metrovancouver

Guidance for Air Permit Applications

Greater Vancouver Regional District
Air Quality Management Bylaw No. 1082, 2008

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Getting Started – Frequently Asked Questions

1. Do I need to apply for an air quality authorization?

Before your industry, trade or business discharges air contaminants (gases, vapours and solid or liquid particles) to the environment, **you must obtain authorization from Metro Vancouver (MV). The discharge of air contaminants without authorization is subject to regulatory action, including fines up to $1,000,000 per day.**

The Province of British Columbia has delegated this authority to Metro Vancouver under section 31 of the BC Environmental Management Act. Metro Vancouver regulates air emissions under GVRD Air Quality Management Bylaw No, 1082, 2008.

2. What processes need authorization?

Examples of operations that generate air contaminants include:

- Combustion of solid, liquid or gaseous fuels,
- Handling or processing of solid bulk materials (sand, gravel, cement, coal, ore, sulphur, grain, sawdust, wood pellets, coal, etc.),
- Handling or processing of vaporous material (petroleum products, asphalt, tar, paints, inks, solvents, etc.),
- Food and animal food processing involving heating,
- Odorous animal and vegetable waste material handling and processing,
- Metal finishing, saw milling, wood product manufacturing, sand-blasting, painting, printing, plastics manufacturing, and
- Any other process that generates potentially harmful gases, vapours, solid particles or liquid particles that discharge into the air.

Use this package to guide you through the permitting, approval, or amendment process.

Metro Vancouver typically issues a permit when a business is expected to be a going concern, or we can issue an approval for short term needs, up to a maximum of 15 months.

If your facility only has one source of emissions, contact us for a simplified single source application.

3. Are there any exemptions?

You might not need a permit or approval if an emission regulation might authorize your facility's air contaminant discharge. Facilities authorized by an emission regulation bylaw must still register with Metro Vancouver.

Metro Vancouver has emission regulation bylaws for:

(1) Agricultural boilers
(2) Automotive refinishing facilities
(3) Boilers and process heaters where facility capacity is less than 50MW
(4) Concrete and concrete products facilities
(5) Gasoline distribution, including bulk terminals, bulk plants, fuel transfer vehicles and service stations

(6) Non-road diesel engines

Contact us or visit http://www.metrovancouver.org/services/Permits-regulations-enforcement/air-quality/register/Pages/default.aspx for copies of all Metro Vancouver Regional District (MVRD) emission regulation bylaws.

Other examples of exemptions include:

- Natural gas or propane-fired boilers or furnaces with an input less than 0.1 MW (≈340,000 BTU/h) used solely for comfort heating,
- Soil or grit discharged in the course of agriculture or horticulture, and
- Steam or internal combustion engines in compliance with BC's Motor Vehicle Act.

Please refer to section 7 of GVRD Air Quality Management Bylaw No, 1082, 2008 for the complete list of exemptions.

4. What is the process for applying for authorization?

The diagram on page 11 shows the steps to authorization.

In general, the process is as follows:

- Applicant contacts MV to see if a permit or approval is required or if a regulation might authorize their emissions;
- Applicant submits a preliminary application;
- Metro Vancouver staff review the application for administrative and technical completeness, consider the need for dispersion modelling, and provide comments;
- Metro Vancouver invoices application fees based on requested emissions;
- Applicant submits a final signed application that addresses MV staff comments and pays application fees;
- Applicant notifies potentially concerned persons according to legal public notification requirements;
- Metro Vancouver notifies relevant municipalities, health authorities and other potentially concerned persons (including complainants) or agencies;
- Metro Vancouver receives comments and forwards these to the applicant for response;
- Metro Vancouver staff consider comments, responses and policy (best available control technology, continuous improvement, etc.) to develop a draft permit or approval, and forward a draft permit to Applicant for comment/response/consultation;
- Metro Vancouver staff make a recommendation to the District Director but cannot fetter any decision;
- Metro Vancouver's District Director makes the permit or approval decision and can impose additional requirements believed to be advisable for the protection of the environment; and
- Metro Vancouver notifies the applicant, concerned persons and agencies of the permit decision and Appeal rights, and posts the issued permit or approval to the MV website.

This process can take anywhere from several months to a year or more, depending on the complexity of the application, the quality of information provided by the applicant, and the public notification process.

5. What is public notification and do I have to go through that process?

Bylaw 1082 and the BC Public Notification Regulation (BCPNR, B.C. Reg. 202/94) require that all applications for new permits and significant amendments undergo public notification so that concerned persons have an opportunity to comment on applications that might impact them.

The District Director also has the discretion to require public notification for applications for minor amendments or approvals.

Public notification generally consists of the applicant:

(1) posting an Environmental Protection Notice, based on the Notice of Application (see the "MVAQ-E" forms in the application package), at the facility, and

(2) publishing an Environmental Protection Notice in local newspapers and the BC Gazette.

Metro Vancouver posts the Environmental Protection Notice on the MV website, and notifies relevant municipalities, health authority, the federal government and anyone who has filed a complaint about an existing facility in the recent past.

The District Director may direct an applicant to hold a public meeting to explain their application, or provide additional notification.

6. What is the difference between a minor amendment and a significant amendment?

Refer to the BC Public Notification Regulation (BCPNR, B.C. Reg. 202/94), which legally defines "minor amendments" and "significant amendments", to understand the difference.

7. Will Metro Vancouver disclose any confidential business information provided with the application?

The information in the application and any documents provided with it are collected under the authority of the BC Freedom of Information and Protection of Privacy Act (FOIPPA). Business confidential information which meets the three requirements under section 21(1) of FOIPPA may be protected.

Please ensure that you clearly identify business information which you consider confidential and which meets the conditions of section 21(1) of FOIPPA below, and provide rationale for the determination.

Disclosure harmful to business interests of a third party

21 *(1) The head of a public body must refuse to disclose to an applicant information*

(a) that would reveal

(i) trade secrets of a third party, or

(ii) commercial, financial, labour relations, scientific or technical information of or about a third party,

(b) that is supplied, implicitly or explicitly, in confidence, ***and***

(c) the disclosure of which could reasonably be expected to

(i) harm significantly the competitive position or interfere significantly with the negotiating position of the third party,

> *(ii) result in similar information no longer being supplied to the public body when it is in the public interest that similar information continue to be supplied,*
> *(iii) result in undue financial loss or gain to any person or organization, or*
> *(iv) reveal information supplied to, or the report of, an arbitrator, mediator, labour relations officer or other person or body appointed to resolve or inquire into a labour relations dispute.*

If you have any questions about the collection or use of this information, please contact us.

8. How long will it take MV to process my application?

Since you must have authorization prior to discharge, submit your application at least one year in advance to allow for review, consultation and public notification. The same holds whether the application is for a new permit, approval or significant amendment. Keep this in mind when making any changes to your existing facility that will result in changes to the authorized emissions.

Staff review applications on a first-come, first-served basis. ***Incomplete or inaccurate applications, or delays in responding to Metro Vancouver requests for information, will slow down the process.***

If an applicant fails to respond to comments in a timely manner, we may consider the application withdrawn. **The discharge of air contaminants without authorization is subject to regulatory action.**

9. What if I already have a permit and it has an expiry date?

Although some older Metro Vancouver permits do not currently have an expiry date, more recent permits have term limits and since 2015, we issue most new or amended permits with expiry dates. Limited term permits are common in most other jurisdictions.

A typical term limit is 10 years although it can vary from less than 5 to up to 20 years, and is considered on a case-by-case basis. Factors taken into account include: the quantity and types of air contaminants discharged, the sensitivity of the receiving environment, the relative capital cost of emission control equipment, confidence in the ability of a facility to minimize impacts, and the state of technology used in the industry.

If your permit has an expiry date, contact us well in advance (at least a year) of that date to avoid a lapse in authorization. You will need to apply for a new permit and you must go through the public notification process. In most cases, an application to extend a permit expiry date is considered a significant amendment and triggers the public notification process.

10. Do I have to pay any fees for an authorization?

In addition to application fees, Metro Vancouver charges authorized facilities annual administrative and emission fees to cover the costs of the monitoring and regulatory programs and to provide an incentive for reducing emissions. We determine fees according to Air Quality Management Fees Regulation Bylaw No. 1083 (the "Fee Bylaw").

Application fees are based on **requested** discharges (in tonnes per year), while annual emission fees are based on **authorized** (not actual) discharges (in tonnes per year). Emission fees are proportional to the potential impact associated with the discharge, with higher per unit fees for the more hazardous air contaminants. Refer to Table 1 in the Fee Bylaw for more information.

11. What if I don't agree with a decision of the District Director?

Any decision made by the District Director, including issuance of a permit or a requirement or condition in a permit or approval, can be appealed as described in Part 8 of the BC Environmental Management Act. The right to appeal extends not only to the applicant, but also to any person aggrieved by that decision, including a concerned person.

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METRO VANCOUVER'S AIR QUALITY AUTHORIZATION PROCESS

STEP 1

Contact MV regarding requirements

Before submitting a preliminary application, contact Metro Vancouver to find out if you need an air emissions permit or approval. For example, some facilities may be authorized by regulation instead. We may ask you to submit a preliminary application if we don't have enough information, even if we later decide you don't need a permit or approval.

STEP 2

Submit preliminary application

Complete and submit a preliminary application using the "Guidance for Air Permit Applications" document and forms available on the Metro Vancouver website. Use the completeness checklist in this document to ensure you're submitting a complete application.

STEP 3

Completeness Review

Metro Vancouver staff will review the preliminary application for completeness to ensure you've provided all administrative information and that you've identified all air contaminants based on current industry knowledge. MV staff will consider the need for dispersion modelling. MV staff will provide you with comments. This step may require several iterations.

STEP 4

Submit final application

Once MV staff are satisfied that the application is complete, submit a final, signed and dated application, (including the signed declaration), along with invoiced application fees.

We charge application fees based on the requested annual emission quantity limits in your final application.

STEP 5

Public Notification and response to comments

Where required, the applicant will notify neighbours and publish an Environmental Protection Notice in local newspapers. We advise applicants to respond to all comments as these responses will be taken into account in making

MV will notify the local municipality, other government agencies (Environment Canada, local Health Authorities), and known concerned persons. MV will also publish notice in the BC Gazette and post notification on the MV website. In some cases, the District Director may require a public meeting.

STEP 6

Preparation and review of draft authorization

MV staff will review the technical merits of the application (including impact on receiving environment and whether best available control technology is proposed) and the comments and responses received. Based on this information, MV staff will prepare a draft authorization for review with the applicant. Staff may request additional information or studies. This step may require several iterations.

STEP 7

Recommendation and final decision

MV staff will make final adjustments to the draft authorization and prepare a recommendation for the District Director who makes the final decision regarding authorization, taking all submitted information into account. **The District Director may impose additional requirements protective of the environment**.

We post all issued authorizations to the MV website.

Applicant led activity

MV led activity

Applicant and MV

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General Instructions for Submitting an Application

1) You can use the same process for a new permit, new approval, or amendment.

2) Application packages must contain the following:

		Preliminary Application	Final Application
i.	Completed standard forms, available at http://www.metrovancouver.org/services/Permits-regulations-enforcement/air-quality/apply-permit/Pages/default.aspx	✓	✓
ii.	Corporate registry search	✓	✓
iii.	Land title documentation, if required	✓	✓
iv.	Process description & schematic flow diagram	✓	✓
v.	Site plan	✓	✓
vi.	Supplemental technical information as outlined in this Guidance document	✓	✓
vii.	Application fees		✓
viii.	A declaration signed by an officer of the company		✓

Use the checklist at the back of this guidance document to assess completeness.

3) ***IMPORTANT - PRELIMINARY APPLICATION PACKAGES***

a) Do not enclose a cheque with your preliminary submission. Metro Vancouver will issue an invoice for fees payable when staff deem the application accurate and complete.

b) Do not publish your application until you receive instruction from Metro Vancouver. Metro Vancouver will provide you with an Environmental Protection Notice based on your final application.

c) Do not sign the Declaration (Form MVAQ-F1) until you are submitting your final application.

d) Do not conduct air dispersion modelling unless we have approved your Metro Vancouver Dispersion Modelling Plan.

4) You can apply for administrative amendments, which don't require any technical review, by letter. For changes in company name or ownership, submit a permit

Transfer Request Form, with the appropriate legal documents (search for "permit transfer" at metrovancouver.org).

5) **Consider using a qualified professional**[1] to help prepare the technical portions of your application. This may help reduce the number of times we have to ask for information before we deem your application complete, and therefore the time it takes for a decision.

6) If you can't provide requested information, indicate why. Indicate 'n/a' if a section does not apply. Incomplete applications will result in delays. **The more accurate and complete the information in your preliminary application, the more likely it will be expedited**.

7) Electronic (**PDF or JPEG format only)** or paper versions of forms and most documents are acceptable. Submit all calculations as Microsoft Excel or compatible files to help expedite review.

8) Report **numerical values to three or fewer significant figures** and a maximum of two decimal places unless greater accuracy is warranted.

9) Report **dates in the format YYYY-MMM-DD** (e.g., 2020-Jun-30) to reduce confusion.

10) We issue authorizations using the SI system. **Convert US (or other) units to metric units.**

11) **Send the completed application package, preferably in electronic format, to:**

Metro Vancouver
Parks and Environment Department
Environmental Regulation and Enforcement Division
4515 Central Boulevard, Burnaby, BC, V5H 0C6
Telephone: (604) 432-6200 Facsimile: (604) 436-6707
Email: regulationenforcement@metrovancouver.org

[1] A **qualified professional is** an individual who is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, who, through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function, and who is prepared to submit a signed QP Declaration of Competency and a Conflict of Interest Disclosure with the application.

SECTION A: BUSINESS INFORMATION & PURPOSE OF APPLICATION

Use Form MVAQ-A1 whether applying for a permit, approval or amendment. If you are completing the forms by hand, please print clearly. **All fields marked with an asterisk** (*) **are mandatory**. Attach all relevant legal documents as requested.

A1. Applicant Information

Provide the name of company seeking authorization, NOT the Agent.

*Company Legal Name	Provide the corporate legal name as registered with the BC Registrar of Companies.
Company DBA Name	Provide the company/facility Doing-Business-As (DBA) name if different from above
*Incorporation Number	Provide the incorporation number as registered with the BC Registrar of Companies.
*Legal Address	Provide the corporate legal address as registered with the BC Registrar of Companies.
Mailing Address	Provide a mailing address if it is different from above. We will send letter correspondence about the facility to this address.
Billing Address	Provide a billing address if it is different from above. We will send invoices for the facility to this address.
Contact Numbers	At minimum, provide a corporate phone number, if applicable. Provide facility contact numbers in section A7 below.
*Email Address	Provide a corporate email address e.g., info@companyABC.ca
*Results of Corporate Registry Search attached?	You must attach the results of a Corporate Registry Search to show registration with the BC Registrar of Companies. You must conduct the search in the 30 days prior to submitting the preliminary application. Obtain a Corporate Registry Search: a) From BC Online (http://www.bconline.gov.bc.ca/), b) From Small Business BC at http://www.smallbusinessbc.ca/, or c) By using the services of companies listed in the yellow pages under "Title Service".

A2. Purpose of Application

*Purpose	Clearly and concisely indicate the purpose of the application. For example: "to authorize the discharge of air contaminants from an anaerobic digester processing 20,000 tonnes per year of organic waste" "to amend existing permit GVA-9999 to include TVOC emissions from a new tank farm and reduce particulate matter emissions due to the installation of a new kiln baghouse to replace an ESP" "to authorize the discharge of air contaminants from an existing sawmill operation after air permit GVA-9999 expires on December 31, 2020" Transfer this description to the "Purpose" section of the Notice of Application.
Website for project information:	If available, provide a link to a website with additional information about the project/application. Project webpages are particularly helpful during the public notification process so that you can explain what you are doing and how you are mitigating impacts on the surrounding community. If dispersion modelling is completed in support of your application, we recommend that you make the results available on your website.
*Authorization requested by date *(YYYY-MMM-DD)*	Provide the (approximate) date when you require authorization. You should submit your application for a new permit, approval or significant amendment at least a year prior to this date. **GVRD Bylaw 1082 prohibits the discharge of air contaminants prior to authorization.**
*Authorization requested term (in years)	Indicate the requested term for the permit in years. A typical term is 10 years although terms can range from less than 5 years up to 20 years and will be considered on a case-by-case basis. Some of the factors we take into account include: the quantity and types of air contaminants discharged, the sensitivity of the receiving environment, the relative capital cost of emission control equipment, confidence in the ability of a facility to minimize impacts, and the state of technology used in the industry.
*Rationale for requested term	Provide rationale (in a separate document if necessary) for the requested term (e.g., substantial capital upgrades, addition of minor source, remote location with no sensitive receptors, no ambient impacts based on dispersion modelling).

A3. Authorization Type

*Authorization Type	Identify the type of authorization you want We issue **permits** when a business is assumed to be a going concern. For short term needs we issue **approvals**, which have a maximum term of 15 months, including amendments. Submit an **amendment** application for: a) administrative items which don't require technical review, such as changes in company name or ownership, can be done by letter or, for example, by Transfer Request Form, or b) any changes to emission sources whether these are: i. Changes in the **quantity** (e.g., hours of operation, raw material inputs, flows) or **quality** of emissions (e.g., concentrations, specific air contaminants), ii. Physical changes in emission sources (e.g., change in stack height or orientation, reconfiguration of sources), or iii. Physical changes in emission control works or procedures, or changes in monitoring requirements (e.g., addition, replacement or removal of emission control equipment, frequency of testing) We recommend you refer to the BC Public Notification Regulation for the definitions of minor and significant amendments.
Existing Permit or Approval number and expiry date (if applicable)	Provide the existing permit or approval number and its expiry date. New permits are issued with new permit numbers.

A4. Authorized Agent Information

Do not complete this section unless an authorized agent will be responsible for this application.

An agent of the applicant may file an application, and unless the District Director specifies otherwise, an obligation imposed by the Bylaw on an applicant may be carried out by an Agent.

Agent's First Name, Last Name, and Title	An Agent is a person who is not an employee of the Applicant.
Agent's Company Name	If applicable, provide the Agent's Company Legal Name as registered with the BC Registrar of Companies
Agent DBA Company Name	Provide the Agent Company's Doing-Business-As name if different from above
Address	Provide the Agent's mailing address
Contact Numbers	At minimum provide a contact number at which the Agent can be reached during business hours.

Agent's Email Address	Provide the Agent's email address

A5. Applicant's Authorization for Agent

Do not complete this section unless an authorized agent will be responsible for this application.

Applicant's Authorization for Agent	Enter the name of the Agent, not the Agent's Company.
Applicant's Name	Provide the name of the officer of the company who is authorizing the Agent.
Applicant's Title	Provide the title of the officer of the company who is authorizing the Agent.
Signature of Applicant and Date signed (YYYY-MMM-DD)	Only an officer of the company can authorize an Agent, not the Agent or Representative of the company.

A6. Technical Contact for this Application

*Contact's First Name, Last Name, and Title	Identify the main technical contact (not the Agent) for this application. This person should be authorized and able to answer any technical questions including those about the process, emission calculations, and references, etc.
*Contact's Company Name	Technical Contact's company name if different from Applicant
*Contact numbers	At minimum provide a contact number at which the Technical Contact can be reached during business hours.
*Email Address	Provide the Technical Contact's email address
QP Declaration of Competency and Conflict of Interest Disclosure	We recommend that applicants use Qualified Professionals to assist with the technical portions of the application. A **qualified professional is** an individual who is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function. More guidance on QP declarations is available later in this document. Attach signed Qualified Professional Declarations of Competency and Conflict of Interest Disclosures where applicable.

A7. Facility Location and Information

*Facility type and description	Describe the primary business activity at the facility. For example: "a portland cement manufacturing plant" "a sawmill and planer mill" "a flexible packaging manufacturing plant" This description will appear on the cover page of the authorization.
*NAICS Code and description	Identify the primary six-digit NAICS (North American Industry Classification System) code for the facility. You can find NAICS codes online at Statistics Canada NAICS search. For example: 327310, Cement Manufacturing 321111, Sawmills (except shake and shingle mills) 322221, Coated and Laminated Packaging Paper and Plastics Film
*Facility Latitude N *Facility Longitude W	Note the facility latitude and longitude, preferably at the primary emission point. You can use the right click function ("what's here?") in Google maps or Bing maps to obtain this information.
*Legal Land Description (Lot/Block/Plan) OR PID/PIN/Crown File No.	Provide the legal land description or PID/PIN/Crown File No for the property. This information is available on property assessment documents, property tax notices, and most municipal GIS systems (e.g., VanMap, City of Surrey COSMOS, Richmond Interactive Map, DeltaMap, NVD Geoweb, BurnabyMap).
*Facility Address	Provide the civic address of the facility, e.g., 4321 Kingsway, Burnaby BC, V5J 4G8
*Facility Operator/Site Contact First Name, Last Name and Title	Provide the name of a facility operator or Site Contact. For example, if the technical contact is a consultant or corporate support, identify an on-site contact who can answer questions about the application.
*Facility Operator/Site Contact Numbers	At minimum, provide a phone number where the Site Contact can be reached during business hours.
*Facility Operator/Site Contact Email Address	Provide an email address for the Site Contact.

A8. How near are sensitive receptors?

Attach a Google or Bing map showing the location of sensitive receptors.

*Nearest business/residence	Provide the name and address of the nearest business, or the address of the nearest residence, and its distance from the legal facility property line. You can use the right click function ("measure distance") in Google maps or Bing maps to obtain this information.

*Nearest sensitive receptor	Provide the name and address of the nearest sensitive receptor (e.g., school, hospital or care facility) and its distance from the legal facility property line.
*Nearest major road	Provide the name of the nearest major road and the its distance from the legal facility property line.

A9. Other Requirements

*Is the Applicant the Legal Land Owner?	The BC Public Notification Regulation under EMA details the requirements for notification to the owners of the property associated with the discharge - refer to PNR section 6(8).
If the Applicant is not the Legal Land Owner……	Indicate whether you have notified the legal land owner of the proposed discharge. Notification is not required at the preliminary application stage, but is required once the application is deemed final.
*Is land title documentation attached?	Attach Land Title documentation **ONLY IF** i. the application is for a first-time permit or approval, or ii. the application is for a permit or amendment where sales or acquisitions of property have taken place since land title documentation was last provided Land Title documentation must include: i. a copy of the property's State of Title Certificate obtained from the Land Title and Survey Authority of BC (LTSA) in the 30 days prior to submitting the preliminary application, and ii. a copy of the Legal Survey Plan with the subject property outlined in red. If Land Title documentation is not required, indicate why.
*Are the changes to your facility classified as a "prescribed reviewable project" pursuant to the Environmental Assessment Act Reviewable Projects Regulation?	Identify whether the British Columbia Environmental Assessment Act classifies this application as a prescribed reviewable project.

A10. Signature

The applicant or agent must sign and date the application once Metro Vancouver staff deem it complete.

SECTION B: PROCESS DESCRIPTION & SCHEMATIC FLOW DIAGRAM

Attach a narrative of the processes at your facility, including the raw materials used and products produced, emphasizing the processes that discharge air contaminants to atmosphere and their associated emission control systems. The description should reference an attached schematic flow diagram with clear links between the two documents.

Your process description should:

- Identify unit operations and processes
- Include raw material, product and residual (waste) flows, with associated quantities and units
- Identify each emission point (e.g., stack or vent) to the atmosphere and the associated emission control equipment
- Identify sources of fugitive emissions (e.g., building air vents, transfer points, open material stockpiles) and controls/partial controls (e.g., watering, enclosure, telescoping chute)

Your schematic flow diagram should:

- Be a **simple** line drawing (black and white only) – not a detailed process control diagram or P&ID
- Identify each plant process
- Identify each emission source (point or fugitive) to atmosphere using the number assigned to that emission source in Section D of this application, or the existing permit
- Identify each emission control system
- Be no smaller than 8.5 x 11 inches (22 x 28 cm) and no larger than 11 x 17 inches (28 x 43 cm)

Also provide:

- Material safety data sheets (SDS) for all raw materials and products that are relevant to potential air emissions (e.g., gases, liquids with volatile components, and solids that could result in dust)
- Separate schematic drawings and specifications for each piece of emission control equipment, identifying the associated numeric emission sources (refer to Section D)

IMPORTANT *Electronic copies must be in JPEG or PDF format only.*

SECTION C: SITE PLAN

Provide a simplified site plan. This plan must be legible in an 8.5 x 11 inch (22 x 28 cm) format as it will form Section 4 of the permit/approval. Issued permits are available on Metro Vancouver's air quality permitting webpage if you would like to view examples.

The site plan, at minimum, should include:

- Building outlines, property lines, North arrow
- Street names and geographical reference points (e.g., "Fraser River", "Granville Street") located adjacent to the property
- Location of each emission source clearly marked with the associated Emission Source number from your existing permit or Section D of this application
- A legend identifying each Emission Source (e.g,. "ES01 Dryer #1 WESP"), space permitting

The site plan should include the full extent of the property, which should take up the majority of the page.

Remove additional details in the site plan that are not relevant to the air permit application.

You can provide full detailed technical site diagrams and drawings as supplemental information to the application; however, we require a simplified site plan for Section 4 of the permit/approval.

IMPORTANT *Electronic copies must be in JPEG or PDF format only.*

SECTION D: TECHNICAL ASSESSMENT

Prior to granting authorization to discharge air contaminants from a facility, Metro Vancouver will assess those discharges to ensure that the controls in place are protective of the environment and will not cause pollution. We will consider factors including the size and siting of the facility (including how close it is to residences, schools, care facilities and other sensitive receptors), its impact on the environment, public complaints, and current industry standard control technologies, with an emphasis on best available control technology (BACT).

IMPORTANT

*Consider using a **qualified professional** to complete this section.*

A **qualified professional is** an individual who is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and who, through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

Figure 1 summarizes the information that will be used to assess your application.

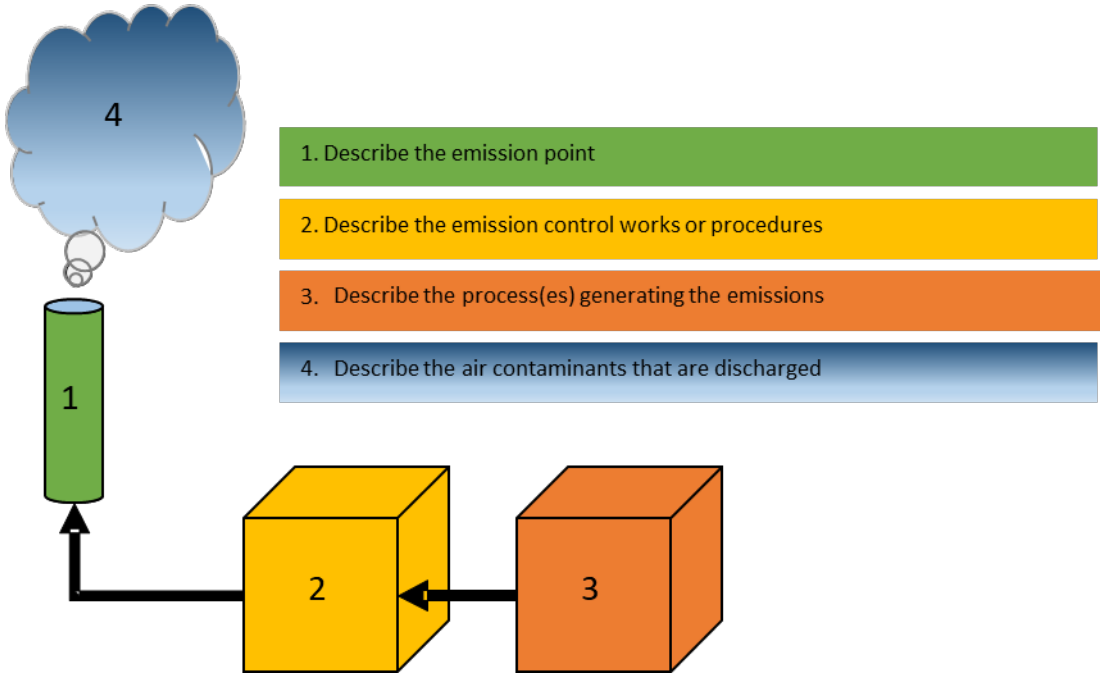


Figure 1: Emission Point Source Analysis

The guidance below will not apply to every emission source, but is provided so that you have considered all pertinent information. Since information gaps can result in processing delays, explain deviations thoroughly. **The better and more complete the information in your preliminary application, the more likely we are to expedite it**.

This guidance is not meant to be exhaustive so please provide any other information that is relevant and helpful to the decision making process.

SECTION D1: EMISSION SOURCE SUMMARY

Complete this section AFTER you have assessed all individual emission sources.

Provide a summary of the requested annual emission quantity limits, in tonnes per year (t/y), for **ALL** emission sources (point or fugitive) using Form MVAQ-D1 (or a reasonable facsimile). We will use this table to ensure we authorize all emission sources and remove any obsolete emission sources from an existing permit or approval.

- For each new, existing or modified emission source, provide annual emission quantities of primary air contaminants you are requesting to be authorized. If your facility does not emit NO_x, SO_2, VOC or TPM, replace the column headings with the appropriate contaminant names. Add columns for additional air contaminants.
- Sum the facility total emission quantities for each contaminant at the bottom of the table.
- For each ***new or modified*** emission source, also attach a completed MVAQ-D2 for point sources (e.g., stacks) or MVAQ-D3 for fugitive sources (e.g., stockpiles, transfer points, ship loading). Attach additional information as requested.

Authorized emission quantity limits are the *not to be exceeded* amounts. Facilities should operate with actual emissions lower than what is authorized to remain in compliance with their permit. Authorized and actual emissions can vary, depending on the variability of the emissions and the site's risk tolerance. Annual emission fees are based on authorized, not actual emission quantities.

Existing permits and approvals – MVAQ-D1a Emission Source Comparison

If you have an existing permit or approval, also provide the following comparison:

- Using form MVAQ-D1a (or a reasonable facsimile), for each existing emission source (including decommissioned sources), provide a comparison between the current and requested emission quantity limits, including reasons for any changes.
- At the bottom of form MVAQ-D1, provide the facility's total currently authorized emission quantity limit for each contaminant. We recommend that you contact us to confirm current emission quantity limits, especially for combustion sources.
- Transfer both the requested and the currently authorized facility total emission quantity limits from MVAQ-D1 to the Notice of Application (MVAQ-E2 or –E3).

Suggestions for defining an emission source

A **point source** is generally *a point of discharge to the atmosphere*, such as a stack or vent that has measureable flow rate and air contaminant concentrations.

- Generally, a point of discharge to the environment, such as a stack, is a single emission source.
- However, multiple processes or flows that discharge through a single discharge point should be grouped under that emission source (e.g., several boilers discharging through one stack or multiple transfer points discharging through one baghouse).

- Where a single process or piece of equipment discharges through multiple identical exits to atmosphere (e.g., same flow rate, concentration, exit temperature, stack height, stack diameter), group the discharges as one emission source (e.g., a longitudinal dryer discharging through several roof vents). The exception is back-up or bypass sources, which must be authorized separately.
- If you are unsure whether to group sources, contact us to discuss how to best present the information.

A fugitive source, such as a material stockpile, an uncovered conveyor, or a wastewater treatment pond, may be uncontrolled or partially controlled (e.g., watering, partial enclosure, wind fence, telescoping chute) and typically does not have measureable flow rate and air contaminant concentrations. Fugitive emissions are often estimated based on emission factors.

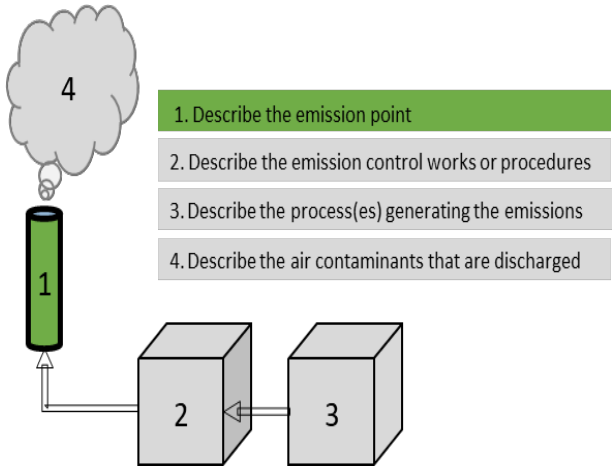
- While it may not be common practice to measure flow rate and air contaminant concentrations from fugitive sources, it is not impossible, since measurement techniques evolve. Always consider obtaining the best possible information.
- If a volume or area source has an associated emission control device, such as a baghouse or cyclone, describe it as a point source using form MVAQ-D2.
- For the purpose of the application, treat area sources that have measureable flow rates and air contaminant concentrations, such as biofilters, as point sources (i.e., use form MVAQ-D2).

SECTION D2: EMISSION INFORMATION FOR POINT SOURCES

Provide a completed copy of MVAQ-D2 for each new or modified point source of emissions (complete MVAQ-D3 for fugitive sources). If requested information is not available, indicate why. Indicate 'n/a' if a section does not apply. Incomplete applications may result in delays. **The better and more complete the information in your preliminary application, the more likely it is to be expedited**.

Attach additional pages and supporting documents as requested.

D2-1 Describe each new or modified point emission source to the atmosphere



EMISSION SOURCE IDENTIFICATION

***D2-1a EMISSION SOURCE (ES) NUMBER**	For new permits assign sequential, unique numbers (ES-01, ES-02, ES-03…) based on process flows For amendments, choose new, original numbers for new emission sources – do not reuse numbers even if you have decommissioned a previously authorized emission source
***D2-1b DESCRIPTION**	Provide a concise description of the process generating the emissions and the point emission source. This description will be included in the permit. For example: "ES-01: natural gas fired boiler discharging through stack" "ES-05: #3 to #4 conveyor transfer point discharging through a baghouse"
***D2-1c EMISSION POINT TYPE**	Is the emission point a stack, vent or transfer point? If you select "Other", explain under "D2-1i Comments". Is it new or modified? • Modified can include a physical change in control works, or changes in discharge contaminants, concentrations, temperatures, flows, hours of operation, etc.

	• Explain modifications under " D2-1i Comments" or provide a reference to a separate document.

EMISSION SOURCE CHARACTERISTICS

D2-1d Stack properties

We include stack properties under the "Works and Procedures" sections of permits.

*D2-1d Stack height (m from ground level)	Stack height (in metres) is measured from ground level. If you are referencing the noted height from the roof line, also provide the building height from ground level under "D2-1i Comments", or other references (i.e. elevations) so that the stack height above the terrain is obvious.
*D2-1d Stack inside diameter at stack top (m)	Stack inside diameter at stack top (in metres). For non-circular stacks, provide the effective diameter and exact dimensions under "D2-1i Comments" (e.g., rectangular stack 2m x 3m).
* D2-1d Stack Design (check all that apply)	Check or highlight all relevant stack design characteristics as noted. If a stack is non-circular, effective diameter = $2\sqrt{\frac{area}{\pi}}$ Identify other features (e.g., gooseneck) under "D2-1i Comments".

D2-1e Exhaust gas properties

We use exhaust gas properties to determine emission quantity limits (concentration limit x flow limit x time limit) and to give an indication of the dispersion characteristics of a plume. Higher velocity, hot plumes will tend to disperse better and farther than low velocity, cool plumes.

*D2-1e Minimum exhaust gas temp (°C) *D2-1e Normal exhaust gas temp (°C)	**Exhaust gas temperatures** are as measured or estimated. For continuous processes the minimum value may appear in your permit. Batch processes may be treated differently. If the temperature is estimated, provide a basis of estimate under "D2-1i Comments" or in a separate document. For discharges of room air, provide the average temperature of room air if it's controlled, or state "ambient" if uncontrolled. Contact us to confirm which temperature to use for dispersion modelling unless it is "ambient", in which case model variable ambient temperature.
*D2-1e Maximum exhaust gas flowrate (Sm^3/min)	Maximum flowrates are typically based on equipment design capacity. This value will appear in your permit as the "Maximum Emission Flow Rate". Provide flows at MV standard conditions which allow us to make consistent comparisons between facilities and over time. MV standard conditions are: 1) 101.325 kPa, 2) 20°C,

	3) 0% moisture content, and 4) 3% oxygen for gaseous or liquid fuels or 8% oxygen for wood fuel. Explain O_2 corrections for other combustion processes under "D2-1i Comments". Provide a basis of estimate under "D2-1i Comments". Use this value to calculate the requested emission quantity limit unless providing a rationale for not using this value. Attach your calculations in an unprotected Excel or compatible worksheet so that Metro Vancouver staff are able to use all Excel tools in reviewing the calculations. If this flowrate is less that equipment design capacity, explain how the facility will demonstrate compliance (e.g., continuous flow measurement).
*D2-1e Exit velocity at actual conditions (m/s)	Calculate the exit velocity from actual flow (m^3/s) divided by stack inside area at stack top (m^2). Use this value for dispersion modelling.
*D2-1e Maximum opacity (%)	Most Metro Vancouver permits require that visible emissions be minimized and that maximum opacity (using EPA Method 9) be 20% or less. We may include this value in your permit.

D2-1f-g Operating hours

*D2-1f Maximum operating hours per year	We often authorize 365 day/year and 24 hour/day operation (even in leap years). It is possible to request fewer hours if a facility or a given process operates and will emit air contaminants fewer than 8760 hours per year. We calculate permit fees based on authorized operating hours. Note that any refinements of the hours of operation in a dispersion model must be consistent with requested operating hours. In permits, this value is called the "Maximum Annual Operating Hours". Operating for more hours than this value would be a contravention of the permit.
*D2-1g(i) Are you requesting a restriction to specific days of the week or hours of the day that you operate? *If yes please explain under comments*	If you are requesting restrictions to your hours of discharge, explain these restrictions under "D2-1i Comments" or in a separate document. For example, note if the plant only operates Monday to Friday, 7 AM to 5 PM or if boilers are only used for the heating season September to April.
D2-1g(ii) If requested max operating hours less than 8760 h/y, how will facility track hours?	If requested operating hours are less than 8760 hours/year, they must be monitored for compliance. Explain how the facility will track operating hours. Permits generally include a requirement to report the number of operating hours per year for each emission source.

D2-1h Odour and/or dust beyond the facility property line

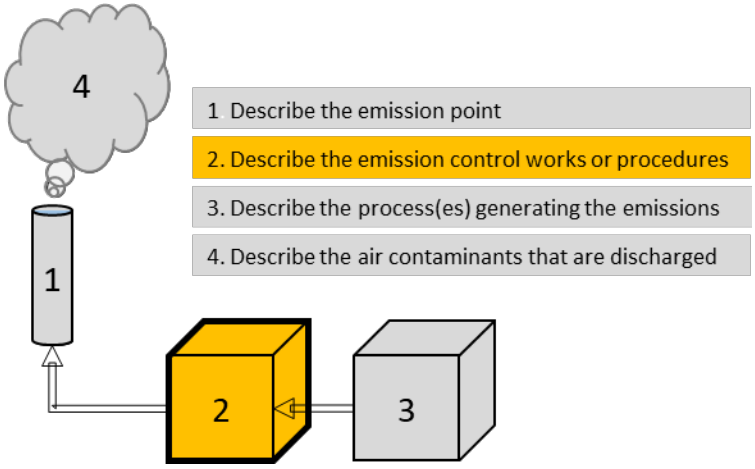
Odour and dust management plans are standard tools used by facilities as part of their Environmental Management System. These plans show that a facility understands and acknowledges the potential for impacts arising from the discharge of odorous air contaminants or dust, and has implemented measures to mitigate that potential.

*D2-1h Is there potential for odour beyond the facility property line from this source?	Be realistic in this assessment. If yes, attach an odour management plan or explain why an odour management plan is not attached.
*D2-1h Is there potential for dust beyond the facility property line from this source?	Be realistic in this assessment. If yes, attach a dust management plan or explain why a dust management plan is not attached.

D2-1i Comments

*D2-1i Comments	Provide additional information to explain responses, and reference attached documents as necessary. Comments in this section may include: • Building height if stack height referenced from roofline • Uncommon or unusual stack features • Modifications to the source • Non-circular stack dimensions • Basis for exhaust gas properties (e.g., temperature estimates, flows, O_2 corrections) • Flow restrictions and how compliance will be demonstrated • Day of week or hour of day restrictions and how compliance will be demonstrated, • Explanation of odour or dust assessments

D2-2 Describe the emission control works or procedures



D2-2a-c Describe how emissions are collected and controlled

*D2-2a Describe how emissions are collected and directed to control works	Describe how the air contaminants released from a process are collected and directed to control works. Is it a fully enclosed vessel and ducting system? Is it a room/building where negative pressure is maintained? How is negative pressure maintained and monitored? Is it a semi-enclosed transfer point?
*D2-2a Collection Efficiency (%)	**Collection efficiency** is the percentage of the air contaminants generated by the process that are captured and directed to the emission control works, and is applied upstream of the control works. Provide an estimate of the **collection efficiency**. A collection efficiency of 100% implies there are no fugitive emissions (no leakage) from the source, which is very rare. If you believe collection efficiency is 100%, provide rationale for your estimate.
*D2-2b Description of control works (equipment or procedures)	Concisely describe any emission control works, e.g., “cyclone”, “baghouse”, “enclosure with negative pressure”, “good operating practices”, “continuous emissions monitoring”, or “not applicable” for uncontrolled sources.
*D2-2c Manufacturer and Model Name and/or Number	Provide process and mechanical information on emission control works. Attach schematic drawings and other supplier information and reference attachments under “D2-2e Comments”.
*D2-2c Control Efficiency (%)	**Control efficiency** is the percentage of the air contaminants directed to the emission control that are removed by the control device. Provide a **control efficiency** for the works or procedures, and provide the reference for this number under “D2-2e Comments” (e.g., equipment vendor, AWMA Air Pollution Engineering Manual, EPA Air Pollution Technology Fact Sheets)

	Overall emission reduction efficiency is the product of collection efficiency and control efficiency. For example, if 95% of a dusty exhaust stream is collected and directed to a cyclone with an 80% control efficiency, the overall emission reduction efficiency is 76%.

D2-2d *Best Available Control Technology?

Metro Vancouver expects applicants will select emission control equipment, procedures, and emission limits that meet or exceed regulatory and industry standards to prevent or minimize adverse public health and environmental impacts, with consideration of continuous improvement.

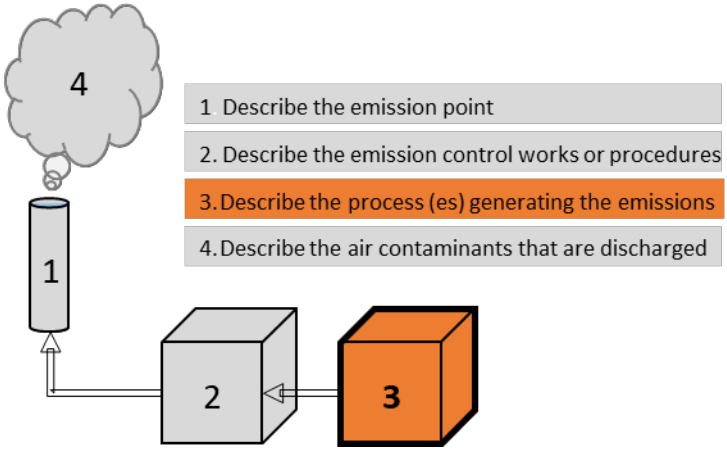
The selection of equipment, procedures and emission limits should consider capital and operating cost, design capacity, effectiveness, reliability, waste products, maintenance and personnel training.

Most effective or advanced control technology currently successfully in use elsewhere?	If yes, provide references. Information on current best available control technology can be found at the EPA BACT Clearinghouse. Alternatively, review control technology used at comparable state-of-the-art facilities in your particular industry and especially those located in densely populated regions such as Metro Vancouver. Consideration should be given not only to control technology but also to emission limits.
Most effective or advanced management practice currently successfully in use elsewhere?	If yes, provide references.
Older control technology or management practice?	If yes, provide rationale for why this the older technology, management practice, or emission limits are adequate. If current industry standards are not met, we may ask for a plan on how you will ultimately meet BACT.
Separate document attached providing rationale for emission controls selected and alternatives considered	In a separate document, provide rationale for why the emission controls were selected and identify any alternatives that were considered, including why they were rejected.

D2-2e Comments

*D2-1e Comments	Provide additional information to explain responses, and reference attached documents as necessary. Comments in this section may include: • References for collection and control efficiencies • Rationale for emission controls selected and alternatives considered (BACT analysis) • References to schematic drawings and other supplier information for control works • Control works design specifications

D2-3 Describe the process(es) or equipment generating the emissions



*D2-3a Process or equipment description	Identify each piece of equipment or unit process that is connected to the emission source (e.g., natural gas fired boiler, storage silo #2, dryer #4)
*D2-3b Manufacturer and Model name and/or Number	Attach supplier information and refer to attachments or provide web link under “D2-3e Comments”.
*D2-3c Maximum throughput or process capacity for non-combustion processes (include units)	Metro Vancouver will use production throughput or process capacity rates to verify that estimated emissions are realistic. Include units – e.g., 100,000 MBF 3/8” per year; 50 GJ/h; 1.2 million tonnes wood pellets dry basis; 50,000 imperial gallons; 189 cubic metres

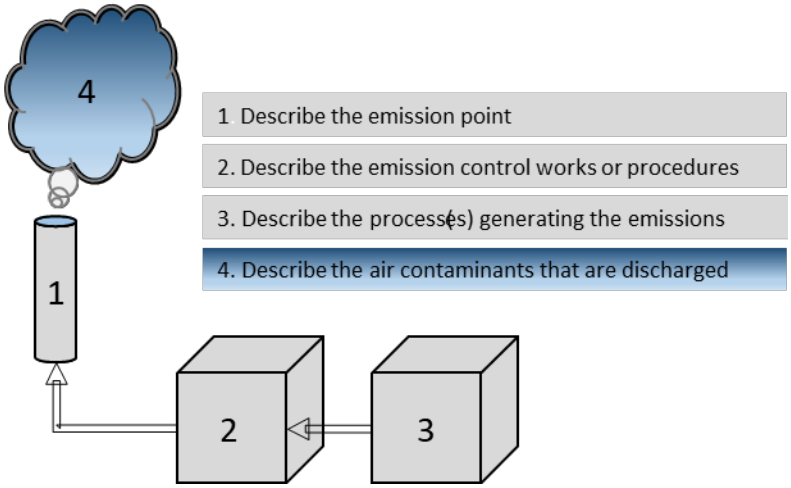
D2-3d Combustion sources (if applicable)

*D2-3d Fuel type	Identify all fuel type(s), including fossil fuels, biomass and gaseous waste streams.
*D2-3d Max input firing rate (GJ/h)	If multiple combustion units feed a single emission source (e.g., multiple burners or several boilers), attach a separate table summarizing each unit. Provide the maximum input firing rate(s) based on the boilerplate (GJ/h) if not identified previously. Attach photos of boilerplates.
*D2-3d Primary or standby fuel?	Differentiate between primary fuels and those used for standby purposes.
*D2-3d Source if waste based	Provide the name of waste based fuel (e.g., biomass, tire derived fuel) suppliers
*D2-3d % Sulphur content	For natural gas i. Use a sulphur content of 15.6 mg sulphur/m^3 (updated Feb 2016) ii. MV may update this number with information from Fortis BC on an annual basis. For other fuels provide site-specific information and identify the source of the information under "D2-3e Comments".
*D2-3d Max firing hours per year	Provide the maximum requested annual operating hours (including start-up) for each combustion unit. Permits often limit standby fuels to a maximum of 350 hours per year of operation.

D2-3e Comments

*D2-3e Comments	Provide additional information to explain responses, and reference attached documents as necessary. Comments in this section may include: • Equipment or process supplier information • Fuel sulphur content basis if not natural gas

D2-4 Describe the air contaminants that are discharged



IMPORTANT *If the only contaminants discharged are products of natural gas combustion, contact us for additional instructions on which emission factors (EFs) to use.*

Identify the air contaminants that will be discharged other than products of natural gas combustion.

Sources of information on process or industry specific air contaminants include:

- Environment Canada's National Pollutant Release Inventory (http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=65A75CDF-1)
- US EPA's AP-42: Compilation of Air Pollutant Emission Factors Volume 1 (https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors)
- Industry associations

*D2-4a Air Contaminant Common Name	Identify the common names of all air contaminants you are applying to authorize, (e.g., sulphur dioxide, nitrogen oxides, total particulate matter (TPM), and total volatile organic compounds (TVOCs)). Identify the reference basis for any contaminant groups, for example, TVOC (as methane), TRS (as H_2S), NOx (as NO_2). In addition to TVOC, identify and quantify speciated VOCs (e.g., pentane, phenol, styrene, formaldehyde, benzene, methane, methanol, acrolein). Clearly identify if your request is for TPM (total particulate matter), or FPM (filterable particulate matter) and CPM (condensable particulate matter) separately. Separate TPM into combustion and non-combustion quantities. Identify other process specific hazardous air pollutants, such as heavy metals.

	List co-contaminants (e.g., VOC or PM emissions from a drying process) but **not the direct products of natural gas combustion**. Contact us for additional instructions with respect to products of natural gas combustion. We may ask you to reconsider your contaminant list if it appears you have not included known contaminants for your type of facility.
D2-4a CAS	CAS stands for the Chemical Abstracts Service registry number CAS numbers are available at http://ccinfoweb.ccohs.ca/chemindex/search.html. (e.g., nitrogen oxides CAS 11104-93-1, total particulate matter CAS N/A, acrolein CAS 107-02-8)
*D2-4b Requested outlet concentration limit under standard conditions (mg/Sm^3)	Identify the ***requested*** maximum outlet concentration limit (mg/Sm^3 or ppm) at standard conditions. In permits, this value is called the "Maximum Emission Quality", meaning it is the not to be exceeded concentration. For permitting, Metro Vancouver considers standard conditions as 101.325 kPa, 20°C, and 0% moisture content. For combustion systems, concentrations must be corrected to 3% oxygen for natural gas and fuel oil, 8% oxygen for wood fuel and biomass. For other combustion processes provide an oxygen correction. Provide reasoning for any deviations. Provide the basis for this number under "D2-4d Comments" or in a separate document (e.g., estimate, site-specific emissions testing, vendor guarantee, industry standard), and preferably in an Excel spreadsheet. This number should be based on the best available information. Site-specific emissions data measured at representative conditions is often the best available information. We may ask you to demonstrate that the requested maximum outlet concentration does not harm the environment nor cause pollution by way of dispersion modelling or other analysis, especially in the case of new permits or for increases in contaminant discharges.
*D2-4c Requested emission quantity limit (t/y)	Your requested emission quantity limit should be based on **maximum requested emission flow rate, maximum annual operating hours,** and **maximum emission quality**. For example, if a combustion emission source is authorized for the following: MAXIMUM EMISSION FLOW RATE (D2-1e): 1000 m^3/min MAXIMUM ANNUAL OPERATING HOURS (D2-1f): 8760 h/y MAXIMUM EMISSION QUALITY (D2-4b): 30 mg/m^3 NO_x Calculate the requested annual emission quantity limit as: = 1000 m^3/min x 30 mg/m^3 NO_x x 8760 h/y x 60 min/h x 1 tonne/10^9 mg

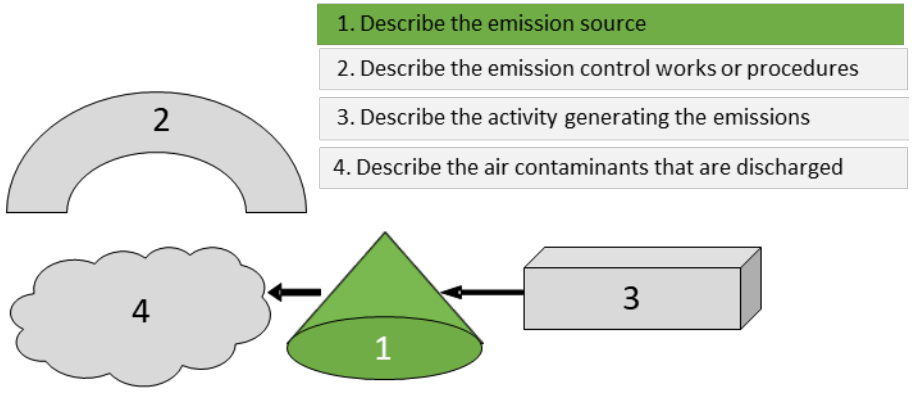
	= 15.8 tonnes NO_x/y We base annual permit emission fees on the <u>maximum authorized</u> emission quantity. In this example, using the current Bylaw 1083 emission fee for NO_x of $50/tonne: Annual permit emission fee for NO_x = 15.8 tonnes NO_x/y x $50/tonne NO_x = $788.40/y If you are requesting an emission quantity limit that is less than the value based on this calculation, provide additional rationale for how you will demonstrate continuous compliance (e.g., continuous emissions monitoring and quarterly reporting*)*
D2-4d *Comments*	Provide additional information to explain responses, and reference attached documents as necessary. Comments in this section may include: • References to sources (e.g., emissions testing reports, industry data, EPA AP-42 emission factors) for types and quantities of air contaminants identified • Sample calculations or references to reviewable Microsoft Excel or compatible worksheets (preferable to PDFs) • Identification of how compliance will be demonstrated • If available, provide an in-stack ratio (ISR) of NO/NO_x and the source of that information (e.g., emissions testing or emission factor)

SECTION D3: EMISSION INFORMATION FOR FUGITIVE SOURCES

Provide a completed copy of MVAQ-D3 for each new or modified fugitive emission source (complete MVAQ-D2 for point sources). If requested information is not available, indicate why. Indicate 'n/a' if a section does not apply. Incomplete applications will result in delays. **The better and more complete the information in your preliminary application, the more likely it is to be expedited**.

Attach additional pages and supporting documents as requested.

D3-1 Describe each new or modified fugitive emission source to the atmosphere



EMISSION SOURCE IDENTIFICATION

*D3-1a **EMISSION SOURCE (ES) NUMBER**	For new permits assign sequential, unique numbers (ES-01, ES-02…) based on process flows. For amendments, choose new, original numbers for new emission sources – do not reuse numbers even if you have decommissioned a previously authorized emission source.
*D3-1b **DESCRIPTION**	Provide a concise description of the fugitive emission source and type of material handled. This description will be included in the permit. For example: "ES-01: wood chip stockpile" "ES-02: ship loading of agricultural products" "ES-03: sulphur conveyance system with three transfer points" "ES-04: three room air vents with low levels of fugitive VOCs"
*D3-1c **EMISSION SOURCE TYPE**	Is the source of fugitive emissions a vent, transfer point, stockpile, loading point or something else? If you select "Other" please explain under "D3-1l Comments"
*D3-1d **EMISSION SOURCE STATUS**	Is the emission source new or modified?

	• Modified can include a physical change in control works or the size of the source, or changes in discharge contaminants, hours of operation, etc. • Explain modifications under "D3-1l Comments" or provide a reference to a separate document.

EMISSION SOURCE CHARACTERISTICS

*D3-1e Dimensions of source	A fugitive source could be a stockpile, tank, vent, door opening, or window. Provide the maximum dimensions for sources that vary in dimension, such as a stockpile, and the actual dimensions for fixed structures such as tanks or vents.
*D3-1f Max operating hours/year	We often authorize 365 day/year and 24 hours/day operation (even in leap years), particularly for fugitive emission sources such as stockpiles. It is possible to request fewer hours if a source will emit air contaminants less than 8760 hours per year. We calculate permit fees based on authorized operating hours. Note that any refinements of the hours of operation in a dispersion model must be consistent with requested operating hours. In permits, this value is called the "Maximum Annual Operating Hours", which is a not to be exceeded limit.
*D3-1g Characterization of emission source	Provide information necessary to characterize the emission source, including dimensions, elevation and other parameters typically used to estimate emissions for that type of source such as number of transfer points, drop height to a stockpile, or silt and moisture content (%) for fugitive dust. Provide the maximum drop height of all transfer points (in metres). If drop heights vary (e.g., during ship loading), provide details under "D3-1l Comments" or attach additional information as necessary.
Requested opacity limit (%)	Opacity limits should be based on best available control technology or best management practice.
*D3-1h Are you requesting a restriction to specific days of the week or hours of the day that you operate?	If you are requesting restrictions to your hours of discharge, explain these restrictions under "D3-1l Comments" or in a separate document. For example, note if the facility or unit process only operates Monday to Friday, 7 AM to 5 PM, or seasonally. Justify why the fugitive source will not emit air contaminants when the facility or unit process is not operating.
D3-1i If max operating hours less than 8760 h/y, how will facility track hours?	If requested operating hours are less than 8760 hours/year, they must be monitored for compliance. Explain how the facility will track operating hours. MV AQ permits generally include a requirement to report the number of operating hours per year for each emission source.

D3-1j-k Odour and/or dust beyond the facility property line

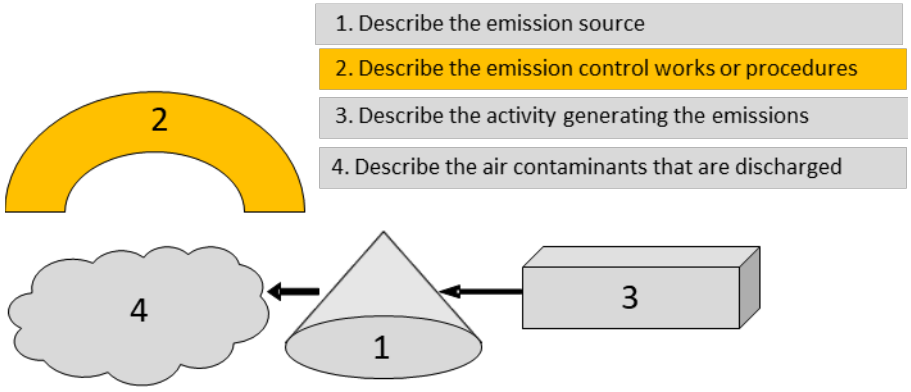
Odour and dust management plans are standard tools used by facilities as part of their Environmental Management System. These plans show that a facility understands and acknowledges the potential for issues arising from the discharge of odorous air contaminants or dust, and has implemented measures to mitigate that potential.

*D3-1j Is there potential for odour beyond the facility property line from this source?	Be realistic in this assessment - most fugitive sources emit either odour or dust. If yes, attach an odour management plan or explain why an odour management plan is not attached.
*D3-1k Is there potential for dust beyond the facility property line from this source?	Be realistic in this assessment – most fugitive sources emit either odour or dust. If yes, attach a dust management plan or explain why a dust management plan is not attached.

D3-1l Comments

*D3-1l Comments	Provide additional information to explain responses, and reference attached documents as necessary. Comments in this section may include: • Explain unusual discharge configurations, or provide diagrams or pictures that help characterize the source's dimensions • Describe operating hours that are different from 8760 h/y • Provide additional comments regarding odour or dust management plans • Provide ranges of drop heights

D3-2 Describe the emission control works or procedures



D3-2a-c Describe how emissions are collected and controlled

*D3-2a Description of how emissions are collected and directed to control works	Describe how the air contaminants released from a process are collected and directed to control works. Is it a fully enclosed vessel and ducting system? Is it a room where negative pressure is maintained? How is

	negative pressure maintained and monitored? Is it a semi-enclosed transfer point?
*D3-2a Collection Efficiency (%)	**Collection efficiency** is the percentage of the air contaminants generated by the process that are captured and directed to the emission control works, and is applied upstream of the control works. Provide an estimate of the **collection efficiency**. A collection efficiency of 100% implies there are no fugitive emissions (no leakage) from the source. If you believe collection efficiency is 100%, provide rationale for your estimate.
*D3-2b Description of control works (equipment or procedures)	Provide a concise description of any emission control works, e.g., "5 water spray units", "telescoping chute", "wind fence", "good operating practices", "not applicable" for uncontrolled sources. Note that if you use a baghouse, cyclone or other type of equipment with a defined discharge point that controls 90% or more of emissions, complete (point source) form MVAQ-D2 instead.
*D3-2c Manufacturer and Model Name and/or Number	Provide process and mechanical information on emission control works. Attach schematic drawings and other supplier information and refer to attachments under "D3-2e Comments".
*D3-2c Control Efficiency (%)	**Control efficiency** is the percentage of the air contaminants directed to the emission control that are removed by the control device. Provide a control efficiency for the works or procedures, and provide the reference for this number under "D3-2e Comments" (i.e., equipment vendor, AWMA Air Pollution Engineering Manual, etc.) **Overall emission reduction efficiency** is the product of collection efficiency and control efficiency. For example, if 95% of a dusty exhaust stream is collected and directed to a cyclone with an 80% control efficiency, the overall emission reduction efficiency is 76%.

D3-2d Best available control technology or best management practice?

Metro Vancouver expects applicants will select emission control equipment or management practices to meet or exceed regulatory and industry standards to prevent or minimize adverse public health and environmental impacts, with consideration of continuous improvement.

The selection of controls or procedures should consider capital and operating cost, design capacity, effectiveness, reliability, waste products, maintenance and personnel training.

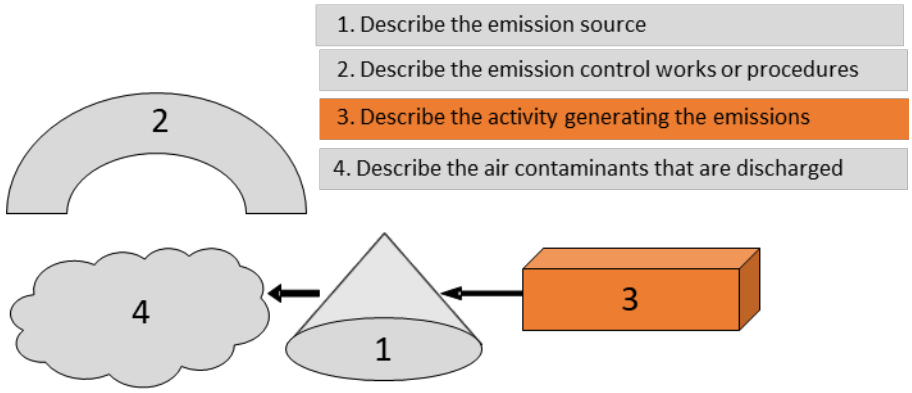
In a separate document, provide rationale for why the emission controls or management practices were selected and identify any alternatives that were considered as well as the reason why they were rejected.

Most effective or advanced control technology currently successfully in use elsewhere?	If yes, provide references. Information on current best available control technology can be found at the EPA BACT Clearinghouse. Alternatively, review control technology used at state-of-the-art facilities in your particular industry and especially those located in densely populated regions such as Metro Vancouver.
Most effective or advanced management practice currently successfully in use elsewhere?	If yes, provide references.
Older control technology or management practice?	If yes, provide rationale for why this the older technology, management practice, or emission limits are adequate. If current industry standards are not met, we may ask for a plan on how you will ultimately meet BACT.

D3-2e Comments

*D3-2e Comments	Provide additional information to explain responses, and reference attached documents as necessary. Comments in this section may include: • Rationale for emission controls or management practices selected and alternatives considered • References for control works or management practices • Control works design specifications

D3-3 Describe the processes or activities generating the emissions



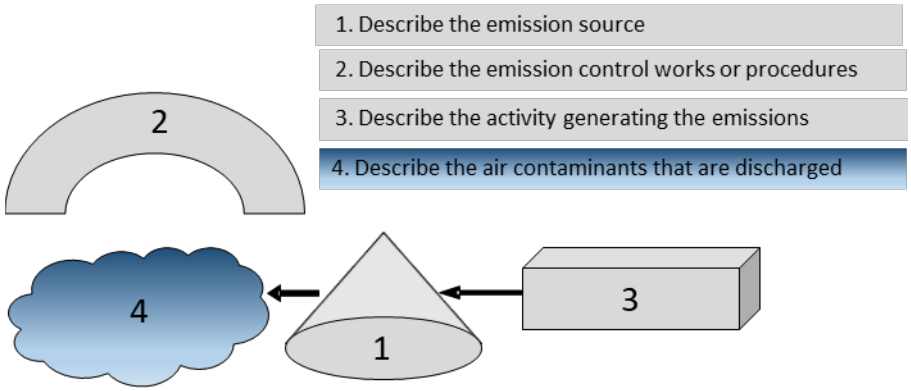
*D3-3a Process or activity description	Describe the source of fugitive emissions. For example: • "evaporation of VOCs from a tank or container" • "wind erosion from a sulphur stockpile"

	• "wood dust during conveyance or ship loading of wood pellets"
*D3-3b Daily or hourly activity limit requested (including units)	Fugitive emissions are typically estimated by multiplying an emission factor by an activity, such as throughput, production or capacity. For fugitive dust from a bulk-handling facility, the activity is typically throughput. Because MV's short-term PM objectives are based on 24 hour rolling averages, we generally have daily limits on throughput (or equivalent) for sources of fugitive dust. Volatile organic compounds typically have hourly ambient criteria and therefore hourly activity limits should be requested. We prefer a limit based on activity, although you can request a limit based on estimated fugitive emissions (kg/d or kg/h). Provide units and averaging periods. Provide calculations and justification for the requested limit and averaging period in an Excel or compatible attachment. Provide references.
D3-3c Annual activity limit requested (including units)	Fugitive emissions are typically estimated by multiplying an emission factor by an activity, such as throughput, production or capacity. For fugitive dust from a bulk-handling facility, the activity is typically throughput. For intermittent processes or activities where the annual fugitive emissions will be much less than the requested daily limit times the requested maximum operating hours, you can request an annual limit. Use the same units as for the daily limit or provide an explanation for any alternatives. We will base annual permit emission fees on this quantity.

D3-3d Comments

*D3-3d Comments	Provide additional information to explain responses, and reference attached documents as necessary. Comments in this section may include: • Rationale for activity selected and alternatives considered • References for calculation of fugitive emissions using that activity • Basis for daily or annual throughput limits

D3-4 Describe the air contaminants that are discharged



At minimum, identify any fugitive total particulate matter and volatile organic compounds that will be discharged.

Sources of information on process or industry specific air contaminants include:

- Environment Canada's National Pollutant Release Inventory (http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=65A75CDF-1)
- US EPA's AP-42: Compilation of Air Pollutant Emission Factors Volume 1 (https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors)
- Industry associations

*D3-4a Air Contaminant Common Name	Identify the common names of all air contaminants you are applying to authorize. Identify the reference basis for any contaminant groups, for example, TVOC (as methane), TRS (as H_2S). In addition to TVOC, identify and quantify speciated VOCs (e.g., pentane, phenol, styrene, formaldehyde, benzene, methane, methanol, acrolein). Identify TPM as non-combustion TPM If available, provide quantities or ratios for speciated TPM (e.g., wood dust, soy dust, limestone dust, clinker dust). Identify other process-specific hazardous air pollutants, such as heavy metals We may ask you to reconsider your contaminant list if it appears you have not included known contaminants for your type of facility.
D3-4b CAS	CAS stands for the Chemical Abstracts Service registry number CAS numbers are available at http://ccinfoweb.ccohs.ca/chemindex/search.html. (e.g., nitrogen oxides CAS 11104-93-1, total particulate matter CAS N/A, acrolein CAS

	107-02-8)
*D3-4c Requested daily emission quantity limit (kilograms per day) – fugitive	Provide sample calculations in a separate document, clearly identifying the basis for calculations (e.g., estimate, industry standard, AP-42) and if the estimate is based on throughput. This number should be based on the daily or hourly activity limit requested (D3-3b). We may ask you to demonstrate that the requested maximum daily fugitive emissions do not harm the environment nor cause pollution by way of dispersion modelling or other analysis, especially in the case of new permits or for increases in contaminant discharges.
D3-4d Requested annual emission quantity limit (tonnes per year) - fugitive	Estimate the maximum annual emission quantity for each air contaminant. Base your estimate on the requested annual activity limit (D3-3c), if applicable. Provide sample calculations and references.

D3-4e Comments

*D3-4e Sample calculations and references	Provide calculations and references (e.g., emissions testing, industry data, EPA AP-42 emission factors) to explain responses, and reference attached documents as necessary.

SECTION D4: AIR QUALITY DISPERSION MODELLING

Metro Vancouver will likely request air quality dispersion modelling if

- an application requires public notification,
- if the change in the annual emission fee based on requested emissions is greater than $1,000,
- if we've received recent complaints about the facility, or
- if the discharge is near sensitive receptors (residences, schools, hospitals, health care facilities, homes for the elderly, etc.).

There may be other instances when MV or local health authorities (Vancouver Coastal Health or Fraser Health) request dispersion modelling.

IMPORTANT *Consider using a **Qualified Professional** to complete this section.*

A **qualified professional** is an individual who is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and who, through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

IMPORTANT *To avoid rework and extra costs, submit a modelling plan to Metro Vancouver for approval prior to running any model.*

Submit a dispersion model plan for approval prior to running any model, ideally with the final application. Use the Metro Vancouver dispersion model template. Metro Vancouver staff will review your plan and may provide comments that you need to address before you run your model.

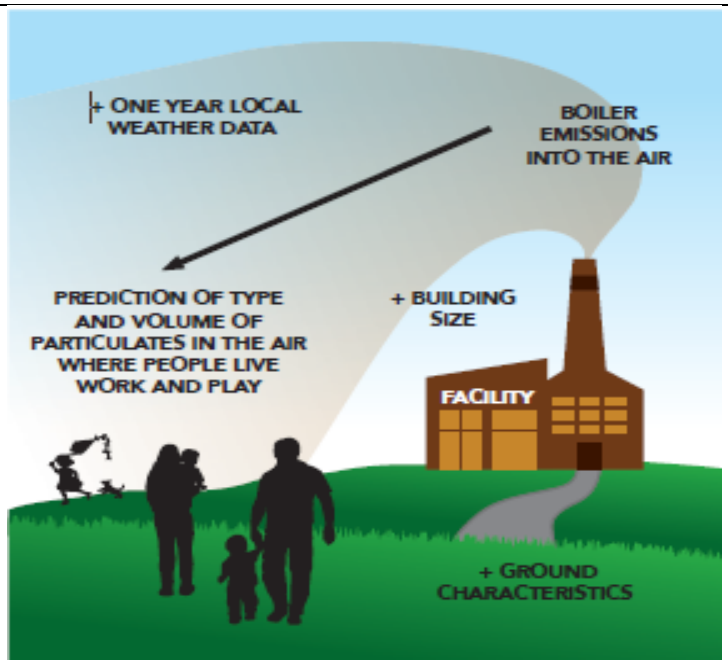
You should base air dispersion modelling on the emission levels and hours of operation that you are applying to have authorized (not normal operating conditions). You must conduct modelling according to the Guidelines for Air Quality Dispersion Modelling in British Columbia published by the BC Ministry of Environment except as indicated in the Metro Vancouver dispersion model template or a model plan approved by Metro Vancouver.

Whether to run a simple screening-level model or a more complex refined model depends on the site, its discharges and the surroundings. In either case, add the predicted receptor level concentrations of air contaminants to ambient concentrations and compare these against MV's Ambient Air Quality Objectives[2] (http://www.metrovancouver.org/services/air-quality/AirQualityPublications/AQOFactsheet.pdf) or ambient criteria from other jurisdictions, such as Alberta, Ontario or Texas.

[2] For more information on Metro Vancouver's Ambient Air Quality Objectives refer to http://www.metrovancouver.org/services/air-quality/AirQualityPublications/CurrentAmbientAirQualityObjectives.pdf

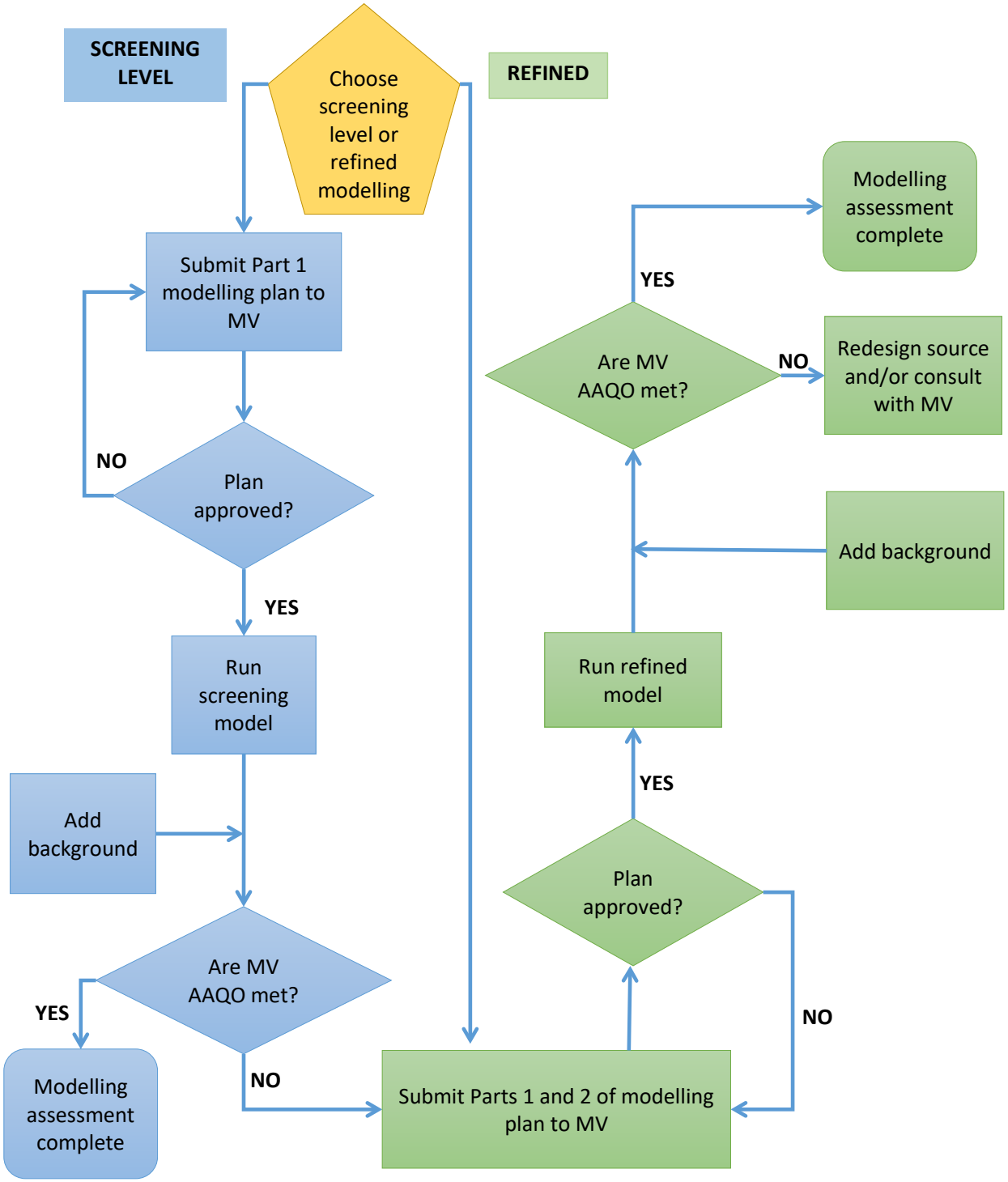
How does dispersion modelling work?

Dispersion modelling is a computer simulation of how air contaminants from a source disperse into the air, and therefore gives an indication of the potential impact of a facility on local air quality. It is a standard tool used in many regulatory jurisdictions, particularly for permit approvals. Modelling can indicate if a higher stack, additional pollution control work, or other redesign is required. Dispersion models can be used to predict air contaminant concentrations at ground level as well as at elevated locations such as balconies on high-rise buildings.



Metro Vancouver's General Guidelines for Air Quality Dispersion Modelling

Metro Vancouver Guidelines for Air Quality Dispersion Modelling for Permits



REF:http://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/bc-dispersion-modelling-guideline-2015.pdf

SECTION D5: SUPPLEMENTAL TECHNICAL AND OTHER INFORMATION

Provide a list of attached reports and documents that support your application using Form MVAQ-D5.

Reports may inform on related environmental management initiatives at the facility. For example:

- ISO14001 certification,
- Environmental Stewardship initiatives, and
- Consultation conducted to date.

Reports may also be technical in nature. For example:

- Emission calculations, including bases for emission estimates (preferably as Excel or Compatible spreadsheets),
- Dust management plans,
- Odour management plans,
- Air dispersion modelling conducted after MV has approved a modelling plan, and
- Emissions testing results for the facility or a similar facility.

Documents should include:

- Manufacturer documentation on emission control equipment,
- Manufacturer documentation on process equipment, and
- Material safety data sheets (SDS) for all raw materials and products that have the potential for air contaminant emissions (i.e., gases, liquids with volatile components, and solids that could result in dust).

Metro Vancouver staff may also request additional supporting information, such as:

- Comparison and contribution to the Lower Fraser Valley Emission Inventory, latest version available at http://www.metrovancouver.org/services/air-quality/AirQualityPublications/2015LowerFraserValleyAirEmissionsInventory.pdf
- Environmental and/or Human Health Impact Analysis using methods approved by Metro Vancouver.
- Proposed ambient or property line monitoring plans. Monitors can be used to gain better information on localized impacts from a particular facility.
- Emission curtailment plans, when emissions from the facility are capable of contributing to episodes of poor air quality as measured by local ambient air monitoring stations or the GVRD Air Quality Health Index (particularly with respect to SO_2 and ozone precursors such as VOCs and NO_x). See https://gis.metrovancouver.org/maps/air/ for more information.

SECTION E: NOTICE OF APPLICATION

Applications are subject to the BC Public Notification Regulation (PNR) which contains requirements for notifying persons who may be interested or adversely affected by the discharge of air contaminants authorized by the permit in question. The PNR sets out minimum requirements and the District Director has the discretion to require additional notification.

Transfer the pertinent information from the application forms to the appropriate "Notice of Application" (see table below). Ensure that in Part 2 (Purpose of Application) of the relevant MVAQ-E form, you use language that the public will easily understand and that the information provides a clear picture of activities at your facility and the resulting emissions.

If you are applying for:	Complete Notice of Application Form:	Is notification required?
A new, first-time permit	MVAQ-E1	YES
A permit amendment	MVAQ-E2	MAYBE
A new permit because your existing permit is expiring	MVAQ-E3	YES

IMPORTANT *Do not publish a notice if Metro Vancouver has not fully reviewed your preliminary application and considered it accurate and complete.*

Metro Vancouver will use your Notice of Application to populate an Environmental Protection Notice (EPN) and will send you a final copy for publication.

The PNR requires that the applicant:

(1) Must, within 15 days of the date of signing a final application, post the application (EPN) for 30 days, at a conspicuous location at all main road entrances to the property, near the proposed point(s) of discharge.

(2) Publish the application in newspapers local to the point of discharge using an approved format (EPN) and at the applicant's expense. The District Director will specify the newspaper(s) in which the application must be published.

The District Director will also:

(1) Circulate copies of the application (EPN) to municipal and other agency contacts (Health Authorities, Environment Canada), and

(2) Publish the application (EPN) in the British Columbia Gazette Part 1.

The District Director can require an applicant to give notice by other methods, such as public meetings, may post the EPN on the Metro Vancouver website, and may notify anyone who has complained about the facility in the past three years. Metro Vancouver will notify the applicant, in writing, of any additional requirements.

For a list of permit applications in progress, refer to http://www.metrovancouver.org/services/Permits-regulations-enforcement/permitting-notices/air-quality-notification/ or search for “Metro Vancouver air notice”.

SECTION F: DECLARATION AND APPLICATION FEES

Once Metro Vancouver staff determine that the application is complete and can be finalized, we will issue an invoice for application fees based on the requested emission quantity limits in tonnes per year. Refer to the MVRD Air Quality Management Fees Regulation Bylaw 1083 for additional information.

Submit a completed declaration form (MVAQ-F1) certifying that the information provided in the application is accurate and complete. Only an officer of the company or a duly authorized agent can sign this declaration. If you need additional information about the declaration, please contact us.

IMPORTANT ***Read the declaration carefully. Do not sign the declaration during the preliminary application submission.***

IMPORTANT ***Final applications are not considered complete without the signed declaration form and the payment of application fees.***

QUALIFIED PROFESSIONAL DECLARATIONS

Metro Vancouver Regional District's Environmental Regulation and Enforcement Division relies on the work of Qualified Professionals. With this comes an assumption that professionals who undertake work in relation to Metro Vancouver permits, licences, and bylaws have the knowledge, experience and objectivity necessary to fulfill this role.

To increase transparency and accountability, Qualified Professionals (QPs) who do work on behalf of Metro Vancouver's regulated community are requested to sign a declaration of their competency, and a conflict of interest disclosure statement, when submitting regulatory documents with QP obligations.

A signed QP Declaration of Competency (Form MV-QP) provides Metro Vancouver staff confidence in the information provided by the QP. A signed QP Conflict of Interest Disclosure Statement (Form MV-QPCOI) gives an indication of the degree of objectivity in the QP's work, and whether it can be relied upon to make recommendations in the public interest. Where appropriate, these documents will be considered by statutory decision makers in the formal judgement of the legal requirement(s) they support.

The declarations do not place additional requirements on the QP beyond what is already required as registered members of professional associations subject to codes of ethics and practice standards. They do, however, reinforce professional accountability by ensuring the QP acknowledges that they are working within their professional scope and are objective in their work.

If the QP is a permanent employee of the company required to submit the regulatory document, they should declare their association with their employer, bearing in mind that as a registered member of a professional association, they are obligated to abide by a code of ethics and practice standards regardless of their employer.

The absence of the declarations, particularly for work with QP requirements, will be taken into account by Metro Vancouver staff when making recommendations to a statutory decision maker.

APPLICATION COMPLETENESS CHECKLIST

	✓ or N/A
SECTION A: Business Information and Purpose of Application	
All fields marked with an asterisk filled in	
Corporate registry documents attached	
Signed Qualified Professional Declaration of Competency attached	
Signed Qualified Professional Conflict of Interest Disclosure Statement attached	
Map showing location of sensitive receptors attached	
Land title documents attached, if required	
Section A signed by Applicant or Agent	
SECTION B: Process Description & Schematic Flow Diagram	
Descriptive process narrative attached	
Simplified process block diagram highlighting all emission sources attached	
Safety Data Sheets for all relevant materials attached	
Emission control equipment schematics and specifications attached	
SECTION C: Site Plan	
Legible, simplified 8.5 x 11” black and white site plan with adjacent geographic references (major streets, water bodies, etc.), and emission sources clearly labelled	
SECTION D: Technical Assessment	
D1 Emission Source Summary table attached	
D1a Existing Emission Source Comparison attached when application is for an amendment or expiring permit	
D2 Emission Information for Point Sources attached for each new or modified source, and all fields marked with an asterisk filled in or deviations explained	
D3 Emission information for Fugitive Sources attached for each new or modified source, and all fields marked with an asterisk filled in or deviations explained	
D4 Metro Vancouver Air Quality Dispersion Modelling Plan attached	
D4 Air Quality Dispersion Modelling Report attached only if Metro Vancouver Dispersion Modelling Plan approved (see guidance)	
D5 Includes supplemental technical and other information table and attachments, such as but not limited to,	
Environmental Management System documents such as relevant Standard	

	✓ or N/A
Operating Procedures	
Dust Management Plan	
Odour Management Plan	
Calculations and references to support requested emissions	
Environmental or human health impact assessments	
Emissions monitoring reports or emissions inventory reports	
SECTION E: Notice of Application attached (identify relevant NOA)	
E1 First - time permits	
E2 - Permit amendments, or	
E3 - Permits with expiry dates	
SECTION F: Declaration and Application Fees	
FINAL application only – signed declaration	
FINAL application only – payment for invoiced application fees	

CONTACT US

For more information, contact us at:

Metro Vancouver
Parks and Environment Department
Environmental Regulation and Enforcement Division
4515 Central Boulevard, Burnaby, BC, V5H 0C6
Telephone: (604) 432-6200 Facsimile: (604) 436-6707
Email: regulationenforcement@metrovancouver.org