

Air Emissions Regulation in the Cariboo – FAQs

The following frequently asked questions pertain to the regulation and enforcement of permitted air emissions in the Cariboo. The intent is to provide brief answers to some of the common questions that the interested public may have regarding the regulation of air emissions. For more detailed information please contact the B.C. Ministry of Environment at 250-398-4530, or use the links provided below to obtain further information.

Q: How are air emissions from industrial sources regulated?

A: In B.C. air emissions from industrial sources which pose a risk to air quality are regulated through a system of permits and regulations under the *Environmental Management Act*. Many operations are required to comply with permits issued with site specific standards and conditions to control emissions from the facility. Some lower risk industries are controlled by Codes of Practice specific to a particular industry type.

Q: How are permit limits set for industrial sources?

A: Permits may contain limits or site specific standards for the quantity and quality of emissions for each stack at a facility. Province wide criteria are normally used to determine an appropriate site specific standard. In addition, to protect local air quality in sensitive areas, dispersion modeling may be used to determine what site specific standards are required to protect ambient air quality.

Q: What is dispersion modeling?

A: Atmospheric dispersion modeling is the computer simulation of how air emissions and pollutants spread in the atmosphere. A dispersion model is used to predict the downwind concentration of air pollutants emitted from sources such as industrial plants, traffic or fugitive dust. Dispersion modeling in an airshed can be used to determine the relative contribution from various sources to observed air quality at a monitoring station, a process called apportionment modelling.

Q: Are there criteria for all emission types?

A: Criteria exist for some industry types which are used to establish limits or site specific permit standards for a facility. Emission criteria can only be developed when it is possible to accurately measure the quality and quantity of emissions from a particular source type. As well, some industry types or types of operations are not common in B.C. and so criteria have not yet been developed. Where criteria do not exist, an assessment of best achievable control technology may be required to establish site specific standards to be included in a permit for a facility.

Q: How are ambient air quality objectives set?

A: National, provincial and local objectives for ambient air quality are set by the applicable jurisdiction based on the best available science and through a deliberative and consultative process. Ambient air quality, is the characterization of substances in the open air. *Objectives for ambient air quality are not legal standards, but are benchmarks used to evaluate ambient air quality.* Local objectives are set through airshed planning,

which is a process that involved many stakeholders, including local government and the public. Air quality objectives are used to guide decision making about a range of activities that can affect air quality and about legal standards set in permits. More information on airshed planning can be found at:

<http://www.bcairsmart.ca/communities/partnerships.html>

http://breatheasywilliamslake.org/resources/About/WLAirshed_Mgt_Plan_Final.pdf

Q: How are objectives used to regulate emission sources?

A: When assessing permits, dispersion modeling can be undertaken to determine if ambient air quality objectives will be met at the property boundary of the facility. Monitoring can also be done in the vicinity of a facility to determine if ambient air quality is meeting objectives. If objectives are not being met, then apportionment modeling considering nearby sources can help determine what emissions sources are most likely contributing to observed ambient air quality.

Q: How often are permitted sites inspected?

A: The inspection frequency varies depending on the facility and is conducted by the B.C. Ministry of Environment for permitted air emission sources.

Q: Do regulated facilities know when inspections are going to be conducted?

A: Operators may be provided a short advance warning of an inspection, essentially as required by the inspector to ensure access to the facility and to ensure that appropriate facility staff and records are available. Where access and safety issues are not a concern at a particular facility or for the purpose of a particular inspection, the inspector will arrive unannounced.

Q: How are emission sources monitored?

A: Source monitoring is the measurement of air emissions in a stack being released from a process. Monitoring of an emission source may be undertaken by the use of an in-stack instrument that continuously monitors emissions, by the manual collection of a sample from a stack using specialized stack sampling equipment, or by visual observations following standard procedures that correlates visibility of a plume to emission quality. Continuous monitors are instruments that continuously measure and record the concentration of a particular compound in a stack emission, such as sulphides. Some types of emissions must be measured by manual stack testing, such as particulate matter. While accurate, manual stack testing requires that a sample of the contents in the exhaust gas is collected from the stack for analysis at a lab. An indirect means to monitor emissions is by visual observation which is done by a certified opacity reader who observes a source to make a qualitative observation of opacity of the plume that relates to the contents of the emission. Opacity is a measure of the light obscuring property of a plume. Operational data is used on conjunction with data about the emissions to determine compliance with permit limits. For some emission sources that cannot be properly sampled by collecting a manual stack sample, an opacity reading is the only means to assess the emission quality. Finally, for some emissions where there is no actual "stack", such as fugitive dust (dust from non-point or area sources like parking lots), no monitoring of the emission source can be conducted. Monitoring of the effects

of the emissions can be done, such as monitoring ambient air quality at a facility property line, or dustfall onto the area surrounding a source of fugitive dust.

Q: How is ambient air quality monitored?

A: Air quality monitoring is the measurement of the quality of air in the open atmosphere, often done to understand the effect of air emission sources on air quality. Air quality stations are set up at a number of locations in Williams Lake to monitor air quality. Some monitors are continuous, with instruments that can measure the levels of air quality contaminants from a sample of air drawn into the instrument. Some stations for particulate matter are filter based, whereby a sample of air is drawn through the instrument that contains a filter upon which particulate matter is collected. The filter can then be sent to a lab to measure how much particulate is collected on it. Continuous monitoring stations provide data online at:
<http://www.bcairquality.ca/readings/index.html>

Q: What kind of particulate matter is monitored?

A: In Williams Lake we monitor total particulate matter to understand the amount of visible dust, as well as fine particulate, called PM10 and PM2.5. The fine particulate fractions are of greater concern due to their association with health impacts, in particular the PM2.5 fraction, that portion smaller than 2.5 microns, can penetrate deep into the lungs. To understand the size of these particles see:
<http://breatheasywilliamslake.org/health.html>

Q: How do we know if air quality is acceptable?

A: The results of air quality data collected at monitoring stations is used to assess air quality trends, to compare to provincial and national objectives, to determine daily air quality index levels, to issue air quality advisories during periods of poor air quality, and used to produce annual trend reports. In addition, the data from continuous stations is presented on a web site (www.bcairquality.ca) giving the public the opportunity to check air quality as the data is collected.

Q: What causes an exceedance of air quality objectives?

A: Air quality is affected by emission sources and by how those emissions disperse in the atmosphere. An exceedance of air quality objectives could be caused by high local emissions, by poor dispersion of local emissions in the atmosphere, by long range transport of far field sources (e.g. forest fires) or a combination of these conditions. Typically in the Cariboo Region, poor air quality occurs under the adverse atmospheric condition known as an “inversion” where local emissions are trapped in a valley and build up over time. Long range transport is another mechanism where emissions generated elsewhere are transported to the airshed where they linger and combine with local emissions resulting in poor air quality.

Q: What happens when a discharger exceeds their permit limit?

A: The ministry responds to non-compliance in accordance with its established policies. Responses include advisories or warning for less serious non-compliance. For more significant non-compliance, a legal investigation by the Conservation Officer Service

potentially leading to enforcement action may be undertaken, or sanctions or orders may be imposed under the *Environmental Management Act*.

Q: What happens if air quality objectives are exceeded?

A: If air quality objectives are exceeded an air quality advisory may be issued. The purpose of an air quality advisory is to warn the public of poor air quality and provide advice that citizens may take to reduce their exposure to air contaminants. An air quality advisory may also recommend voluntary emission reduction actions by industry and residents.

Q: Who do I contact to report air quality problems?

A: The public can contact the local office of the B.C. Ministry of Environment at 250-398-4530 during normal office hours if they have an enquiry about air quality. To report an incident or an observed non-compliance the public can call the RAPP line, which is available 24 hrs a day 7 days a week, at 1-877-952-7277 or online at <http://www.env.gov.bc.ca/cos/rapp/form.htm>.

Q: What is being done to improve air quality and reduce emissions?

A: Airshed Management Plans have been developed to manage and improve air quality in Williams Lake and Quesnel. As well, Air Quality Roundtables have been established in both communities to provide a forum for local government, regulatory agencies, industry and public interest groups to work together to improve air quality. Local objectives and action plans have been established to provide direction in improving air quality. These roundtables meet annually to report on progress in implementing the plans and to review air quality monitoring results. The roundtables have established websites to make information available and share the work of the roundtable with the public.

Q: Where can I find more information about air quality regulation?

A: The public is encouraged to visit the following web sites for more information. Contact information is available at these sites for anyone wishing to further pursue their interest in air quality.

Information on current air quality	http://www.bcairquality.ca/readings/index.html
To link to current advisories and venting information	http://www.bcairquality.ca/index.html
To get information about the local efforts to improve air quality in Williams Lake	http://breatheasywilliamslake.org/
To get information about the local efforts to improve air quality in Quesnel	http://quesnelairshed.wordpress.com/
To find out more about provincial efforts to improve air quality	http://www.bcairsmart.ca/
To get information about airshed planning	http://www.bcairsmart.ca/communities/partnerships.html
To get copies of permits	http://www.env.gov.bc.ca/epd/waste_discharge_auth/authorization_docs.htm
To locate discharges in your area	http://webmaps.gov.bc.ca/imfx/imf.jsp?site=imapbc
Online reporting of violations	http://www.env.gov.bc.ca/cos/rapp/form.htm
To get information about completed enforcement actions	http://www.env.gov.bc.ca/main/compliance-reporting/
To get information on codes of practice	http://www.env.gov.bc.ca/epd/codes/index.htm
To get information regarding permit applications	http://www.env.gov.bc.ca/epd/waste_discharge_auth/index.htm
To get information on criteria for industrial emission sources	http://www.env.gov.bc.ca/epd/industrial/index.htm
To get information regarding ministry compliance management framework	http://www.env.gov.bc.ca/compliance/mgmt_framework.html
To access the <i>Environmental Management Act</i>	http://www.bclaws.ca/
To obtain information about enforcement action	http://www.env.gov.bc.ca/main/compliance-reporting/