter must use the first available data from after the period for which the data is missing;

(ii) if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

(iii) if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(5) by replacing QC.2.5 by the following:

"**QC.2.5. Methods for estimating missing data**

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods specified in QC.2.3.2 must,

(*a*) when the missing data concern high heat value, carbon content, molecular mass or any other data sampled to calculate greenhouse gas emissions,

(i) determine the sampling or measurement rate using the following equation:

Equation 2-2

$$R = Q_{S\,Act} \Big/ Q_{S\,Required}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.2.4;

(ii) for data requiring sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern gas consumption, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(6) by replacing QC.3.7 by the following:

"**QC.3.7. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content, sulphur content, ash content, hydrogen content, water content, BSM emissions, pitch content, carbon present in skimmed dust from electrolysis cells, volatiles content, data for slope calculations, frequency and duration of anode effects, overvoltage, SF_6 concentration or data to calculate current efficiency,

(i) determine the sampling or measurement rate using the following equation:

Equation 3-11

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.3.6;

(ii) for data that require sampling or analysis,

- if $R \geq 0.9$: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if $0.75 \leq R < 0.9$: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if $R < 0.75$: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern net anode consumption, anode paste consumption, packing material consumption, green anode or cathode consumption, quantity of tar recovered, green coke consumption, liquid aluminum production, aluminum hydrate production, baked anode or cathode production, calcinated and under-calcinated coke production, coke dust quantity or SF_6 quantity, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(7) by replacing QC.4.5 by the following:

"**QC.4.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content, calcium oxide content or magnesium oxide content,

(i) determine the sampling or measurement rate using the following equation:

Equation 4-5

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.4.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern clinker production, the emitter must use the first data estimated after the period for which the data is missing or use the maximum daily production capacity and multiply it by the number of days in the month;

(*c*) when the missing data concern raw material consumption, the emitter must use the first data estimated after the period for which the data is missing or use the maximum rate of raw materials entering the kiln and multiply by the number of days in the month ;

(d) when the missing data concern the quantity of dust, the quantity of gypsum or the quantity of limestone, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal

power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(8) by inserting the following paragraph before the first paragraph of QC.5.5:

"The emitter must demonstrate that everything has been done to capture 100% of the data.";

(9) by replacing QC.6.5 by the following:

"**QC.6.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content or molecular mass,

(i) determine the sampling or measurement rate using the following equation:

Equation 6-4

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.6.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first

available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern raw material consumption or hydrogen production, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(10) by replacing QC.7.6 by the following:

"**QC.7.6. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content or sampled data,

(i) determine the sampling or measurement rate using the following equation:

Equation 7-10

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\ Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\ Required}$ = Quantity of samples or measurements required under QC.7.5;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern the consumption of carbon-containing raw material, consumption of ferrous scrap, annual consumption of molten iron, consumption of coking coal, consumption of flux material, consumption of direct reduced iron pellets, consumption of carbon electrodes, consumption of ore, quantity of slag produced, consumption of greenball pellets, production of fired pellets, production of coke oven gas, production of metallurgical coke, quantity of air pollution control residue collected, quantity of other coke oven by-products, production of steel, quantity of gas from basic oxygen furnaces transferred, the production of sinter, the production of iron or the quantity of non-metallic by-products, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(11) by replacing QC.8.5 by the following:

"**QC.8.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-

analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern calcium oxide content or magnesium oxide content,

(i) determine the sampling or measurement rate using the following equation:

Equation 8-3

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Required}}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.8.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern lime production or the production of calcined by-products and waste, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(12) by inserting the following before QC.9.4.1 in the French text:

"**QC.9.4. Exigences d'échantillonnage, d'analyse et de mesure**";

(13) by replacing QC.9.5 by the following:

"**QC.9.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content, molecular mass, molar fraction, molecular fraction, high heat value, CO_2 concentration, CO concentration, O_2 concentration, temperature, pressure, nitrogen content or biochemical oxygen demand,

(i) determine the sampling or measurement rate using the following equation:

Equation 9-28

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.9.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern coke burn, volumetric gas flow, gas volume, number of hours of operation, quantity of bituminous product blown, quantity of crude oil and intermediate products, quantity of wastewater treated, quantity of coke, quantity of coke dust or number of vessels openings in a coking unit, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(14) by replacing QC.10.5 by the following:

"**QC.10.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbonate content in raw materials or in carbonate-based material output, use the default value of 1.0;

(*b*) when the missing data concern carbon content or high heat value,

(i) determine the sampling or measurement rate using the following equation:

Equation 10-1

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.10.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*c*) when the missing data concern the quantity of spent pulping liquor, the mass flow of spent pulping liquor, the annual production of each pulp and paper product manufactured or the quantity of carbonate material, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(15) by replacing QC.11.5 by the following:

"**QC.11.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern the hourly concentration of CO_2, the volumetric gas flow rate or the process vent average mass flow rate of gas in the water stripper/evaporator during a performance test, conduct a new performance test;

(*b*) when the missing data concern carbon content,

(i) determine the sampling or measurement rate using the following equation:

Equation 11-6

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.11.4;

(ii) for data that require sampling or analysis:

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*c*) when the missing data concern the ore quantity, process vent mass flow rate of gas in the water stripper/evaporator or quantity of sodium carbonate, estimate the replacement data on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(16) by replacing QC.12.5 by the following:

"**QC.12.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content, molecular mass, molar fraction, molecular fraction, high heat value, CO_2 concentration, CO concentration, O_2 concentration, temperature, pressure, nitrogen content or biochemical oxygen demand,

(i) determine the sampling or measurement rate using the following equation:

Equation 12-3

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\ Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\ Required}$ = Quantity of samples or measurements required under QC.12.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern coke burn, volumetric gas flow, gas volume, number of hours of operation, quantity of raw materials, quantity of product, quantity of steam or quantity of wastewater treated, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(17) by replacing QC.13.5 by the following:

"**QC.13.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when data determined on the basis of the performance test provided for in QC.13.4 is missing, conduct a new performance test;

(*b*) when the missing data concern carbon content, temperature, pressure or gas concentration, other than data prescribed in the performance test,

(i) determine the sampling or measurement rate using the following equation:

Equation 13-5

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

Q_{SAct} = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\ Required}$ = Quantity of samples or measurements required under QC.13.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*c*) when the missing data concern adipic acid production or gas flow rate, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal

power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(18) by replacing QC.14.5 by the following:

"**QC.14.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content or other sampled data,

(i) determine the sampling or measurement rate using the following equation:

Equation 14-2

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.14.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern raw material consumption or lead production, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(19) by replacing QC.15.5 by the following:

"**QC.15.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content or other sampled data,

(i) determine the sampling or measurement rate using the following equation:

Equation 15-2

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\ Required}$ = Quantity of samples or measurements required under QC.15.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern raw material consumption, zinc production or by-product production, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(20) by replacing QC.16.7 by the following:

"**QC.16.7. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern sampled data,

(i) determine the sampling or measurement rate using the following equation:

Equation 16-4

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\ Required}$ = Quantity of samples or measurements required under QC.16.6;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern the quantity of energy transferred or a quantity of HFC, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(21) by replacing QC.18.5 by the following:

"**QC.18.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content or carbonate content,

(i) determine the sampling or measurement rate using the following equation:

Equation 18-7

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.18.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern raw material consumption, carbonate consumption, reducing agent consumption, carbon electrode consumption, recycled material consumption or copper production, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance

specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(22) by replacing QC.19.6 by the following:

"**QC.19.6. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content or carbonate content,

(i) determine the sampling or measurement rate using the following equation:

Equation 19-3

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.19.5;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern raw material consumption, carbonate consumption, reducing agent consumption, flux material consumption, carbon electrode consumption, ferroalloy production or by-product production, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(23) by replacing the part of QC.20.5 preceding subparagraph 1 of the first paragraph by the following:

"When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:";

(24) by adding the following after paragraph 2 of QC.20.5:

"(3) when the missing data concern magnesium production, the replacement data must be estimated on the basis of all the data relating to the processes used.";

(25) by replacing QC.21.5 by the following:

"**QC.21.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when data determined on the basis of the performance test provided for in QC.21.4 is missing, conduct a new performance test;

(*b*) when the missing data concern carbon content, temperature, gas pressure or gas concentration, other than data prescribed in the performance test,

(i) determine the sampling or measurement rate using the following equation:

Equation 21-5

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.21.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*c*) when the missing data concern nitric acid production or a gas flow rate, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply

to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(26) by replacing QC.22.5 by the following:

"**QC.22.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content,

(i) determine the sampling or measurement rate using the following equation:

Equation 22-2

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.22.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern phosphate rock consumption or phosphoric acid production, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(27) by replacing QC.23.5 by the following:

"**QC.23.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbon content or molecular mass,

(i) determine the sampling or measurement rate using the following equation:

Equation 23-6

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.23.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern raw material quantity, ammoniac production or waste gas consumption, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(28) by replacing QC.24.5 by the following:

"**QC.24.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) when the missing data concern sampled data,

(*a*) determine the sampling or measurement rate using the following equation:

Equation 24-9

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\ Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\ Required}$ = Quantity of samples or measurements required under QC.24.4;

(*b*) for data that require sampling or analysis,

(i) if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

(ii) if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

(iii) if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(2) when the missing data concern gas quantity, the replacement data must be estimated on the basis of all the data relating to the processes used;

(3) when the missing data concern equipment capacity, the replacement data must be estimated on the basis of an equivalent nominal SF_6 and PFC gas capacity, and on repair, replacement and maintenance data for similar pieces of equipment.";

(29) by replacing QC.25.5 by the following:

"**QC.25.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to obtain 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbonate content in raw materials or in carbonate-based material output, use the default value of 1.0;

(*b*) when the missing data concern carbon content,

(i) determine the sampling or measurement rate using the following equation:

Equation 25-3

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.25.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*c*) when the missing data concern raw material consumption or carbonate consumption, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(30) by replacing QC.26.5 by the following:

"**QC.26.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern carbonate content in raw materials or in carbonate-based material output, use the default value of 1.0;

(*b*) when the missing data concern carbon content,

(i) determine the sampling or measurement rate using the following equation:

Equation 26-2

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.26.4;

(ii) for data requiring sampling and/or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*c*) when the missing data concern raw material consumption, glass production or carbonate consumption, the replacement data must be estimated on the basis of all the data relating to the processes used;

(2) an emitter who uses a continuous emission monitoring system must use the procedure in the SPE 1/PG/7 protocol entitled Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation published in November 2005 by Environment Canada or apply to the missing parameters the method specified in subparagraph *a* of paragraph 2 of QC.1.6.";

(31) by replacing the heading of QC.27.6 by the following:

"**QC.27.6. Methods for estimating missing data**

The emitter must demonstrate that everything has been done to capture 100% of the data.

When the missing data concern fuel consumption, the replacement data must be estimated on the basis of all the data relating to the processes used.

QC.27.7. Tables";

(32) by replacing QC.28.5 by the following:

"**QC.28.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) an emitter who uses one of the calculation methods provided for in this Protocol must,

(*a*) when the missing data concern volumetric fraction or fluid density,

(i) determine the sampling or measurement rate using the following equation:

Equation 28-10

$$R = Q_{S\,Act} \Big/ Q_{S\ \mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.28.4;

(ii) for data that require sampling or analysis,

- if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

- if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

- if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(*b*) when the missing data concern gas quantity or substrate quantity, the replacement data must be estimated on the basis of all the data relating to the processes used;

(*c*) when one or more values used to calculate the emissions attributable to heat transfer fluids using equation 28-5 is missing, the emitter must estimate greenhouse gas emissions using the arithmetic average of the emission rates for the previous year and for 2 months following the missing data period. When those emission rates cannot be obtained, the emitter must estimate the greenhouse gas emissions using data from the suppliers of the heat transfer fluids.";

(33) by replacing QC.29.5 by the following:

"**QC.29.5. Methods for estimating missing data**

When, as part of an emitter's sampling activities, the emitter is unable to obtain analytical data, the emitter must, using the methods prescribed in this Protocol, re-analyze the original sample, a backup sample or a replacement sample for the same measurement and sampling period.

When sampling or measurement data required by this Protocol for the calculation of emissions is missing, the emitter must demonstrate that everything has been done to capture 100% of the data. The emitter must then use replacement data, established as follows:

(1) when the missing data concern carbon content, high heat value, molecular mass, molar fraction, temperature, pressure or sampled data,

(*a*) determine the sampling or measurement rate using the following equation:

Equation 29-17

$$R = Q_{S\,Act} \Big/ Q_{S\,\mathrm{Re}\,quired}$$

Where:

R = Actual sampling or measurement rate, expressed as a percentage;

$Q_{S\,Act}$ = Quantity of actual samples or measurements obtained by the emitter;

$Q_{S\,Required}$ = Quantity of samples or measurements required under QC.29.4;

(*b*) for data that require sampling or analysis,

(i) if R ≥ 0.9: replace the missing data by the arithmetic mean of the sampling or measurement data from immediately before and after the period for which the data is missing. If no data are available from before that period, the emitter must use the first available data from after the period for which the data is missing;

(ii) if 0.75 ≤ R < 0.9: replace the missing data by the highest data value sampled or analyzed during the report year for which the calculation is made;

(iii) if R < 0.75: replace the missing data by the highest data value sampled or analyzed during the 3 preceding years;

(2) when the missing data concern operating time, gas quantity, liquid quantity or gas flow rate, the replacement data must be estimated on the basis of all the data relating to the processes used.";

(34) by adding the following after QC.29.6:

"**QC.30. FUEL DISTRIBUTION**

QC.30.1. Covered sources

For the purposes of this protocol, "fuel" means automotive gasolines, diesels, propane, natural gas and heating fuel oils, with the exception of

(1) aviation fuel or or fuel oil for schips;

(2) hydrocarbons used as a raw material by industries that use chemical and petrochemical processes to transform hydrocarbon molecules;

(3) the renewable portion derived from biomass and biofuel of such fuels.

In addition, "fuel distribution" means the following activities:

(1) all forms of trade or sale of fuels refined, manufactured, mixed, prepared or distilled in Québec, for consumption in Québec;

(2) bringing fuel into Québec, or causing fuel to be brought into Québec, for consumption, trade or sale in Québec, in one or more containers totalling over 200 litres, other than fuel contained in a fuel tank installed as standard equipment to supply a vehicle motor.

QC.30.2. Greenhouse gas reporting requirements

The greenhouse gas emissions report referred to in section 6.2 must include the following information:

(1) the annual emissions attributable to the use of fuel distributed for consumption in Québec, in metric tons CO_2 equivalent, excluding fuels other than automotive gasolines or diesel for transport purposes used by an emitter for its establishments referred to in the first paragraph of section 2 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances (c. Q-2, r. 46.1) that is required to cover greenhouse gas emissions pursuant to section 19 of that Regulation;

(2) the total annual quantity of each fuel distributed for consumption in Québec, measured at the primary distribution or trading points or at the receiving point of fuels purchased outside Québec by the emitter for the emitter's own consumption, including firstly and excluding secondly fuels used by an emitter referred to in the first paragraph of section 2 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances that is required to cover greenhouse gas emissions pursuant to section 19 of that Regulation, expressed

(*a*) in thousand cubic metres at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;

(*b*) in kilolitres at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume;

(3) the name and contact information for each emitter referred to in the first paragraph of section 2 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances that is required to cover greenhouse gas emissions pursuant to section 19 of that Regulation to whom fuel has been distributed during the year, along with the total annual quantity distributed to each emitter, expressed

(*a*) in thousand cubic metres at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;

(*b*) in kilolitres at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume.

QC.30.3. Calculation methods for CO_2 emissions

The annual CO_2 equivalent emissions attributable to the use of fuel distributed for consumption in Québec must be calculated using equation 30-1:

Equation 30-1

$$CO_2 = \sum_{i=1}^{n} [Q_i \times EF_i \ ]$$

Where:

CO_2 = Annual emissions attributable to the use of fuel distributed for consumption in Québec, in metric tons CO2 equivalent;

n = Number of fuels distributed for consumption in Québec;

i = Fuel;

Q_i = Quantity of fuel *i*, calculated using equation 30-2, expressed

- in thousand cubic metres at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;
- in kilolitres at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume;

EF_i = Emission factor for fuel *i*, as indicated in Table 30-1 in QC.30.6, expressed

- in metric tons of CO_2 equivalent per thousand cubic metre at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;
- in metric tons of CO_2 equivalent per kilolitre, at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume;

Equation 30-2

$$Q_i = Q_i^T - Q_i^D - Q_i^G$$

Where:

Q_i = Quantity of fuel *i*, expressed

- in thousand cubic metres at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;

- in kilolitres at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume;

Q_i^T = Total quantity of fuel *i* distributed or traded for consumption in Québec or purchased outside Québec by the emitter for the emitter's own consumption, expressed

- in thousand cubic metres at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;

- in kilolitres at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume;

Q_i^D = Total quantity of fuel *i* distributed or traded to an emitter for the establishments referred to in subparagraph 2 of the second paragraph of section 2 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances that is required to cover greenhouse gas emissions pursuant to section 19 of that Regulation, expressed

- in thousand cubic metres at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;

- in kilolitres at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume;

Q_i^G = Total quantity of fuel *i*, other than automotive gasolines or diesel for transport purposes, distributed or traded to an emitter referred to in the first paragraph of section 2 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances that is required to cover greenhouse gas emissions pursuant to section 19 of that Regulation, expressed

- in thousand cubic metres at standard conditions, in the case of fuels the quantity of which is expressed in gas volume;

- in kilolitres at standard conditions, in the case of fuels the quantity of which is expressed in liquid volume.

QC.30.4. Sampling, analysis and measurement requirements

An emitter who operates an enterprise that distributes fuel must, before the first emissions report and thereafter as prescribed by the manufacturer or annually, whichever occurs soonest, calibrate all the equipment used to measure quantities of liquid or gaseous fuel as required for the purposes of the calculation method in QC.30.3.

QC.30.5. Method for estimating missing data

The emitter must be able to demonstrate that everything has been done to capture 100% of the data.

When the missing data concern the quantity of fuel distributed, the replacement data must be estimated on the basis of all the data relating to the processes used of or the data used for inventory purposes.

QC.30.6. Tables

Table 30-1. Fuel emission factors, in CO_2 equivalent

(QC.30.3)

Liquid fuels	**Emission factor (metric tons CO_2 equivalent per kilolitre)**
Automotive gasolines	2.361
Diesels	2.790
Light oils (0, 1 and 2)	2.735
Heavy oils (4, 5 and 6)	3.146
Gaseous fuels	**Emission factor (metric tons CO_2 equivalent per thousand cubic metres)**
Propane	1.544
Natural gas	1.889

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9. Emitters referred to in the third paragraph of section 6.1, as amended by section 1 of this Regulation, are only required to report their greenhouse gas emissions in accordance with the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (R.R.Q., c. Q-2, r. 15) beginning on 1 January 2013.

10. This Regulation comes into force on the fifteenth day following the date of its publication in the *Gazette officielle du Québec*, except sections 4 and 7 and paragraphs 2 to 33 of section 8, which come into force on 1 January 2013.

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