



Woodfibre LNG

Waste Discharge Authorization Application for Air Emissions

October 2026

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About the Woodfibre LNG Facility and the WDA Process

A Waste Discharge Authorization (WDA) is a permit issued by the BC Energy Regulator (BCER) under British Columbia's *Environmental Management Act*. It sets clear, enforceable limits on the type and quantity of substances a facility can release into the environment, and ensures emissions are thoroughly assessed, monitored and reported against limits set through scientific and regulatory review.

Woodfibre LNG is applying for a WDA for air emissions from its facility, including emissions from flaring. The application process includes a public comment period, when members of the public can review the application and submit comments to Woodfibre LNG. Woodfibre LNG will then submit those comments to the BCER for consideration in its review of the application. The public comment period will begin once Woodfibre LNG submits the WDA application to the BCER.

A copy of the WDA permit application will be available at www.woodfibrelng.ca and at the Squamish Public Library.

About Woodfibre LNG

Woodfibre LNG is building one of the lowest-emission liquefied natural gas (LNG) export facilities in the world, located on the site of the former Woodfibre pulp mill in Howe Sound. Our facility is designed to run on electricity sourced from BC Hydro's grid rather than natural gas. This, together with other technologies to reduce or avoid emissions, will enable our facility to produce LNG with nine times less greenhouse gas (GHG) emissions than a conventional LNG export facility.

Sḵw̱xwú7mesh Úxwumixw: Collaboration and Regulatory Oversight

The Woodfibre LNG facility is located within the traditional territories of the Sḵw̱xwú7mesh Úxwumixw (Squamish Nation) and səliłwətał (Tsleil-Waututh Nation). Sḵw̱xwú7mesh Úxwumixw holds a unique role on this project as an environmental regulator alongside provincial and federal regulators. This role stems from the *Squamish Nation Environmental Assessment Agreement*, the first legally binding Indigenous-led environmental assessment of a project in Canada. Sḵw̱xwú7mesh Úxwumixw is involved during the development of the WDA permit application and will remain an important regulator and collaborator as the project moves forward.



Glossary of Terms

AIR QUALITY DISPERSION

A scientific modelling method used to predict how emissions released into the air will travel, spread and dilute as they move through the surrounding environment over time and a range of weather conditions.

AMBIENT AIR QUALITY

The overall quality of the air in a given area, shaped by emissions from all nearby sources combined, such as vehicles and residential and commercial heating, rather than just a single facility.

B.C. AIR QUALITY OBJECTIVES

The non-statutory limits adopted by the provincial government on the acceptable presence of contaminants in the atmosphere, established to protect human health and the environment.

BCER

The BC Energy Regulator, the provincial regulator responsible for overseeing energy projects in British Columbia, including reviewing and issuing permits such as the Waste Discharge Authorization permit.

CACS (CRITERIA AIR CONTAMINANTS)

Common air pollutants that are monitored and regulated because of their potential effects on air quality, including nitrogen oxides (NO_x), sulphur dioxide (SO₂), carbon monoxide (CO) and fine particulate matter (PM_{2.5}).

COMBUSTION

The process of burning fuel to generate heat or power equipment, which can produce emissions as a byproduct. Often referred to as burning.

EMISSIONS

Substances released into the air, most commonly as a result of industrial processes like combustion or burning natural gas in a flare stack.

FLARE STACK

A tall structure used to safely and controllably burn off excess gas, most often during equipment start-up, shutdown or unplanned operational events.

GHGs

Greenhouse gases (GHGs) such as carbon dioxide (CO₂) and methane (CH₄) that contribute to climate change.

HEAT MEDIUM FURNACE

Equipment that heats a fluid, which is then circulated through the facility to provide the heat needed for the LNG production process.

LNG TRAIN

The connected group of equipment used to cool natural gas into liquid form (LNG) for storage and export.

MARINE VESSELS

Seafaring ships that transport LNG from the facility (LNG carriers) or assist with safely manoeuvring vessels at the marine terminal (tugboats).

POINT SOURCE EMISSIONS

Emissions released from a specific, identifiable location, such as a flare stack or vent.

THERMAL OXIDIZER

Equipment that uses high heat to incinerate acid gas and other waste components, such as carbon dioxide (CO₂), hydrogen sulphide (H₂S) and other sulphur-containing compounds (e.g., mercaptans), residual hydrocarbons and VOCs, including BTEX (benzene, toluene, ethylbenzene, xylene).

VENTING

The controlled release of gas directly into the atmosphere without combustion, typically used for safety or operational reasons.

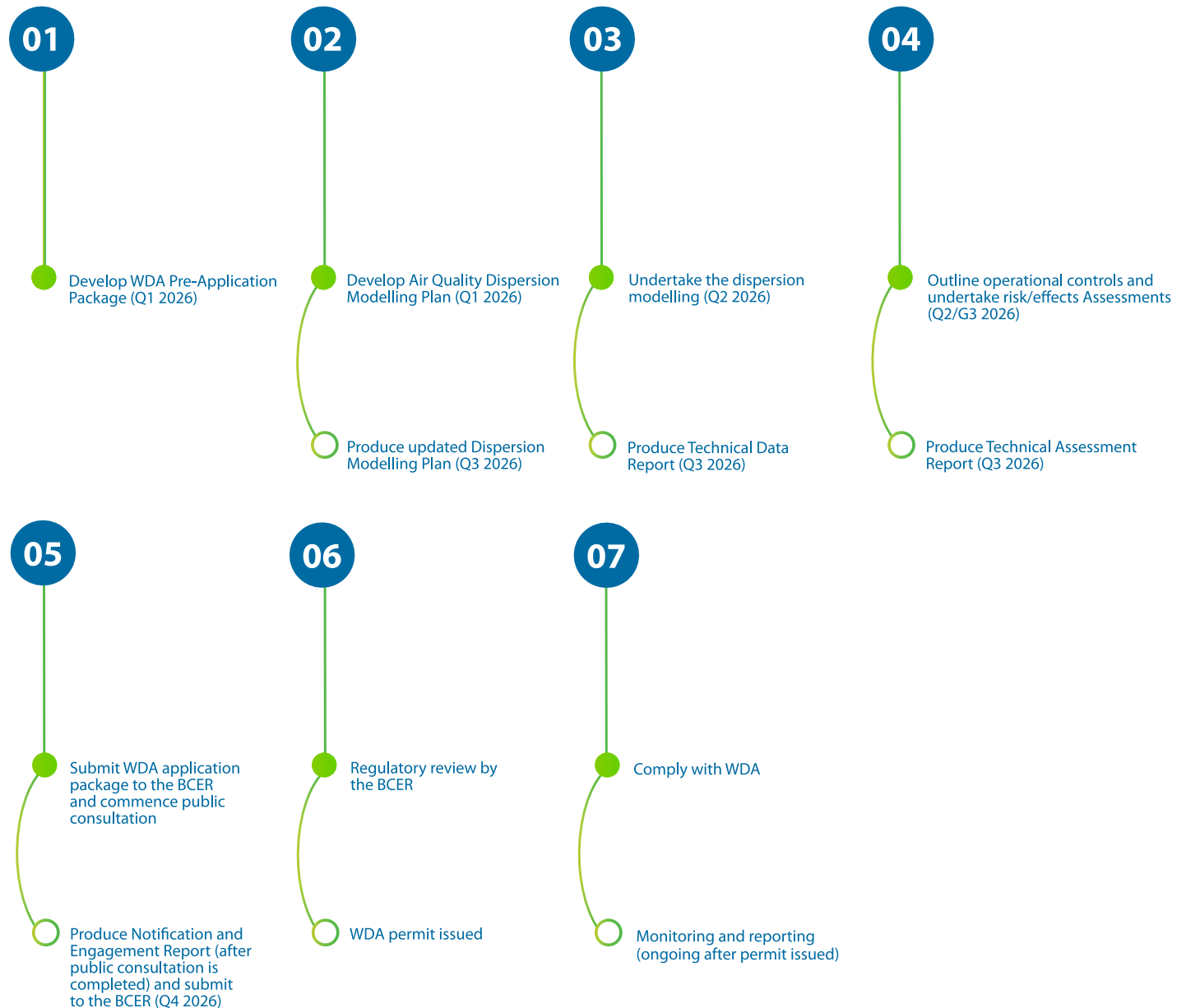
VOLATILE ORGANIC COMPOUNDS (VOCs)

Carbon-based chemicals that easily evaporate into gases at room temperature due to their high vapour pressure and low water solubility.

WASTE DISCHARGE AUTHORIZATION (WDA)

A permit issued by the BC Energy Regulator that sets enforceable limits on what a facility can release into the environment.

Timeline: Woodfibre LNG's WDA Application



Air Emissions Assessed in Woodfibre LNG's WDA Application

Woodfibre LNG's application is built on external air quality dispersion modelling completed by Stantec, a qualified environmental consulting firm with extensive experience assessing air quality and human health effects for industrial and LNG facilities.

The modelling is based on five years of meteorological data and produced extensive modelling figures (called isopleths) across parameters, durations and scenarios. The isopleths illustrate the maximum predicted ground-level concentrations for each parameter, for every scenario modelled, and inform the assessment of potential impacts on air quality, human health, water, soil and vegetation from the facility.

TYPES OF CONTAMINANTS/EMISSIONS ASSESSED IN OUR WDA PERMIT



Nitrogen oxides (NO_x)

Gases formed during high-temperature combustion.



Sulphur dioxide (SO₂)

A gas produced when fuels containing sulphur are burned.



Carbon monoxide (CO)

An odourless, colourless gas produced by the incomplete combustion of fuels.



Fine particulate matter (PM_{2.5})

Tiny airborne particles, 2.5 microns or smaller, roughly a third the size of a single red blood cell.



Total reduced sulphur (TRS)*

A group of foul-smelling gases that contain sulphur in a reduced chemical state.



Hydrogen sulphide (H₂S)*

A colourless, flammable gas that smells like rotten eggs.

*Note: TRS and H₂S emissions are specific to one non-routine case resulting from our modelling. In this case, the results were compared to B.C. odour thresholds in the absence of B.C. Air Quality Objectives.

How is air quality in B.C. regulated?

The Province of B.C. has established Air Quality Objectives for Criteria Air Contaminants (CACs), science-based objectives to protect human health and the environment. The BCER uses these objectives, together with the dispersion modelling described above, to guide its WDA permit decision-making process. Once a WDA permit application has been approved, the BCER issues the WDA permit, which will contain enforceable emissions limits from each identified point source.

AIR QUALITY OBJECTIVES

Air Quality Objectives are non-statutory limits adopted by the provincial government. They can be used to compare against a facility's emissions and support airshed management decisions. Achievement of the objectives is based on a combination of two factors: a concentration (e.g., micrograms per cubic metre or parts per billion) and a measurement of time. For example, the annual objective for PM_{2.5} (fine particulate matter) is compared against the average concentration measured over a full year, not any single reading. A short period of higher concentrations on one day does not, on its own, determine whether the objective is met.

Why Nitrogen Dioxide, not Nitrogen Oxides?

Nitrogen oxides (NO_x) are a group of reactive gases containing nitrogen and oxygen, primarily nitric oxide (NO) and nitrogen dioxide (NO₂). When NO is released into the atmosphere, it mixes with ozone present in the atmosphere to rapidly transform into NO₂. British Columbia has established provincial Air Quality Objectives for NO₂ rather than the broader NO_x group.

What's not included: GHGs

This WDA does not cover GHG emissions such as CO₂. GHGs were assessed separately through the Environmental Assessment process and are tracked against provincial climate frameworks like CleanBC.

Why isn't carbon dioxide included as a CAC?

Carbon dioxide (CO₂) isn't classified as a CAC because, unlike NO_x, sulphur dioxide (SO₂), carbon monoxide (CO) and fine particulate matter (PM_{2.5}), it doesn't directly impact local air quality or health effects at the concentrations typically emitted by industrial facilities. Instead, CO₂ is managed as a greenhouse gas through a separate regulatory process focused on climate impact.

HOW DOES WOODFIBRE LNG ASSESS VOLATILE ORGANIC COMPOUND EMISSIONS?

Volatile organic compound (VOC) emissions were assessed as part of air quality modelling and human health risk assessments for the Environmental Assessment (EA) completed for the project. That assessment concluded that VOC emissions would result in a negligible effect on air quality, with maximum estimated concentrations predicted to be much less than the minimum regulatory criteria.

Updated estimates for VOCs from the project were evaluated by Stantec and determined to be similar to or less than concentrations predicted in the EA for the project. The results demonstrate that the nature (quantity and composition) of VOCs emitted by the project has not materially changed since the EA.

The predicted VOC concentrations in surrounding communities are far below applicable screening levels* during normal operations, in some cases 1,000 to over 1,000,000 times lower. This is consistent across every operating scenario assessed, including during commissioning, stabilizing operations, steady-state (normal) operations and unplanned scenarios: community-level concentrations remain below health-based thresholds in all cases.

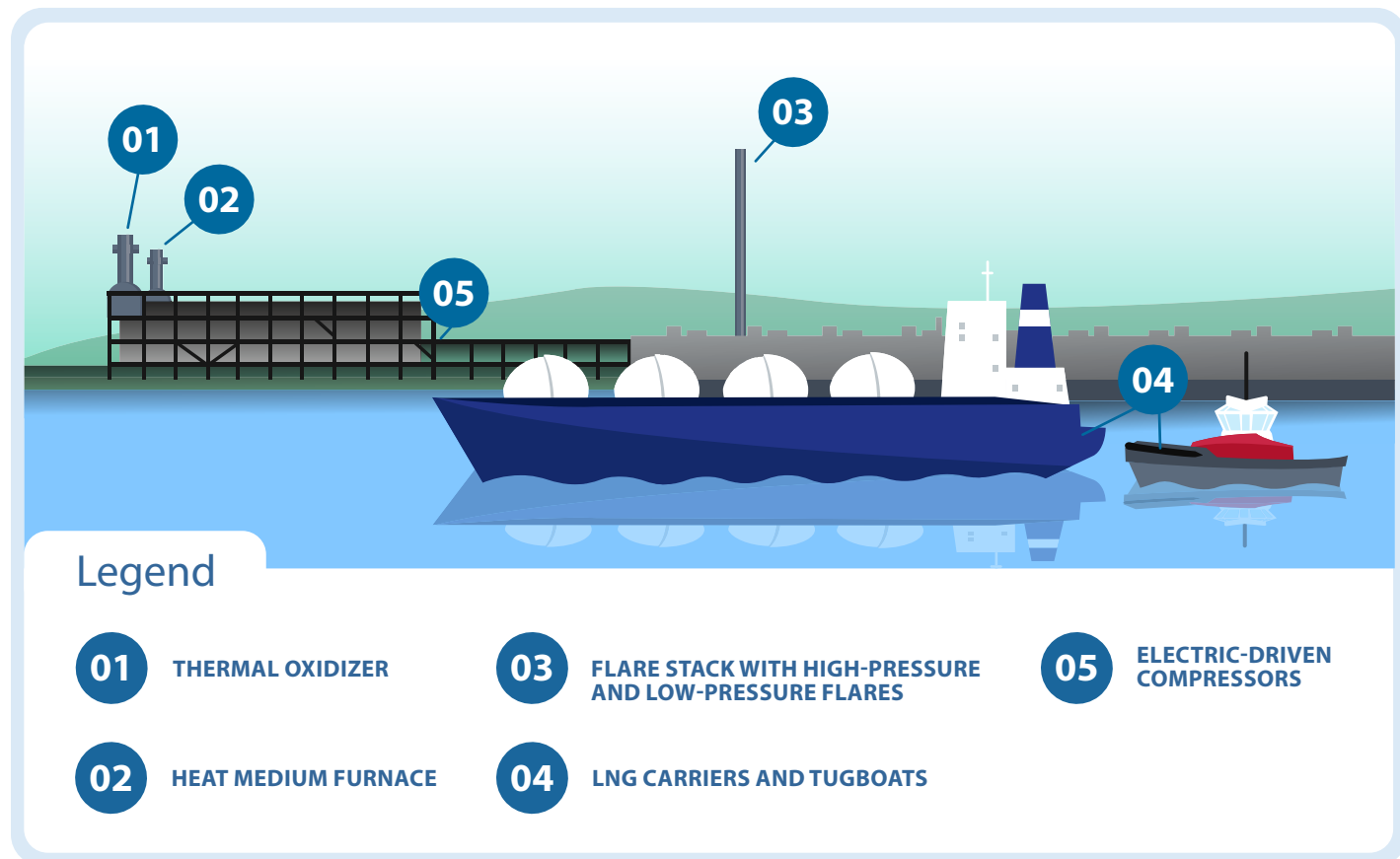
*British Columbia does not have specific, individual ambient air quality screening levels or objectives for most VOCs under its standard provincial air quality guidelines, with a rare exception for formaldehyde.

Screening levels applied for this project include Alberta Environment and Protected Areas ambient air quality objectives, Ontario Ministry of Environment, Conservation and Parks ambient air quality criteria and the Texas Commission on Environmental Quality Environmental Screening Levels.



Point Source Emissions at Woodfibre LNG

AIR EMISSIONS WILL BE PRODUCED FROM FOUR SOURCES WITHIN THE WOODFIBRE LNG PLANT: LOW-PRESSURE FLARE, HIGH-PRESSURE FLARE, HEAT MEDIUM FURNACE AND THERMAL OXIDIZER.



As a hydroelectric-powered facility, Woodfibre LNG is designed to significantly reduce overall emissions compared to conventional LNG facilities powered by gas turbines. Woodfibre LNG uses electricity from BC Hydro's low-emissions grid to power the liquefaction process.

DID YOU KNOW?

At Woodfibre LNG, the gas flared will be domestic-quality natural gas, the same gas you would burn in your stove or fireplace, or use for heating your home.

Main Sources of Woodfibre LNG Air Emissions

Combustion Sources

Thermal oxidizer

- » **Function:** Uses an operational temperature of 982°C, controlled retention time and oxygen to convert waste gases, such as acid gas and VOCs, into CO₂ and water vapour, instead of sending these gases to the flare or releasing them directly into the atmosphere.
- » **Emissions-Reducing Features:** The thermal oxidizer is equipped with low-NOx burners, which minimize the amount of NOx produced when gas is burned.

Heat medium furnace

- » **Function:** Provides the heat needed for the LNG production process by supplying a high-temperature (~300°C) and low-temperature (~180°C) heating medium (fluid) to specific equipment, including heat exchangers and gas heaters.
- » **Emissions-Reducing Features:** The furnace is equipped with ultra-low-NOx burners, which minimize the amount of NOx produced when gas is burned.

Flaring

- » **Function:** A controlled, built-in system designed to safely burn excess natural gas and relieve pressure during certain operating events, such as start-up, shutdown, maintenance and unplanned conditions. It is a pressure-relief and disposal system, similar to a pressure-release valve.
- » **Emissions-Reducing Features:** Woodfibre LNG's high-pressure flare uses a multi-nozzle style flare tip that automatically adjusts the opening size of the flare tip nozzles based on the flare header pressure. This results in a high exit speed of the gas, which keeps the gas burning efficiently across a wide range of conditions. The multi-nozzle style flare tip also helps maintain better gas-air mixing across different flow rates, which allows for more complete burning of gas, reducing the likelihood of black smoke (from incomplete combustion).

Other Emissions Sources

Emissions from marine vessels

LNG carriers and tugboats associated with Woodfibre LNG's operations will contribute air emissions in the surrounding area. These emissions are regulated by Transport Canada, separately from the BCER's regulation of the facility's air emissions. However, vessel emissions are included in Woodfibre LNG's air quality assessment alongside emissions from the facility to provide a complete picture of potential impacts.

Emissions from FortisBC's compressor station

Emissions from FortisBC's Squamish compressor station are included in Woodfibre LNG's air quality assessment alongside emissions from the facility to provide a complete picture of potential impacts on the surrounding area in the permit application.

Emissions from the compressor station are also regulated by the BCER under the provincial *Energy Resource Activities Act*. FortisBC will obtain its own WDA permit from the BCER for the Squamish compressor station (which will not be included in Woodfibre LNG's WDA permit).

SMALL INTERMITTENT SOURCES

Woodfibre LNG's application also includes two small, intermittent emissions sources: an essential diesel generator and diesel fire water pumps. These systems are used for facility safety and emergency backup purposes (in case of power failure) and are not part of routine day-to-day operations.

LEARN MORE ABOUT TRANSPORT
CANADA'S MARINE VESSEL EMISSIONS
REGULATIONS:



Potential Air Emissions Interactions and Impacts on People and the Environment

Understanding Potential Interactions

“Interactions” refers to the different ways air emissions can come into contact with air, land, water or living things after they are released.

Inhalation

Inhalation happens when people breathe in air containing emissions like nitrogen oxides (NO_x), sulphur dioxide (SO₂) or fine particulate matter (PM_{2.5}).

NO_x and SO₂ can irritate the airways and lungs when inhaled. At higher concentrations, they can make breathing more difficult, particularly for people with existing respiratory conditions like asthma.

PM_{2.5} can affect breathing depending on the level and duration of exposure. In some cases of high exposure, it can have more serious health impacts.

Woodfibre LNG’s air quality modelling assesses whether predicted emissions levels in the surrounding area stay within the B.C. Air Quality Objectives, which are set specifically to protect human health.

Acid deposition

Acid deposition happens when NO_x and SO₂ react with moisture and other substances in the atmosphere, forming compounds that settle onto land or water, either through rain, snow or fog (wet deposition) or as dry particles (dry deposition). At high concentrations, acid deposition can change the chemistry of soil and water, which can affect plant growth, forest health and aquatic ecosystems, including fish and other organisms sensitive to changes in water pH.

Eutrophication

Eutrophication occurs when nitrogen from air emissions settles into water bodies and adds extra nutrients. This can lead to excess growth of algae or plants, which can reduce oxygen levels in the water and affect fish and other aquatic life.

HOW ARE ACID DEPOSITION AND EUTROPHICATION REGULATED?

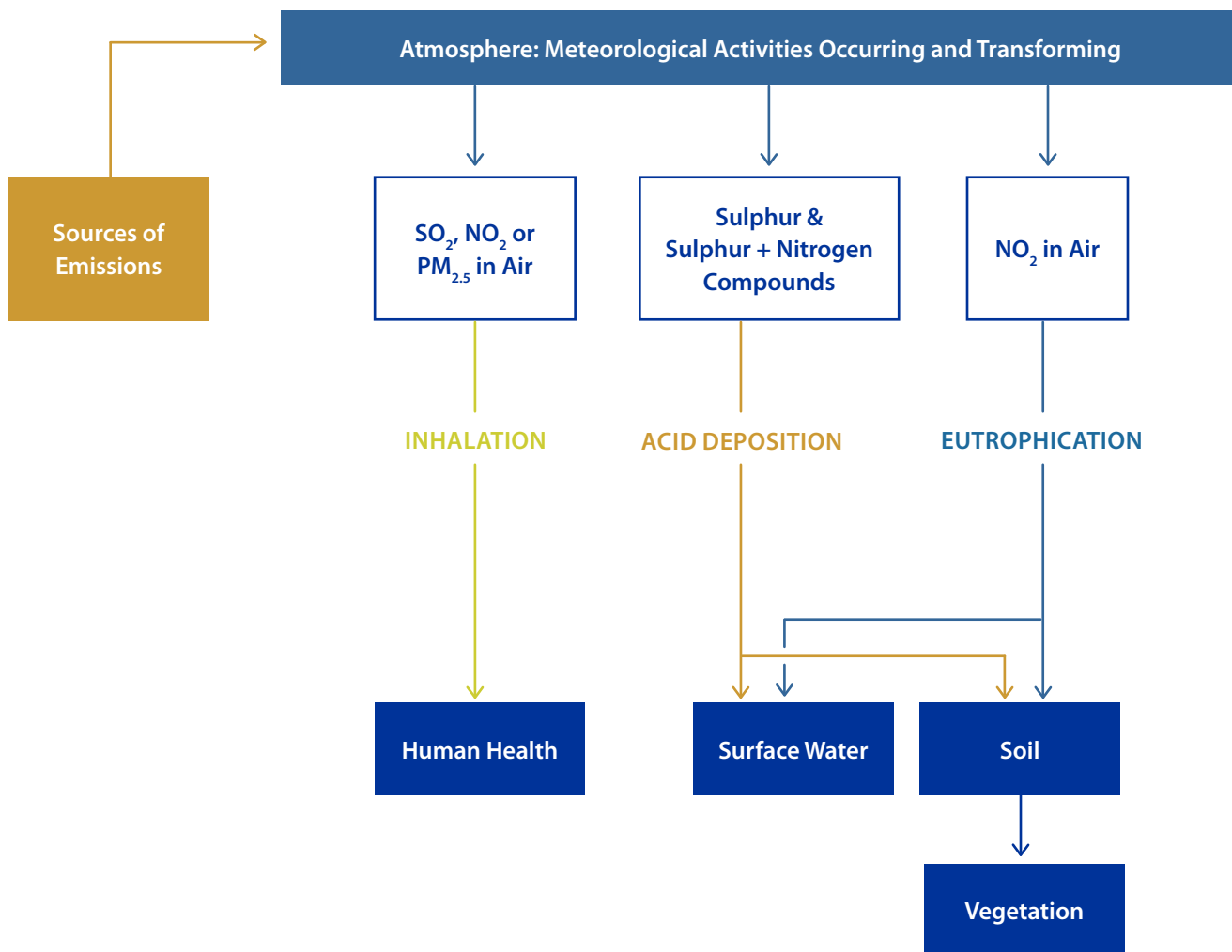
Unlike air quality, which is measured against fixed limits (the B.C. Air Quality Objectives), acid deposition and eutrophication are assessed site-by-site against the specific tolerance of local soils and ecosystems. Known as a critical load, this assessment measures how much a specific area of land or water can absorb before harmful changes occur.

MITIGATIONS

Woodfibre LNG’s mitigations for these potential interactions are built into the design of the facility and the technologies selected for it. For example, our electric-driven compressors and flare tip technology are intended to reduce overall emissions and minimize black smoke from flaring, compared to conventionally powered facilities with gas-driven equipment.

THIS DIAGRAM SHOWS HOW EMISSIONS FROM THE FACILITY COULD TRAVEL THROUGH THE ATMOSPHERE AND REACH PEOPLE AND THE ENVIRONMENT, FOLLOWING THE PATHWAYS DESCRIBED ON PAGE 10.

Emissions Pathways: From the Facility to Receptors in the Environment



Air Quality Dispersion Modelling: Woodfibre LNG's Approach and Findings

How Woodfibre LNG assessed air quality for the WDA permit application

Woodfibre LNG's air quality assessment covers over 30,000 receptor points across a 40 km x 40 km area surrounding the facility, using historical meteorological data to capture a wide range of weather conditions. This approach provided a total of 43,800 hours of meteorological conditions at 30,000 locations for assessment. At each receptor point, the modelling reported all possible predicted emissions across a five-year period.

For the WDA permit application, Woodfibre LNG used the highest predicted ground-level concentration of emissions across the same five-year period, rather than an average, providing a conservative picture of potential impacts. Put simply, Woodfibre LNG modelled the highest predicted emissions scenarios and the emissions predicted to occur during routine operations.

WHAT'S INCLUDED IN THE MODELLING: ROUTINE AND NON-ROUTINE CASES

The modelling assesses several different operating scenarios, including routine and non-routine cases. Non-routine scenarios were included to ensure the assessment accounts for temporary or less frequent operating conditions, such as facility start-up and unplanned operational events. These scenarios are assessed separately because they can involve temporarily different emissions patterns than day-to-day operations. Including them in the permit application ensures the full range of potential operating conditions is assessed and accounted for in the facility's permit.

BASELINE AIR QUALITY

The existing conditions in the area before any Woodfibre LNG emissions — the baseline air quality — have been added to the modelling. Baseline figures were established using monitoring data from the existing provincial Squamish air monitoring station, which measures emissions from home heating, vehicles and buildings in the area.

Modelled Scenarios

Commissioning (4–6 months)

Commissioning Case

Planned flaring event: liquefaction start-up to reach stable operation (peak flared gas flow rate during commissioning period)

Stabilizing Operations (Years 1–2)

Project Alone Case

Normal operations of heat medium furnace, thermal oxidizer, high-pressure and low-pressure flares (pilot, purge, design leaks, compressor seals, with a higher rate of passing valves to the flare system)

Application Case

Project Alone Case + Marine Vessels + Baseline

Normal (Steady-State) Operations (Year 3+)

Project Alone Case

Normal operations of heat medium furnace, thermal oxidizer, high-pressure and low-pressure flares (pilot, purge, design leaks, compressor seals, with a higher rate of passing valves to the flare system)

Application Case

Project Alone Case + Marine Vessels + Baseline

Cumulative Case

Application Case + FortisBC Squamish Compressor Station

Non-Routine Cases

Flaring – Process Upset / Trip

Unplanned flaring event: based on a power failure that requires the facility to start up again

Thermal Oxidizer (TO) – High Inlet Sulphur

Maximum sulphur in the inlet pipeline gas (with additional mercaptans), which results in higher sulphur emissions from the thermal oxidizer (45 ppmv vs 24 ppmv)

Flaring / Venting – TO Trip

Unplanned event: If the thermal oxidizer is unavailable, acid gas/high-pressure flash gas/condensate vapour streams routed to the flare and vented

How reliable is the dispersion modelling?

The dispersion modelling is designed to be conservative, meaning it tends to overstate rather than understate potential impacts. For example, it assumes marine vessels are present 24/7, emissions sources are operating at maximum rates simultaneously, and the least favourable weather conditions are present at the facility — three conditions that are unlikely to occur together in practice. This approach is intended to ensure the assessment captures the highest predicted emissions scenario, rather than a best-case or average scenario.

DID YOU KNOW?

Woodfibre LNG expects between 30 and 40 LNG carriers to load at the facility each year. The final number will depend on the total capacity of the LNG carriers.

Key Findings

01 Air pollutant levels in nearby communities are expected to remain well below B.C.'s Air Quality Objectives and other accepted guidelines. These objectives are specifically designed to protect human health and the environment.

02 The modelling predicts that emissions from the Woodfibre LNG facility alone (not including marine vessels) will result in minor impacts to air quality in the area and are well within the B.C. Air Quality Objectives.

03 Predicted emissions concentrations are highest at or near the facility boundary (often called the fenceline) and rapidly decrease as you move away.

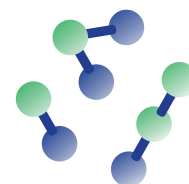
04 Emissions from marine vessels, which are regulated by Transport Canada, contribute to predicted elevated concentrations near the boundary of Woodfibre LNG; however, these predictions are conservative as they assume marine vessels are present 24/7 and overlap with the least favourable weather conditions.

07 Non-routine scenarios contribute small to moderate changes to air quality near the facility boundary (fenceline). For example, in the event of a thermal oxidizer trip, the predicted likelihood of an exceedance of the odour threshold (H_2S greater than $14 \mu\text{g}/\text{m}^3$) is one hour in every 10 years at the fenceline. For this event to occur, the thermal oxidizer would need to be offline (for a short period of time) when there was the conservative concentration of H_2S in the pipeline feed gas and specific meteorological conditions (e.g., wind speed, wind direction, ambient temperatures) were met.

05 When compared to steady-state (normal) operations, the higher emissions during stabilizing operations resulted in only minor increases in maximum predicted ground-level concentrations. For example, the 1-hour NO_2 ground-level concentration at the facility is predicted at $18.2 \mu\text{g}/\text{m}^3$ in stabilizing operations, compared to $18.1 \mu\text{g}/\text{m}^3$ in steady-state (normal) operations. These numbers are well within the B.C. Air Quality Objective of $113 \mu\text{g}/\text{m}^3$. Note: the predicted project ground-level concentrations noted here exclude the existing baseline concentration of $41.6 \mu\text{g}/\text{m}^3$.

06 The higher emissions for the Cumulative Case (including the FortisBC Compressor Station), compared to steady-state (normal) operations, resulted in only a minor increase in predicted ground-level concentrations. For example, the maximum predicted 24-hour $\text{PM}_{2.5}$ ground-level concentration is $2.5 \mu\text{g}/\text{m}^3$ in steady-state (normal) operations, compared to $2.6 \mu\text{g}/\text{m}^3$ for the Cumulative Case. These numbers are well within the B.C. Air Quality Objective of $25 \mu\text{g}/\text{m}^3$. Note: the predicted project ground-level concentrations noted here exclude the existing baseline concentration of $17.7 \mu\text{g}/\text{m}^3$.

Nitrogen Oxides Emissions



Where does NO_x come from?

NO_x forms when nitrogen, which makes up most of the air we breathe, reacts with oxygen under high heat. It comes from both human-caused activity, such as vehicle exhaust, and natural sources, such as volcanic activity.

At Woodfibre LNG, NO_x is produced through combustion activities within the facility's heat medium furnace, thermal oxidizer and flare system, as well as by marine vessels associated with the project.

B.C. Air Quality Objectives for NO₂

	Averaging Interval	British Columbia Air Quality Objective (µg/m ³)
NO ₂	1-Hour	113 ^a
	Annual	32 ^b

^aAchievement for 1-hour NO₂ is based on the three-year average of the annual 98th percentile of the daily 1-hour maximum. This requires the extraction of the highest predicted 1-hour value at each location for each day, followed by the calculation of the 98th percentile (the eighth highest) of those 365 values for each year, then averaging the three annual values.

^bAchievement for annual NO₂ is based on the average of all 1-hour average concentrations over a single calendar year.

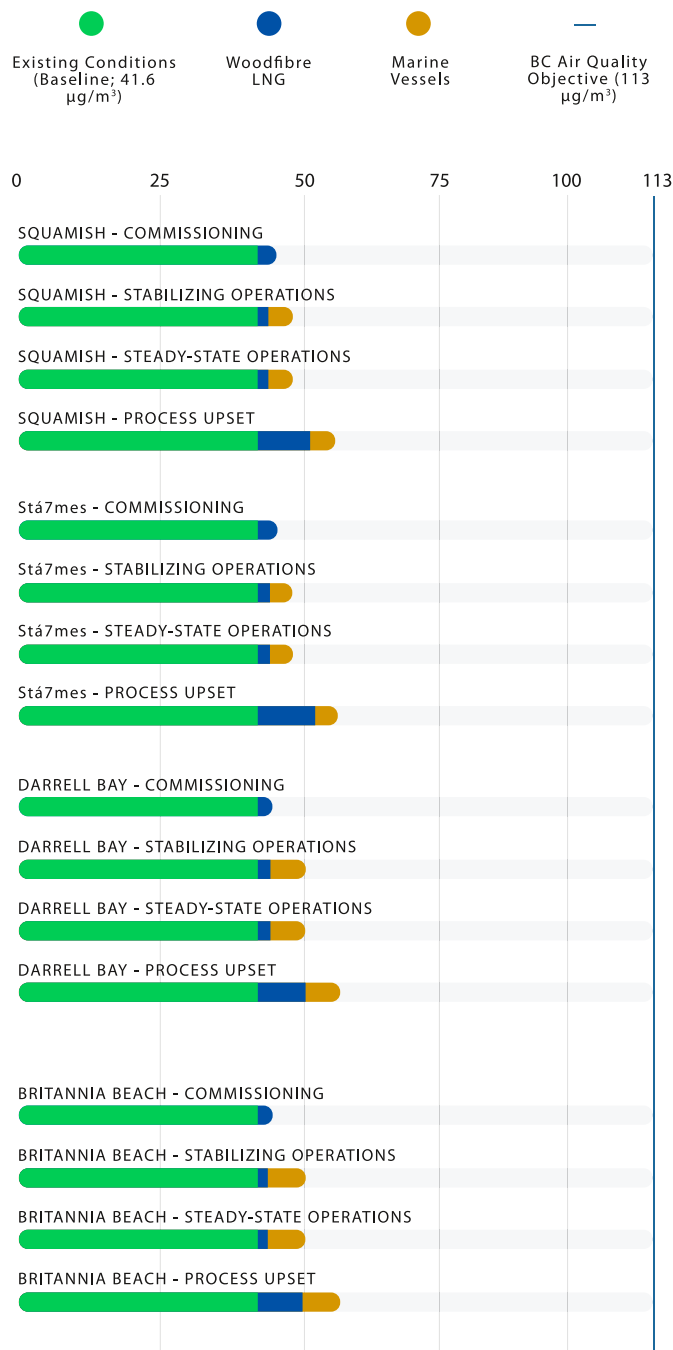
Air quality dispersion modelling results for NO₂

The modelling predicts that NO₂ concentrations emitted from the facility alone will remain within the B.C. Air Quality Objectives during all operational phases:

- » During facility commissioning, the highest predicted NO₂ ground-level concentrations remain within the B.C. Air Quality Objectives, with predicted concentrations (including baseline concentrations) of 59.8 µg/m³ for the 1-hour NO₂ and 11.1 µg/m³ for annual NO₂.
- » During stabilizing operations, the highest predicted NO₂ ground-level concentrations from the facility alone also remain within the B.C. Air Quality Objectives, at 18.2 µg/m³ (1-hour) and 1.6 µg/m³ (annual).

NO₂ modelling

(Modelled 98th Percentile of the Daily 1-Hour Maximum)



µg/m³ is a metric unit of measurement used to express the concentration of a substance — such as a pollutant, dust or chemical — within a specific volume of air.

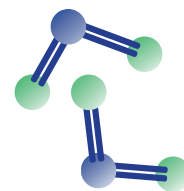
- » However, when emissions from marine vessels and baseline concentrations are added to the facility's emissions during operations, the modelling predicts the 1-hour NO₂ ground level concentrations will exceed the B.C. Air Quality Objective for Stabilizing and Normal Operations Application Cases, the Cumulative Case and the Process Upset Case. In these cases, the highest predicted ground level concentration of 1-hour NO₂ will occur at or near the facility boundary (126.5 µg/m³) and rapidly decrease as you move away; the ground level concentration is reduced to 79 µg/m³ at two kilometres from the fenceline and even lower in the surrounding communities.
- » The highest predicted annual ground level concentration of NO₂ remains well below the B.C. Air Quality Objective, with stabilizing operations and Cumulative Case having the highest maximum predicted concentration of 14.1 µg/m³ at the fenceline. (This number includes a baseline concentration value of 9.4 µg/m³ and marine vessels.)
- » During steady-state (normal) operations, the highest predicted annual NO₂ ground level concentration from the facility alone also remains within the B.C. Air Quality Objective, at 1.6 µg/m³ (annual), increasing to 14.0 µg/m³ with the inclusion of baseline and marine vessels.
- » The maximum predicted 1-hour concentration of 56.5 µg/m³ is approximately 28% of the World Health Organization (WHO) 1-hour NO₂ guideline of 200 µg/m³. WHO describes short-term concentrations exceeding 200 µg/m³ as capable of causing significant acute inflammation of the airways, particularly in people with existing respiratory conditions, such as asthma or chronic obstructive pulmonary disease. **At concentrations below this guideline, the acute respiratory risk is considered negligible.**
- » For eutrophication, the empirical critical load for forested upland and wetland ecosystems was exceeded in the Application Case and Cumulative Case in small areas immediately adjacent to the facility fenceline. Exceedance areas totalled 22.6 ha in the Application Case (0.6% of local study area) and 25.4 ha in the Cumulative Case (0.7% of local study area). The assessment indicates a **low potential** for widespread terrestrial eutrophication effects to forested ecosystems due to the incremental increase of NO₂ emissions.
- » Lichens were specifically assessed because these sensitive species and ecosystems are affected at a lower threshold than forested ecosystems. The baseline nitrogen deposition (1.8 kg/ha/yr) used in the dispersion modelling is already close to the selected critical load (2 kg/ha/yr). Therefore, relatively small increases in nitrogen deposition are sufficient to result in exceedance over a large area. The modelling predicts that lichens may experience a decline in abundance and richness due to the incremental increase of NO₂ emissions.

Potential effects of Woodfibre LNG's NO₂ emissions on human health and the environment

THE MODELLING SHOWS THAT:

- » Concentrations at sensitive receptors, including Squamish, Stá7mes and Britannia Beach, are much less than the B.C. Air Quality Objectives for 1-hour and annual NO₂.
- » The highest maximum predicted 1-hour NO₂ ground level concentration in the local communities was 56.5 µg/m³ for the Non-Routine Process Upset Case, which includes the baseline concentration of 41.6 µg/m³. Therefore, there is a potential short-term incremental project contribution of 14.9 µg/m³. However, the predicted concentration remains well below the B.C. Air Quality Objective.
- » There was no change predicted in the overall nutrient productivity (trophic status) of Mill Creek or Woodfibre Creek (closest streams to the Woodfibre LNG facility) for any of the modelled scenarios due to the incremental increase of NO₂ emissions.
- » The 63 kg/ha/yr empirical critical load for salt marsh was not exceeded in any of the modelled scenarios. As a result, no eutrophication effects to salt marsh are predicted based on the incremental increase of NO₂ emissions.

Sulphur Dioxide Emissions



Where does SO₂ come from?

Sulphur dioxide comes from natural sources, such as volcanic activity, and human-caused activity, primarily through the combustion of fossil fuels that contain sulphur compounds.

At Woodfibre LNG, SO₂ is produced mainly through the thermal oxidizer, which treats gas streams containing sulphur compounds as part of the LNG production process, along with smaller contributions from the heat medium furnace and flare system.

B.C. Air Quality Objectives for SO₂

	Averaging Interval	British Columbia Air Quality Objective (µg/m ³)
SO ₂	1-Hour	170 ^a
	Annual	10.5 ^b

^aAchievement for 1-hour SO₂ is based on the three-year average of the annual 99th percentile of the daily 1-hour maximum. This requires the extraction of the highest predicted 1-hour value at each location for each day, followed by the calculation of the 99th percentile (the fourth highest) of those 365 values each year, then averaging the three annual values.

^bAchievement for SO₂ is based on the average 1-hour concentrations averaged over one year.

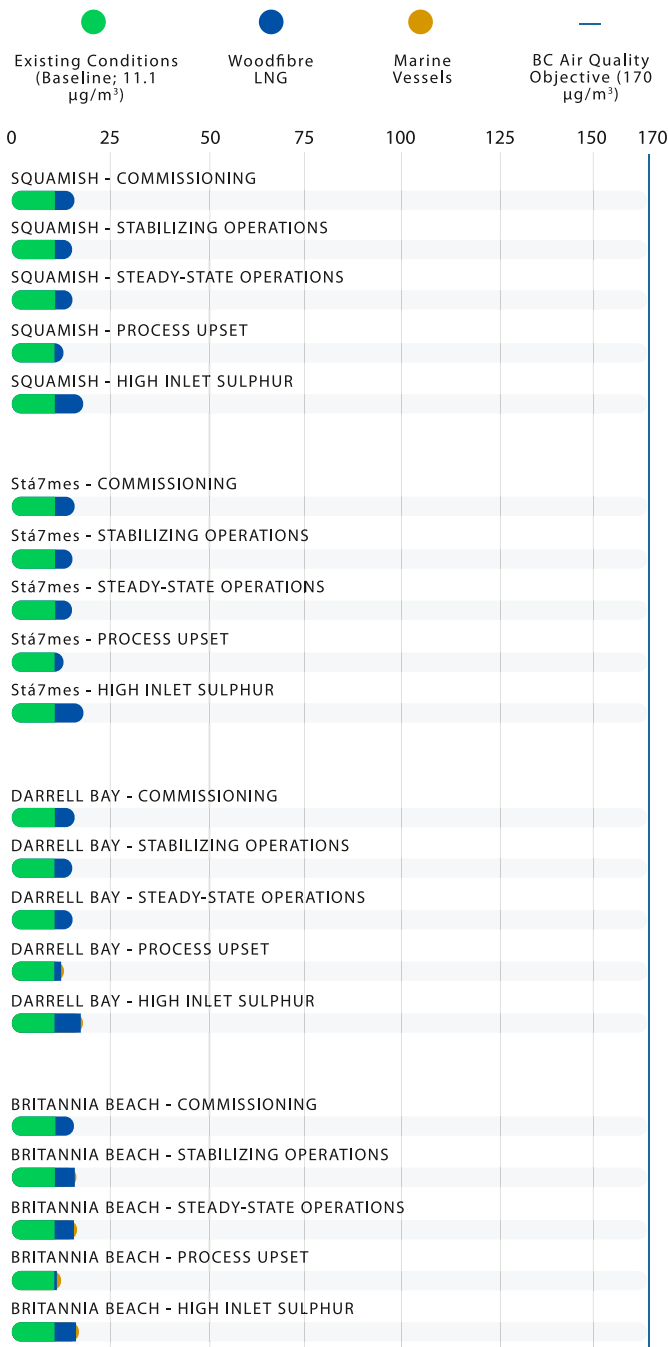
Air quality dispersion modelling results for SO₂

The modelling predicts SO₂ ground-level concentrations will be kept well within the B.C. Air Quality Objectives for all scenarios, including with marine vessels added and under non-routine conditions:

- » During facility commissioning, the highest predicted SO₂ ground-level concentrations at/near the fenceline are (including baseline concentrations) 64.4 µg/m³ for the 1-hour SO₂ and 5.1 µg/m³ for annual SO₂.
- » During stabilizing operations and steady-state (normal) operations, the highest predicted SO₂ ground-level concentrations from the facility alone are both 53.3 µg/m³ (1-hour) and 4.4 µg/m³ (annual). With the inclusion of marine vessels and baseline SO₂ concentrations, the highest predicted

SO₂ modelling

(Modelled 99th Percentile of the Daily 1-Hour Maximum)



µg/m³ is a metric unit of measurement used to express the concentration of a substance — such as a pollutant, dust or chemical — within a specific volume of air.

SO₂ ground-level concentrations for both stabilizing operations and steady-state (normal) operations are 64.4 µg/m³ (1-hour) and 5.1 µg/m³ (annual), both remaining well below the respective B.C. Air Quality Objectives.

- » Under a High Inlet Sulphur scenario, an unlikely event where incoming gas contains higher-than-typical sulphur content, the highest predicted 1-hour SO₂ ground-level concentration is 151.1 µg/m³ when combined with baseline and marine vessels, remaining below the B.C. Air Quality Objective. The ground-level concentration of SO₂ rapidly decreases as you move away from the facility boundary, with a ground-level concentration of 85 µg/m³ (1-hour) within approximately 500 metres of the fenceline.

Potential effects of Woodfibre LNG's SO₂ emissions on human health and the environment

THE MODELLING SHOWS THAT:

Concentrations at sensitive receptors, including Squamish, Stá7mes and Britannia Beach, fall well below the B.C. Air Quality Objectives for 1-hour SO₂ and annual SO₂.

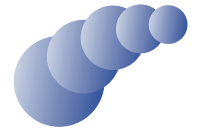
- » The highest maximum predicted 1-hour SO₂ ground-level concentration in local communities was 17 µg/m³ for the non-routine High Inlet Sulphur scenario, which includes the baseline concentration of 11.1 µg/m³. This means there is a potential short-term incremental project contribution of 5.9 µg/m³.
 - › The World Health Organization (WHO) provides a 10-minute and 24-hour SO₂ guideline of 500 µg/m³ and 40 µg/m³, respectively. The 1-hour ground-level concentration of 17 µg/m³ is well below the WHO guidelines.
 - › At concentrations below this guideline, the acute respiratory risk from facility emissions is negligible.
- » Exceedance of acidification critical loads for exposed soils was predicted in small areas that are primarily associated with low-elevation coniferous forest near the project and northward along the Skwxwú7mesh (Squamish) River valley. Exceedance areas totalled 120.1 ha in the Application Case and 128.2 ha in the Cumulative Case, and the assessment indicates a low

potential for widespread terrestrial acidification effects to forested ecosystems due to the incremental increase of SO₂ emissions from the project.

- » Acidification can lead to a reduction in pH and ultimately result in adverse effects on fish as sensitive receptors. Mill Creek and Woodfibre Creek were assessed to typically have a very low to low sensitivity to acid inputs. Therefore, the modelling predicted there will be no biological concern resulting from acidification.



Fine Particulate Matter Emissions



Where does PM_{2.5} come from?

PM_{2.5} comes from natural sources, such as wildfires and windblown dust, and from human activity (primarily combustion processes).

At Woodfibre LNG, PM_{2.5} is produced through combustion activities within the facility's heat medium furnace, thermal oxidizer and flare system, as well as by marine vessels associated with the project.

B.C. Air Quality Objectives for PM_{2.5}

	Averaging Interval	British Columbia Air Quality Objective (µg/m ³)
PM _{2.5}	24-Hour	25 ^a
	Annual	8 ^b

^aAchievement for PM_{2.5} is based on the annual 98th percentile of the daily average, averaged over one year.

^bAchievement for PM_{2.5} is based on the annual average of daily values over one year.

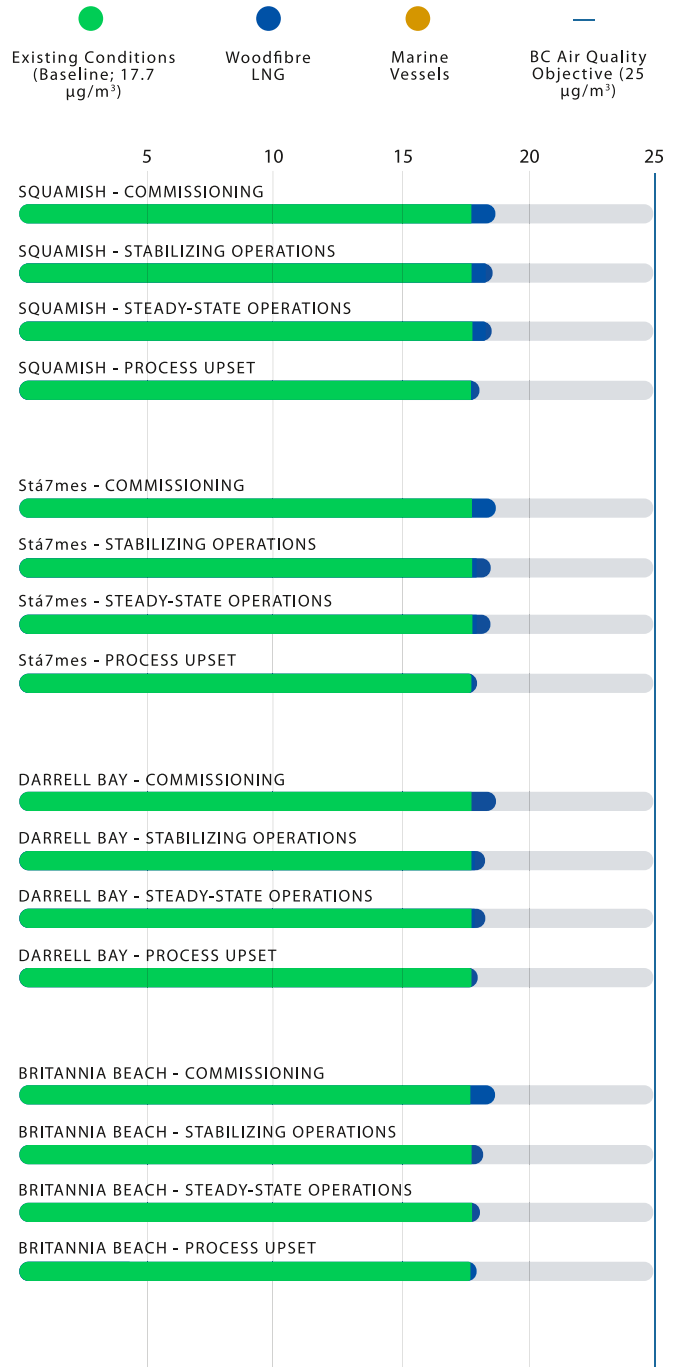
Air quality dispersion modelling results for PM_{2.5}

The modelling predicts PM_{2.5} ground-level concentrations will be well within the B.C. Air Quality Objectives for all scenarios, including with marine vessels added and under non-routine conditions:

- » During facility commissioning, the highest predicted PM_{2.5} ground-level concentrations at/near the fenceline are (including baseline concentration) 19.8 µg/m³ for the 24-hour PM_{2.5} and 5.4 µg/m³ for annual PM_{2.5}.
- » During stabilizing operations, the highest predicted PM_{2.5} ground-level concentrations from the facility alone are 2.1 µg/m³ (24-hour) and 0.2 µg/m³ (annual). With the inclusion of marine vessels and baseline concentrations, the highest predicted PM_{2.5} ground-level concentrations are 20.2 µg/m³ (24-hour) and 5.4 µg/m³ (annual), both remaining below the B.C. Air Quality Objectives.

PM_{2.5} modelling

(Modelled 98th Percentile of the Daily 24-Hour Average)



µg/m³ is a metric unit of measurement used to express the concentration of a substance — such as a pollutant, dust or chemical — within a specific volume of air.

- » During steady-state (normal) operations, the highest predicted $PM_{2.5}$ ground-level concentrations from the facility alone are $2.0 \mu\text{g}/\text{m}^3$ (24-hour) and $0.2 \mu\text{g}/\text{m}^3$ (annual). With the inclusion of marine vessels and baseline concentrations, the maximum predicted concentrations are the same as during stabilizing operations: $20.2 \mu\text{g}/\text{m}^3$ (24-hour) and $5.4 \mu\text{g}/\text{m}^3$ (annual), both remaining below the B.C. Air Quality Objectives.
- » During all phases of operation, the ground-level concentration of $PM_{2.5}$ decreases as you move away from the facility boundary, with levels varying in each community.

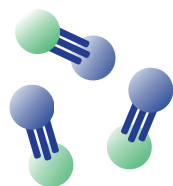
Potential effects of Woodfibre LNG's $PM_{2.5}$ emissions on human health and the environment

THE MODELLING SHOWS THAT:

- » Predicted $PM_{2.5}$ concentrations do not exceed the B.C. Air Quality Objective under any modelled scenario, including with marine vessels added, under non-routine conditions and including baseline concentrations. Woodfibre LNG's contribution to $PM_{2.5}$ health risk is predicted to be low.



Carbon Monoxide Emissions



Where does CO come from?

Carbon monoxide comes primarily from the incomplete combustion of carbon-containing compounds like oil, natural gas, coal and wood.

At Woodfibre LNG, CO is produced through combustion activities within the facility's heat medium furnace, thermal oxidizer and flare system, as well as by marine vessels associated with the project.

B.C. Air Quality Objectives for CO

	Averaging Interval	British Columbia Air Quality Objective (µg/m³)
CO	1-Hour	14,300
	8-Hour	5,500

Air quality dispersion modelling results for CO

The modelling predicts CO ground-level concentrations will be kept well within the B.C. Air Quality Objectives for all scenarios, including with marine vessels added and under non-routine conditions:

- » During facility commissioning, the highest predicted CO ground-level concentrations at/near the fenceline are (including baseline concentration) 665 µg/m³ for the 1-hour CO and 387 µg/m³ for 8-hour CO.
- » During stabilizing operations, the highest predicted ground-level concentrations from the facility alone are 278 µg/m³ (1-hour) and 48.5 µg/m³ (8-hour).
- » With the inclusion of marine vessels and baseline concentrations, the highest predicted 1-hour CO ground-level concentration during stabilizing operations is 1,729 µg/m³ and the highest predicted 8-hour CO ground-level concentration is 781 µg/m³, both remaining well below the B.C. Air Quality Objectives.
- » During steady-state (normal) operations, the highest predicted CO ground-level concentrations are 140 µg/m³ (1-hour) and 36 µg/m³ (8-hour). With the inclusion of marine vessels and baseline concentrations, the maximum predicted concentrations are the same as during stabilizing operations: 1,729 µg/m³ (1-hour) and 781 µg/m³ (8-hour).

Potential effects of Woodfibre LNG's CO emissions on human health and the environment

THE MODELLING SHOWS THAT:

- » Maximum predicted concentrations for CO in all modelled scenarios were 12% to 14% of the B.C. Air Quality Objectives. Therefore, predicted CO concentrations remain significantly below the B.C. Air Quality Objective under every modelled scenario, including with marine vessels added, under non-routine conditions and including baseline concentrations.



Woodfibre LNG's Commitment to Monitoring and Next Steps

Woodfibre LNG's commitment to monitoring

Monitoring will be a required and ongoing part of Woodfibre LNG's operations under the WDA permit. Once approved, the permit will set specific requirements for how air emissions and their effects on the environment are tracked over time, both at the facility and in the surrounding area. Monitoring requirements are enforced by the BCER. Woodfibre LNG will be required to report monitoring data to the BCER, which will review it to confirm the facility is operating within its permitted limits.

In addition, Woodfibre LNG is developing an Air Quality Mitigation and Monitoring Plan (AQMMP) in accordance with our Environmental Assessment Certificate. The AQMMP will describe how Woodfibre LNG will collect and track emissions data once the facility is operating, and will guide any additional measures if needed. This plan will be developed in consultation with the BCER, Skwxwú7mesh Úxwumixw (Squamish Nation), B.C. Ministry of Environment and Parks, B.C. Ministry of Health, Vancouver Coastal Health and səliłwətał (Tseil-Waututh Nation), and will be informed by the dispersion modelling completed for the WDA application.

Existing local monitoring

The B.C. Ministry of Environment and Parks operates a monitoring station in Squamish, which provides hourly air quality data used to calculate the Air Quality Health Index (AQHI), a publicly available measure of air quality and associated health risk.

LEARN MORE ABOUT THE WDA PERMITTING PROCESS

Learn more about the WDA permitting process on the BCER's website.



SHARE YOUR INPUT

The public comment period on Woodfibre LNG's WDA permit application will commence after the application is submitted fall 2026 to the BC Energy Regulator. Your feedback during this public comment period will be shared with the BCER as part of Woodfibre LNG's WDA application. Visit www.woodfibrelng.ca for more information about the WDA process.



HOW EMISSIONS ARE MONITORED AND VERIFIED



Measure & Track

Flow metres & gas chromatographs track emissions from all flaring sources



Monitor

Air quality is measured in the local area



Emissions Data

Discharge rates & emission data submitted to BCER (as per WDA permit)



BCER

Verify compliance with permit requirements and minimization of flaring

In accordance with our Environmental Assessment Certificate, an Air Quality Mitigation and Monitoring Plan will be developed in consultation with the BCER, Skwxwú7mesh Úxwumixw, B.C. Ministry of Environment and Parks, B.C. Ministry of Health, Vancouver Coastal Health and səliłwətał (Tseil-Waututh Nation). This will be in place prior to commencement of flaring and will include the monitoring requirements specified in the WDA permit for air emissions.



