



# FORT MCMURRAY

ATHABASCA VALLEY & PATRICIA MCINNES  
2022 AIR QUALITY



**The Wood Buffalo Environmental Association (WBEA) operates two Air Monitoring Stations (AMS) in Fort McMurray (pictured above): Athabasca Valley near MacDonal Island Park (right), and Patricia McInnes in Timberlea (left).**

**In this report you'll find a summary of air quality data taken directly from your AMS stations.**



## 1 SOURCE

Pollution is emitted into the air from a variety of sources

## 2 MEASURE

The WBEA ambient air monitoring stations measure the concentrations of pollutants in the air

## 3 Share

The information the WBEA collects is available to view on [wbea.org](http://wbea.org) and is used to calculate the air quality health index (AQHI)

### WHAT WE MEASURE

#### OZONE - O<sub>3</sub>

Ozone at ground-level is not emitted directly into the air but formed by chemical reactions of NO<sub>x</sub> and volatile organic compounds (VOCs), from vehicular and industrial emissions. Ozone can affect sensitive vegetation, by slowing plant growth and making them more susceptible to disease.

#### SULPHUR DIOXIDE - SO<sub>2</sub>

Sulphur dioxide is produced from the combustion of sulphur-containing fossil fuels.

#### FINE PARTICULATE MATTER - PM<sub>2.5</sub>

Particulate matter consists of a mixture of solid particles and liquid droplets found in the air. Fine particulate matter is produced mainly by combustion processes, including forest fires. Fine particulate matter poses a health risk as the particles can be inhaled deep into the lungs.

#### NITROGEN DIOXIDE - NO<sub>2</sub>

Nitrogen dioxide is produced by combustion of fossil fuels. Nitrogen dioxide is a key ingredient for ground level ozone formation and destruction, and can also interact with water to form acid rain.

#### TOTAL REDUCED SULPHURS - TRS

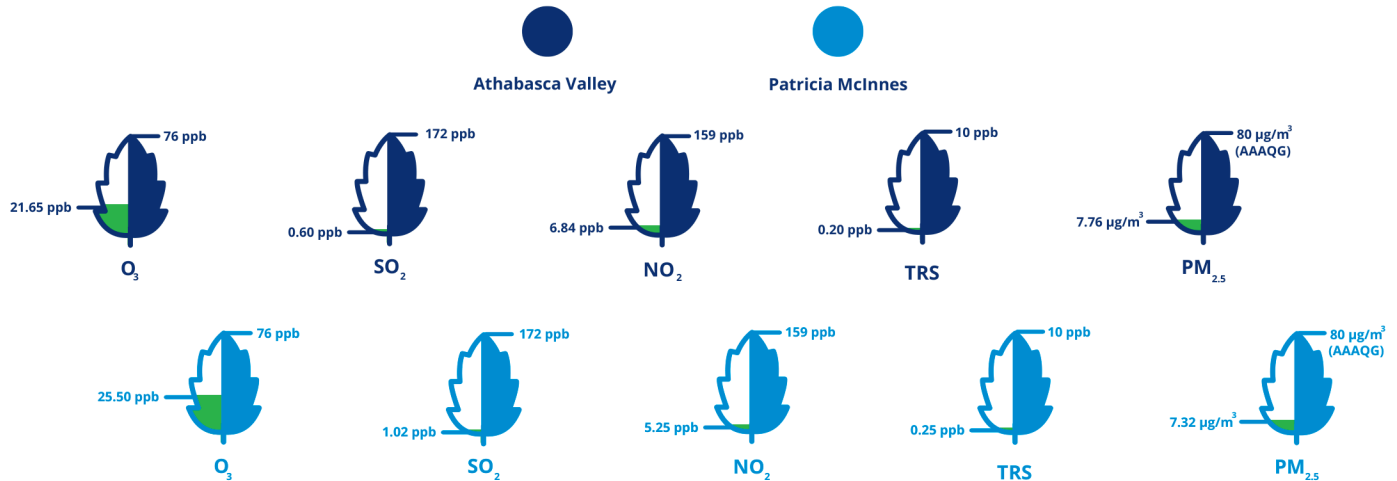
The term "Total Reduced Sulphur" covers a larger group of sulphur-containing compounds—including hydrogen sulphide—with the potential to cause unpleasant odours.

# COMMUNITY AIR MONITORING

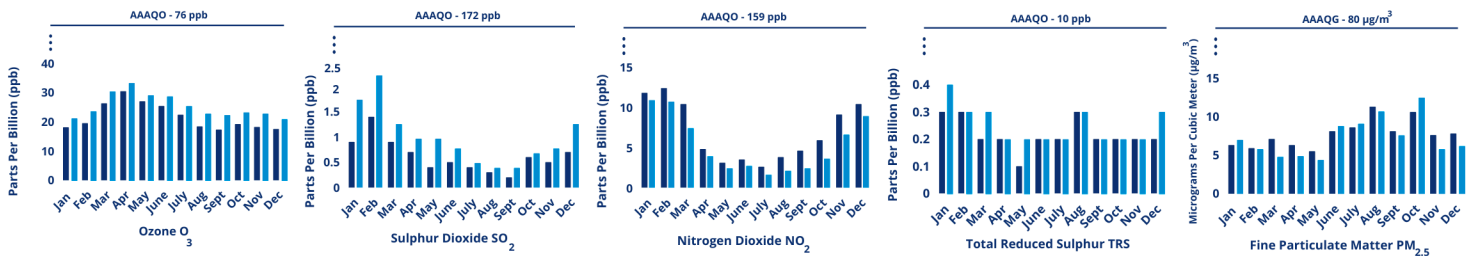
## Comparing Your Air in 2022 to the Alberta Ambient Air Quality Objectives and Guidelines (AAAQO/G)

The Alberta government sets limits called "AAAQOs" and "AAAQGs" for the amount of pollutants that can be in the air. The following images demonstrate the annual averages of hourly data of each pollutant compared to its relative AAAQO/G limit. The solid blue area (dark blue for Athabasca Valley, light blue for Patricia McInnes) shows the total AAAQO/G limit, while the green area shows the annual average for each pollutant (measured hourly).

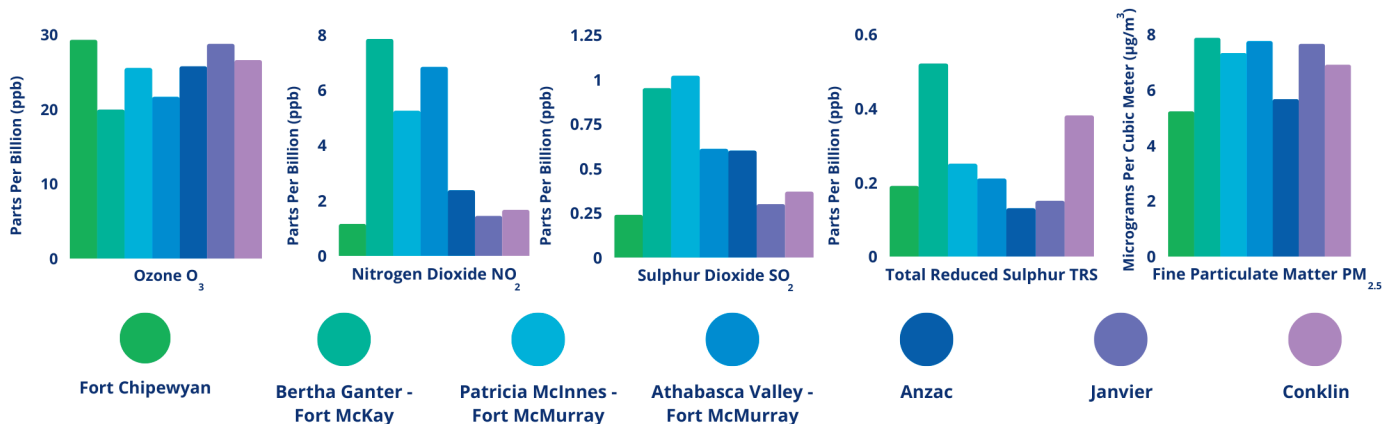
Data has been broken out to show averages from both Athabasca Valley and Patricia McInnes monitoring stations.



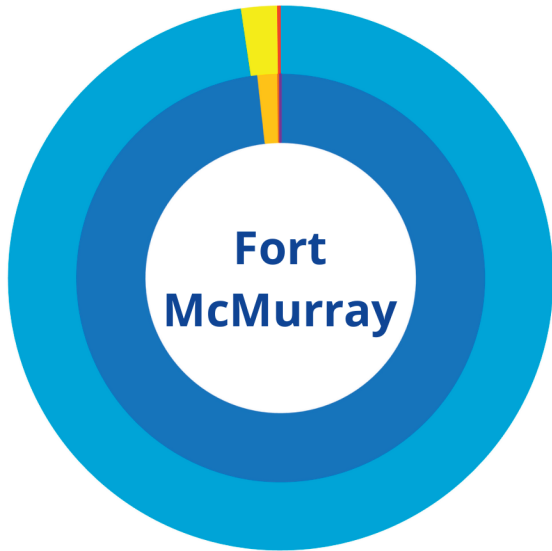
These bar graphs show a monthly average of hourly data for pollutants measured in the air outside in 2022. We've compared each pollutant to its relative hourly AAAQO/G limit.



## Comparison of Hourly Average Concentrations of Pollutants Between Community Stations in the RMWB 2022



# Air Quality Health Index (AQHI) 2022 Hourly Annual Average



## Fort McMurray - Athabasca Valley (Outer Ring)

- **Low Risk (1 to 3) - 97.66%**
- **Moderate Risk (4 to 6) - 2.13%**
- **High Risk (7 to 10) - 0.21%**
- **Very High Risk (greater than 10) - 0.00%**

## Fort McMurray - Patricia McInnes (Inner Ring)

- **Low Risk (1 to 3) - 98.25%**
- **Moderate Risk (4 to 6) - 1.56%**
- **High Risk (7 to 10) - 0.15%**
- **Very High Risk (greater than 10) - 0.04%**

## AIR QUALITY HEALTH INDEX (AQHI)

The **AQHI** is a number from 1 to 10 that indicates the relative health risk associated with local air quality. A low AQHI number means that it is a good time to be active outdoors. A high AQHI number means that precautions should be taken to limit exposure to the air, especially for 'at risk' individuals, including children, seniors, and those with lung conditions.

Health risk	AQHI	At Risk Population	General Population
Low Risk	1-3	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.
Moderate Risk	4-6	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	No need to modify your usual outdoor activities unless you are experiencing symptoms such as coughing and throat irritation.
High Risk	7-10	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms such as coughing and throat irritation.
Very High Risk	10+	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

To view the AQHI for Your Community

