

Guidance for compliance with Oakville Health Protection Air Quality By-law 2010-035

Section 4 emissions reporting

March 8, 2011
Ver. 2

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1 INTRODUCTION

Recent studies by the province have found that the residents of Oakville are living in a “taxed airshed,” which is defined as “a geographical region covered by a volume of air that has similar characteristics and in which air quality is comprised of elevated levels of air contaminants.” A key contributor to the poor air quality in Oakville is fine particulate matter (particles with an aerodynamic diameter less than 2.5 micrometres, PM_{2.5} or fine PM for short). Fine PM is unusual in that its presence in the air is not only the result of direct emissions from specific sources, but also of several other contaminants called precursor pollutants mixing in the air.

Short and long-term exposure to the current levels of fine PM in the air is causing health effects including premature mortality and morbidity. Sustained exposure over the course of a year can increase these effects tenfold, yet there are no federal or provincial regulatory standards for direct emissions of this pollutant or for the contribution provided by the emission of precursor pollutants. Industrial facilities are major stationary sources of such emissions, but commercial, institutional and residential buildings also emit fine PM and precursor pollutants. Vehicular traffic is another major source of emissions of fine PM and precursors.

The Town of Oakville has undertaken a number of initiatives to protect the health of its residents by working to limit emissions of fine PM and precursor pollutants. One initiative was to pass the Health Protection Air Quality By-law 2010-035 (HPAQB) on February 1, 2010. The HPAQB seeks to safeguard the health, safety and well-being of Oakville residents by gathering information on emissions of fine PM and its precursors, and regulating major emitters of these pollutants.

Purpose of the guide

To assist facilities with compliance, the town is developing guidance documents to support implementation of the HPAQB and explain its requirements.

This guide provides direction on the reporting requirements under section 4 of the HPAQB for owners and operators of facilities in Oakville. A guide to provide direction on the regulation of major emitters is also currently being developed by the town.

It is recommended that the HPAQB and amendment, provided in appendix 3.1, 3.2, and 3.3, be referenced along with this document. A list of frequently asked questions is provided in appendix 3.5.

Guidance document development

In June 2010, the town convened a focus group of about 20 representatives of local businesses and air quality consultants to review draft guidance documents and provide feedback on how to improve them.

Input received from the focus group was helpful in identifying future improvements and areas needing immediate clarification. The majority of the comments received from the focus group have been incorporated into this document. Suggestions for future improvements include the development of additional case studies and tools such as on-line forms and templates, and these will be addressed in the coming months.

1.1 Quick overview of the HPAQB

Purpose

The purposes of the HPAQB ([section 2](#)) are to help protect the Oakville population from the harmful human health effects of fine PM and to implement regulatory measures that will help reduce the levels of fine PM in Oakville's ambient air over time.

Measures in the HPAQB include collecting information to identify potential sources of fine PM and its precursors; implementing regulatory controls on facilities that have sources of major emissions; and collecting monitoring and other data that will inform decisions to reduce the health risk from these air pollutants. The town will also encourage public participation in Council decision-making on major emissions of health-risk air pollutants.

How it works

The HPAQB contains two levels of requirement. The first is a reporting requirement. Under the by-law, if a facility emits at least one health-risk air pollutant in a non-negligible quantity, its owner or operator needs to report the emission to the town. Information reported will be maintained in a database of health-risk emissions from across Oakville. Facilities only need to report their emissions once unless they change.

The second level of requirement is an approval by Council of facilities that cause a "major emission" of a health-risk air pollutant. A major emission is an emission of one or more health-risk air pollutants that exceed the levels established under the HPAQB. Under the by-law, proposed or existing facilities that produce a major emission would be subject to an approval process involving assessment of health impacts from emissions, and implementation of regulatory controls where necessary.

Facilities receiving approval under the HPAQB are required to submit a report of the actual emissions of health-risk air pollutants from their facility to the town every year for three years following approval, and thereafter for a period of time determined by the town.

The reporting and approval requirements under the HPAQB apply to existing and proposed facilities. A fee of \$25,000 is assessed to facilities submitting approval applications for major emissions to defray the administrative and peer review costs associated with these applications. There is no fee for facilities addressing only the reporting requirement.

1.2 Terms used

Affected airshed: The airshed receiving any increase in concentrations of fine PM of more than 0.2 micrograms per cubic metre expressed as an annual average, due to a major emission.

Assessment: A health-risk assessment of the range of public health effects, including mortality and morbidity, using

Version 3.0 of the Illness Cost of Air Pollution ("ICAP") model developed by the Canadian Medical Association or other health-risk methodology the Town deems acceptable, following input from a qualified peer reviewer.

Facility: A building or structure, or equipment or other stationary items on a site or at a location that is under common operation, management, and/or control. This definition does not include a residential site containing less than 25 dwelling units or a commercial, business or institutional site less than 0.1 ha in size.

Fine particulate matter, fine PM, PM_{2.5}: Airborne particulate matter that is less than or equal to 2.5 microns in aerodynamic mass median diameter.

Health-risk air pollutant: Fine particulate matter and/or one or more precursor pollutants.

Major emission: An emission of a health-risk air pollutant from a facility that exceeds at least one of the following thresholds:

- (a) For directly emitted fine particulate matter: more than 300 kilograms per year
- (b) For volatile organic compounds: more than 10, 000 kilograms per year
- (c) For nitrogen oxides (as NO₂ equivalent): more than 20, 000 kilograms per year
- (d) For sulphur dioxide: more than 20, 000 kilograms per year
- (e) For ammonia: more than 10, 000 kilograms per year

Negligible quantity of any health-risk air pollutant:

- In reference to directly emitted fine PM: the emission of less than 1 kilogram in total per year.
- In reference to precursor pollutants: the emission of less than 10 kilograms in total per year.

Precursor pollutant: A pollutant which, when emitted into the air, participates in atmospheric mixing or chemical transformation or both to produce fine PM. Precursor pollutants include nitrogen oxides, ammonia, sulphur dioxide, volatile organic compounds, and other pollutants specified by the town (presently no such other pollutants have been defined).

Public health effect: The risk of an adverse impact on public health within the affected airshed derived from chronic exposure to PM_{2.5}.

Significant: In reference to the assessment of a public health effect: an increased rate of premature non-traumatic mortality of one or more premature deaths per one hundred thousand population per year, based on annual exposure to fine PM; or other outcomes from exposure to fine PM as from time to time Council may direct.

Town-approved atmospheric dispersion model: An air dispersion model that has the capacity to address FPM and atmospheric chemistry and the effects of emissions of precursor pollutants on the production of FPM in the atmosphere, and which is acceptable to the town, following input from the town review; or, specified by the town. The town has pre-approved the CALPUFF dispersion model; however, other models may be suggested for use by an applicant and will be accepted by the town if, upon review, it is determined that the model possesses scientific merit and provides results of equal or greater accuracy as that performed by CALPUFF.

Volatile organic compounds (VOCs): The HPAQB defines VOCs as compounds that are designated in item 65 of schedule 1 to the *Canadian Environmental Protection Act (CEPA), 1999* or compounds that are determined by the town (presently no other compounds have been determined).

CEPA defines VOCs as those that participate in atmospheric photochemical reactions, **excluding:**

- methane;
- ethane;
- methylene chloride (dichloromethane);
- 1,1,1-trichloroethane (methyl chloroform);
- 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
- trichlorofluoromethane (CFC-11);
- dichlorodifluoromethane (CFC-12);
- chlorodifluoromethane (HCFC-22);
- trifluoromethane (HFC-23);
- 1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114);
- chloropentafluoroethane (CFC-115);
- 1,1,1-trifluoro-2,2-dichloroethane (HCFC-123);
- 1,1,1,2-tetrafluoroethane (HFC-134a);
- 1,1-dichloro-1-fluoroethane (HCFC-141b);
- 1-chloro-1,1-difluoroethane (HCFC-142b);
- 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
- pentafluoroethane (HFC-125);
- 1,1,2,2-tetrafluoroethane (HFC-134);
- 1,1,1-trifluoroethane (HFC-143a);
- 1,1-difluoroethane (HFC-152a);
- parachlorobenzotrifluoride (PCBTF);
- cyclic, branched or linear completely methylated siloxanes;
- acetone;
- perchloroethylene (tetrachloroethylene);
- 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);

- 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);
- 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);
- difluoromethane (HFC-32);
- ethylfluoride (HFC-161);
- 1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
- 1,1,2,2,3-pentafluoropropane (HFC-245ca);
- 1,1,2,3,3-pentafluoropropane (HFC-245ea);
- 1,1,1,2,3-pentafluoropropane (HFC-245eb);
- 1,1,1,3,3-pentafluoropropane (HFC-245fa);
- 1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
- 1,1,1,3,3-pentafluorobutane (HFC-365mfc);
- chlorofluoromethane (HCFC-31);
- 1-chloro-1-fluoroethane (HCFC-151a);
- 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
- 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C₄F₉OCH₃);
- 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF₃)₂CFCF₂OCH₃);
- 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅);
- 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF₃)₂CFCF₂OC₂H₅); and
- methyl acetate and perfluorocarbon compounds that fall into the following classes, namely:
 - cyclic, branched or linear completely fluorinated alkanes,
 - cyclic, branched, or linear completely fluorinated ethers with no unsaturations,
 - cyclic, branched or linear completely fluorinated tertiary amines with no unsaturations, or
 - Sulphur containing perfluorocarbons with no unsaturations and with sulphur bonds only to carbon and fluorine.

Town: The Corporation of the Town of Oakville

2 SECTION 4 REPORTING REQUIREMENTS

Part III — reporting, section 4 of the HPAQB sets out the emissions reporting requirements for proposed or existing facilities as follows:

- (1) *Subject to subsection (3), where a proposed or (an) existing facility may emit at least one health-risk air pollutant into the air, its owner or operator shall advise the Town in writing forthwith of the emission source or sources, and provide the average and worst-case rates of daily and annual emissions of any emitted health-risk air pollutant facility-wide.*

- (2) *Where a person proposes a change to a facility or its operation, and such change may change the rates referenced in subsection (1) of any emitted health-risk air pollutant, its owner or operator shall advise the Town of the change in writing forthwith.*
- (3) *This section does not apply to an owner or operator of a facility that emits only a negligible quantity of any health-risk air pollutant.*
- (4) *For the purposes of addressing the reporting obligation in this section, an owner or operator may, unless the Town provides otherwise, include in its submission to the Town a copy or part of a copy of any completed form with relevant information filed pursuant to the National Pollutant Release Inventory or the Ontario Toxics Reduction Act, 2009.*
- (5) *The Town shall post on its web-site a current list of all facilities reporting under this section, their emitted rates, and whether the facility is a source of a major emission.*

Guidance for these requirements follows.

2.1 Who should report

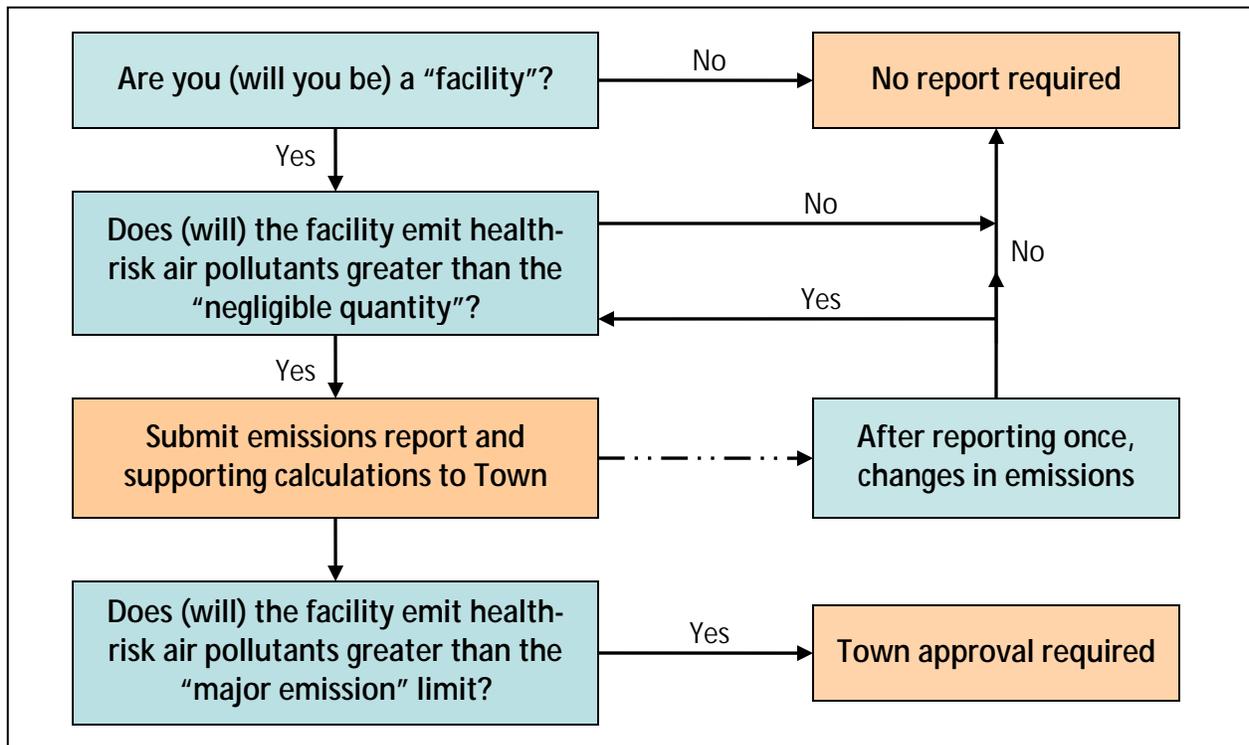
The owner or operator of an existing or proposed facility is required to advise the town in writing of non-negligible emissions of health-risk air pollutants. A negligible facility-wide emission is defined as:

- less than 1 kg/year of direct fine PM emissions or
- less than 10 kg/year of any other individual precursor pollutant as defined in the by-law.

No reporting is required for facilities that emit negligible amounts of health-risk air pollutants.

Facilities are not required to report emissions generated during routine testing of emergency (backup) generators. However, if generators are used in non-emergency situations, then emissions under those circumstances must be reported.

Proposed and existing facilities that are **major** emitters are also required to seek approval from the town. Those requirements are presented in a separate guidance document dedicated to sections 5 and 6 of the HPAQB. The reporting process is summarized below:



2.2 When to report

Facilities reporting under section 4 only have to do so once, unless their emissions change.

Proposed facilities:

- (a) with a Provincial Certificate of Approval (C of A) for air emissions under section 9 of the Ontario Environmental Protection Act, must report within 30 days of *receiving the C of A*;
 - (b) without a C of A, must report within 30 days of *commencing operations* that will emit any health-risk air pollutant;
- but the HPAQB promotes reporting as part of the planning process and prior to construction.

Existing facilities that currently have a C of A for air emissions must report emissions before May 1, 2011 (section 19(2)(a)(ii)).

All other existing facilities, i.e. those without C of A for air emissions that emit greater than negligible amounts of any health-risk air pollutant, must report before September 1, 2012 (section 19(2)(a)(iii)).

2.3 Updating reports

If there are changes to operations that impact the emission levels of a facility that has previously reported under section 4, the facility is required to submit a new or amended report under section 4(2). The HPAQB requires facilities to notify the town within 30 days of any changes in the amounts of health-risk air pollutants emitted.

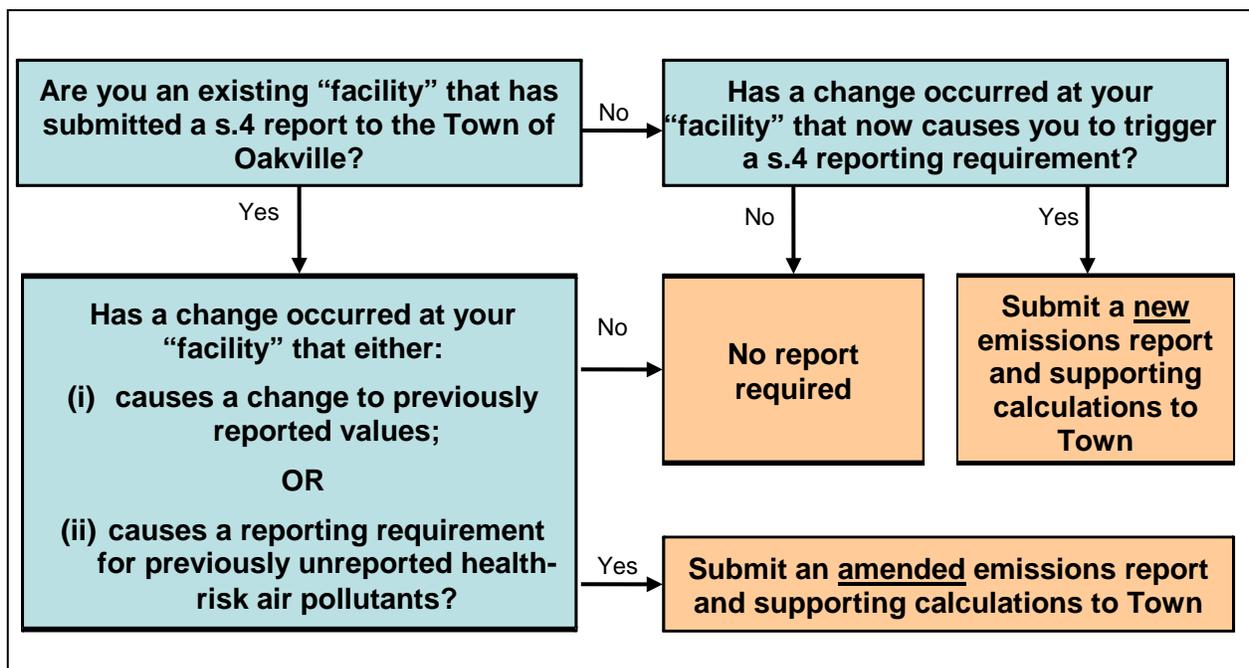
Examples of changes that would trigger the need for an amended report are:

- Facility process modifications that would alter the nature of emissions including facility closures, process discontinuations or the addition of new or modified processes and substances.
- Process changes that may require an amended CofA.
- Stack test results that indicate that measured emissions levels are different from what had been previously reported to the town.

Changes that have no impact on emissions do not require an amended report.

If a facility makes multiple changes over the course of a calendar year it should consult with the town, in advance, as to whether a single amended report consolidating all the changes would be appropriate.

The reporting process for a change in emissions is summarized below:



2.4 What to report

Contents of the report

Each facility must report the following for **each** emission source, appropriately coded, as well as all sources combined at the facility:

1. Average daily emissions

Average daily emissions for an existing or proposed facility are to be calculated based on the typically scheduled hours of operation. An up-to-date emissions scenario must be used for an existing facility. For a proposed facility average daily emissions must be estimated based on the expected average hours of operation per day.

2. Average annual emissions

Average annual emissions are calculated by multiplying the average daily emission by the average number of days an existing facility operates, or a proposed facility expects to operate.

3. Worst case daily emissions

Worst case daily emissions for proposed or existing facilities are estimated based on the highest number of hours a facility can operate in one day at the maximum rate of emissions of health-risk air pollutants.

4. Worst case annual emissions

Worst case annual emissions for a proposed or existing facility are estimated as the up-to-date, maximum emissions of health-risk air pollutants that a facility can emit over the course of a calendar year.

The HPAQB states that a facility may: “include in its submission to the town a copy or part of a copy of any completed form with **relevant information** filed pursuant to the National Pollutant Release Inventory or the *Ontario Toxics Reduction Act, 2009*.” However, additional information is also required for section 4 reporting.

The town requires a one-time report of both daily and annual average and worst case emissions. Other reporting requirements do not address all four scenarios. For example, the NPRI seeks reporting on actual annual emissions only.

The town also requires that all emission reports include a copy of the calculations used to produce emission estimates or results. Differences between the town’s reporting requirements and the NPRI requirements are outlined in appendix 3.5.

2.4.1 Information required

Categories of information required:

- Facility description and contact information
- Facility activities including process descriptions and operating schedule
- Substance information (source and process information and emissions of health-risk air pollutants for each process/source)

Since acetone is an excluded VOC listed in the CEPA definition, which the HPAQB adopts, facilities are not required to report acetone emissions to the town.

Details of the elements in these information categories are similar to those required for reports under the NPRI and *Ontario Toxics Reduction Act, 2009*, but **only data for the health-risk air pollutants, as defined by the HPAQB, is required for section 4 reporting.**

The following is a list of required information within each of the three categories of information:

Facility description

- Company's legal name
- Facility address
- Company's trade name
- Facility Federal Business Number (if available)
- NPRI ID (if available)
- Ontario Certificate of Approval (Air) by Ministry of the Environment (if available)
- Nature of the facility's business
- Industrial Classification Codes and their descriptions
 - NAISC 6-digit code
 - Canadian 4-digit SIC code
 - US SIC code
- If the facility is portable or not
- Latitude and longitude and UTM co-ordinates near the mid-point of the facility
- Full name, address and contact information (email, telephone number(s), fax number) of the:
 - Facility coordinator (person who is responsible for preparing and submitting more than one report for the same company)
 - Contractor (independent contractor preparing the report)
 - Technical contact person (person who prepared the report)
 - Public contact (the person responsible for answering any questions from the public concerning the report)
 - Company official certifying the report (this person is legally responsible for the contents of the report)

Facility activities / process descriptions / operating schedule and shutdown periods

- Process descriptions for the health-risk air pollutants
- Typical operating schedule
 - hours/day
 - days/week and
 - months/year
- Typical hours of operation per year taking into account planned maintenance

Facility green features / environmental practices / sustainability plans

The town encourages reporting facilities to report their green features, best environmental practices and technologies, and/or sustainability plans at the facilities that demonstrate their commitment to the environment by limiting and reducing their emissions. If the facilities choose to report their efforts, please provide the information in the comment section of the “Facility Activities and Information” in the reporting form.

The information will be published on the website along with their total emissions data in various scenarios if the facility chooses to report their environmental efforts.

Substance Information (Source and process information and emissions of health-risk air pollutants for each process/source)

The town requires substance information only for the health-risk air pollutants. Chemical Abstract Service numbers for the health-risk air pollutants are given in appendix 3.7.

If toluene or xylene is present in the VOCs emissions from any sources, facilities are required to report these two substances separately by using the appendix form for toluene and xylene emissions.

The following information is required for each substance relevant to the emission of a health-risk air pollutant:

- The methodology and calculations used to calculate emissions of health-risk (and other) pollutants. Details of the methods can be found in the Ontario provincial guide *Step By Step Guideline For Emission Calculation, Record Keeping And Reporting For Airborne Contaminant Discharge* (<http://www.ene.gov.on.ca/publications/4099e04.pdf>) or NPRI guideline *Guide for Reporting to the National Pollutant Release Inventory 2008* (<http://www.ec.gc.ca/inrpnpri/default.asp?lang=En&n=0CC66FE7-1>). Documents describing methodologies for estimating emissions can be found in section 4, references.

Where US EPA emission factors are used and emission factors for PM_{2.5} are not provided for a particular process, it is acceptable to use emissions factors for PM₁₀ or PM for the same process.

Where US EPA emission factors are used, please also provide the quality rating of the emission factor.

- Average and worst case daily and annual emissions of health-risk air pollutants from each source. Details are indicated on the reporting form (see below).

Emission calculations required for a CofA also require worst-case (maximum) emission rates to be estimated. Those same estimate methodologies can be used as a basis to provide the estimates required for section 4 reporting.

Point Sources

Stack Information

Stack ID	
Description of stack	
Process description	
Stack orientation	Horizontal / Vertical
Is the stack capped?	Yes / No
Height above ground (m)	
Equivalent diameter (m)	
Average exit velocity (m/s)	
Average exit temperature (°C)	
Latitude or UTM Northing	
Longitude or UTM Easting	

Provide UTM or latitude and longitude in decimal degrees accurate to five decimal places or in dd mm ss.n format where seconds are accurate to one decimal place.

Stack ID: _____

Health-risk air pollutants	Basis of estimate (name or title of method)	Daily avg. emissions (kg/day)	Annual avg. emissions (kg/year)	Daily worst-case emissions (kg/day)	Annual worst-case emissions (kg/year)
PM _{2.5}					
NO _x					
SO ₂					
NH ₃					
VOCs					

Other Sources from Storage, Fugitive Release, and Other Non-Point Release

Health-risk air pollutants	Basis of estimate (name or title of method)	Daily avg. emissions (kg/day)	Annual avg. emissions (kg/year)	Daily worst-case emissions (kg/day)	Annual worst-case emissions (kg/year)
PM _{2.5}					
NO _x					
SO ₂					
NH ₃					
VOCs					

Road Dust Emissions (PM_{2.5})

Road ID	Basis of estimate (name or title of method)	Daily avg. emissions (kg/day)	Annual avg. emissions (kg/year)	Daily worst-case emissions (kg/day)	Annual worst- case emissions (kg/year)

Only road dust emission from unpaved roads within the property boundary of a facility that are cumulatively travelled more than 10,000 km per year by vehicles needs to be assessed. This is consistent with NPRI reporting requirements.

For more details, see the *Unpaved Industrial Road Dust section* under *6. Fugitive Emission Sources section* available in the “General NPRI Reporting Tools” of “NPRI Toolbox” in “Reporting to the NPRI” section at www.ec.gc.ca/inrp-npri.

Building Information

If facility consists of a single, rectangular building, please provide building dimension in meter:

Length (m)		Width (m)		Height (m)	
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If facility does not fit the above description, facility can provide detail information in the “Building Information Comment” section.

In the future, the town may require additional information regarding *all* data in the report (e.g. stacks details, building information, etc.) for QA/QC purpose and/or future town-wide air-quality modelling.

2.4.2 How to submit reports

The town requires facilities to use the “fillable” pdf reporting form provided by the town for reporting.

If facilities have more than two emission point sources or toluene or xylene are present in the VOCs emissions from any sources, facilities are required to use the appendix form for additional stacks, and the appendix form for toluene and xylene emissions for reporting.

The reporting form, the appendix form for additional stacks, the appendix form for toluene and xylene emissions are available or download online at <http://www.oakville.ca/environment/health-protection-air-quality.html>.

Disclosure of proprietary information

It is not expected that disclosure of proprietary information to the town will be necessary to meet the HPAQB section 4 reporting requirements. Should this be an issue of concern to the reporting facility, please contact the town.

2.4.3 Where to submit reports

All reports in connection with the HPAQB are to be sent by registered mail to the following address:

Attention: Environmental Policy
Health Protection Air Quality By-law Implementation
Corporation of the Town of Oakville
1225 Trafalgar Road
Oakville, ON L6H 0H3

Include a paper and electronic copy of the report, using the reporting form, and a copy of supporting calculations. Please do not convert files to pdf format.

Items delivered by registered mail must be postmarked no later than the due date of the report. The town will not be responsible for delivery delays by courier or Canada Post. Reports delivered by email will not be accepted.

Any correspondence about the HPAQB may be sent to the address above or to healthprotection@oakville.ca.

2.5 Additional reporting requirements

Timelines for additional reporting requirements for major emitters requiring approval by the town under sections 12 and 13 of the HPAQB are described in HPAQB section 15. These will be set out in a separate guidance document.

2.6 Offences

Facilities subject to the HPAQB that fail to report or obtain an approval are subject to prosecution and liable upon conviction to a fine of up to \$100,000 for a first offence, and \$10,000 a day for each day or part of a day that the offence continues for any subsequent offence (section 17).

3 APPENDICES

3.1 By-law Number 2010-035

THE CORPORATION OF THE TOWN OF OAKVILLE

BY-LAW NUMBER 2010-035

A by-law to assess and control the health effects of major emissions of fine particulate matter in the Town of Oakville.

WHEREAS s. 11(2) of the *Municipal Act, 2001*, as amended (“the Act”), permits municipalities to pass by-laws respecting the health, safety and well-being of persons;

WHEREAS s. 128 of the Act permits municipalities to prohibit and regulate with respect to public nuisances, including matters that, in the opinion of council, are or could become or cause public nuisances;

WHEREAS the Province of Ontario and the Government of Canada have gathered research and prepared reports on fine particulate matter and its serious harm to human health, but have not passed air regulations that focus on fine particulate matter, evaluate together ambient conditions and new emissions, assess the human and public health impacts of such conditions, or limit cumulative concentrations; and

WHEREAS The Corporation of the Town of Oakville considers it appropriate and in the public interest to prevent or reduce adverse effects to its residents and public health due to fine particulate matter in the Town of Oakville;

COUNCIL ENACTS AS FOLLOWS:

DEFINITIONS

1. In this by-law, the following definitions apply:

"affected airshed" means the airshed receiving any increase in concentrations of fine particulate matter of more than 0.2 micrograms per cubic metre, expressed as an annual average, due to a major emission;

"assessment" means a health-risk assessment of the range of public health effects, including mortality and morbidity, using:

- (a) Version 3.0 of the Illness Cost of Air Pollution ("ICAP") model developed by the Canadian Medical Association; or

- (b) such other health-risk methodology as the Town deems acceptable, following input from a qualified peer reviewer;

"facility" means a building, structure, equipment and other stationary items on a site or at a location that is under common operation, management, and/or control, but does not include:

- (i) a site that contains less than 25 dwelling units; or,
- (ii) a commercial, business or institutional site or location that is less than 0.1 ha in size;

"fine particulate matter" means airborne particulate matter that is less than or equal to 2.5 microns in aerodynamic mass median diameter ("PM_{2.5}");

"health-risk air pollutant" means fine particulate matter and/or one or more precursor pollutants;

"major emission" means an emission from a facility into the air of a health-risk air pollutant that exceeds at least one of the following thresholds:

- (a) for directly emitted fine particulate matter, more than 300 kilograms per year;
- (b) for volatile organic compounds, more than 10,000 kilograms per year;
- (c) for nitrogen oxides (as NO₂ equivalent), more than 20,000 kilograms per year;
- (d) for sulphur dioxide, more than 20,000 kilograms per year; or,
- (e) for ammonia, more than 10,000 kilograms per year;

"negligible quantity of any health-risk air pollutant" means, in respect of directly emitted fine particulate matter, the emission of less than 1 kilogram of fine particulate matter in total per year, and in respect of precursor pollutants, the emission of less than 10 kilograms of any precursor pollutant in total per year;

"precursor pollutant" means a pollutant which, when emitted into the air, participates in atmospheric mixing or chemical transformation, or both, to produce fine particulate matter, including:

- (a) nitrogen oxides;
- (b) ammonia;
- (c) sulphur dioxide;
- (d) volatile organic compounds; and,
- (e) such other pollutants as are specified by the Town;

"public health effect" means the risk of an adverse impact on public health within the affected airshed, derived from chronic exposure to PM_{2.5};

"significant" means, in relation to the assessment of a public health effect,

- (a) an increased rate of premature non-traumatic mortality of one or more premature deaths per one hundred thousand population per annum, based on annual exposure; or
- (b) such other outcome as from time to time Council may direct;

"Town-approved atmospheric dispersion model" means an air dispersion model that has the capacity to address fine particulate matter and atmospheric chemistry and, in particular, the effects of emissions of precursor pollutants on the production of fine particulate matter in the atmosphere, and which is:

- (a) acceptable to the Town, following input from a qualified peer reviewer; or,
- (b) specified by the Town;

"volatile organic compounds" means:

- (a) the compounds designated as Item 65 on Schedule 1 to the *Canadian Environmental Protection Act, 1999*; or
- (b) the compounds as determined by the Town;

"Town" means The Corporation of the Town of Oakville.

PART I – PURPOSES

2. The purposes of this by-law are:

- (a) to take measures, including collecting information, implementing regulatory controls and monitoring, to protect human health from fine particulate matter;
- (b) to designate specified sources of major emissions of health-risk air pollutants as public nuisances; and,
- (c) to encourage public participation in Council decision-making on major emissions of health-risk air pollutants.
- (d) to reduce over time the levels of fine particulate matter in the ambient air of the Town.

PART II – APPLICATION OF THE BY-LAW

3. This by-law applies to any person who owns or operates a facility located in the Town that may emit at least one health-risk air pollutant into the air.

PART III - REPORTING

4. (1) Subject to subsection (3), where a proposed or existing facility may emit at least one health-risk air pollutant into the air, its owner or operator shall advise the Town in writing forthwith of the emission source or sources, and provide the average and worst-case rates of daily and annual emissions of any emitted health-risk air pollutant facility-wide.

- (2) Where a person proposes a change to a facility or its operation, and such change may change the rates referenced in subsection (1) of any emitted health-risk air pollutant, its owner or operator shall advise the Town of the change in writing forthwith.
- (3) This section does not apply to an owner or operator of a facility that emits only a negligible quantity of any health-risk air pollutant.
- (4) For the purposes of addressing the reporting obligation in this section, an owner or operator may, unless the Town provides otherwise, include in its submission to the Town a copy or part of a copy of any completed form with relevant information filed pursuant to the National Pollutant Release Inventory or the Ontario Toxics Reduction Act, 2009.
- (5) The Town shall post on its web-site a current list of all facilities reporting under this section, their emitted rates, and whether the facility is a source of a major emission.

PART IV – REQUIREMENTS FOR TOWN APPROVAL

Proposed Facilities

5.
 - (1) Where a person proposes to locate a facility in Oakville that may cause a major emission to the air, that person shall, as early as practicable during the planning for such facility and, in any event, prior to any construction of such facility, obtain a facility-specific approval of its proposed air emissions.
 - (2) Prior to receiving an application, the Town encourages a potential applicant to consult with the Town to receive input on whether the facility is likely to be a source of a major emission and, if so, on appropriate methods of addressing application requirements.
 - (3) The application shall include payment of the prescribed fee and submission of the following information:
 - (a) facility description: a description of the facility, including all sources of emissions that may contribute to a major emission, the average and worst-case rates of daily and annual emissions during operations, and the operating conditions that give rise to average and worst-case emissions;
 - (b) evaluation: an evaluation, using a Town-approved atmospheric dispersion model, of the air concentrations across the affected airshed resulting from average and worst-case annual emissions of:

- (i) the predicted levels of fine particulate matter emitted by the proposed facility due to direct emissions and secondary formation from facility-emitted precursor pollutants;
 - (ii) the existing levels of fine particulate matter in the affected airshed; and,
 - (iii) (i) and (ii) combined.
- (c) mapping: mapping that illustrates:
- (i) the extent of the affected airshed, considering predicted average and worst-case annual emissions of fine particulate matter due to the proposed major emission, in such formatting as deemed appropriate by the Town; and,
 - (ii) within the affected airshed, the average and worst-case annual ambient concentrations of fine particulate matter, as contour plots, at one microgram per cubic metre intervals, or at such formatting as deemed appropriate by the Town;
- (d) assessment: an assessment of the public health effects associated with:
- (i) the predicted levels of fine particulate matter in the affected airshed resulting from the major emission; and
 - (ii) the existing levels of fine particulate matter in the affected airshed; and,
- (e) appraisal: an appraisal of any measures available to the facility that would reduce risks to public health, including the costs and other implications of implementing such measures.

Existing Facilities

6. (1) (a) Where a person owns or operates a facility in Oakville that causes a major emission to the air, that person shall obtain a facility-specific approval of its air emissions.
- (b) Where a person owns or operates a facility in Oakville that causes a major emission to the air, and proposes a change that will increase the major emission, that person shall obtain a facility-specific approval of its air emissions, or amendment to an existing approval, before implementing any change that will cause such increase to its emissions.

- (2) Prior to receiving an application, the Town encourages a potential applicant to consult with the Town to receive input on whether the facility is likely a source of a major emission and, if applicable, on appropriate methods of addressing application requirements.
- (3) The application shall include payment of the prescribed fee and submission of the following information:
 - (a) facility description: a description of the facility, including all sources of emissions that may contribute to a major emission, the average and worst-case rates of daily and annual emissions during operations, and the operating conditions that give rise to average and worst-case emissions;
 - (b) evaluation: an evaluation, using a Town-approved atmospheric dispersion model, of the air concentrations within the affected airshed resulting from average and worst-case annual emissions of:
 - (i) the estimated levels of fine particulate matter emitted by the existing facility due to direct emissions and secondary formation from facility-emitted precursor pollutants; and,
 - (ii) the existing levels of fine particulate matter in the affected airshed;
 - (c) mapping: mapping that illustrates:
 - (i) the extent of the affected airshed, considering estimated average and worst-case annual emissions of fine particulate matter due to the proposed major emission, in such formatting as deemed appropriate by the Town; and,
 - (ii) within the affected airshed, the average and worst-case annual ambient concentrations of fine particulate matter, as contour plots, at one microgram per cubic metre intervals, or at such formatting as deemed appropriate by the Town;
 - (d) assessment: an assessment of the public health effects associated with:
 - (i) the estimated levels of fine particulate matter in the affected airshed resulting from the major emission; and
 - (ii) the existing levels of fine particulate matter in the affected airshed; and,
 - (e) appraisal: an appraisal of any measures available to the facility

that would reduce risks to public health, including the costs and other implications of implementing such measures.

PART V – TOWN DECISION-MAKING PROCESS

Peer Review of the Application

7. Upon receipt of an application for approval and the prescribed fees, the Town shall identify a person with appropriate expertise to peer review the submitted application, and, subject to s. 8(2), shall carry out a two-phase peer review process within 120 days.

Peer Review Phase (1): Determination Whether the Application is Complete

8. Phase I shall involve the following process:
 - (1) Upon receipt of the documents submitted by the applicant, the peer reviewer shall determine whether the application is complete. Where the peer reviewer determines that the application is complete, the peer reviewer shall proceed forthwith to Phase (2) of the process.
 - (2) Where the peer reviewer determines that the application is not complete, the Town shall advise the applicant of this determination forthwith. Upon such determination, the application is suspended and the calculation of Town time is suspended. The suspension shall last until the applicant submits additional information to the Town, which then restarts the calculation of Town time and requires the peer reviewer to assess again whether the application is complete.
 - (3) If the applicant fails to obtain a determination that the application is complete within six months of submitting the application, the Town shall close the application and return all original documents to the applicant.

Peer Review Phase (2): Review of the Complete Application

9. Phase (2) shall involve the following process:
 - (1) Following a determination that an application is complete, the peer reviewer shall proceed to review the application and, in particular, its facility description, evaluation, mapping, assessment, and appraisal components.
 - (2) The peer reviewer shall, within 30 days of determining an application is complete, produce a peer review report not to exceed 10 pages, excluding appendices, which sets out, in concise, non-technical language the results of the review on items 3(a) to (e), of section 5 or 6 of this by-law.

- (3) Following receipt of the peer review report, the Town staff shall forthwith examine the review and, where satisfied that the review is complete, forward the review to the applicant for comment.
- (4) Upon receipt of the peer review report, the applicant shall have 30 days to provide written comment on the review to the Town. If the applicant does not return written comment within 30 days, the application shall be considered incomplete and the Town shall close the application and return all original documents to the applicant.
- (5) Upon the conclusion of the 30-day applicant comment period, the Town staff shall forward any comment to the peer reviewer for any addendum review prepared forthwith, not to exceed 3 pages in length, excluding appendices, which shall be prepared by the peer reviewer within 30 days of receiving the applicant's comments. This step concludes this Phase of the process.
- (6) Any failure by the Town to comply with any specified time frames in this by-law shall not eliminate the need for approval or invalidate any approval given under this by-law.

Council Consideration of the Application

10. Following the completion of the peer review process, the Town shall engage in public and agency consultation on the application, using the following process:
 - (1) The Town shall forthwith:
 - (a) post a notice of public consideration of the review by the Town Council, with such notice specifying a Council meeting date no less than 30 days from the posting of notice, and with such notice posted on the Town website and in a newspaper of general circulation in the Town;
 - (b) post on its web-site the complete application, and the peer review report(s), and any comments by the applicant; and,
 - (c) circulate a request for comment to the Halton Region Health Department, and such other persons or agencies as the Town may determine are appropriate, and thereafter post received comments on its website.
 - (2) At the scheduled meeting, Council shall hear any delegations and consider and decide upon the application pursuant to the provisions of the Town's procedure by-law.
11. (1) At the conclusion of the Council meeting hearing the application, or as soon thereafter as Council may determine, Council shall make a decision on the application.

- (2) In making a decision on the application, Council shall consider whether the major emission has a significant public health effect in the Town.
- (3) In considering whether the major emission has a significant public health effect, Council shall have before it a complete application, the related peer review, any additional information provided by the applicant, any written input received from the Halton Region Health Department, and any other information received from other persons or agencies as deemed appropriate.

Town Decision-making on the Application: Proposed Facilities

12. Where, in relation to an application for an approval of a proposed facility that may cause a major emission, Council has before it the required information, and all required land use approvals have been obtained for the proposed facility, Council shall make one of the following decisions, as applicable:
 - (a) Where, following consideration of the application, Council concludes that the major emission of the proposed facility is not likely to cause a significant public health effect in the Town, Council shall approve the application, subject to such conditions as Council may deem appropriate; or,
 - (b) Where, following consideration of the application, Council concludes that the major emission of the proposed facility is likely to cause a significant public health effect in the Town, Council shall:
 - (i) refuse to approve the application and, in such case, also decide that in its opinion the major emission of the proposed facility constitutes a public nuisance; or
 - (ii) approve the application on the basis that the public interest favours allowing the major emission of the proposed facility to occur, subject to such conditions as Council may deem appropriate.

Town Decision-making on the Application: Existing Facilities

13. Where, in relation to an application for an approval of an existing facility which causes a major emission, Council has before it the required information, Council shall make one of the following decisions, as applicable:
 - (a) Where, following consideration of the application, Council concludes that the major emission of the facility is not likely to cause a significant public health effect in the Town, Council shall approve the application, subject to such conditions as Council may deem appropriate;

- (b) Where, following consideration of the application, Council has before it an application that does not meet paragraph (a), but proposes an overall 25 percent reduction in health-risk air pollutants over the next five years, and the peer review agrees the proposed reduction is achievable, Council shall approve the application, and authorize a five-year approval of the facility causing the major emission, subject to such conditions as Council may deem appropriate; or,
- (c) Where, following consideration of the application, Council concludes that paragraph (b) does not apply, and the major emission of the facility is likely to cause a significant public health effect in the Town, Council shall:
 - (i) refuse to approve the application and, in such case, also decide that in its opinion the major emission of the facility constitutes a public nuisance; or
 - (ii) approve the application on the basis that the public interest favours allowing the major emission of the facility to occur, subject to such conditions as Council may deem appropriate.

PART VI – FEES

- 14. (1) The fee prescribed for applicants for approval under this by-law is \$25,000, paid by certified cheque, and payable to The Corporation of the Town of Oakville.
- (2) The fee prescribed in subsection (1) includes \$5,000 for administration and \$20,000 to carry out the peer review of the application pursuant to sections 7, 8 and 9 of this by-law.
- (3) Where an applicant pays the prescribed fee, but the actual cost incurred by the Town is less than this fee, the Town may return such portion of the prescribed fee as it determines appropriate.

PART VII – EMISSIONS MONITORING AND TOWN REPORTING

- 15. Each owner or operator of a facility receiving approval under this by-law must prepare and submit to the Town, annually during the first three years following approval, and thereafter for such period as the Town determines appropriate, a report that provides average and worst-case rates of daily and annual health-risk air pollutant emissions from the facility, and such further information as Council may require.
- 16. Each year, based on the most current information provided under this by-law, the Town shall prepare a report on health-risk air pollutants, including the estimated total emissions, expressed in kilograms, of each health-risk air pollutant from:
 - (a) all facilities causing major emissions approved under this by-law; and,

- (b) all other facilities reporting under Part III.

PART VIII – OFFENCES

- 17. (1) Any person, being the owner or operator of a facility that is subject to this by-law, is guilty of an offence, if that person:
 - (a) fails to provide the Town with emission information in accordance with Section 4 of this by-law;
 - (b) fails to submit an application for approval for the facility required under Section 5 or 6 of this by-law;
 - (c) operates or permits the operation of the facility without an approval required under Section 5 or 6 of this by-law;
 - (d) operates or permits the operation of the facility other than in compliance with a condition of approval of a facility imposed under Section 12 or 13 of this by-law;
 - (e) fails to provide a report under Section 15 of this by-law; or
 - (f) provides false information to the Town under any provision of this by-law.
- (2) Any person guilty of an offence is liable upon conviction to a fine of up to \$100,000 for a first offence, and \$10,000 a day for each day or part of a day that the offence continues for any subsequent offence.

PART IX – TOWN GUIDANCE

- 18. (1) The Town may issue guidance documents to assist with the implementation and administration of this by-law.
- (2) Areas of guidance may include, but are not limited to:
 - (a) information to be submitted under PART III and use of equivalent reporting regimes;
 - (b) exemption from PART III and examples of emissions of a negligible quantity of any health-risk air pollutant; and,
 - (c) information to be submitted under PART IV, including protocols for assessment, mapping, modeling, evaluation, and appraisal.

PART X - TRANSITIONAL MATTERS

- 19. (1) Subject to subsection (2), this by-law shall apply immediately on its passage by Council.
- (2) Despite any other provision of this by-law:
 - (a) For any person owning or operating a facility subject to section 4 of this by-law:

- (i) the Town will suspend the operation of this section for the first six months following the passage of this by-law;
 - (ii) after six months from the passage of this by-law, the operation of this section shall remain suspended, except for those persons who have a certificate of approval for air emissions under section 9 of the Environmental Protection Act;
 - (iii) the suspension set out in paragraph (a)(ii) shall be lifted after one year from the passage of this by-law, or after such further time as Council may determine.
- (b) For any person owning or operating a facility subject to section 6 of this by-law:
- (i) the Town will suspend the operation of this section for the first year following the passage of this by-law;
 - (ii) after one year from the passage of this by-law, the operation of this section shall remain suspended, except for those persons who have a certificate of approval for air emissions under section 9 of the Environmental Protection Act;
 - (iii) the suspension set out in paragraph (b)(ii) shall be lifted after two years from the passage of this by-law, or after such further time as Council may determine.

PART XI – SEVERABILITY

20. If any section of this by-law, or parts thereof, are found by any court of law to be illegal or beyond the power of Council to enact, such section, sections, part or parts shall be deemed to be severable, and all other sections or parts shall be deemed to be separate and independent therefrom and to be enacted as such.

PASSED this 1st day of February, 2010.

MAYOR

CLERK

3.2 By-law Number 2010-118

THE CORPORATION OF THE TOWN OF OAKVILLE

BY-LAW NUMBER 2010-118

A by-law to amend By-law 2010-035, a by-law to assess and control the health effects of major emissions of fine particulate matter in the Town of Oakville

COUNCIL ENACTS AS FOLLOWS:

1. By-law 2010-035 is amended by deleting clause (i) of the definition of “facility” and replacing it with the following:

“(i) a residential site that contains less than 25 dwelling units; or,”

2. By-law 2010-035 is further amended by deleting clause 19(2)(a)(ii) and replacing it with the following:

“(ii) after six months from the passage of this by-law, the operation of this section shall remain suspended, except for those persons who have a certificate of approval for air emissions under s. 9 of the Environment Protection Act, and for such persons, the information required by s. 4 shall be submitted to the Town not later than the lifting of the suspension of s. 4 pursuant to s. 19(2)(a)(iii);”

PASSED this 1st day of June, 2010

MAYOR

CLERK

3.3 By-law Number 2010-187

THE CORPORATION OF THE TOWN OF OAKVILLE

BY-LAW NUMBER 2010-187

A by-law to amend By-law 2010-035, a by-law to assess and control the health effects of major emissions of fine particulate matter in the Town of Oakville

COUNCIL ENACTS AS FOLLOWS:

1. By-law 2010-035 is amended by deleting subsection 19(2) in its entirety and replacing it with the following:

“(2) Despite any other provision of this by-law:

- (a) for any person owning or operating a facility subject to section 4 of this by-law:
 - (i) the Town will suspend the operation of section 4 until May 1, 2011;
 - (ii) the operation of section 4 shall remain suspended after May 1, 2011, except for those persons who have a certificate of approval for air emissions under section 9 of the Environment Protection Act; and,
 - (iii) the suspension of the operation of section 4 as set out in paragraph (a)(ii) above shall be lifted on September 1, 2012.
- (b) for any person owning or operating a facility subject to section 6 of this by-law, the Town will suspend the operation of section 6 until September 1, 2012.”

2. Section 2 of By-law 2010-118 is hereby repealed.

PASSED this 20th day of December, 2010

MAYOR

CLERK

3.4 Worked examples and case studies

One worked example is included below and more will be provided in later updates to this document.

A gas combustion source (boiler)

Two 8.3 MMBTU/hr boilers, burning natural gas using low NOx burners, are located at a facility (as defined). Only one boiler operates at any one time (the second is a backup) and a single boiler is operational for seven days/week, 24 h/day, 365 days/year. The “normal” operation of the boiler is 6.8 MMBTU, but this can vary over time. Demand can require full load operation (8.3 MMBTU/h) usually for up to 10 per cent of the time, but it can be higher. The operator has determined that operational data over the past three years is reflective of current operations. An older, now discarded boiler was used in prior years. The boilers operated as follows:

Year	Fuel consumption (10 ⁶ scf)	Average MMBTU/h
2009	61.1470	7.18
2008	52.9753	6.22
2007	63.9648	7.51
	Average =	6.97

(10⁶ scf = 1028 MMBTU)

Since there were no manufacturer-supplied boiler-specific emission factors, the operator used those published by the U.S. EPA, in the AP-42 document, and in the latest version of the FIRE database. The emission factors obtained from AP-42 (section 1.4) for natural gas boilers < 100 MMBTU/hr are shown below:

Health Risk Substances	Emission factor (lb/10 ⁶ scf)	Emission factor (kg/10 ⁶ m ³)
Particulate matter (PM)	7.6	121.6
Particulate matter (PM _{2.5})	Same as PM	
Oxides of nitrogen (NOx)	50	800
Sulphur dioxide (SO ₂)	0.6	9.6
Volatile organic compounds (VOCs)	5.5	99

Daily and annual maximum:

8.3 MMBTU/h (based on operating capacity – 1 boiler)

Maximum annual fuel use: 70.7276 million scf

$$8.3 \frac{\text{MMBTU}}{\text{hour}} \cdot \frac{1}{1028 \text{ MMBTU}} \cdot 10^6 \text{ scf} \cdot 8760 \frac{\text{hour}}{\text{year}}$$

Maximum daily fuel use: 0.193774 million scf (8.3/1028 x 24 hrs/day)

Daily and annual average:

6.97 MMBTU/hr (based on average over the past three years, as determined by operator)

Average annual fuel use: 59.3942 million scf (6.97/1028 x 8760)

Average daily fuel use: 0.162724 million scf (6.97/1028 x 24)

Annual maximum (worst-case)

- PM_{2.5} 7.6 [lb/10⁶ scf] x 70.7276 [10⁶ scf] x 0.453592 [kg/lb] = 244 kg/year
- NO_x 50 [lb/10⁶ scf] x 70.7276 [10⁶ scf] x 0.453592 [kg/lb] = 1,604 kg/year
- SO₂ 0.6 [lb/10⁶ scf] x 70.7276 [10⁶ scf] x 0.453592 [kg/lb] = 19.2 kg/year
- VOCs 5.5 [lb/10⁶ scf] x 70.7276 [10⁶ scf] x 0.453592 [kg/lb] = 176 kg/year

[Note: the above indicate that emission reporting is required for all HRAP substances]

Daily maximum (worst-case)

- PM_{2.5} 7.6 [lb/10⁶ scf] x 0.193774 [10⁶ scf] x 0.453592 [kg/lb] = 0.668 kg/day
- NO_x 50 [lb/10⁶ scf] x 0.193774 [10⁶ scf] x 0.453592 [kg/lb] = 4.39 kg/day
- SO₂ 0.6 [lb/10⁶ scf] x 0.193774 [10⁶ scf] x 0.453592 [kg/lb] = 0.0527 kg/day
- VOCs 5.5 [lb/10⁶ scf] x 0.193774 [10⁶ scf] x 0.453592 [kg/lb] = 0.483 kg/day

Annual average

- PM_{2.5} 7.6 [lb/10⁶ scf] x 59.3942 [10⁶ scf] x 0.453592 [kg/lb] = 205 kg/year
- NO_x 50 [lb/10⁶ scf] x 59.3942 [10⁶ scf] x 0.453592 [kg/lb] = 1,346 kg/year
- SO₂ 0.6 [lb/10⁶ scf] x 59.3942 [10⁶ scf] x 0.453592 [kg/lb] = 16.2 kg/year
- VOCs 5.5 [lb/10⁶ scf] x 59.3942 [10⁶ scf] x 0.453592 [kg/lb] = 148 kg/year

Daily average

- PM_{2.5} 7.6 [lb/10⁶ scf] x 0.162724 [10⁶ scf] x 0.453592 [kg/lb] = 0.561 kg/day
- NO_x 50 [lb/10⁶ scf] x 0.162724 [10⁶ scf] x 0.453592 [kg/lb] = 3.69 kg/day
- SO₂ 0.6 [lb/10⁶ scf] x 0.162724 [10⁶ scf] x 0.453592 [kg/lb] = 0.0443 kg/day
- VOCs 5.5 [lb/10⁶ scf] x 0.162724 [10⁶ scf] x 0.453592 [kg/lb] = 0.406 kg/day

3.5 Comparison between Town of Oakville section 4 reporting and annual emissions reporting under the Federal National Pollutant Inventory Scheme

Town of Oakville s.4 reporting	NPRI reporting
<p>Who needs to report</p> <p>Facilities that emit greater than negligible amounts of health-risk air pollutants.</p> <p>Emissions generated during maintenance testing of emergency generators are exempt.</p>	<p>Who needs to report</p> <p>All owner/operators (apart from those specifically exempted) that exceed the 20, 000 hour employee threshold</p>
<p>Substances of interest</p> <p>Health-risk air pollutants (PM_{2.5}, NO_x, SO₂, NH₃ and VOCs)</p>	<p>Substances of interest</p> <p>Part 1–5 substances (>300 substances)</p>
<p>Reporting thresholds</p> <p>PM_{2.5} = 1 kg/year emission threshold</p> <p>NO_x, SO₂, NH₃ and VOCs = 10 kg/year emission thresholds</p>	<p>Reporting thresholds</p> <p>Part 1–2 substances = usage thresholds (various)</p> <p>Part 3 substances = by defined facility (no usage or emission threshold)</p> <p>Part 4–5 substances = emission thresholds (various)</p>
<p>Reporting frequency</p> <p>One-time reporting of daily and annual average and worst-case emissions. Updates required if changes alter daily and annual average and worst-case emissions.</p>	<p>Reporting frequency</p> <p>Annual reporting on June 1 of emissions during previous calendar year.</p>
<p>Data to be submitted</p> <ul style="list-style-type: none"> - Facility information - Emission values (as specified) - Supporting calculations 	<p>Data to be submitted</p> <ul style="list-style-type: none"> - Facility Information - Emission values (as specified)

Town of Oakville s.4 reporting	NPRI reporting
- Relevant process descriptions	
<p>Road dust emissions</p> <p>PM_{2.5} releases from road dust caused by vehicular traffic on unpaved roads within facility boundaries, when travel on these roads exceeds 10, 000 vehicle kilometers traveled (VKT) per year.</p>	<p>Road dust emissions</p> <p>TPM, PM₁₀ and PM_{2.5} releases from road dust caused by vehicular traffic on unpaved roads within facility boundaries, when travel on these roads exceeds 10, 000 vehicle kilometers traveled (VKT) per year.</p>
<p>Reporting fees</p> <p>None</p>	<p>Reporting fees</p> <p>None</p>

3.6 Frequently asked questions & answers

What are health-risk air pollutants?

Health-risk air pollutants are fine PM and its precursor pollutants (sulphur dioxide, nitrogen oxides, ammonia and volatile organic compounds).

What are precursor pollutants?

Precursor pollutants for fine PM are those pollutants whose reactions in the atmosphere lead to the formation of additional fine PM. For example, sulphur and nitrogen oxides and volatile organic compounds will undergo reactions involving water and sunlight to form additional particles (or aerosols) that contain nitrates, sulphates and other organic compounds that are particles (termed “secondary organic aerosols”).

Which facilities qualify as “major emitters”?

Facilities that have a "major emission" because they release into the air any one or more than one of the following:

- More than 300 kilograms per year of directly emitted fine PM
- More than 10, 000 kilograms per year of volatile organic compounds
- More than 20, 000 kilograms per year of nitrogen oxides (as NO₂ equivalent)
- More than 20, 000 kilograms per year of sulphur dioxide
- More than 10, 000 kilograms per year of ammonia

Which existing facilities will be required to report emissions?

All existing facilities that emit health-risk air pollutants in non-negligible quantities are required to report. Facilities that have or require a Certificate of Approval (CofA) from the Ministry of the Environment (MOE) are required to report between August 1, 2010 and February 1, 2011.

Facilities that do not hold a CofA must report by February 1, 2011.

Major emitters that have gained approval from the town must provide additional reports annually for three years after gaining approval.

How often will facilities be required to report?

Under section 4 of the HPAQB facilities are required to report only once, unless changes have occurred that would alter emissions ([section 4\(b\)](#)). Facilities that qualify as “major emitters” and that have sought and obtained approval from the town are required to report annually for three years ([section 15](#)).

Why are the major emitter threshold levels proposed by Oakville so much higher than those outlined in the City of Toronto by-law? Why not match the City of Toronto by-Law to implement the reporting portion?

The major emitter thresholds in the HPAQB are the same as the NPRI reporting thresholds. Thresholds defining major emitters may be altered in the future as the town gathers and analyzes data collected as part of this by-law.

Is any consideration given to working with existing reporting mechanisms (i.e. NPRI) to avoid duplication of reporting?

The by-law allows utilization of some NPRI data (e.g., emission calculation methods) and calculations for CofA's relevant to health-risk air pollutants.

If the purpose of the HPAQB is to protect human health, why is vehicular traffic not addressed?

The HPAQB focuses on stationary sources of fine PM emissions that contribute to mortality and morbidity in Oakville. Industrial facilities are major stationary sources of emissions, but commercial, institutional and residential facilities are also sources and fall under the HPAQB. Mobile sources of health-risk and other air pollutants are regulated differently in Canadian law than stationary sources.

However, the town recognizes that mobile sources within its boundaries, including vehicular traffic, raise human health issues through their emissions of fine PM into the airshed. The town is implementing a variety of initiatives to assist in reducing emissions and health effects from these sources. For example, it is addressing vehicular sources by implementing master plans focused on promoting modes of transportation other than single occupancy vehicles. A number of town initiatives are set out in the town's 2008 and 2009 *Let's Go Green Together* and *State of the Environment Reports*, available on Oakville.ca.

Are only point-source emissions of fine PM to be assessed for section 4 emissions reporting?

No. All sources, stack emission sources and fugitive emissions as explained in the s.4 guidance document must be included.

What does the facility "size" definition refer to?

The size definition refers to the lot size.

What does the definition of "stationary" mean?

"Stationary" includes semi-permanent structures, equipment or other items and excludes vehicles (cars, trucks, etc.).

How does the town define the term "volatile?"

The term "volatile" is interpreted as a substance whose vapour pressure exceeds 0.01 kPa at 25°C. This interpretation will allow certain reporters to exclude organic compounds with negligible volatility; however it is optional for reporters to exclude compounds based on the volatility definition.

3.7 List of substances (health-risk air pollutants)

Substance name	CAS No.*
Fine PM (particulate matter with diameter less than 2.5 µm)	**
Nitrogen oxides (expressed as NO ₂)	11104-93-1
Ammonia NH ₃	7664-41-7
Sulphur dioxide	7446-09-5
Volatile organic compounds [#]	**
Toluene	108-88-3
Xylene ⁺	1330-20-7

* The Chemical Abstracts Service (CAS) Registry number is the property of the American Chemical Society and any use or redistribution, except as required in supporting regulatory requirements and/or for reports to the government when the information and the reports are required by law or administrative policy, is not permitted without the prior, written permission of the American Chemical Society.

** No single CAS number applies to this substance.

[#] Note that individual VOCs are not required to be reported – only the total VOCs.

⁺ “all isomers” including, but not limited to, the individual isomers of xylene: m-xylene (CAS No. 108-38-3), o-xylene (CAS No. 95-47-6) and p-xylene (CAS No. 106-42-3).

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