Ontario's Local Air Quality Regulatory Framework

An Overview of Ontario Regulation 419/05: Air Pollution – Local Air Quality

Air Quality Monitoring in Hamilton:
Giving Community a Voice

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Ontario

Presentation Outline

- The Law in Ontario – Regulating Air Pollution in a Community
- Objectives of the Local Air Quality Regulation
- Standards Setting Under the Local Air Quality Regulation
- Demonstrating Compliance with the Local Air Quality Regulation
- Verifying Compliance with the Local Air Quality Regulation
- Where to Find More Information and How to Have Your Say

The Law in Ontario – Regulating Air Pollution in a Community

Environmental Protection Act, R.S.O. 1990, c. E.19

Defines:
"Natural Environment"
"Air"
"Contaminant"

Approximately 25 regulations under the Environmental Protection Act

Outlines the need to obtain Approvals or Permissions to Operate

Defines and details what is meant by "Adverse Effect"

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The Law in Ontario – Regulating Air Pollution in a Community

Environmental Protection Act, R.S.O. 1990, c. E.19

Global Air Quality

Impacts from climate change, managing emissions of carbon dioxide, greenhouse gas emissions, and depletion of the ozone layer.

- 4 Regulations under the Environmental Protection Act

Regional Air Quality

Impacts from multiple types of transboundary sources, such as industry, vehicles, residential heating, etc., that may lead to smog, acid rain, etc.

- 7 Regulations under the Environmental Protection Act

Local Air Quality

Impacts on a community as a result of their proximity to nearby sources of air emissions.

- 14 Regulations under the Environmental Protection Act including ***O. Reg. 419/05: Air Pollution – Local Air Quality***

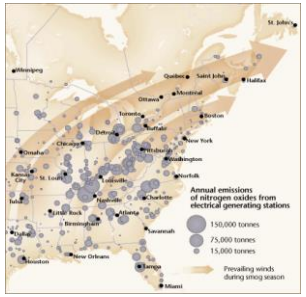

Photo credit: Wisconsin School of Business

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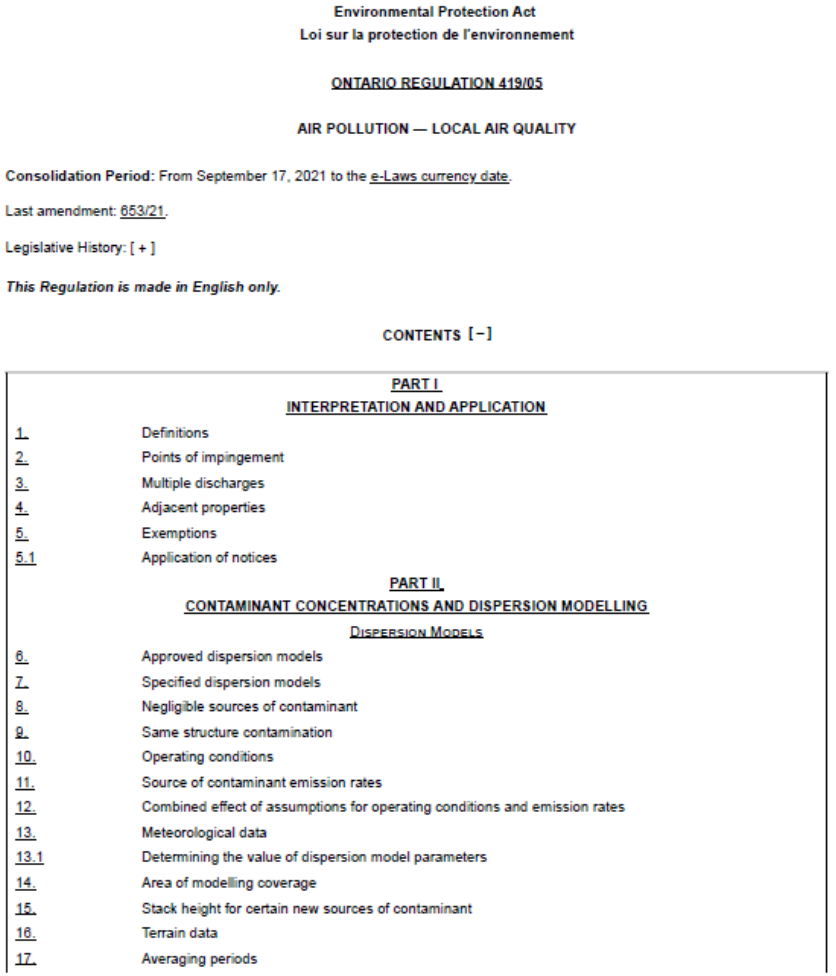
Objectives of the Local Air Quality Regulation (O. Reg. 419/05)

- Work within the province's air management framework to protect local communities from the effects of air pollution resulting from nearby industrial and commercial operations.
  - Introduced a risk-based approach to implementing new and updated air standards

- Require industry and commercial operations to operate responsibly under a set of rules that are publicly transparent.



Environmental Protection Act
Loi sur la protection de l'environnement

ONTARIO REGULATION 419/05

AIR POLLUTION — LOCAL AIR QUALITY

Consolidation Period: From September 17, 2021 to the e-Laws currency date.

Last amendment: 653/21.

Legislative History: [+]

This Regulation is made in English only.

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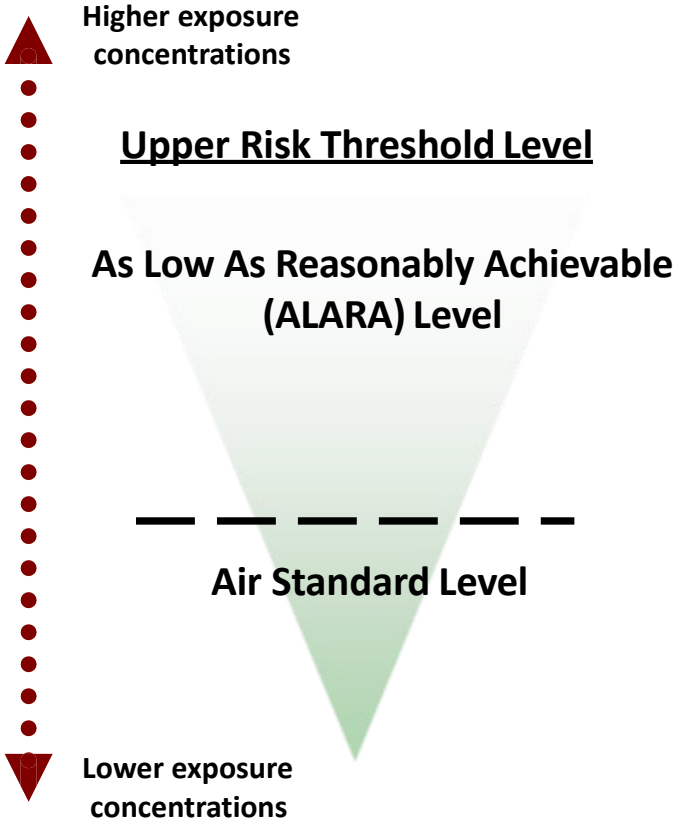
Standards Setting under the Local Air Quality Regulation (O.Reg. 419/05)

- Air standards in the Local Air Quality Regulation:
  - are legal limits for concentrations of contaminants in air.
  - reflect a concentration that is protective against adverse effects.
  - are used to assess the contributions of a contaminant to air by a regulated facility. A limit must be met anywhere outside of a facility's property boundary (e.g. point of impingement or POI).
  - do not consider economic or technical issues – these issues are intended to be addressed through other compliance options such as technology-based standards



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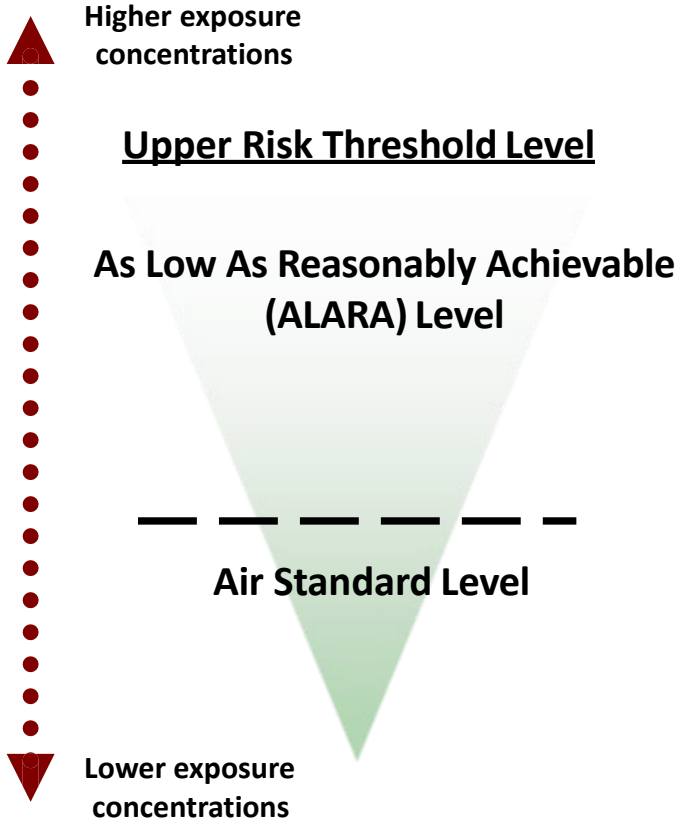
Standards Setting under the Local Air Quality Regulation (O.Reg. 419/05)

- New or updated standards are usually phased-in to allow industry time to comply with the regulation. New or updated standards for 69 contaminants have been introduced since 2005.

- An Upper Risk Threshold, or URT, is a threshold set by the ministry at a concentration greater than its corresponding air standard. A URT is used to manage risks by triggering actions when it is exceeded both during and after the phase-in period of an air standard and is also used during the evaluation of requests for site-specific standards.

- Air standards and URTs are determined by toxicologists. When new or updated air standards come into effect, the public has the opportunity to comment on the proposed limit through Environmental Registry of Ontario.



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Demonstrating Compliance with the Local Air Quality Regulation (O. Reg. 419/05)

There are currently **three** compliance approaches for industrial facilities. A single facility may use one or more of these approaches:

1

Demonstrate compliance with the "Schedule 3 Air Standards"

- Compliance is demonstrated using computer models or through a combination of computer modelling and air monitoring data.

2

Request and Meet a "Site-Specific Standard (SSS)"

- available to eligible facilities affected by new or existing requirements.
- assessed using approved air dispersion models or through a combination of computer modelling and air monitoring data.

3

Register and meet the requirements of a "Technical Standard"

- available if the ministry has developed a "technical standard" that applies to a specific type of industry.
- Requires best available emissions control technology and practices.

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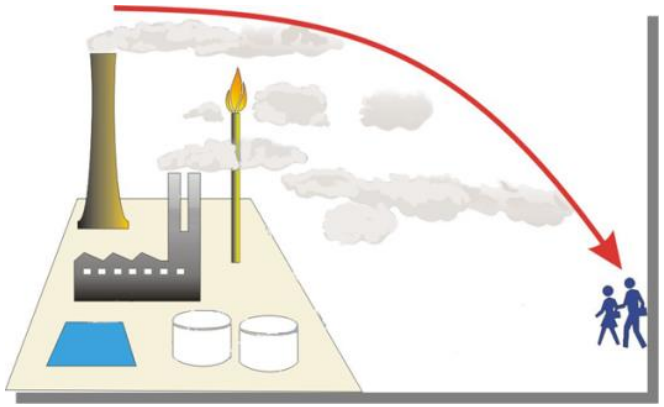
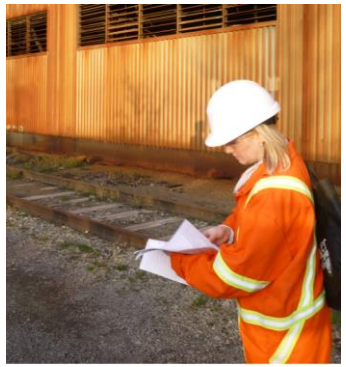
Demonstrating Compliance with the Local Air Quality Regulation (O. Reg. 419/05) – Emission Summary and Dispersion Modelling Reports

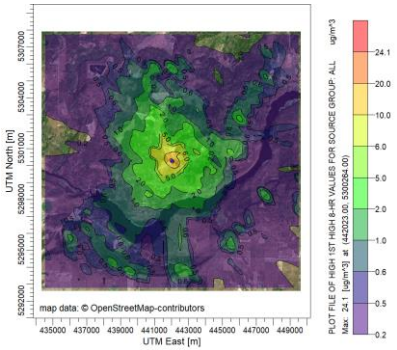
- The regulation requires most facilities to prepare and update a document called an Emission Summary and Dispersion Modelling Report or ESDM Report. An ESDM Report:
  - is the key document that a facility uses to demonstrate their ability to comply with air limits and site-specific standards.
  - includes information on how a facility operates.
  - includes information on the types and quantities of chemicals and particles that are released into the air from a facility's operations.
  - includes information on how the facility used a computer model to determine concentrations of each chemical and particle outside their property boundary.
- If requested, the regulation requires a facility to provide a member of the public with a copy of the Executive Summary of their ESDM Report.

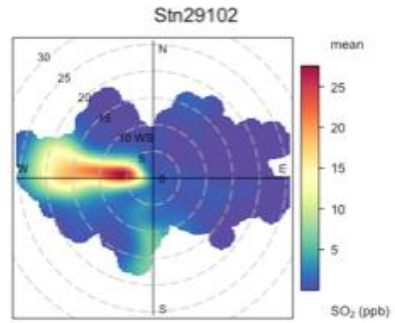


Verifying Compliance with the Local Air Quality Regulation (O. Reg. 419/05)

- Ministry environmental officers conduct planned and/or reactive inspections.
  - Initiate corrective action and compliance and/or enforcement activities where required.
- Engineering review of ESDM Reports.
  - During assessment of a request for an environmental compliance approval or site-specific standard approval.
  - Random or targeted assessments conducted by Air Compliance Engineers in our regional offices.
- Review of ambient air monitoring data to identify trends, potential issues, and/or possible sources.
  - Scientists and technicians review and audit the data that is collected at air monitoring stations in Hamilton.
  - Ambient air monitoring alone cannot be used to verify compliance, it can be used as a tool to identify non-compliance.







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Verifying Compliance with the Local Air Quality Regulation (O.Reg. 419/05) – Air Quality Monitoring in Hamilton

- The ministry has carried out air quality monitoring in the Hamilton area for many years.
- Industry-operated stations have been managed by the Hamilton Air Monitoring Network (HAMN) since 2003. Data for these stations is made available to the public in real-time on the HAMNair.ca website.
- The ministry conducts regular audits of the industrial monitoring network to ensure data integrity and confidence in the monitoring results.
- HAMN provides the ministry with real-time air quality alerts based on agreed thresholds. HAMN also submits monthly, quarterly and annual reports to the Ministry for review.
- Air monitoring in Hamilton is essential to determine where progress is being made and to identify air quality issues that require additional focus and attention.

Downtown Hamilton AQHI Station

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Hamilton Air Monitoring Stations

Ministry of the Environment Conservation and Parks

Projection:
Universal Transverse Mercator
Zone 17
False Easting: 500000m
False Northing: 0m
Central Meridian: -81
Scale Factor: 0.9996
Latitude of Origin: 0
1983 North American Datum

0 0.325 0.65 1.3 1.95 2.6 3.25
Kilometres

The maps shown here are for illustration purposes only and are not suitable for site-specific use or applications. Ministry of the Environment provides this information with the understanding that it is not guaranteed to be accurate, correct or complete and conclusions drawn from such information are the responsibility of the user. While every effort has been made to use data believed to be accurate, a degree of error is inherent in all maps. Map products are intended for reference purposes only, and the Ministry of the Environment will accept no liability for consequential and indirect damages arising from the use of these maps. These maps are distributed 'as-is' without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability to a particular purpose or use.

Information provided by the Ministry of the Environment and the Ministry of Natural Resources.
Imagery aquisition - 2010

Published Month Year
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Where to find more information and how to have your say…

- Air Quality in Ontario Annual Reports (airqualityontario.com)
  - Ontario reports annually on air quality across the province, including Hamilton
- Environmental Registry of Ontario
  - Provide your input on new policies, industry requests for approvals, new standards, etc.
- Access Environment (gov.on.ca)
  - A map-based tool that can be searched for registrations on the Environmental Activity and Sector Registry (EASR), Renewable Energy Approvals (REA), and Environmental Compliance Approvals (ECAs) issued by the Ministry since December 1999
- Air Quality Heath Index (AQHI) Ontario
  - Access current pollutant concentrations; sign up for alerts
- Contact the Ministry's Hamilton District Office at (905) 521-7650 to speak with an Environmental Officer about your questions or concerns

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Where to find more information and how to have your say…

- Hamilton Air Monitoring Network - HAMN | Hamilton Air Quality Monitoring and Reporting (hamnair.ca)
  - Access real-time air monitoring data at Hamilton stations as reported by Industry
- Clean Air Hamilton – Dedicated to improving air quality in Hamilton's community
  - Clean Air Hamilton reports annually on progress related to air quality in Hamilton
- Explore National Pollutant Release Inventory (NPRI) Data - Canada.ca
  - A federal database of pollutant information reported by industry on an annual basis
- Request a copy of a facility's executive summary of their Emissions Summary and Dispersion Modelling Report

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Questions/ Discussion

Appendices

Local Air Quality Regulation (O.Reg. 419/05) Table of Contents

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Further Guidance on Demonstrating Compliance with the Local Air Quality Regulation

- Guideline A-10: Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report | Ontario.ca
    - Technical Bulletin: management approaches for industrial fugitive dust sources | ontario.ca
- Guideline A-11: Air Dispersion Modelling Guideline for Ontario | Ontario.ca
    - Methodology for Modeling Assessments of Contaminants with 10 Minute Average Standards and Guidelines under O. Reg. 419/05 | ontario.ca
    - Technical Bulletin: modelling open flares under O.Reg. 419/05 | ontario.ca
- Guideline A-12: Guide to Requesting a Site-specific Standard | ontario.ca
- Guide to Applying for Registration to the Technical Standards Registry - Air Pollution | ontario.ca
- Cumulative Effects of Benzene and Benzo(a)Pyrene - Pre-submission requirements for industry air approvals | Ontario.ca

Facilities in Hamilton with Site Specific Standards under the Local Air Quality Regulation

Facility	Environmental Registry Ontario No.	Contaminant	Averaging Period	Current Limit in Micrograms per Cubic Metre	Approval Expiry Date
Arcelor Mittal Dofasco	012-2024	Suspended Particulate Matter	24 hour	177	June 30, 2023
	012-4675	Benzene	Annual	10	
		Benzo(a)Pyrene	Annual	0.011	
		Manganese and Manganese Compounds	24 hour	1.5	
Carmeuse Lime	012-9911	Calcium Oxide	24 hour	73	February 28, 2023
		Suspended Particulate Matter	24 hour	187	
Harsco Canada Corp	012-5919	Manganese and Manganese Compounds	24 hour	1.5	June 30, 2023
		Suspended Particulate Matter	24 hour	177	
Rain Carbon	013-0752	Benzene	Annual	12.7	November 21, 2022
		Benzo(a)Pyrene	Annual	0.0008	
Stelco	012-2106	Suspended Particulate Matter	24 hour	190	June 30, 2023
		Benzene	Annual	3.9	
		Benzo(a)Pyrene	Annual	0.0045	

Technical Standards

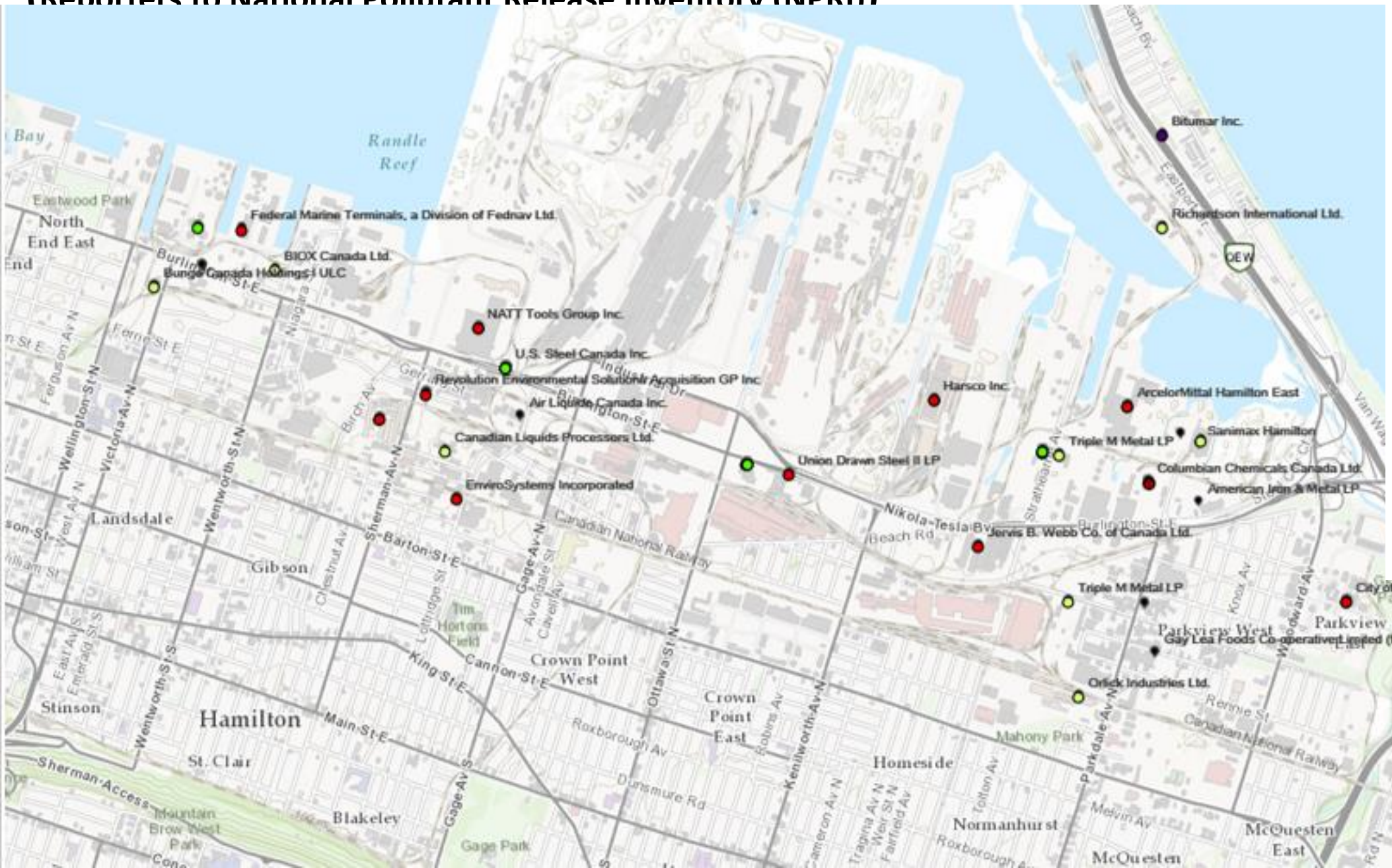
Access the Public Registry:
https://www.ontario.ca/page/technical-standards-registry-air-pollution for all registration details

Status	Sector	Date Published	Registered Facilities	Contaminants
Published	Forest Products	2009; Updated: 2014	14	Acrolein
	Foundries	2009; Updated: 2016	17	Lead and other contaminants (over 300)
	Pulp and Paper	2014	4	Total Reduced Sulphur (TRS) and other contaminants (over 50)
	Metal Finishers	2016	9	Hexavalent Chromium and Nickel
	Petrochemical	2016; Updated: 2020	4	Benzene and 1,3-Butadiene
	Petroleum Refinery	2016; Updated: 2020	4	Benzo-a-Pyrene and Benzene
	Mining Sites	2018	-	Nickel and other contaminants (25 in total)
	Hot Mix Asphalt	2020	-	Benzo-a-pyrene, VOCs, metals, Carbon monoxide, carbon dioxide, sulphur dioxide, nitrogen oxides, SPM and other contaminants (70 in total)

* only 1 facility in Hamilton has registered to a Technical Standard: Alcast Technologies has registered to the Foundries Industry Standard

Map of Large Air Emitters in Hamilton

(Reporters to National Pollutant Release Inventory (NPRI))



Legend

Benzene

Benzo(a)pyrene

Manganese

Particulate Matter Less than or equal to 2.5 Microns

Sulphur Dioxide

Total Reduced Sulphur (TRS)

List of NPRI Facilities

Note: Only one priority contaminant displays on the map below, however it should be noted that several of the facilities flagged emit multiple priority contaminants.