2026 Upwind-Downwind

Addressing
Environmental Racism/Inequity in Urban Air Pollution

Best Available Technology:
A driver for Justice and Innovation

Presented by C&S Grant Environmental Consulting Inc.

May 2026

Presentation Overview

- Environmental Racism & Environmental Justice
- What is Best Available Technology (BAT)?
- How BAT can be a driver for Environmental Justice and Innovation?
- Examples:
  - Hamilton Area
  - Aamjiwnaang First Nation (next to Sarnia's Chemical Valley)

Environmental Racism & Environmental Justice

- On June 20, 2024, Bill C-226, National Strategy Respecting Environmental Racism and Environmental Justice Act became law.

- Although there is no definition of environmental racism or environmental justice that is accepted by everyone, the federal website Environmental Justice and Environmental Racism - Canada.ca offers a general description:

  - "… **Environmental racism** is a form of systemic racism. When it comes to the environment, environmental racism occurs when environmental decision-making, policies, and practices overly disadvantage some people due to their race. This outcome can be intentional or unintentional."

  - "… **Environmental justice** is a movement seeking to ensure fair and meaningful inclusion of affected peoples and equal sharing of benefits and costs when making decisions about the environment. Environmental justice aims to recognize and seek to address the existing inequalities faced by Indigenous, racialized, or otherwise marginalized communities throughout the decision-making process."

What is Best Available Technology (BAT)?

- Best Available Technology (BAT*) is the assessment of all methods that are used, or available for use, to reduce environmental exposures of one or more contaminants.
- When assessing BAT, one would consider the use of:
  - add on air pollution control technologies,
  - modifications to equipment or processes; or
  - opportunities to substitute raw materials for less toxic alternatives.
- In summary, BAT assessments lead to technically (and/or economically) feasible options to reduce pollution.
- A review of requirements imposed by other jurisdictions, in particular the US Environmental Protection Agency (US EPA) also provides insights on what is technically (and economically) feasible.

*sometimes referred to as Best Available Control Technology (BACT) or best management practices

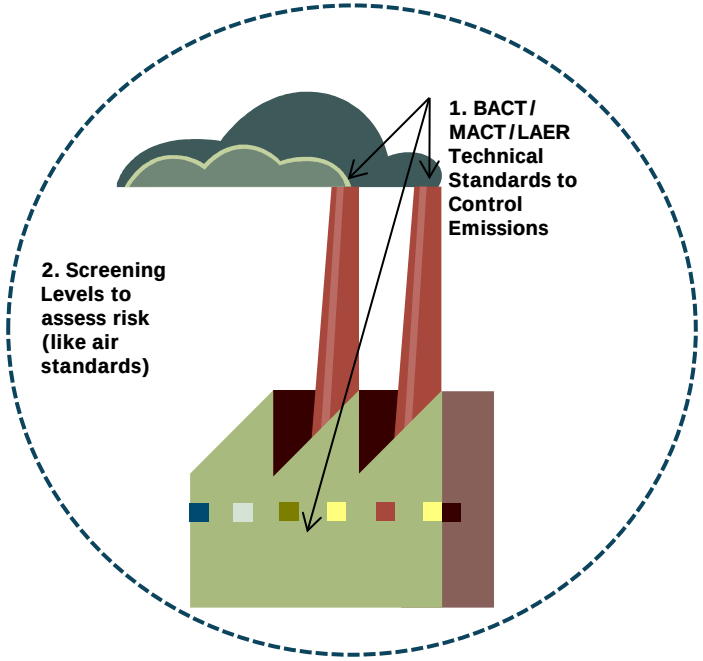
Comparison of US and Ontario Requirements

US EPA Requirements:

A. US EPA requires best available control technology (BACT) and for certain sectors Maximum Achievable Control Technology (MACT) to be installed first. In some locations Lowest Achievable Emission Rate (LAER) is required.

B. Once installed, US EPA assesses risks using values similar to Ontario air standards to determine whether or not further action is needed to reduce emissions.

C. Generally, states have values (like air standards) but they are not legal requirements. Legal requirements focus on BACT.

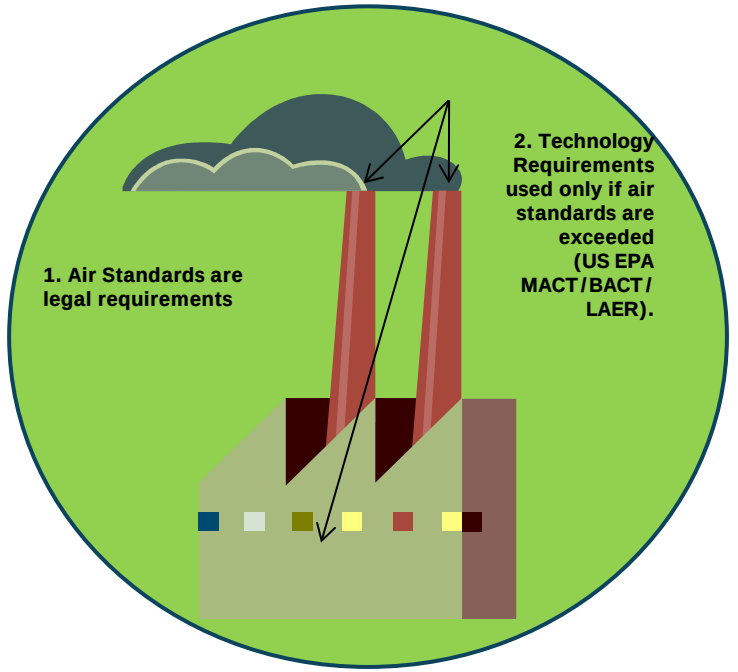


Ontario O. Reg. 419/05: Air Pollution – Local Air Quality:

A. Air standards are legal requirements which are generally assessed first.

B. If a facility cannot meet a standard, ministry requires them to assess best available technology via:
   - the site-specific standards process; or
   - a sector-based technical standard.

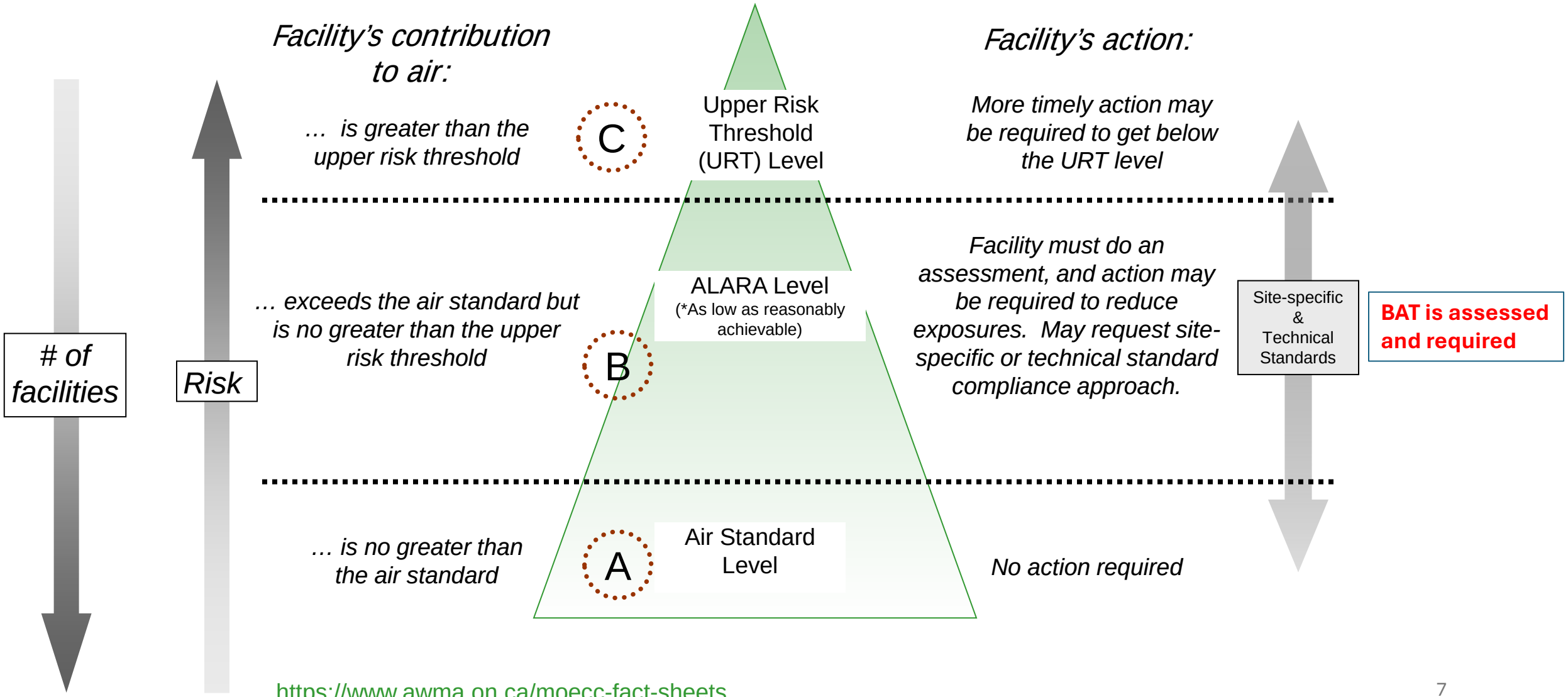
C. US EPA requirements serve as good tool for benchmarking of cost-effective technology.



Background – Ontario Regulation 419/05 and Best Available Technology (BAT)

- Ontario Regulation 419/05 (O.Reg. 419/05): Air Pollution – Local Air Quality is built on a risk-based foundation that is consistent with Canadian and International Standards.
  - This risk-based approach employs the principle of As Low As Reasonably Achievable (ALARA)… aka, Best Available Technology (BAT)
  - O.Reg. 4919/05 came into force, after passing a comprehensive Ontario government regulatory process, on November 30, 2005.
- Air quality standards and dispersion modelling are used in O.Reg. 419/05 to determine when BAT assessments are required to be implemented; where these assessments are meant to be rigorous.

Regulatory Framework for Managing Risk



https://www.awma.on.ca/moecc-fact-sheets

Local Air Quality Regulation Compliance Approaches

There are currently **three** compliance approaches for industrial facilities:

❶ Demonstrate **compliance with the air standards** by the phase-in period.

Assessed using approved air dispersion models or through modelling and monitoring.

OR

❷ Request and meet a **site-specific standard.**

Available to eligible facilities affected by new or existing requirements. Assessed using approved air dispersion models or through modelling and monitoring. Based on best available control technologies or practices.

OR

❸ Register under and meet a **technical standard** for specified contaminants.

Available if the Ministry of the Environment has developed a technical standard that applies to the sector and those contaminants.

Best Available Technology is assessed and required

https://www.awma.on.ca/moecc-fact-sheets

BAT requirements under O. Reg. 419/05

- Under Ontario Regulation 419/05: Air Pollution – Local Air Quality, a few regulatory instruments require BAT:

- Site-specific standards
  - Sections 32 to 37.1, O. Reg. 419/05
  - Guideline A-12: Guideline for the Implementation of Air Standards in Ontario
  - Guide to Requesting a Site-specific Standard

- Technical standards
  - Sections 38 to 44, O. Reg. 419/05
  - Guideline A-12: Guideline for the Implementation of Air Standards in Ontario
  - Guide to Applying for Registration to the Technical Standards Registry - Air Pollution
  - Technical Standards Registry - Air Pollution

What about Abatement Plans and BAT?

- Ontario's Environmental Compliance Policy is an overarching document that articulates how legislative violations would be addressed. It refers to a development of a "compliance plan" (which used to be called an "abatement" plan).

- A "compliance plan" is a written document prepared by a responsible person that sets out:
  - the details of the actions that they will take to address an identified violation(s) within a specified timeline
  - how they will prevent future reoccurrence or preventive measures that will be taken to protect the natural environment or human health.

- **Abatement plan - Section 29 (O. Reg. 419/05).**
  - "A person who gives a notice to a provincial officer under subsection 28 (1) or (1.1) in respect of a contaminant shall, not later than 30 days after giving the notice, prepare and submit to a provincial officer a written abatement plan for the contaminant that recommends steps that should be taken to prevent discharges of the contaminant from resulting in a contravention of section 19 or 20 or an adverse effect. ...."

- Abatement plans do not require a BAT assessment. However, one could be requested.

When else is BAT required?

Cumulative effects assessment in air approvals

In March 2018 (EBR Registry #: **013-1680)**, MECP introduced the Policy on Cumulative effects assessment in air approvals (see Pre-submission requirements for industry air approvals).

- Document provides guidance to a signing Director on how to consider cumulative effects in making decisions on Environmental Compliance Approvals (ECAs) - Air applications.
- The cumulative effects policy applies to:
  - selected areas where ambient air quality levels exceeded Ambient Air Quality Criteria (AAQCs) and where there is a concentration of industrial sources - Hamilton/Burlington and Sarnia/Corunna
  - selected contaminants that are known carcinogens - Benzene and Benzo(a)Pyrene
  - new and expanding facilities that submit an application for an ECA or ECA amendment in designated areas

- Action levels were determined following the ministry's framework for managing risk - each action level is a 10-fold increase above the AAQC.
- If triggered, a review of BAT can/should be requested and implementation considered.

Hamilton Area

Key Sources in Hamilton include:
Integrated Iron and Steel Mills and Carbon Black facility

Hamilton Air Monitoring Network (HAMN)

Aamjiwnaang First Nation

Chemical Valley - Sarnia, Ontario

1942 – people came to build
Polymer Corporation – synthetic rubber plant.

Community grew to 2325 residents with over 500 homes and other business/infrastructure.

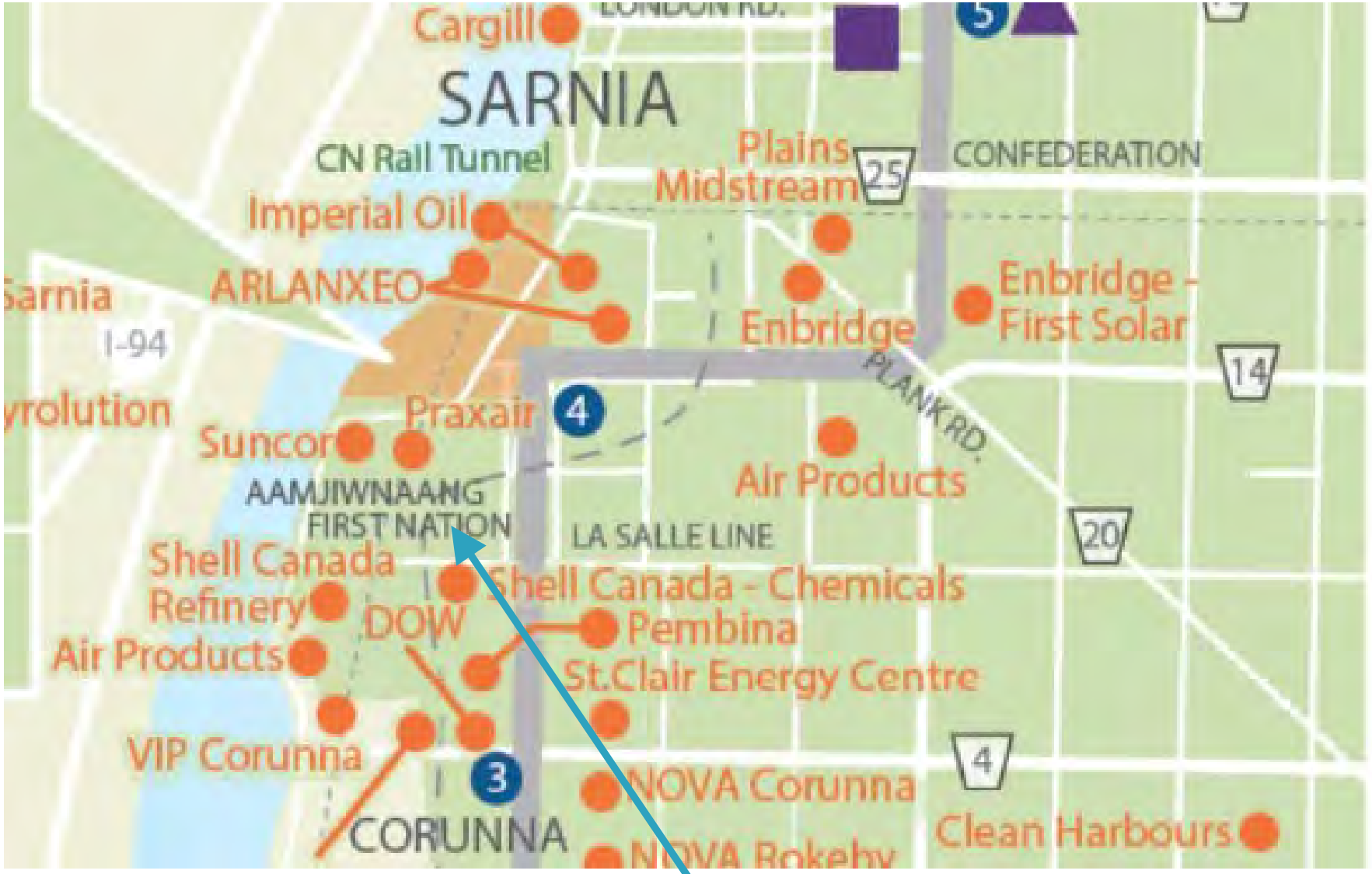
In 1951, the community was disbanded due to "health and safety concerns" and all residents were relocated by 1966.

But Aamjiwnaang was not relocated …

Example: Setting the Petroleum Refining Industry Standard, 2012–16

Aamjiwnaang First Nation

Walpole Island First Nation: about 40 km south of Aamjiwnaang



Aamjiwnaang First Nation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Best Available Control

Comparison of Monitoring for Benzene in 2023

Monitoring Data	Average Benzene Concentrations (µg/m³)	Maximum Benzene Concentrations (µg/m³)
Sarnia (near the AFN Band Office)	6.5	353
Other US Communities (with heavy industry)	0.6 (Bay Area, California)	1.3 (Bay Area, California)
Other non-industrial areas in Ontario	0.3-0.4	0.5

Background – AFN Air Quality Reports

Benzene Measurement Summary: Ada, Errnol Sportcenter & Wilson 2023-2026

Period	Benzene Measurement (µg/m³) at Three AFN Monitors			Benzene Measurement (µg/m³) Chevron, Richmond CA
	Highest Hourly	Highest 24-Hr Avg	Percent of Days Exceeding AAQC	Highest 24-Hr Avg
2023	353	62.7	-	1.6
2024 (Ada)	151	63.2	20%	1.6
2025	88	16.6	19%	9.6 (single outlier day)
2026-Q1	62	10.1	36%	1.3

AAQC refers to the Ontario benzene ambient air quality criterion: 2.25 µg/m³, 24 hour average.

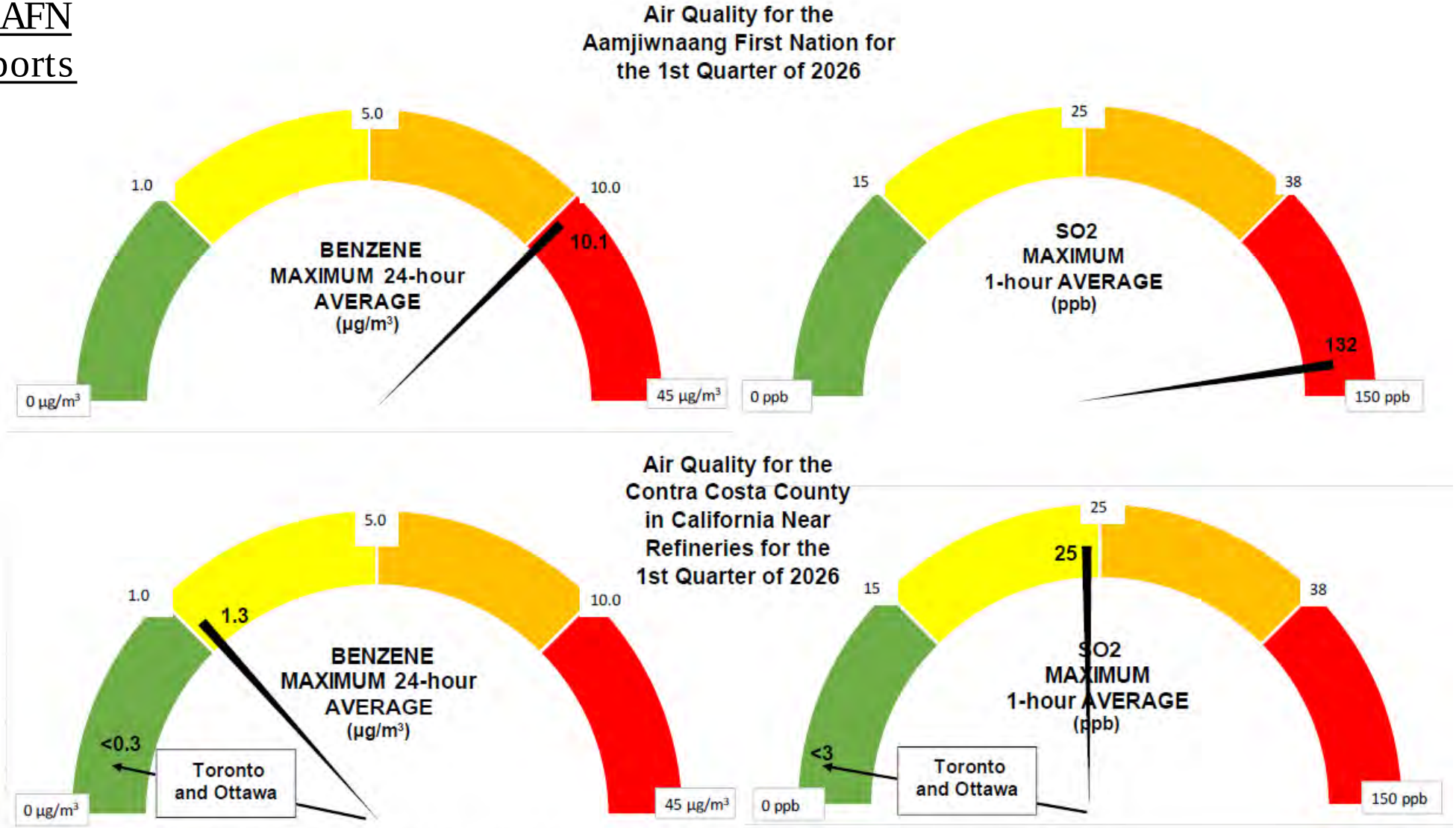
Background – AFN Air Quality Reports

SO2 Measurement Summary: Ada, Errnol & Wilson Monitors 2022-2026

Period	SO2 Measurement (ppb) at Three AFN Monitors				SO2 Measurements (ppb) Contra Costa County, CA	
	Highest Hourly	# of 1-hr Std Exceedances	Max 24-hr	# of 24-hr WHO Guideline Exceedances	Highest Hourly	Max 24-hr
2022	189	-	69	14	22	4.0
2023	204	175	86	15	7	2.5
2024	296	177	70	19	13	2.0
2025	137	111	48	8	31	2.8
2026-Q1	132	36	45	4	25	2.2

The Ontario SO2 1-hr air quality standard is 40 ppb; and the WHO 24-hr SO2 Guideline is 15 ppb.

Background – AFN Air Quality Reports



Note: Benzene levels in ambient air for Ottawa and Toronto are generally less than 0.3 µg/m^3.

Sulphur dioxide (SO2) levels in ambient air for Ottawa and Toronto are generally less than 3 ppb.

Identifying Best Available Technology

- Canada generally lags the United States and Europe in terms of industrial air pollution control.

- This provides an opportunity to use US federal and some state agency air pollution rules:
  - US EPA, electronic code of federal regulations;
  - California Resources Board and key air quality management districts such as the Southcoast Air Quality Management District (SCAQMD) and the Bay Area Air Quality Management District (BAAQMD)
  - Allegheny County Health Department air pollution rules for coke battery air emissions.

Aamjiwnaang First Nation

- Former Aamjiwnaang First Nation Chief Chris Plain speaks about the reality of the injustices endured by the Aamjiwnaang community (Senate on Bill C-226: Canada's first environmental racism bill, 2024).

  - **"The situation at Aamjiwnaang is not a knowledge problem. It's an inaction problem." …"**

  - **"We need to mend the treaty relationship between Aamjiwnaang and the Crown, where Aamjiwnaang has an equal voice in decision making, … We want to be part of a solution." …**

  - **"We want to feel confident that the air we are breathing isn't slowly killing us. And we want to live with peace of mind that our children will not get sick and die before us."**

Questions?

Cathy Grant: cathy.csgenv@gmail.com

416 417 9190

Scott Grant: scott.csgenv@gmail.com

647-284-8219

C&S Grant Environmental Consulting Inc.