

GUELPH INNOVATION DISTRICT

GUELPH, ONTARIO

LAND-USE COMPATIBILITY (AIR QUALITY AND NOISE)

RWDI #2605326

June 12, 2026

SUBMITTED TO:

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1 INTRODUCTION

1.1 Project Overview

RWDI AIR Inc. (RWDI) was retained by Fusion Homes (Fusion) to undertake a land use compatibility study for the proposed Guelph Innovation District (GID) development located on the north side of the intersection of Victoria Road South and Stone Road East in Guelph, Ontario (the Site). RWDI understands that the proposed 325-acre development has already received secondary plan and block plan approvals, and Fusion is now going through the Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA) and draft plan approval process. As part of the application, the City of Guelph requires a land-use compatibility to assess the potential impacts of surrounding sites on the development. The location of the subject lands is shown on Figure 1. The detailed site plan is included in Appendix A.

The subject lands are currently on land zoned "Urban Reserve". The site is bounded by Natural Heritage System and additional Urban reserve lands, with Employment, Institutional and Open Space, Golf Course and Parks lands beyond this. Zoning is provided on Figure 4. Official Plan designations are provided on Figure 5.

1.2 Scope of Work

The scope of this study was to

- Assess the potential for compatibility issues with respect to noise and air quality, considering the following:
 - o Ministry of the Environment, Conservation and Parks (MECP) Guideline D-6;
 - o Ontario Regulation (O. Reg.) 419/05 (Air Quality);
 - o O. Reg. 1/17 (Activities Requiring Assessment of Air Emissions);
 - o MECP Guideline NPC-300 (Noise);
 - o MECP Noise Screening Guidelines;
 - o Proposed site plan for the development;
 - o Municipality Official Plan;
 - o Existing zoning by-laws pertaining to lands within the study area; and,
 - o Other applicable guidelines and documents, as required.
 - o Complete a review of the site plan in the context of the above guidelines and documents.
- Conduct an online search to identify the types and nature of existing land uses that are currently within the study area.
- Apply tools such as the MECP's Guideline D-6 and meteorological data for the study area, together with RWDI's long experience in assessing air quality, noise, and vibration impacts.
- Conduct a search of publicly available air quality, noise, and vibration information for any information on emission sources at existing sites surrounding the study area.
- Considerations to include noise, vibration, emissions, dust, and odour.



2 LAND USE COMPATIBILITY FRAMEWORK

2.1 Provincial Planning Statement

The following excerpts from the Provincial Planning Statement, 2024 (Ontario 2024) help identify the general intentions of land uses within Ontario with respect to air quality and noise effects for proposed sensitive land uses:

- Section 3.3.3 states that:

“New development proposed on adjacent lands to existing or planned corridors and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, or where avoidance is not possible, minimize and mitigate negative impacts on and adverse effects from the corridor and transportation facilities.”

- Section 3.5.1 states the following:

“Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.”

- Section 3.5.2 states the following:

“Where avoidance is not possible in accordance with policy 3.5.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other major facilities that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent sensitive land uses is only permitted if potential adverse effects to the proposed sensitive land use are minimized and mitigated, and potential impacts to industrial, manufacturing or other major facilities are minimized and mitigated in accordance with provincial guidelines, standards and procedures.”

- Section 8.0 defines sensitive land uses as:

“...buildings, amenity areas, or outdoor spaces where routine or normal activities occurring at reasonably expected times would experience one or more adverse effects from contaminant discharges generated by a nearby major facility. Sensitive land uses may be a part of the natural or built environment. Examples may include, but are not limited to residences, daycare centres, and educational and health facilities.”

2.2 Provincial Compatibility Guidelines

The Ministry of Environment, Conservation and Parks' (MECP) D-series guidelines deal with land use compatibility in Ontario. The most relevant guideline in the present case is D-6 (Compatibility between Industrial Facilities, <https://www.ontario.ca/page/d-6-compatibility-between-industrial-facilities>). It provides a classification scheme for industries based on their potential for emissions that could cause adverse effects at nearby sensitive land uses. The classification scheme is summarized in Table 1.

Table 1: D-6 Industry Classification Scheme

Class	Descriptors
I	• Small scale • Self-contained • Packaged product • Low probability of fugitive emissions • Daytime operations only • Infrequent and/or low intensity outputs of noise, odour, dust, vibration
II	• Medium scale • Outdoor storage of wastes or materials • Periodic outputs of minor annoyance • Low probability of fugitive emissions • Shift operations • Frequent movement of products and/or heavy trucks during daytime
III	• Large scale • Outside storage of raw and finished products • Large production volumes • Continuous movement of products and employees during shift operations • Frequent outputs of major annoyance • High probability of fugitive emissions

For each class of industry, the guideline provides an estimate of potential influence area and a minimum recommended separation distance from sensitive land uses, which are set out in Table 2.

Table 2: D-6 Separation Distances

Class	Potential Influence Area (m)	Minimum Separation Distance (m)
I	70	20
II	300	70
III	1000	300

Guideline D-6 recommends the following:

1. "...no sensitive land uses shall be permitted within the actual or potential influence areas of Class I, II or III industrial land uses, without evidence to substantiate the absence of a problem." (Sec. 4.5.1 of Guideline D-6).
2. "No incompatible development other than that identified in Section 4.10, *Redevelopment, Infilling and Mixed-Use Areas* should occur [within the recommended minimum separation distances]" (Sec. 4.3 of Guideline D-6)
3. "When a change in land use is proposed [in an area of urban redevelopment, infilling or transition to mixed use] for either industrial or sensitive land use, less than the minimum separation distance ... may be acceptable subject to either the municipality or the proponent providing a justifying impact assessment (i.e., a use specific evaluation of the industrial processes and the potential for off-site impacts on existing



and proposed sensitive land uses). Mitigation is the key to dealing with less than the minimum to the greatest extent possible.” (Sec. 4.10.3 of Guideline D-6).

With respect to how separation distance should be measured, the guideline states that:

“Measurement shall normally be from the closest existing, committed and proposed property/lot line of the industrial land use to the property/lot line of the closest existing, committed or proposed sensitive land use.”

However, it does allow the measurement to include areas within the lot lines (on-site buffers) where site-specific zoning or site plan control precludes the use of the area for a sensitive use in the case of the sensitive land use, and for an activity that could create an adverse effect in the case of the industrial land use.

When dealing with vacant industrial lands, the guideline states that:

“Determination of the potential influence area shall be based upon a hypothetical worst-case scenario for which the zone area is committed”.

2.3 City of Guelph Official Plan

The City of Guelph Official Plan also has policies that require the assessment of land use compatibility.

- Section 11.1.8.10 provides the following definition of compatibility:

“Compatibility/compatible means: Development or redevelopment which may not necessarily be the same as, or similar to, the existing development, but can coexist with the surrounding area without unacceptable adverse impact.”

- Section 11.2.6.4 states that:

1. *“When considering development applications and public realm projects, there shall be regard to all applicable provincial and municipal policies, regulations and guidelines to ensure that compatibility will be achieved and maintained with regard to noise, vibration, dust, odour, air quality and illumination so as to achieve the goals of:*
 - a) *Preventing undue adverse impacts from proposed development on the City's Waste Resource Innovation Centre, designated Major Utility and the Cargill plant designated Industrial; and*
 - b) *Preventing undue adverse impacts on the proposed development from the City's Waste Resource Innovation Centre, designated Major Utility and the Cargill plant designated Industrial.*
2. *Sensitive land uses may be prohibited in the Zoning By-law or limited (through massing and siting, buffering and design mitigation measures) in areas in proximity to the Major Utility and Industrial designations to ensure compatibility. In addition, noise and air emissions reports shall be required and vibration and illumination reports may be required, in support of development approval requests. Such environmental reports are to specify how compatibility will be achieved and maintained between the Waste Resource Innovation Centre and Cargill and the proposed development, and may include measures aimed at minimizing impacts.*



3. *The City shall consult with the Ministry of the Environment, Cargill and the City's Waste Resource Innovation Centre during the development approvals process and during the design process for public spaces in the vicinity of the Cargill plant and the City's Waste Resource Innovation Centre property to ensure compatibility."*
- With respect to the GID, Section 11.2.7.1 states that:
 1. *"Lands within the GID Secondary Plan area are subject to the interpretation and implementation policies of the Official Plan and the following specific policies.*
 2. *Where the policies of this Secondary Plan conflict with those in the Official Plan, the policies of the GID Secondary Plan shall prevail.*
 3. *The built form policies of the GID Secondary Plan respond sensitively to the topography and adjacent land uses. The primary intent is to ensure compatibility among buildings of different types and forms, the minimization and mitigation of adverse shadow and view impacts, and the creation and maintenance of an inviting and comfortable public realm. Nevertheless, the City recognizes the need to be somewhat flexible and allow for well-designed buildings that respond appropriately to the conditions of their site and surroundings and are consistent with the principles of this Secondary Plan. Where "generally" is used to qualify a built form policy found in Section 11.2.6.2 of this Secondary Plan, it is the intent that the policy requirement shall be met except where an applicant has demonstrated to the City's satisfaction that site-specific conditions warrant considerations of alternatives, and that the proposed alternative built form parameters meet the general intent of the policy. Such exceptions shall not require an amendment to this Secondary Plan."*

3 METHODOLOGY

3.1 Facility Information

Information on nearby industrial facilities was obtained from the following sources:

- Published satellite imagery and street-based photography.
- Searching MECP Access Environment website for Environmental Compliance Approval (ECA) and Environmental Sector and Activity Registry (EASR) registrations for existing industries within 1000 m of the subject lands.
- Searching the Environmental Registry for new or amended ECA and EASR registrations for existing industries within 1000 m of the subject lands.
- Environment and Climate Change Canada's (ECCC) National Pollutant Release Inventory (NPRI) data for industries within 1000 m of the subject lands.
- Site visits.

3.2 Site Visit

RWDI has visited this site on multiple occasions and has a thorough understanding of the area and the surrounding facilities.



3.3 Meteorology

RWDI reviewed wind data from former Guelph Turfgrass Institute when it was still located on the subject lands, to assist in the assessment. A summary of the directional distribution of winds over a period from 2006-2021 is shown in Figure 2. The wind directions in the figure refer to the direction from which the wind blows, while the annual frequency of a given wind direction is shown as a distance radially from the centre. The most frequent winds originate from the northwest to southwest with winds from the north northeast through south southwest less frequent. Winds from the east are relatively common, however. There is a new meteorological station at the new Guelph Turfgrass Institute complex on Stone Road, but this data has not been reviewed as it has only been in operation since 2021 or 2022.

4 RESULTS

The review considered the influence of potential future residential development on industrial uses in the surrounding General Industrial areas, including any proposed expansions or intensifications that are known. Potential future uses in the General Industrial areas that are not currently proposed are also considered, as well as the influence of transportation systems. The results of the review are outlined below.

4.1 Existing and Proposed Industrial Uses

Table B-1 in Appendix B lists all identified industries with MECP air emission permits within 1000 m of the subject lands, as well as any facilities of interest that do not have MECP permits. Figure 3 shows all facilities of interest, including facilities with MECP permits within the 1000 m radius. Table 3 only lists the facilities whose potential influence areas extend to the subject lands when measured from the lot line of the facility. Guideline D-6 recommends that no sensitive uses be permitted within the influence areas “without evidence to substantiate the absence of a problem”. These facilities are discussed in the following sections.

As of the date of this report, the MECP Access Environment database, which provides public access to ECAs and EASR registrations, has been out of service., and has been for several weeks. Normally copies of all ECAs and EASR registrations would be included in the appendices of this report, but not all are not currently available. Appendix B provides the information that is currently available. Despite this, the conclusions and recommendations in this report are not materially affected by the absence of this information.

Table 3: Facilities Potentially Influencing the Proposed Development

Class	Industry	Address	Potential Influence Area (m)	Recommended Minimum Separation Distance (m)	Actual Separation Distance ^[1]	
					Property Line (m)	Residential Properties (m)
III	Lockhart Excavators Ltd. Pit #4	555 Stone Road E	1000	300	35	35
III	Cargill	165 Dunlop Dr	1000	300	140	345
III	City of Guelph Waste Resource Innovation Centre	110 Dunlop Dr	1000	300	520	730
III	PDI Bulk	256 Victoria Rd S	1000	300	25	125
III	Owens Corning Composite Materials Canada LP	247 York Rd	1000	300	890	930

Notes:

[1] Separation distance is from the property line of the subject lands to the property line of the industry.

4.1.1 Lockhart Excavators Ltd. Pit #4

Lockhart Excavators Ltd. Pit #4 is located south of Stone Road East and is used as a construction material storage yard. Pit #4 is not listed on the Ministry of Natural Resources Pits and Quarries Online tool, nor is there any form of environmental approval listed for the site on Access Environment.

Aggregate and recycled construction materials are stockpiled on the site, but no extraction of virgin aggregate takes place. Portable crushing and screening equipment and other heavy equipment is visible in aerial imagery and would be used for sorting material brought in from licenced aggregate sites or excess material from construction projects, as well as processing of recycled materials.

There are site entrances directly across Stone Rd E from the Blocks 50 and 51 (Employment), which provides suitable buffer between Block 31 (Residential) and the Lockhart site. Block 46 (Mixed Use) is also across from the eastern site entrance for the Lockhart site, however there are existing residences in closer proximity to the Lockhart site, which would already constrain potential impacts from Lockhart's operations.

No additional assessment or mitigation is proposed, provided Blocks 50 and 51 remain designated as Employment.



4.1.2 Cargill

Cargill (known for many years as Better Beef) operates a meat packing facility, which employs 950 people and processes 1,500 head of cattle per day. RWDI understands that the facility includes a truck washing facility and a water treatment facility. Given the potential for noise and odour impacts, RWDI recommends that additional study is required to inform mitigation measures.

RWDI does note that the GID Draft Plan of Subdivision provides increased separation between residential blocks and the Cargill facility through Block 54 (Stormwater Management), Block 55 (Significant Natural Areas & Natural Areas), Block 60 (Park) and Block 64 (Open Space). This increased separation distance is already a highly effective form of mitigation.

4.1.3 City of Guelph Waste Resource Innovation Centre

The City of Guelph operates a waste transfer station, material recovery facility, and composting facility at 110 Dunlop Drive. The current aerobic, in-vessel composting facility was designed in response to odours from the previous composting facility that closed in 2006. The current composting facility includes an odour control system which includes better air handling systems, improved tipping bay truck bay doors, as well as a biofilter system with dedicated exhaust stack. The biofilter exhaust stack is approximately 38 metres tall. Given the potential for noise and odour impacts, RWDI recommends that additional study is required to inform mitigation measures.

RWDI does note that the GID Draft Plan of Subdivision provides increased separation between residential blocks and the biofilter exhaust stack through Block 54 (Stormwater Management), Block 55 (Significant Natural Areas & Natural Areas), Block 60 (Park) and Block 64 (Open Space). This increased separation distance is already a highly effective form of mitigation.

4.1.4 PDI Bulk

The Victoria Road South site is the corporate headquarters for PDI. Operations include an ISO container depot, packaging + blending, tanker wash bay, bulk trucking, maintenance facility, rail terminal, silo & tank storage. NPRI shows methylenebis(phenylisocyanate) and polymeric diphenylmethane diisocyanate are manufactured, processed or otherwise used at the facility, but no reportable air emissions. EASR Registration shows emissions of hydrochloric acid, sodium hydroxide, glycerol, propylene oxide, ethylene oxide polymer, methylene chloride, gasoline, acetone, and nitrogen oxides.

The site is directly across Victoria Road from existing sensitive land uses, although the operations are further removed from those land uses, being located mainly to the south and east of the property. Due to the nature of the emissions from the PDI, RWDI recommends that additional study is required to inform mitigation measures.

RWDI does note that the GID Draft Plan of Subdivision provides increased separation between residential blocks and the biofilter exhaust stack through Block 55 (Significant Natural Areas & Natural Areas). This increased separation distance is already a highly effective form of mitigation.



4.1.5 Owens Corning Composite Materials Canada LP

Owens Corning Composite Materials Canada LP (“OC”) operates a composites manufacturing facility producing glass fiber materials on York Road. The facility operates with a site-specific air standard for hexavalent chromium (granted on May 6, 2016), which was to remain in effect through June 30, 2026. In March 2025, the facility filed an application for a new site-specific standard. This application includes a detailed air quality assessment for the facility, which lists several tall stacks, including 105 Furnace Stack (East) and 105 Furnace Stack (West) at 35.1 metres and 105 Forehearth Stack at 28 metres.

As the GID development does include potential residential buildings of 18 storeys, RWDI recommends that additional study is required to ensure that potential impacts are within acceptable levels. RWDI notes that there are existing multi-storey residential buildings located much closer to the OC facility, so RWDI does not expect compatibility issues, but given the fact that the OC facility operates under a site-specific air standard for hexavalent chromium, further study is warranted. RWDI does not expect noise from the OC facility to be a concern at the Site.

4.2 Future Industrial Uses

The current zoning designations and official plan are provided in Figure 4 and Figure 5, respectively. Land use surrounding the subject lands is zoned as commercial, with a similar designation under the Official Plan.

A review of the ERO revealed there are no proposals for any facilities within the study area that may impact the subject lands. Should a new industry be constructed on existing lands and/or an existing industry be modified, a new review must be completed for the potential impact on the proposed development.

4.3 Transportation Facilities

Based on experience with roadway modelling assessments and publicly available studies, such as The City of Toronto produced report: “Avoiding the TRAP: Traffic-Related Air Pollution in Toronto and Options for Reducing Exposure” (October 2017), the most widely reported mitigation strategy is separation distances or buffer zones. Some environmental agencies (California and British Columbia) recommend a setback of approximately 150m from major highways and 100m from roads with annual average traffic volumes of 15,000 vehicles or more per day. The Site is located along Victoria Road South and Stone Road East, which are arterial roads with traffic levels well below 15,000 vehicles or more per day¹, and therefore a detailed investigation is not considered necessary.

The CN railway corridor is located over 700 metres of the Site, which carries CN freight trains, VIA Rail passenger trains and Metrolinx commuter trains. In addition, the Guelph Junction Railway abuts the Site.

Noise impacts due to both the CN railway corridor and Guelph Junction Railway may require mitigation at the Site. A detailed noise impact assessment will be undertaken to determine the specific requirements.

¹ GHD, “Traffic Impact Study for Block Plan Areas 1 & 2 within the Guelph Innovation District”, April 2024.



Air quality impacts due to operations along the CN railway corridor are expected to be insignificant at the Site. The limited frequency of trains on the Guelph Junction Railway also limits the potential air quality impacts at the Site and therefore does not require detailed assessment. Mitigation measures that are intended to mitigate noise impacts from nearby industry or rail operations will provide effective mitigation for any air quality impacts that do occur.

4.4 Potential Mitigation

Potential mitigation measures that could be included in the design for impacted residential blocks could include one or more of the following. The extent to which they apply would be determined through more detailed analysis and modelling of the impacts from the industrial facilities.

- Mandatory air conditioning to allow windows and doors to remain closed.
- For multi-storey residential buildings, residential floors and suites will be positively pressurized by the building HVAC systems.
- Outdoor amenity areas screened from the industrial facilities where required.
- Incorporation of warning clauses into development agreements, and/or purchase and lease agreements regarding the potential impacts from nearby industrial operations.
- Specification of minimum sound isolation performance for window glazing.
- It is not anticipated that acoustical barriers will be required but could be used in specific situations.

5 CONCLUSIONS & RECOMMENDATIONS

The scope of this study was to prepare a land-use compatibility to assess the potential impacts of surrounding sites on the development.

The subject land is generally compatible with industrial land uses and transportation sources in the area, although additional study is required to property design potential mitigation options that may be required in specific locations to ensure compatibility. These mitigation measures could include one or more of the following.

- Mandatory air conditioning to allow windows and doors to remain closed.
- For multi-storey residential buildings, residential floors and suites will be positively pressurized by the building HVAC systems.
- Outdoor amenity areas screened from the industrial facilities by intervening buildings.
- Incorporation of warning clauses into development agreements, and/or purchase and lease agreements regarding the potential impacts from nearby industrial operations.
- Specification of minimum sound isolation performance for window glazing.
- It is not anticipated that acoustical barriers will be required but could be used in specific situations.

The extent to which they apply would be determined through more detailed analysis and modelling of the impacts from the industrial facilities and the transportation sources.



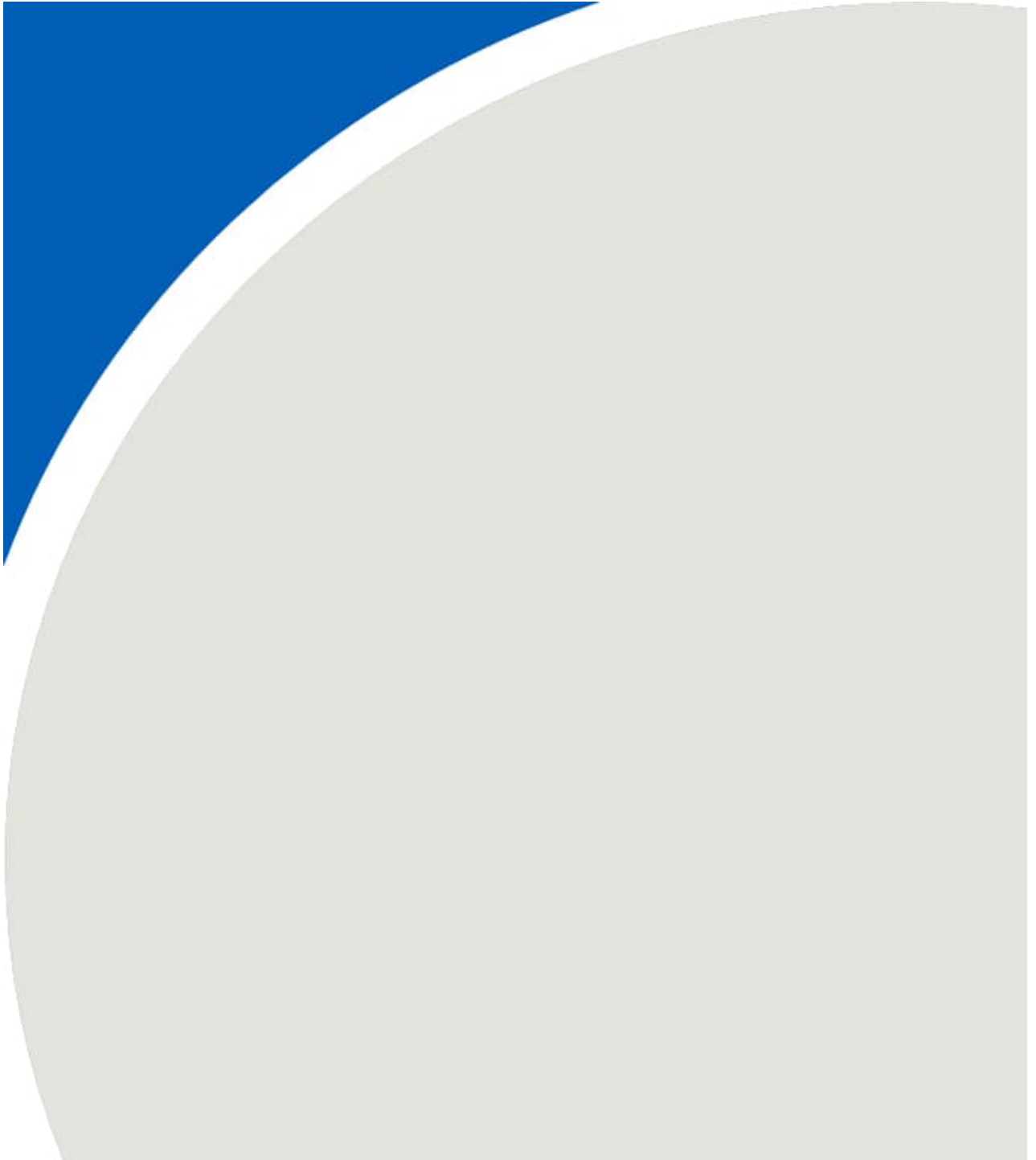
6 STATEMENT OF LIMITATIONS

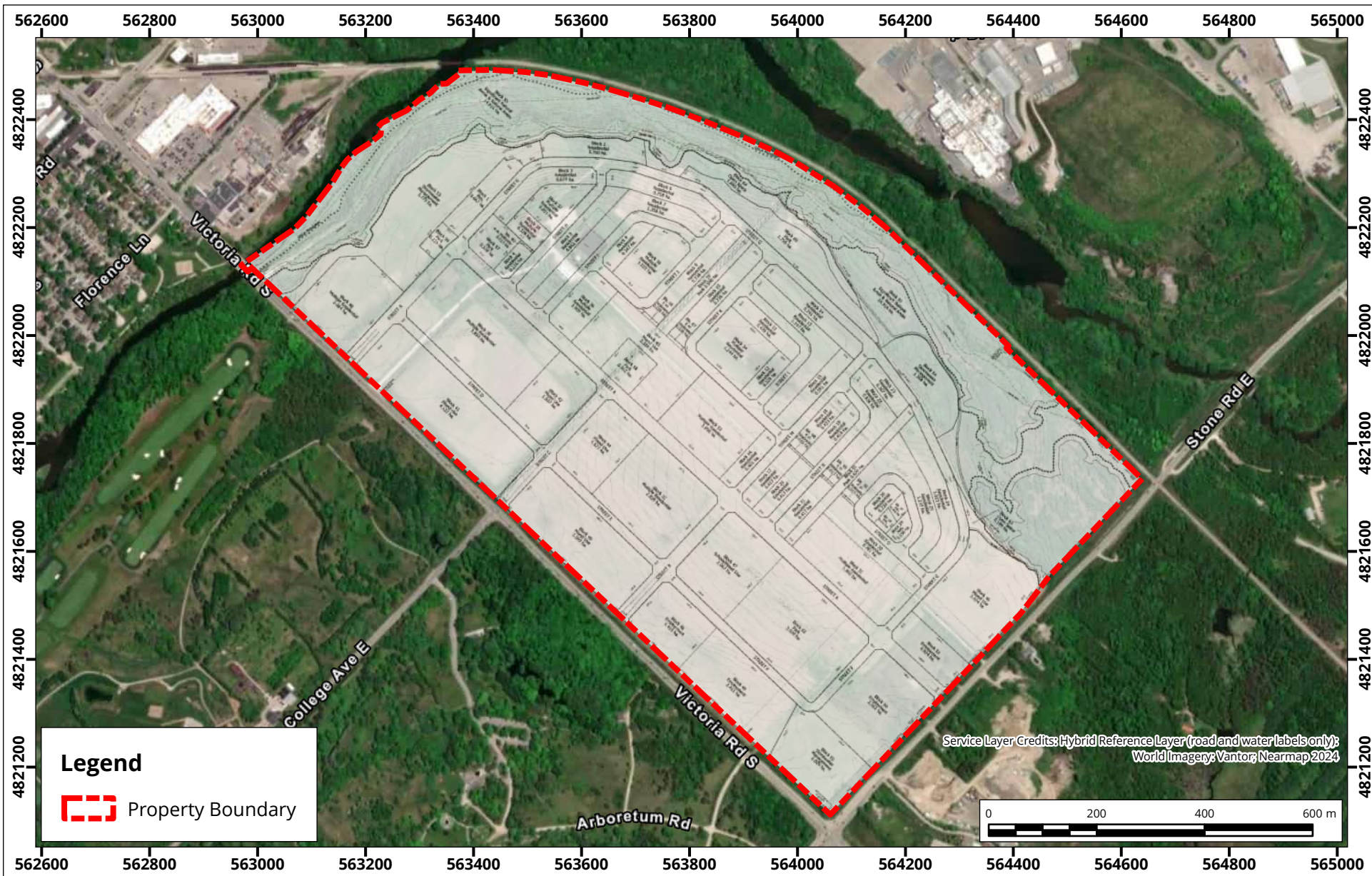
This report titled Guelph Innovation District Land Use Compatibility Study dated June 9, 2026, was prepared by RWDI AIR Inc. ("RWDI") for Fusion Homes ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

FIGURES





Site Location

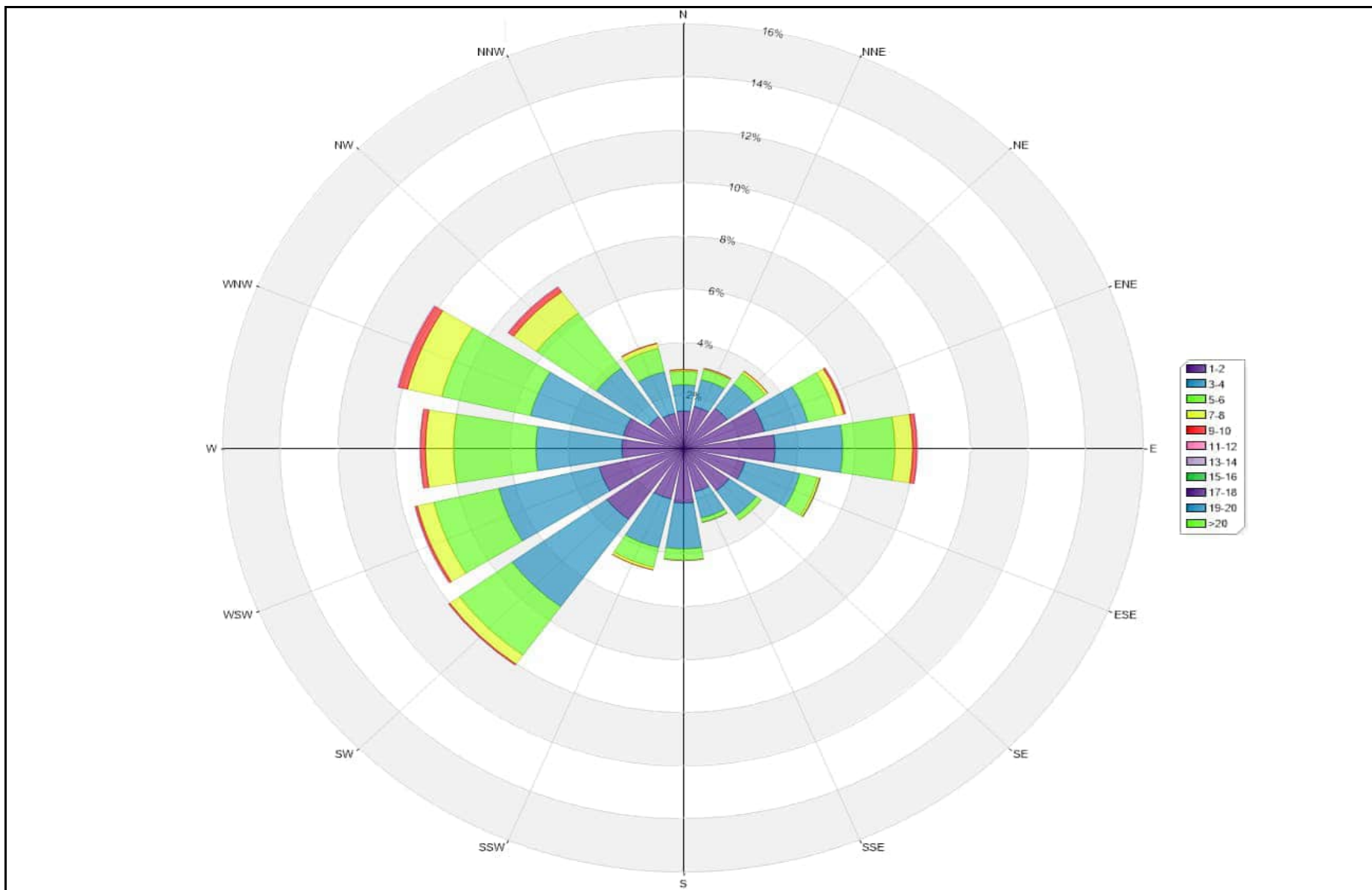
Map Projection: NAD 1983 UTM Zone 17N
Guelph Innovation District - Guelph, Ontario



Drawn by: PIP	Figure: 1
Approx. Scale: 1:10,000	
Date Revised: Jun 8, 2026	

Project #: 2605326





Directional Distribution (%) of Winds in m/s (Blowing From)

Guelph Turfgrass Institute
2006-2021

Guelph Innovation District - Guelph, Ontario

Drawn by: BGS

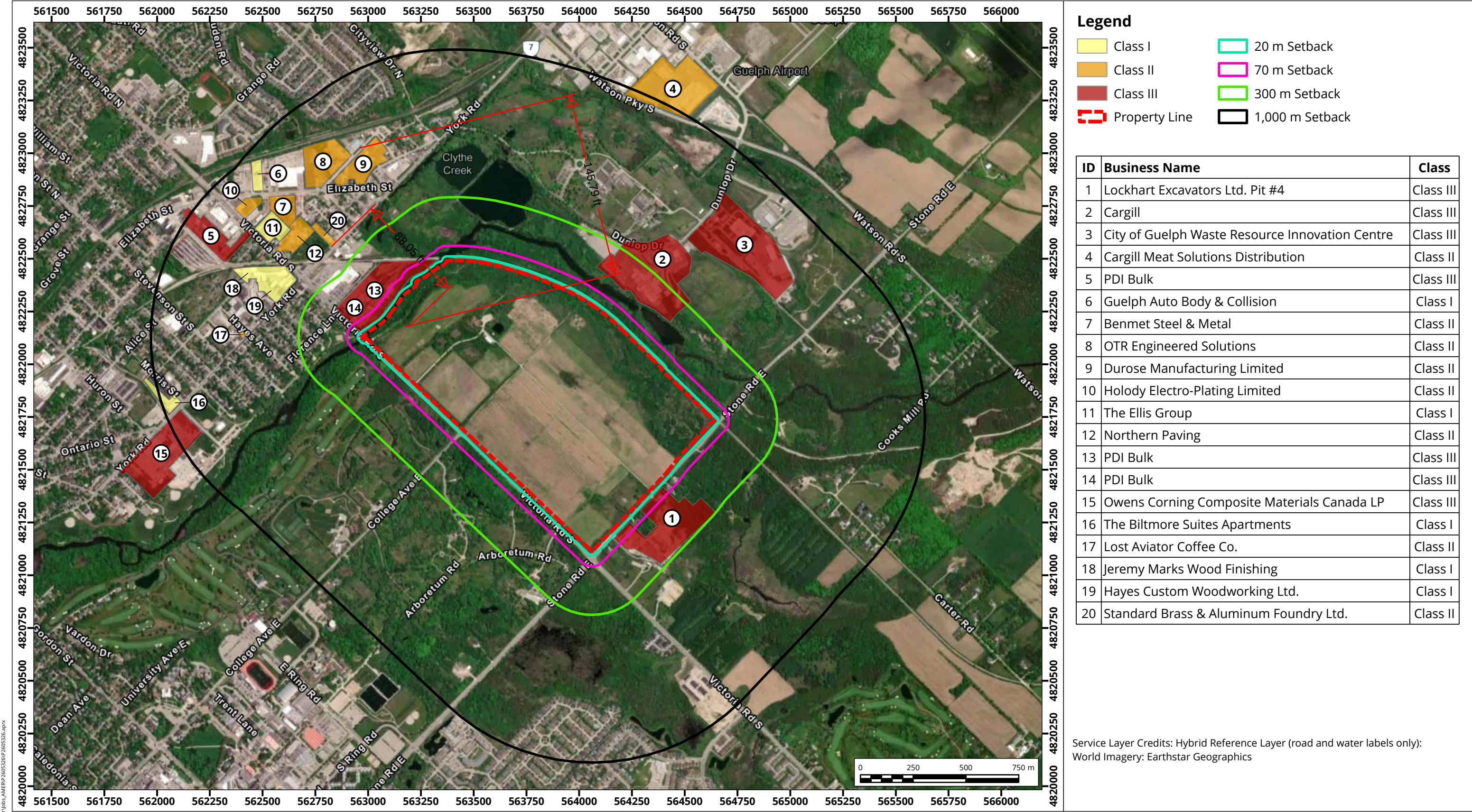
Figure: 2

Approx. Scale: not to scale

Date Revised: Jun 09, 2026

Project #2605326





Legend

Class I

Class II

Class III

Property Line

20 m Setback

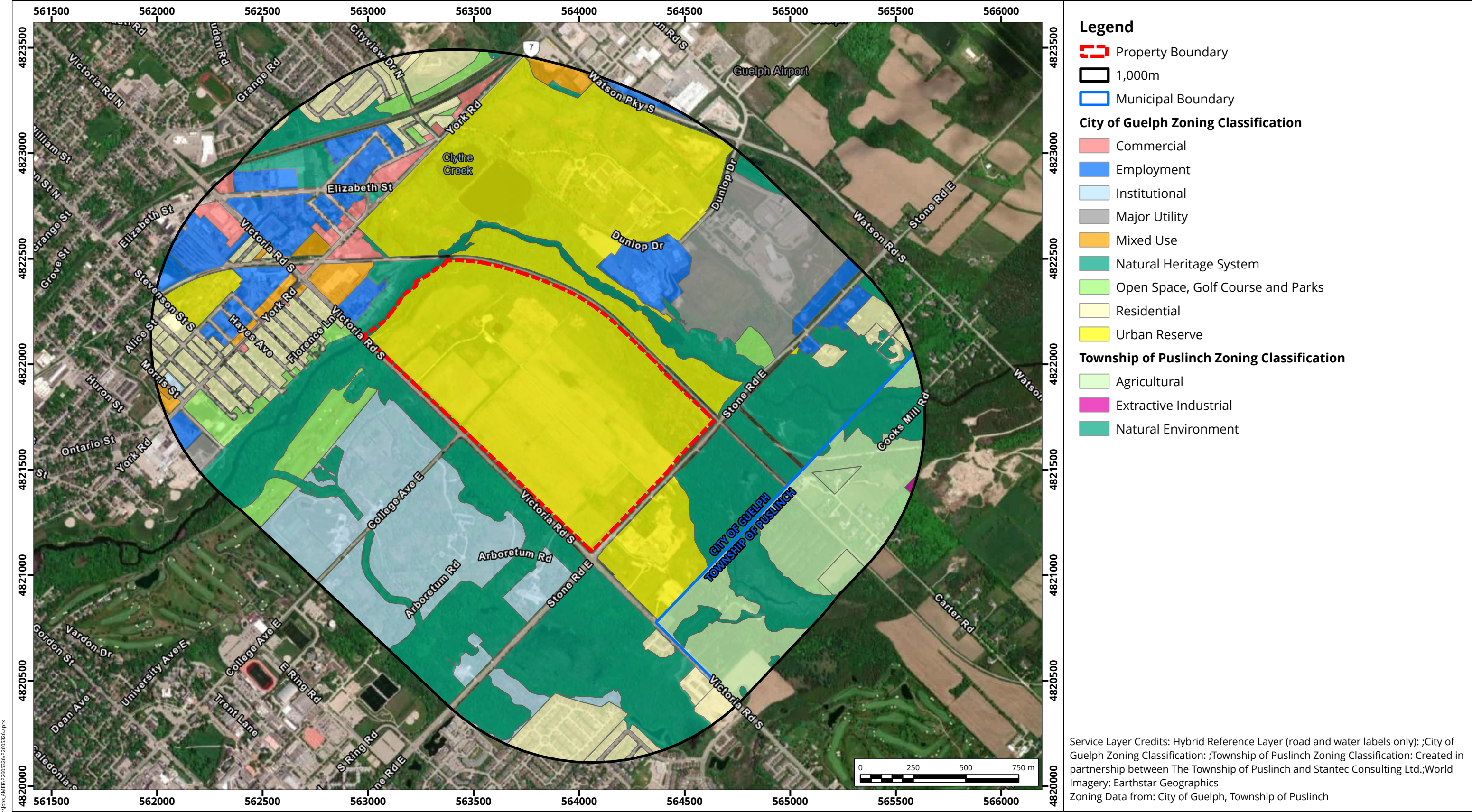
70 m Setback

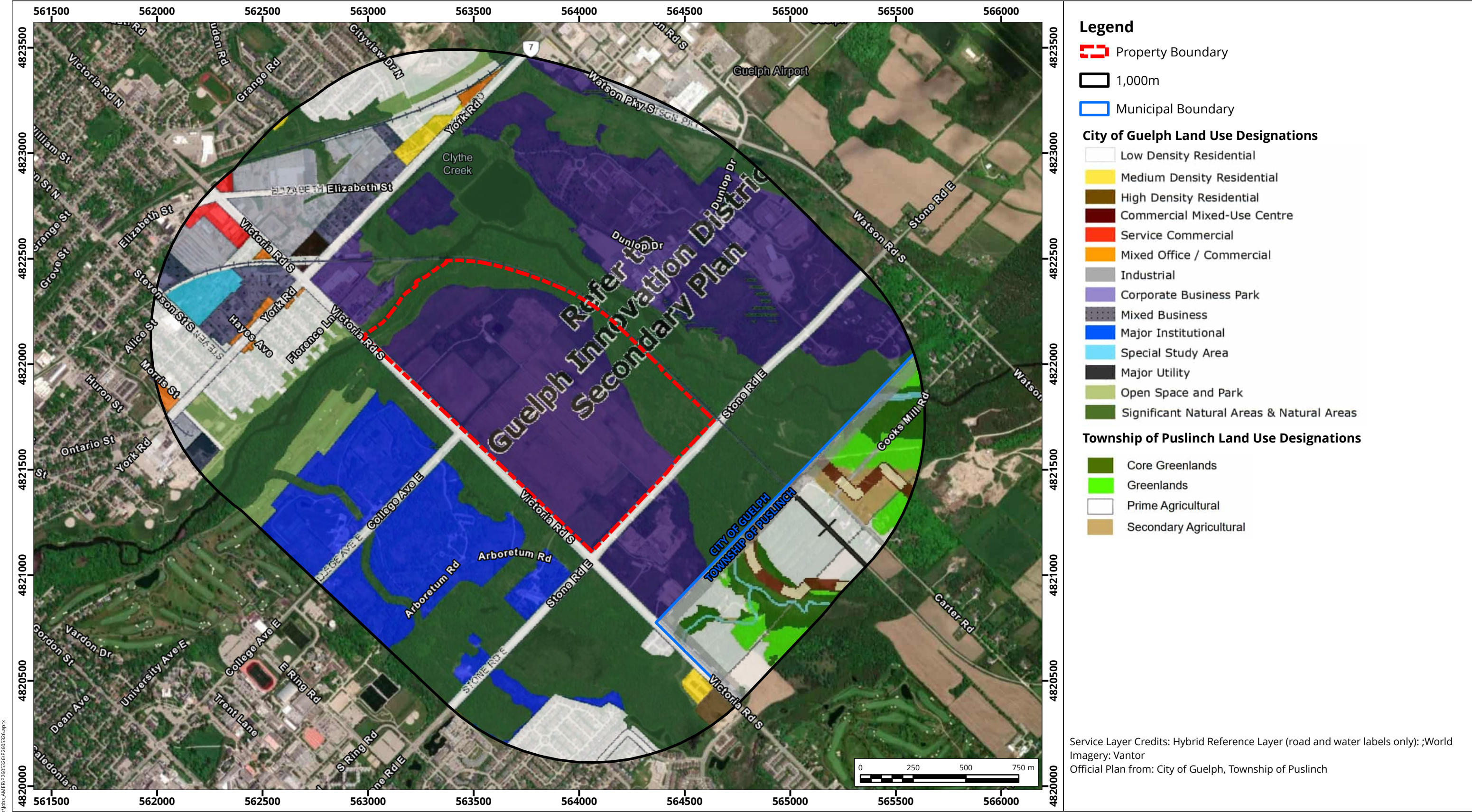
300 m Setback

1,000 m Setback

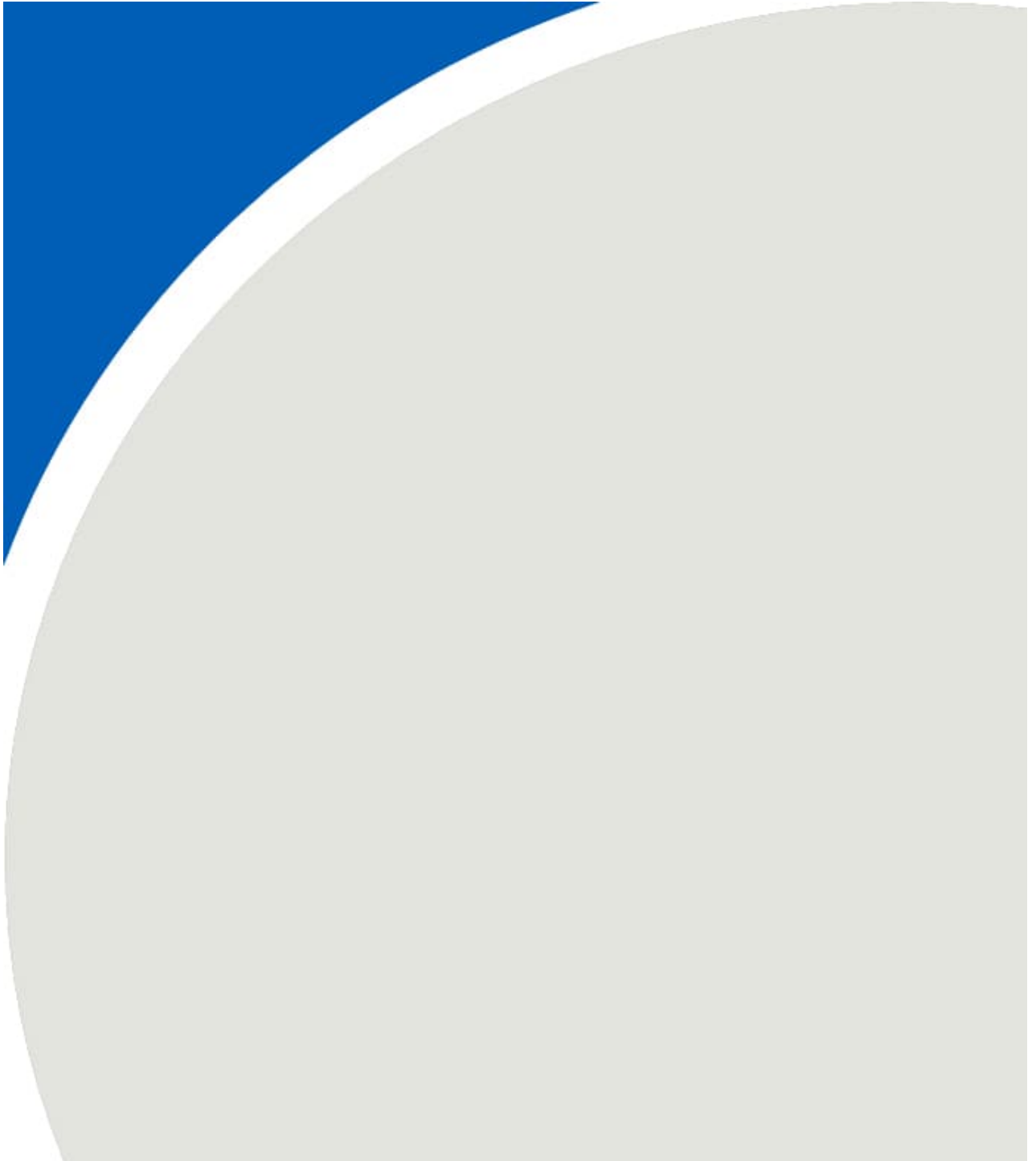
ID	Business Name	Class
1	Lockhart Excavators Ltd. Pit #4	Class III
2	Cargill	Class III
3	City of Guelph Waste Resource Innovation Centre	Class III
4	Cargill Meat Solutions Distribution	Class II
5	PDI Bulk	Class III
6	Guelph Auto Body & Collision	Class I
7	Benmet Steel & Metal	Class II
8	OTR Engineered Solutions	Class II
9	Durose Manufacturing Limited	Class II
10	Holody Electro-Plating Limited	Class II
11	The Ellis Group	Class I
12	Northern Paving	Class II
13	PDI Bulk	Class III
14	PDI Bulk	Class III
15	Owens Corning Composite Materials Canada LP	Class III
16	The Biltmore Suites Apartments	Class I
17	Lost Aviator Coffee Co.	Class II
18	Jeremy Marks Wood Finishing	Class I
19	Hayes Custom Woodworking Ltd.	Class I
20	Standard Brass & Aluminum Foundry Ltd.	Class II

Service Layer Credits: Hybrid Reference Layer (road and water labels only):
World Imagery: Earthstar Geographics





APPENDIX A



DRAFT PLAN OF SUBDIVISION

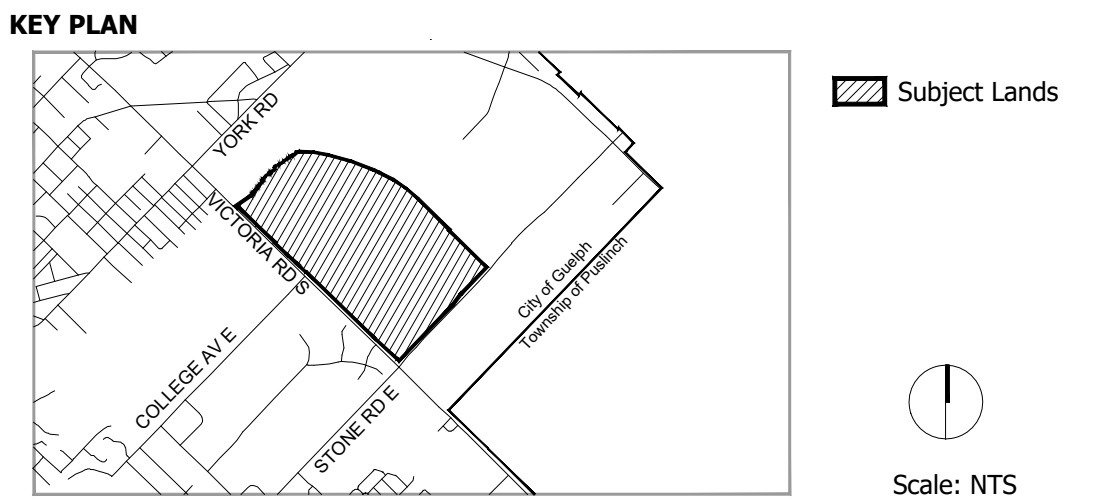
LEGAL DESCRIPTION
PART OF BROKEN FRONT LOTS 10, 11 & 12
CONCESSION 1, DIVISION 'G'
GEOGRAPHIC TOWNSHIP OF GUELPH
IN THE CITY OF GUELPH, COUNTY OF WELLINGTON

OWNER'S CERTIFICATE
I HEREBY AUTHORIZE MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED
TO SUBMIT THIS PLAN FOR APPROVAL.

Date: Client Name
Company Name

SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ON THIS
PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND
CORRECTLY SHOWN.

Date: J. Andrew Smith, Surveyor, O.L.S.
Callon Dietz Incorporated



ADDITIONAL INFORMATION
Required Under Section 51 (17) of the Planning Act, R.S.O., 1990, c.P.13 as Amended

(a) As Shown (e) As Shown (h) Municipal Water Supply
(b) As Shown (f) As Shown (i) Loam / Sandy Loam
(c) As Shown (g) As Shown (j) As Shown
(d) Residential, Multiple Residential, Mixed Use, School, (k) All Services As Required
Employment, Open Space, Park, Stormwater Management (l) As Shown

DESCRIPTION	LOTS/BLOCKS	UNITS	AREA
Residential	1-30	457	17.725 ha
Multiple Residential	31-40	861	16.724 ha
Mixed Use	41-46	3,722	15.451 ha
School/Mixed Use	47		2.067 ha
Employment	48-51		7.311 ha
Stormwater Management	52-54		7.156 ha
Significant Natural Area & Natural Areas	55		24.916 ha
Park	56-62		7.964 ha
Open Space	63,64		1.289 ha
Walkway	65-70		0.121 ha
Road Widening	71-74		0.108 ha
Roads			15.764 ha
Total	74	5,040	116.596 ha

- NOTES
- All dimensions are in metres unless otherwise shown.
 - Survey information provided by Callon Dietz Land Surveying Ontario, Nov. 2016.
 - Topographic information provided by MTE.
 - Wetland, dipline, and buffers provided by NSRI INC, Oct. 2022.
 - Contains information made available under Grand River Conservation Authority's Open Data Licence v1.0.
 - Contains information licensed under the Open Government Licence - City of Guelph.
 - Daylight triangle 9m x 9m.
 - Conceptual 3 meter trail location.

Revision No.	Date	Issued / Revision	By
1.	Nov. 11, 2025	Preliminary Draft Plan;	SP

Stamp	Date
	May 28, 2026
File No.	1405G
Plan Scale	1:2,500 (Arch D)
Drawn By	S.P./J.B
Checked By	D.A.

Project	Dwg No.
GUELPH INNOVATION DISTRICT BLOCK 1 & 2 Fusion Homes Guelph, Ontario.	1 of 1
File Name	DRAFT PLAN OF SUBDIVISION

Scale Bar

K:\1405G - GID Block 1 and 2\2025\1405G_Draft Plan of Subdivision_28May2026.dwg

APPENDIX B

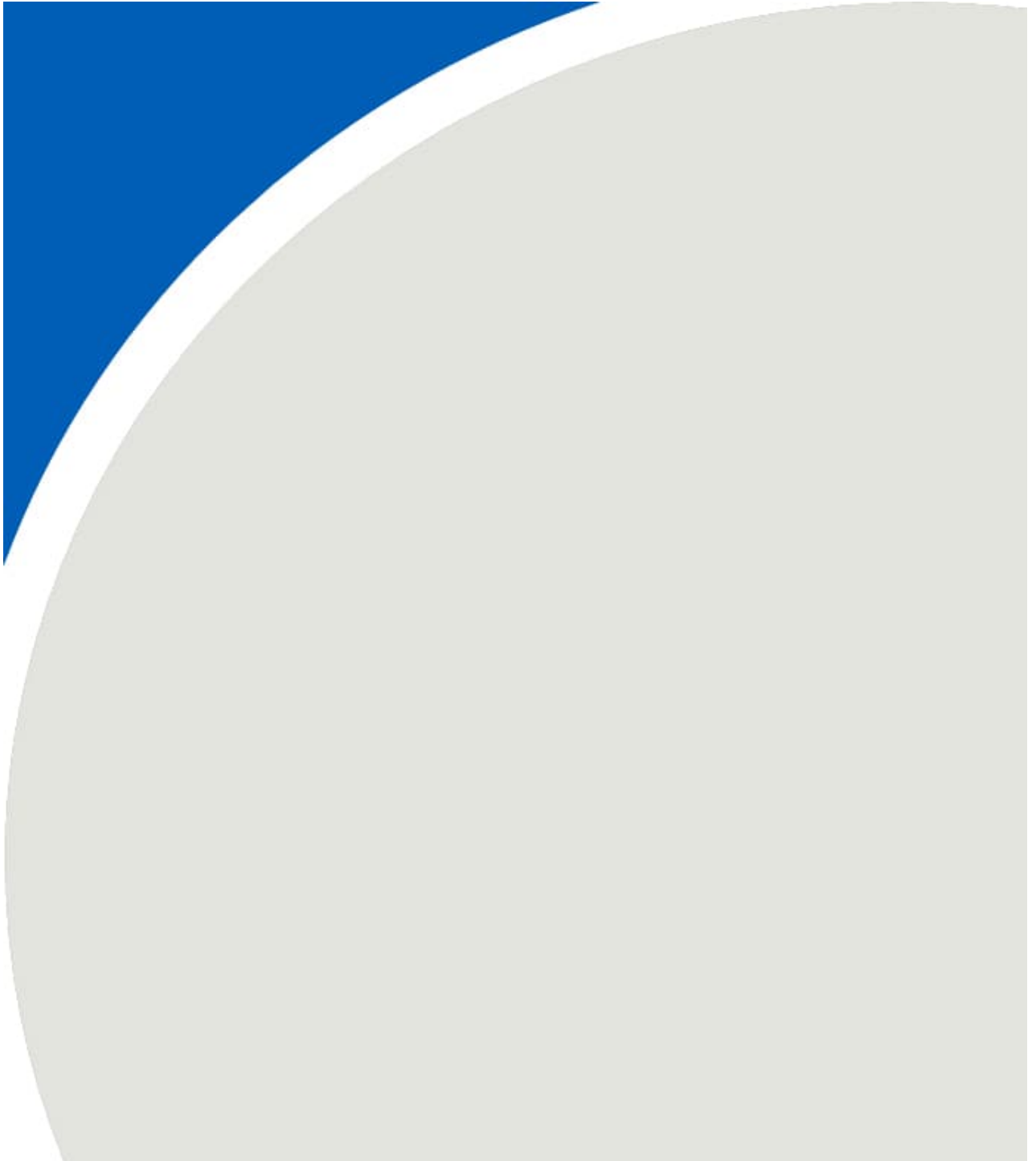


Table B-1: List of Industrial and Non-Industrial Facilities Around the Proposed Development with Potential for Air Emissions

Map Icon Number	BUSINESS NAME	ADDRESS	TYPE OF APPROVAL/ FACILITY/ EQUIPMENT	APPROVAL / REGISTRATION NUMBER	Comment on Operations	Tall Stacks Present	Approximate Distance to Site (m)	Approximate Distance to Residential Lots (m)	D-6 Classification
1	Lockhart Excavators Ltd. Pit #4	555 Stone Road E Guelph, ON N1L 1B7	No Approval	None	Pit #4 is not listed on the Ministry of Natural Resources Pits and Quarries Online tool, nor is there any form of environmental approval listed for the site on Access Environment. Aerial imagery shows a portable crusher and various pieces of heavy equipment operating at the site. There is a site entrance directly across Stone Rd E from the Block 50 (Mixed Use), however there are existing residences in closer proximity to Pit #4.	No	35	35	III
2	Cargill Proteins	165 Dunlop Dr Guelph, ON N1E 6N1	ECA-AIR	6137-DGFGJE-14	Cargill (known for many years as Better Beef) operates a meat packing facility, which employs 950 people and processes 1,500 head of cattle per day. RWDI understands that the facility includes a truck washing facility and a water treatment facility. Given the potential for noise and odour impacts, RWDI recommends that additional study is required to inform mitigation measures.	No	140	345	III
3	City of Guelph Waste Resource Innovation Centre	110 Dunlop Dr Guelph, ON N1E 3J3	ECA-AIR	0040-AVLRLV-14 3345-AJMJ3G-14	The City of Guelph operates a waste transfer station, material recovery facility, and composting facility at 110 Dunlop Drive. The current aerobic, in-vessel composting facility was designed in response to odours from the previous composting facility that closed in 2006. The current composting facility includes an odour control system which includes better air handling systems, improved tipping bay truck bay doors, as well as a biofilter system with dedicated exhaust stack. The biofilter exhaust stack is approximately 38 metres tall. Given the potential for noise and odour impacts, RWDI recommends that additional study is required to inform mitigation measures.	Yes	520	730	III
4	Cargill Meat Solutions Distribution	180 Watson Pkwy Guelph, ON N1L 1P4	ECA-AIR	A-500-3119047555	Refrigerated meat storage and distribution facility. Beyond 1000m. NPRI shows ammonia releases, but no other significant air quality sources expected. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development. Noise from cooling systems potentially significant, but separation distance sufficient that impacts are not expected to be material.	No	965	1110	II
5	PDI Bulk	351 Elizabeth St Guelph, ON N1E 2X9	ECA-AIR	3130-56QSTW-14 2594-65JQVA-14	Bulk transfer rail yard. Existing sensitive uses about the site. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development. Site uses sea containers as noise mitigation for adjacent residential lands. Separation distance sufficient that impacts at GID are not expected to be material.	No	720	845	II
6	Guelph Auto Body & Collision	406 Elizabeth St Guelph, ON N1E 2Y1	ECA-AIR	4522-6Q4QEZ-14	Auto body shop. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	830	945	I
7	Benmet Steel & Metal	415 Elizabeth St Guelph, ON N1E 2Y2	No Approval	None	Scrap metal yard. Located approximately 100 metres from existing sensitive land uses. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	620	755	II
8	OTR Engineered Solutions	430 Elizabeth St Guelph, ON N1E 2Y1	ECA-AIR	3822-83ERJ4-14	Off-the-road tire and wheel technologies. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	635	785	II
9	Durose Manufacturing Limited	460 Elizabeth S Guelph, ON N1E 6C1	ECA-AIR	2851-A5WP5J-14	Custom steel fabrication, rolling and forming. Site is abutting residential lands. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	515	705	II
10	Holody Electro-Plating Limited	66 Victoria Rd S Guelph ON N1E 5P6	ECA-AIR	2979-BHHMFQ-14	Existing sensitive land uses less than 70 metres away. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	800	900	II
11	The Ellis Group	136 Victoria Rd S Guelph, ON N1E 5P6	No Approval	None	Packaging company. Site is abutting residential lands. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	610	705	I
12	Northern Paving	150 Victoria Rd S Guelph, ON N1E 5P6	No Approval	None	Paving company yard. Site is abutting residential lands. NPRI shows no reported releases. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	520	635	II

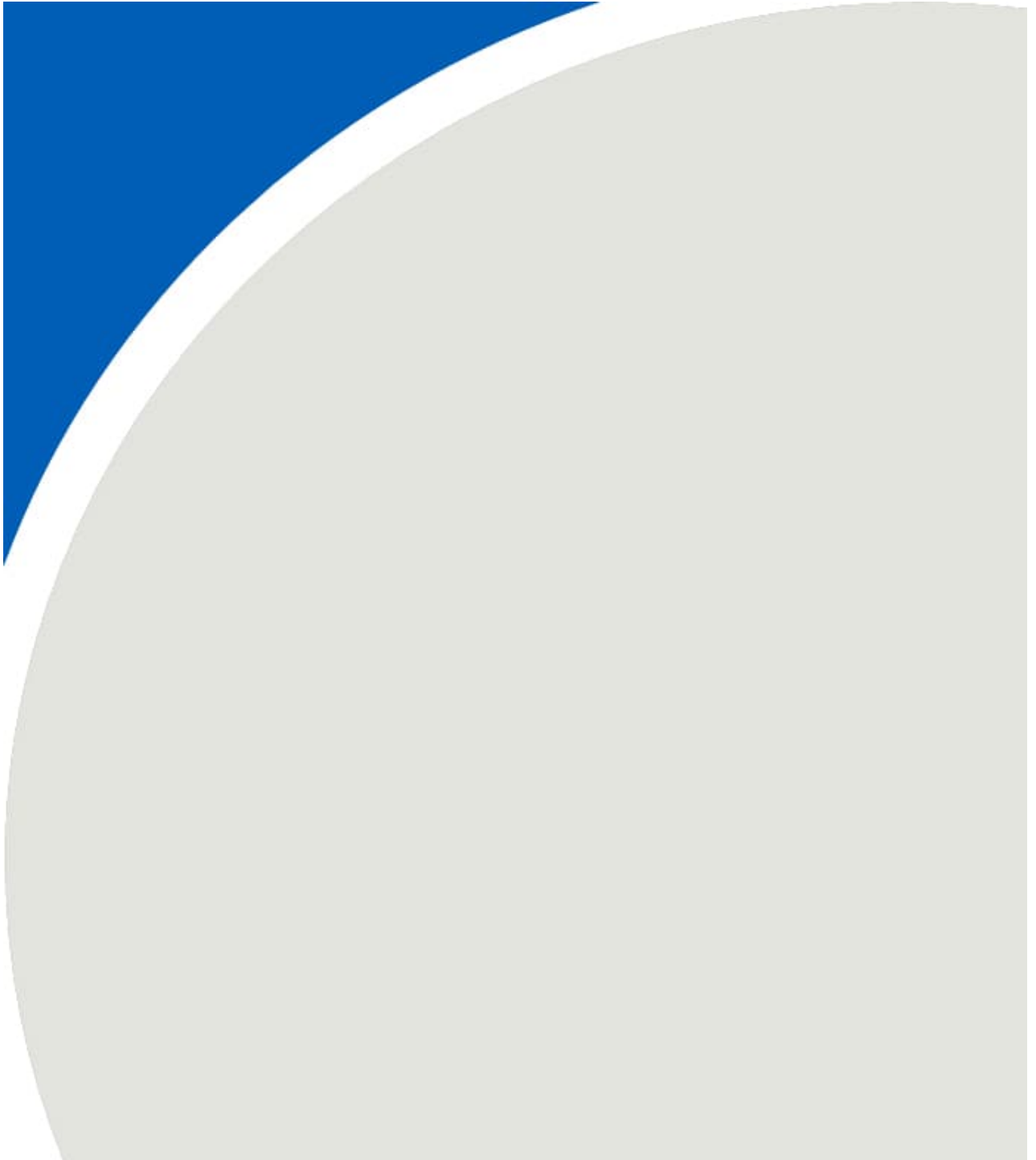
Table B-1: List of Industrial and Non-Industrial Facilities Around the Proposed Development with Potential for Air Emissions

Map Icon Number	BUSINESS NAME	ADDRESS	TYPE OF APPROVAL/ FACILITY/ EQUIPMENT	APPROVAL / REGISTRATION NUMBER	Comment on Operations	Tall Stacks Present	Approximate Distance to Site (m)	Approximate Distance to Residential Lots (m)	D-6 Classification
13	PDI Bulk	256 Victoria Rd S Guelph, ON N1E 5P9	ECA-AIR	9441-7ZNQZX-14	Facility has older ECAs. As the site is now registered on the EASR as of 2020, the older ECAs should be revoked.	No	25	125	III
14	PDI Bulk	256 Victoria Rd S Guelph, ON N1E 5P9	EASR-Air Emissions	R-010-4112387595	The Victoria Road Sout site is the corporate headquarters for PDI. Operations include an ISO container depot, packaging + blending, tanker wash bay, bulk trucking, maintenance facility, rail terminal, silo & tank storage. NPRI shows methylenebis(phenylisocyanate) and polymeric diphenylmethane diisocyanate are manufactured, processed or otherwise used at the facility, but no reportable air emissions. EASR Registration shows emissions of hydrochloric acid, sodium hydroxide, glycerol, propylene oxide, ethylene oxide polymer, methylene chloride, gasoline, acetone, and nitrogen oxides.	No	25	125	III
15	Owens Corning Composite Materials Canada LP	247 York Rd Guelph, ON N1E 3G4	ECA-AIR	9124-C9ZNEW-14 3465-BJ9QB8-14	Composites manufacturing facility producing glass fiber materials. The facility operates with a site-specific air standard for hexavalent chromium (granted on May 6, 2016), which was to remain in effect through June 30, 2026. In March 2025, the facility filed an application for a new site-specific standard. This application includes a detailed air quality assessment for the facility, which lists several tall stacks, including 105 Furnace Stack (East) and 105 Furnace Stack (West) at 35.1 metres and 105 Forehearth Stack at 28 metres. Additional study recommended.	Yes	890	930	III
16	The Biltmore Suites Apartments	250 York Rd Guelph, ON N1E 0S5	EASR-Air Emissions	R-010-9111485186	Approval appears to be for soil / groundwater remediation vents. Emissions include 1,3-butadiene and benzene, which are not normal residential emissions, except where brownfield remediation venting is installed. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	920	980	I
17	Lost Aviator Coffee Co.	404 York Rd Guelph, ON N1E 3H4	EASR-Air Emissions	R-010-6114153031	Coffee roasting. EASR Registration shows emissions of particulate matter, volatile organic compounds, and carbon dioxide (CO2 is not normally included in air quality assessments). NPRI shows no reported releases. Roaster stack is short and has a gooseneck. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	550	650	II
18	JEREMY MARKS	490 York Rd, Unit I Guelph, ON N1E 6T9	EASR-Air Emissions	R-010-5110118612	Woodworking shop. EASR Registration shows emissions of volatile organic compounds. NPRI shows no reported releases. No tall stacks, sources are close to the roof. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	410	530	I
19	Hayes Custom Woodworking Ltd.	490 York Rd, Unit J Guelph, ON N1E 6T9	ECA-AIR	7854-7KVR5S-14	Custom cabinetry shop. NPRI shows no reported releases. No tall stacks, sources are close to the roof. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	410	530	I
20	Standard Brass & Aluminum Foundry Ltd.	550 York Rd Guelph, ON N1E 3J4	ECA-AIR	5187-DA3MRS-13	NPRI shows releases to atmosphere of lead, however site is abutting residential lands, and there are no tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development.	No	410	525	II
Facilities Not Included									
	Kingpin Auto Body Repair	74 Suburban Ave Guelph, ON N1E 6B5	No Approval	None	Auto body shop. No tall stacks. Site is abutting residential lands. Impacts are highest in the nearfield, and will not materially affect the proposed development. Facility has no approvals.	No	670	870	I
	TM Auto Body Collision	429 Elizabeth St Guelph, ON N1E 2Y2	No Approval	None	Auto body shop. No tall stacks. Impacts are highest in the nearfield, and will not materially affect the proposed development. Facility has no approvals.	No	635	780	I
	Simplicity Car Care Guelph (Sutton Collision)	15 Industrial St Guelph, ON N1E 6B9	No Approval	None	Auto body shop. No tall stacks. Site is abutting residential lands. Impacts are highest in the nearfield, and will not materially affect the proposed development. Facility has no approvals.	No	480	650	I
	McGregor Furniture Company Ltd.	490 York Rd Guelph, ON N1E 6T9	ECA-AIR	1038-7BCTSW-13	Permanently Closed		410	530	n/a

Table B-1: List of Industrial and Non-Industrial Facilities Around the Proposed Development with Potential for Air Emissions

Map Icon Number	BUSINESS NAME	ADDRESS	TYPE OF APPROVAL/ FACILITY/ EQUIPMENT	APPROVAL / REGISTRATION NUMBER	Comment on Operations	Tall Stacks Present	Approximate Distance to Site (m)	Approximate Distance to Residential Lots (m)	D-6 Classification
	Huntsman Corporation Canada Inc.	256 Victoria Rd S Guelph, ON N1E 5P9	ECA-AIR	6253-4WBPFR-14, 3441-4WAJT7-14, 9606-4YYLMT-14, 4603-4WBQA7-14, 0772-4WBQGN-14, 3660-4WBJWF-14	Permanently Closed		25	125	n/a

APPENDIX B – FACILITY 4



ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A-500-3119047555

Version: 1.0

Issue Date: October 7, 2021

Pursuant to section 20.3 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:

Cargill Limited

240 GRAHAM AVENUE (AVE) 300
WINNIPEG MANITOBA
R3C4C5

For the following site:

180 WATSON PARKWAY SOUTH, GUELPH
ONTARIO, CANADA, N1L 1K8

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s) 5080-B3XR4K, issued on October 3, 2018.

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Description Section

A meat processing facility producing raw meat products for the consumer market, consisting of the following processes and support units:

- raw meats (beef, pork and poultry) products receiving and handling operations;
- raw meats treatment/grinding and blending operations;
- carbon dioxide freezing operations;
- packaging/storage and shipment;
- one (1) natural gas fired water heater, having a maximum heat input of 15,825,000 kilojoules per hour;

including the Equipment and any other ancillary and support processes and activities, operating at a Facility Production Limit of up to 600 tonnes per day of fresh meat products, discharging to the air as described in the Original ESDM Report.

DEFINITIONS

For the purpose of this environmental compliance approval, the following definitions apply:

1. "ACB list" means the document entitled "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", as amended from time to time and published by the Ministry and available on a Government website;
2. "Acceptable Point of Impingement Concentration" means a concentration accepted by the Ministry as not likely to cause an adverse effect for a Compound of Concern that,
 - a. is not identified in the ACB list, or
 - b. is identified in the ACB list as belonging to the category "Benchmark 2" and has a concentration at a Point of Impingement that exceeds the concentration set out for the contaminant in that document.

With respect to the Original ESDM Report, the Acceptable Point of Impingement Concentration for a Compound of Concern mentioned above is the concentration set out in the Original ESDM Report;
3. "Approval" means this entire Environmental Compliance Approval and any Schedules to it;
4. "Company" means Cargill Limited operating as Cargill Limited that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;
5. "Compound of Concern" means a contaminant that is described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged from the Facility in an amount that is not negligible;
6. "Description Section" means the section on page one of this Approval describing the Company's operations and the Equipment located at the Facility and specifying the Facility Production Limit for the Facility;
7. "Director" means a person appointed by the Minister pursuant to pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;
8. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
9. "Emission Summary Table" means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;
10. "Environmental Assessment Act" means the *Environmental Assessment Act*, R.S.O. 1990, c.E.18;
11. "EPA" means the *Environmental Protection Act*, R.S.O. 1990, c.E.19;
12. "Equipment with Specific Operational Limits" means one (1) natural gas fired water heater, having a maximum heat input of 15, 825,000 kilojoules per hour or any Equipment related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other Equipment that is specifically referenced in any published Ministry document that outlines specific operational guidance that must be considered by the Director in issuing an Approval;
13. "Equipment" means equipment or processes described in the ESDM Report, this Approval and in the Schedules referred to herein and any other equipment or processes;
14. "ESDM Report" means the most current Emission Summary and Dispersion Modelling Report that describes the Facility. The ESDM Report is based on the Original ESDM Report and is updated after the issuance of this Approval in accordance with section 26 of O. Reg. 419/05 and the Procedure Document;
15. "Facility Production Limit" means the production limit placed by the Director on the main product(s) or raw materials used by the Facility;
16. "Facility" means the entire operation located on the property where the Equipment is located;

17. "Log" means a document that contains a record of each change that is required to be made to the ESDM Report, including the date on which the change occurred. For example, a record would have to be made of a more accurate emission rate for a source of contaminant, more accurate meteorological data, a more accurate value of a parameter that is related to a source of contaminant, a change to a Point of Impingement and all changes to information associated with a Modification to the Facility that satisfies Condition 2;
18. "Minister" means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the EPA under the Executive Council Act;
19. "Ministry" means the ministry of the Minister;
20. "Modification" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the Facility that may discharge or alter the rate or manner of discharge of a Compound of Concern to the air or discharge or alter noise or vibration emissions from the Facility;
21. "Noise Screening Documents" means means the completed Primary Noise Screening Method, or the completed Secondary Noise Screening Method, with supporting information and documentation, as updated in accordance with Condition 5 of this Approval;
22. "O. Reg. 419/05" means Ontario Regulation 419/05: Air Pollution – Local Air Quality, made under the EPA;
23. "Original ESDM Report" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of O. Reg. 419/05 and the Procedure Document by Taylor Roumeliotis (Ramboll Canada Inc.) and dated September 28, 2020 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this Approval;
24. "Point of Impingement" has the same meaning as in section 2 of O. Reg. 419/05;
25. "Primary Noise Screening Method" means the Ministry Primary Noise Screening Method form as described in the "Primary Noise Screening Method Guide", January 31, 2017, as amended;
26. "Procedure Document" means Ministry guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2018, as amended;
27. "Processes with Significant Environmental Aspects" means the Equipment which, during regular operation, would discharge one or more contaminants into the air in an amount which is not considered as negligible in accordance with section 26 (1) 4 of O. Reg. 419/05 and the Procedure Document;
28. "Publication NPC-207" means the Ministry draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the Ministry, August 1978, as amended;
29. "Publication NPC-300" means the Ministry Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning, Publication NPC-300", August 2013, as amended;
30. "Schedules" means the following schedules attached to this Approval and forming part of this Approval namely:
 - Schedule 1 - Supporting Documentation;
31. "Toxicologist" means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants;

32. "Written Summary Form" means the electronic questionnaire form, available on the Ministry website, and supporting documentation, that documents the activities undertaken at the Facility in the previous calendar year;

TERMS AND CONDITIONS

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

1. GENERAL

1. Except as otherwise provided by this Approval, the Facility shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this Approval and in accordance with the following Schedules attached hereto:
 - Schedule 1 - Supporting Documentation

2. LIMITED OPERATIONAL FLEXIBILITY

1. Pursuant to section 20.6 (1) of the EPA and subject to Conditions 2.2 and 2.3 of this Approval, future construction, alterations, extensions or replacements are approved in this Approval if the future construction, alterations, extensions or replacements are Modifications to the Facility that:
 - a. are within the scope of the operations of the Facility as described in the Description Section of this Approval;
 - b. do not result in an increase of the Facility Production Limit above the level specified in the Description Section of this Approval; and
 - c. result in compliance with the performance limits as specified in Condition 4.
2. Condition 2.1 does not apply to,
 - a. the addition of any new Equipment with Specific Operational Limits or to the Modification of any existing Equipment with Specific Operational Limits at the Facility; or
 - b. Modifications to the Facility that would be subject to the Environmental Assessment Act.
3. Condition 2.1 of this Approval shall expire ten (10) years from the date of this Approval, unless this Approval is revoked prior to the expiry date. The Company may apply for renewal of Condition 2.1 of this Approval by including an ESDM Report that describes the Facility as of the date of the renewal application.

3. REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION

1. Prior to making a Modification to the Facility that satisfies Condition 2.1.a and 2.1.b, the Company shall prepare a proposed update to the ESDM Report to reflect the proposed Modification.
2. The Company shall request approval of an Acceptable Point of Impingement Concentration for a Compound of Concern if the Compound of Concern is not identified in the ACB list as belonging to the category "Benchmark 1" and a proposed update to an ESDM Report indicates that one of the following changes with respect to the concentration of the Compound of Concern may occur:

- a. The Compound of Concern was not a Compound of Concern in the previous version of the ESDM Report and
 - i. the concentration of the Compound of Concern exceeds the concentration set out for the contaminant in the ACB list; or
 - ii. the Compound of Concern is not identified in the ACB list; or
 - b. The concentration of the Compound of Concern in the updated ESDM Report exceeds the higher of,
 - i. the most recent Acceptable Point of Impingement Concentration, and
 - ii. the concentration set out for the contaminant in the ACB list, if the contaminant is identified in that document.
3. The request required by Condition 3.2 shall propose a concentration for the Compound of Concern and shall contain an assessment, performed by a Toxicologist, of the likelihood of the proposed concentration causing an adverse effect at Points of Impingement.
 4. If the request required by Condition 3.2 is a result of a proposed Modification described in paragraph 1 of this condition, the Company shall submit the request, in writing, to the Director at least 30 days prior to commencing to make the Modification. The Director shall provide written confirmation of receipt of this request to the Company.
 5. If a request is required to be made under Condition 3.1 in respect of a proposed Modification described in Condition 3.1, the Company shall not make the Modification mentioned in Condition 3.1 unless the request is approved in writing by the Director.
 6. If the Director notifies the Company in writing that the Director does not approve the request, the Company shall,
 - a. revise and resubmit the request; or
 - b. notify the Director that it will not be making the Modification.
 7. The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.
 8. If the Director approves the request, the Company shall update the ESDM Report to reflect the Modification.
 9. Condition 3 does not apply if Condition 2.1 has expired.

4. PERFORMANCE LIMITS

1. Subject to Condition 4.2, the Company shall not discharge or cause or permit the discharge of a Compound of Concern into the air if,
 - a. the Compound of Concern is identified in the ACB list as belonging to the category “Benchmark 1” and the discharge results in the concentration at a Point of Impingement exceeding the Benchmark 1 concentration; or
 - b. the Compound of Concern is not identified in the ACB list as belonging to the category “Benchmark 1” and the discharge results in the concentration at a Point of Impingement exceeding the higher of,
 - i. if an Acceptable Point of Impingement Concentration exists, the most recent Acceptable Point of Impingement Concentration, and

- ii. the concentration set out for the contaminant in the ACB list, if the contaminant is identified in that document.
2. Condition 4.1 does not apply if the benchmark set out in the ACB list has a 10-minute averaging period and no ambient monitor indicates an exceedance at a Point of Impingement where human activities regularly occur at a time when those activities regularly occur.
3. The Company shall, at all times, ensure that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-300.
4. The Company shall, at all times, ensure that the vibration emissions from the Facility comply with the limits set out in Ministry Publication NPC-207.
5. The Company shall operate any Equipment with Specific Operational Limits approved by this Approval in accordance with the Original ESDM Report

5. DOCUMENTATION REQUIREMENTS

1. The Company shall maintain an up-to-date Log.
2. No later than June 30 in each year, the Company shall update the ESDM Report in accordance with section 26 of O. Reg. 419/05 and shall update the Noise Screening Documents so that the information in the reports is accurate as of December 31 in the previous year.
3. The Company shall make the Emission Summary Table (see section 27 of O. Reg. 419/05) and Noise Screening Documents available for examination by any person, without charge, by posting it on the Internet or by making it available during regular business hours at the Facility.
4. The Company shall, within three (3) months after the expiry of Condition 2.1 of this Approval, update the ESDM Report and the Noise Screening Documents such that the information in the reports is accurate as of the date that Condition 2.1 of this Approval expired.
5. Conditions 5.1 and 5.2 do not apply if Condition 2.1 has expired.

6. REPORTING REQUIREMENTS

1. Subject to Condition 6.2, the Company shall provide the Director no later than August 31 of each year, a Written Summary Form to be submitted through the Ministry's website that shall include the following:
 - a. a declaration of whether the Facility was in compliance with section 9 of the EPA, O. Reg. 419/05 and the conditions of this Approval;
 - b. a summary of each Modification satisfying Condition 2.1.a and 2.1.b that took place in the previous calendar year that resulted in a change in the previously calculated concentration at a Point of Impingement for any Compound of Concern.
2. Condition 6.1 does not apply if Condition 2.1 has expired.

7. OPERATION AND MAINTENANCE

1. The Company shall prepare and implement, not later than three (3) months from the date of this Approval, operating procedures and maintenance programs for all Processes with Significant Environmental Aspects, which shall specify as a minimum:
 - a. frequency of inspections and scheduled preventative maintenance;
 - b. procedures to prevent upset conditions;

- c. procedures to minimize all fugitive emissions;
 - d. procedures to prevent and/or minimize odorous emissions;
 - e. procedures to prevent and/or minimize noise emissions; and
 - f. procedures for record keeping activities relating to the operation and maintenance programs.
2. The Company shall ensure that all Processes with Significant Environmental Aspects are operated and maintained in accordance with this Approval, the operating procedures and maintenance programs.

8. COMPLAINTS RECORDING AND REPORTING

1. If at any time, the Company receives an environmental complaint from the public regarding the operation of the Equipment approved by this Approval, the Company shall take the following steps:
- a. Record and number each complaint, either electronically or in a log book. The record shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant.
 - b. Notify the District Manager of the complaint within two (2) business days after the complaint is received, or in a manner acceptable to the District Manager.
 - c. Initiate appropriate steps to determine all possible causes of the complaint, and take the necessary actions to appropriately deal with the cause of the subject matter of the complaint.
 - d. Complete and retain on-site a report written within five (5) business days of the complaint date. The report shall list the actions taken to appropriately deal with the cause of the complaint and set out steps to be taken to avoid the recurrence of similar incidents.

9. RECORD KEEPING REQUIREMENTS

1. Any information requested by any employee in or agent of the Ministry concerning the Facility and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided to the employee in or agent of the Ministry, upon request, in a timely manner.
2. Unless otherwise specified in this Approval, the Company shall retain, for a minimum of five (5) years from the date of their creation all reports, records and information described in this Approval, including,
- a. a copy of the Original ESDM Report and each updated version;
 - b. supporting information used in the emission rate calculations performed in the ESDM Reports;
 - c. the records in the Log;
 - d. copies of each Written Summary Form provided to the Ministry under Condition 6 of this Approval;
 - e. records of maintenance, repair and inspection of Equipment related to all Processes with Significant Environmental Aspects; and

- f. all records related to environmental complaints made by the public as required by Condition 8 of this Approval.

10. REVOCATION OF PREVIOUS APPROVALS

1. This Approval replaces and revokes all Certificates of Approval (Air) issued under section 9 EPA and Environmental Compliance Approvals issued under Part II.1 EPA to the Facility in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

REASONS

The reasons for the imposition of these terms and conditions are as follows:

1. GENERAL

Condition No. 1 is included to require the Approval holder to build, operate and maintain the Facility in accordance with the Supporting Documentation in Schedule 1 considered by the Director in issuing this Approval.

2. LIMITED OPERATIONAL FLEXIBILITY, REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION AND PERFORMANCE LIMITS

Conditions No. 2, 3 and 4, are included to limit and define the Modifications permitted by this Approval, and to set out the circumstances in which the Company shall request approval of an Acceptable Point of Impingement Concentration prior to making Modifications. The holder of the Approval is approved for operational flexibility for the Facility that is consistent with the description of the operations included with the application up to the Facility Production Limit. In return for the operational flexibility, the Approval places performance based limits that cannot be exceeded under the terms of this Approval. Approval holders will still have to obtain other relevant approvals required to operate the Facility, including requirements under other environmental legislation such as the Environmental Assessment Act.

3. DOCUMENTATION REQUIREMENTS

Condition No. 5 is included to require the Company to maintain ongoing documentation that demonstrates compliance with the performance limits as specified in condition [4, Performance Limits condition] of this Approval and allows the Ministry to monitor on-going compliance with these performance limits. The Company is required to have an up to date Noise Screening Documents and an up to date ESDM Report that describes the Facility at all times and make the Emission Summary Table from that report and the Noise Screening Documents available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the Facility.

4. REPORTING REQUIREMENTS

Condition No. 6 is included to require the Company to provide a yearly Written Summary Form to the Ministry, to assist the Ministry with the review of the site's compliance with the EPA, the regulations and this Approval.

5. OPERATION AND MAINTENANCE

Condition No. 7 is included to require the Company to properly operate and maintain the Processes with Significant Environmental Aspects to minimize the impact to the environment from these processes.

6. COMPLAINTS RECORDING AND REPORTING PROCEDURE

Condition No. 8 is included to require the Company to respond to any environmental complaints regarding the operation of the Equipment, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

7. RECORD KEEPING REQUIREMENTS

Condition No. 9 is included to require the Company to retain all documentation related to this Approval and provide access to employees in or agents of the Ministry, upon request, so that the Ministry can determine if a more detailed review of compliance with the performance limits as specified in condition 4 of this Approval is necessary.

8. REVOCATION OF PREVIOUS APPROVALS

Condition No. 10 is included to identify that this Approval replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

APPEAL PROVISIONS

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal, within 15 days after the service of this notice, require a hearing by the Tribunal. You must also provide notice to, the Minister of the Environment, Conservation and Parks in accordance with Section 47 of the *Environmental Bill of Rights, 1993* who will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act*, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;

VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar*		
Ontario Land Tribunal	The Minister of the	The Director appointed for the purposes
655 Bay Street, Suite	Environment,	of Part II.1 of the <i>Environmental</i>
1500	Conservation and	<i>Protection Act</i>
Toronto, Ontario	Parks	Ministry of the Environment,
M5G 1E5	and 777 Bay Street, 5th	Conservation and Parks
OLT.Registrar@ontario.ca	Floor	135 St. Clair Avenue West, 1st Floor
	Toronto, Ontario	Toronto, Ontario
	M7A 2J3	M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

This instrument is subject to Section 38 of the *Environmental Bill of Rights, 1993*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at ero.ontario.ca, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 7th day of October, 2021



Neryed Ragbar

Director

appointed for the purposes of Part II.1 of the *Environmental Protection Act*

c: Taylor Roumeliotis, Ramboll Canada Inc.
Jennifer Angus-Waldron

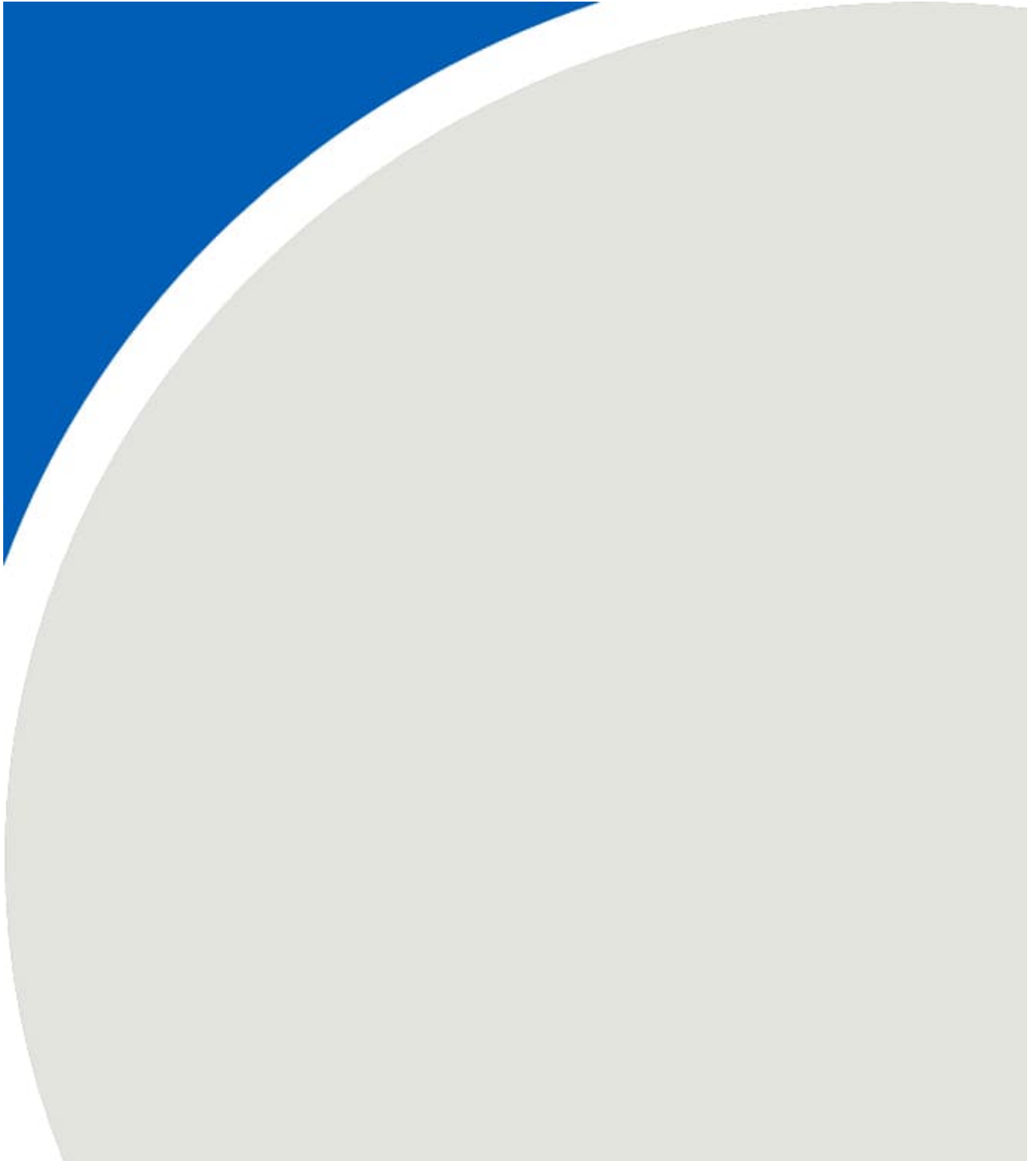
The following schedules are a part of this environmental compliance approval:

SCHEDULE 1

Supporting Documentation

1. Environmental Compliance Approval Application, certified by Jennifer Angus-Waldon on February 26, 2020..
2. Emission Summary and Dispersion Modelling Report, prepared by Taylor Roumeliotis (Rambol Canada Inc.) and dated September 28, 2020.
3. The Primary Noise Screening Method signed by Taylor Roumeliotis (Rambol Canada Inc.) dated September 28, 2020.

APPENDIX B – FACILITY 14





Ministry of the Environment, Conservation and Parks
Operations Division

Confirmation of Registration

Registration Number: R-010-4112387595

Version Number: 001

Date Registration Filed: Jul 03, 2020 13:07:36 PM

Dear Sir/Madam,

POLYMER DISTRIBUTION INC

256 Victoria Road South
Guelph ON N1E 5R1

You have registered, in accordance with Section 20.21(1) (a) of the *Environmental Protection Act*, the use, operation, construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing that is located at the facility noted below, or the alteration of a process or rate of production at the facility, including the activities set out in schedule 'A'.

256 Victoria Road South Guelph ON N1E 5R1

Please note that the facility noted above is subject to the applicable provisions of O. Reg. 245/11, and O. Reg.1/17.

The activity related information provided during the registration process is included as part of the confirmation of registration as schedule 'A'.

Dated on Jul 03, 2020

Director

Environmental Approvals Access and Service Integration Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5

Any questions related to this registration and the Environmental Activity and the Sector Registry should be directed to:

Ministry of the Environment, Conservation and Parks

Customer Service Representative

Environmental Approvals Access and Service Integration Branch

Phone:(416) 314-8001

Toll free: 1-800-461-6290

Schedule 'A'

Part 3 - Activity Information

3.1 Industry Eligibility Check

a. Please select the facility's primary North American Industry Classification System (NAICS) code.	484221
b. Does the facility have any other applicable NAICS codes?	☒ Yes ☐ No
b. i. If yes, please select the facility's secondary NAICS code(s), and confirm any other applicable NAICS code(s).	
c. Are you engaged in an activity at the facility that may discharge or from which may be discharged a contaminant into any part of the natural environment other than water?	☒ Yes ☐ No
d. Is the activity exempt from requiring an Environmental Compliance Approval (ECA) under section 9 (1) of the Environmental Protection Act (EPA) other than an activity that has been prescribed by an EASR regulation under Part II.2 of the Act?	☐ Yes ☒ No
e. Are the only activities engaged in at the facility, other than activities described in question 3.1d above, prescribed under a single other EASR regulation?	☐ Yes ☒ No
f. Is an alternative low-carbon fuel site within the meaning of Ontario Regulation (O. Reg.) 79/15 (Alternative Low-Carbon Fuels) operated at the facility?	☐ Yes ☒ No
g. Is the activity a renewable energy project as defined in the EPA?	☐ Yes ☒ No
h. Is an end-of-life vehicle waste disposal site within the meaning of O. Reg. 85/16 operated at the facility?	☐ Yes ☒ No

3.2 Facility Related Information

a. Has a site-specific air standard ever been set for a contaminant discharged from the facility? (section 35 of O. Reg. 419/05 (Air Pollution -- Local Air Quality))	☐ Yes ☒ No
b. Has a person ever been registered in the Ministry's Technical Standards Registry – Air Pollution under section 39 of O. Reg. 419/05 (Air Pollution – Local Air Quality) in respect of the facility?	☐ Yes ☒ No
c. Do all of the activities to be registered occur exclusively at the site? <i>Please Note: Discrete activities that involve the use of equipment that is intended to be moved from one site to another to perform the same function (such as the use of mobile rock crushing equipment or mobile PCB destruction equipment) are not prescribed for the purpose of the Environmental Activity and Sector Registry, and an Environmental Compliance Approval may be required.</i>	☒ Yes ☐ No
d. Is the facility located on a property that has been deemed a single property under subsection 4 (2) of O. Reg. 419/05?	☐ Yes ☒ No
e. Is the facility located in an area of development control within the Niagara Escarpment Planning Area?	☐ Yes ☒ No
e. i. If yes, has a development permit required under section 24 of the Niagara Escarpment Planning and Development Act (NEPDA) in respect of the facility been issued?	☐ Yes ☐ No
f. Is there a landfilling site that is no longer permitted to accept waste for disposal located on the site on which the facility is located?	☐ Yes ☒ No
g. Is the activity part of an undertaking to which the Environmental Assessment Act applies?	☐ Yes ☒ No
g. i. If yes, is one or more of the following conditions met: - All class EA requirements have been completed, including decisions on any Part II order requests; OR - The facility has received approval to proceed with the undertaking.	☐ Yes ☐ No

h. Please provide a description of the facility. The description should include a summary of operations and activities at the facility that discharge contaminants, as well as what is produced, if applicable.

PDI operates a bulk trans-load terminal for chemical commodities. The Facility primarily handles liquid chemical commodities. There are bulk storage tanks used for interim storage of certain commodities and warehousing operations on the site as well. Commodities are received mostly by rail, but some products are received in intermodal bulk tanks, intermediate bulk tote tanks or drums. Transfers are made from the rail cars to either bulk trucks for delivery or to storage tanks for interim storage and eventual transfer to bulk trucks for delivery. Inter-modal tanks are usually transferred

to storage tanks for interim storage and eventual transfer to bulk trucks for delivery. Tote tanks and drums are pump-transferred to bulk trucks for delivery. In addition, used oil is received at the Facility via rail car and transferred to trucks for delivery to recycling and re-refining facilities. PDI holds a waste/transfer processing Environmental Compliance Approval (ECA), which permits this activity.

i. Please enter the date on which the facility commenced or will commence operations.

2006-06-06

j. Is the facility located in a multi-tenant building?

☐ Yes

☒ No

3.3 Activity Related Information

a. Does the land disposal of waste as defined in Regulation 347 General – Waste Management occur at the facility?

☐ Yes

☒ No

b. Does the facility process or dispose of waste by way of thermal treatment, other than the thermal treatment of wood fuel that meets the specifications in Chapter 5 of the EASR publication in a wood-fired combustor?

☐ Yes

☒ No

c. Does the facility use a wood-fired combustor?

☐ Yes

☒ No

c. i. If yes, does the wood-fired combustor have a nominal load heat input capacity of less than 3 megawatts?

☐ Yes

☐ No

c. ii. If yes, was the wood-fired combustor installed at the facility on or after January 31, 2017?

☐ Yes

☐ No

c. iii. If yes, does the wood-fired combustor exclusively use one or more of the following as fuel:

- Wood chips that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood briquettes that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood pellets that meet the specifications set out in Chapter 5 of the EASR publication.

☐ Yes

☐ No

d. Does the facility have any plating processes that use cadmium, cyanide, chromium or nickel, including chrome plating, electroplating or electroless plating?

☐ Yes

☒ No

e. Is an electrolytic stripping process that removes cadmium, chromium or nickel from an object used at the facility?

☐ Yes

☒ No

f. Are metals processed outdoors at the facility, including torching, shearing, shredding or plasma cutting, other than for the purpose of routine maintenance carried out at the facility on any plant, structure, equipment, apparatus or thing?

☐ Yes

☒ No

g. Is a fossil-fuel electric power generation facility with a maximum electrical power output capacity equal to or greater than 25 megawatts operated at the facility?

☐ Yes

☒ No

h. Is a combustion source that uses biogas, biomass, coal, petroleum coke or waste as a fuel, or that uses a fuel derived from biogas, biomass, coal, petroleum coke or waste other than a small wood-fired combustor operated at the facility?

☐ Yes

☒ No

i. Is a combustion turbine used at the facility?

☐ Yes

☒ No

Part 4 - Operational Information

4.1 Air

a. Does the EASR Emission Summary and Dispersion Modelling (ESDM) Report provide for modifications that have not yet been implemented at the facility?	☐ Yes	☒ No
a. i. If yes, please provide the date on which the modifications will be completed.		
b. Has an instrument under O. Reg. 419/05 been issued in respect of the facility?	☐ Yes	☒ No
b. i. If yes, what type(s) of instruments (including any notices, orders or approvals) has (have) been issued? (select all that apply)		
ss. 7(1) Specified Dispersion Models	☐	
ss. 8(2) Negligible Sources	☐	
ss. 10(2) Operating Conditions	☐	
ss. 11(2) Refined Emission Rates	☐	
ss. 13.1 Value of Dispersion Modelling Parameters	☐	
ss. 13(1) Meteorological Data	☐	
ss. 14(6) Area of Modelling Coverage	☐	
ss. 20(5) Speed-up Order	☐	
Other	☐	
List all that have been issued		
c. To what standard did the licensed engineering practitioner assess compliance of the facility's emissions (please select the applicable box(es)):		
Section 19 of O. Reg. 419/05 (Schedule 2)	☐	
Section 20 of O. Reg. 419/05 (Schedule 3)	☒	
N/A – The amount of any contaminant discharged from the site is negligible	☐	
N/A – Source(s) discharge only sound as a contaminant	☐	
N/A – Source(s) discharge sound as a contaminant and the amount of any other contaminant discharged is negligible	☐	
d. Please select all applicable boxes that apply to a discharge of a contaminant(s) to air from the facility:		
Contaminant(s) belonging to Benchmark 1 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant	☒	
Contaminant(s) belonging to Benchmark 1 category of ACB list is above the concentration for a specified averaging period set out for the contaminant	☐	
By exceeding a Benchmark 1 contaminant limit(s), you must also notify your local District Office and take appropriate action in accordance with Reg. 419/05. Please see https://www.ontario.ca/page/rules-air-quality-and-pollution#section-4 for more details under "Notification of Exceedances".		
Contaminant(s) belonging to Benchmark 2 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant	☒	

Contaminant(s) belonging to Benchmark 2 category of ACB list is above the concentration for a specified averaging period set out for the contaminant	☐		
The concentration of the contaminant(s) does not have a Ministry standard, guideline, or screening level set out for the contaminant	☐		
N/A – The amount of any contaminant discharged from the site is negligible	☐		
N/A – Source(s) discharge only sound as a contaminant	☐		
N/A – Source(s) discharge sound as a contaminant and the amount of any other contaminant discharged is negligible	☐		
e. Does the facility operate a generator for non-emergency purposes?	☐ Yes ☒ No		
f. Does the facility use or operate a large boiler or heater greater than 10.5 gigajoules per hour?	☒ Yes ☐ No		
g. Will an Emissions Summary Table be uploaded? <i>Please Note: An Emissions Summary Table is required to be uploaded at the time of registration. An Emissions Summary Table is also required to be uploaded if any modifications to the facility require an update to the EASR ESDM. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Emissions Summary Table is required to be uploaded.</i>	☒ Yes ☐ No		
h. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the EASR ESDM Report and made statements in the EASR ESDM Report Supplement and the date signed.			
First Name	Last Name	Licence Number(s)	Date Signed
Pamela	Cameron	90468513	2020-06-30

4.2 Fugitive Dust Control

a. Does the EASR ESDM Report prepared for the facility identify a source of fugitive dust?	☐ Yes ☒ No		
a. i. If yes, has a licensed engineering practitioner signed and sealed a Best Management Practice Plan (BMPP) for fugitive dust control?	☐ Yes ☐ No		
b. Has a BMPP for fugitive dust control been prepared as a result of a written notice from the Director issued under O. Reg. 1/17?	☐ Yes ☒ No		
c. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for fugitive dust control and the date signed and sealed.			
First Name	Last Name	Licence Number(s)	Date Signed

4.3 Noise

a. Please select the noise assessment method that was completed for the facility:	
The facility meets the 1000m setback distance	☐
Primary Noise Screening Method	☐
Secondary Noise Screening Method	☐
Acoustic Assessment Report	☒
a. i. If the Primary Noise Screening Method was used, is the actual separation distance from the facility to the closest Point of Noise Reception equal to or greater than the minimum separation distance as determined by the Primary Noise Screening Method?	☐ Yes ☐ No
a. ii. If the Secondary Noise Screening Method was used, is the combined sound level from the facility at each affected Point of Noise Reception as determined by the Secondary Noise Screening Method less than or equal to the applicable sound level limit set out in Chapter 3 of the EASR publication?	☐ Yes ☐ No

a. iii. If an acoustic assessment was completed, did the acoustic assessment determine that the combined sound level from the facility at each affected Point of Noise Reception less than or equal to of the applicable sound level limit set out in Chapter 3 of the EASR publication? ☒ Yes ☐ No

a. iii. a) If no, has a Noise Abatement Action Plan been developed for the facility? ☐ Yes ☐ No

a. iii. b) If yes, please provide the title of the Noise Abatement Action Plan and the date it was prepared.

Name of NAAP	Date Prepared

b. Has an Acoustic Audit Report been prepared as a result of a written notice from the Director? ☐ Yes ☒ No

b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the acoustic audit report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Will an Acoustic Assessment Summary Table be uploaded? ☒ Yes ☐ No

Please Note: An Acoustic Assessment Summary Table is required to be uploaded at the time of registration if an Acoustic Assessment was completed for the facility. An Acoustic Assessment Summary Table is also required to be uploaded if any modifications to the facility require an update to the facility's noise report. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Acoustic Assessment Summary Table is required to be uploaded.

d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the noise report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed
Pamela	Cameron	90468513	2020-06-30

4.4 Odour

a. Did the Odour Screening Report indicate that a circumstance which requires a BMPP for odour to be prepared exists at the facility? ☐ Yes ☒ No

b. Did the Odour Screening Report indicate that a circumstance which requires an Odour Control Report (OCR) to be prepared exists at the facility? ☐ Yes ☐ No

b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the Odour Control Report and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Has a BMPP for odour been prepared as a result of a written notice from the Director issued under O. Reg. 1/17? ☐ Yes ☒ No

d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for odour and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

Table 6 Emissions Summary Table

Contaminant	CAS No.	Emission Rate (g/s)	Air Dispersion Model Used	POI (µg/m3)	MOECC Max POI Concentration Limit (µg/m ³)	Limiting Effect	Regulation Schedule #	Averaging Period (hours)	% of MOECC POI
Hydrochloric Acid	7647-01-0	5.07E-03	AERMOD	1.73	20	Health	Standard B1	24	8.6%
Sodium Hydroxide	1310-73-2	1.21E-02	AERMOD	7.87	10	Corrosion	Guideline B1	24	78.7%
Glycerol, Propylene oxide, Ethylene oxide polymer	9082-00-2*	2.49E-02	AERMOD	31.98	120	Health & Particulate	SL-MD B2	24	26.6%
Methylene Chloride	75-09-2	3.83E-01	AERMOD	158.77	220	Health	Standard B1	24	72.2%
Gasoline	86290-81-5	4.05E-01	AERMOD	139.41	175	Health	SL-JSL B2	24	79.7%
Acetone	67-64-1	3.63E+00	AERMOD	1096.63	11,880	Health	Standard B1	24	9.2%
Nox	10102-440	3.13E-01	AERMOD	42.901	200	Health	Standard B1	24	21.5%
			AERMOD	108.587	400			1	27.1%

* also listed as Glycerol, Propylene oxide, Ethylene oxide polymer, and Polyether Triol all under the same CAS 9082-00-2.

Table 3: Acoustic Assessment Summary Table

PDI - Guelph, ON

6/26/2020

Notes to Table:

- "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104, EASR Publication, Chapter 3. Impulsive noise sources are assessed separately from continuous noise sources.
- Daytime occurs from 0700-1900h. Evening occurs from 1900h to 2300h. Night-time occurs from 2300-0700h
- Worst-case cumulative sound level from all applicable sources operating.
- Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?
- Applicable worst-case sound level limit, as per EASR Publication, Chapter 3. Impulsive limit based on 4 events/hr.
- Performance limit (aka guideline limit) based on following:
 C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
 M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
 D = Default guideline minima per EASR Publication, Chapter 3, as applicable (e.g., 50 dBA for daytime)

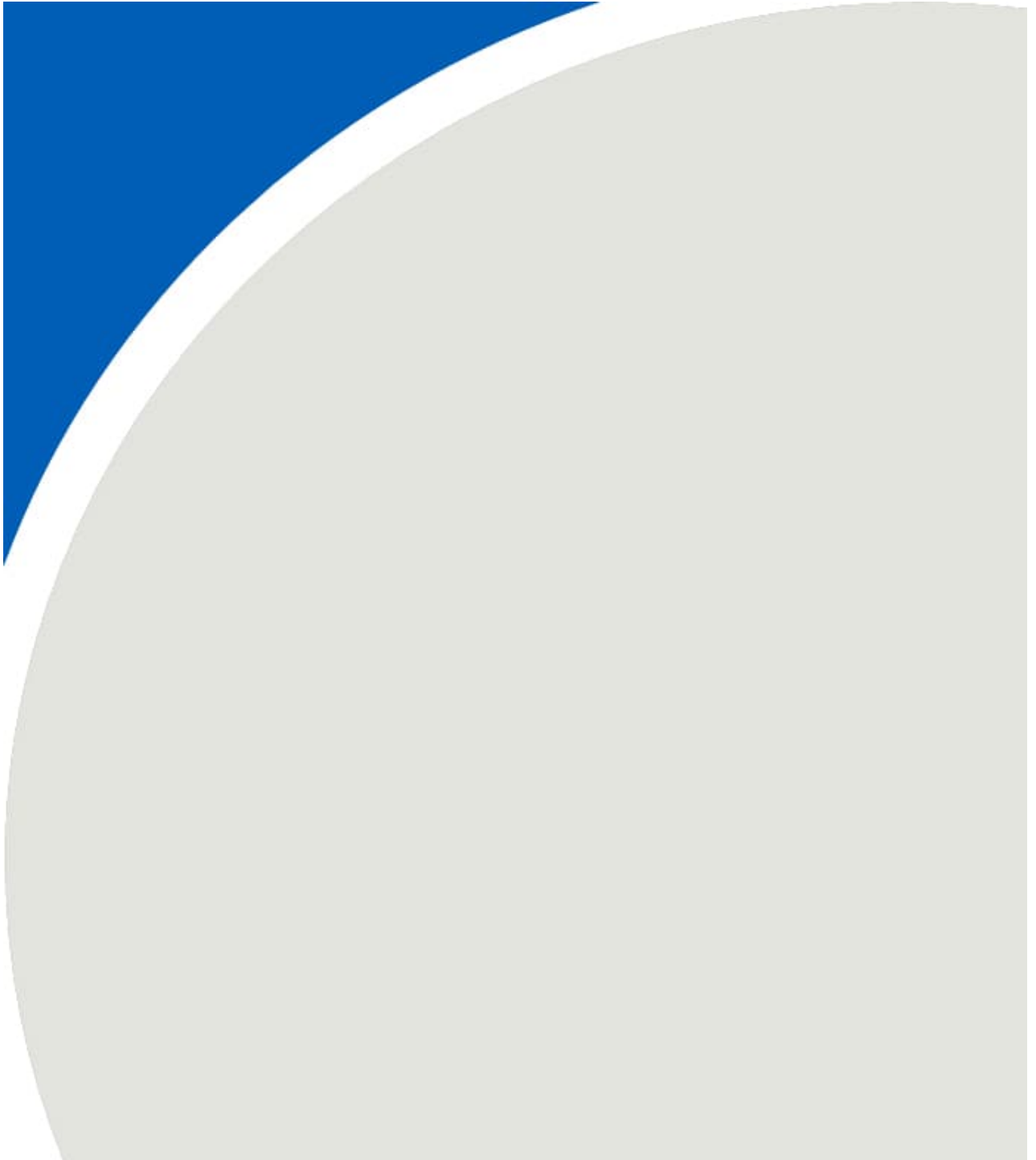
Table 3a: Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Class of Area	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Performance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)
POR1	House to Southwest	1	Daytime	49	No	50	D	Yes
			Evening	49	No	50		Yes
			Night-time	45	No	45		Yes
POR2	House to West	1	Daytime	50	No	50	D	Yes
			Evening	50	No	50		Yes
			Night-time	44	No	45		Yes
POR3	House ot Northwest	1	Daytime	39	No	50	D	Yes
			Evening	39	No	50		Yes
			Night-time	33	No	45		Yes
POR4	Prison to East	1	Daytime	33	No	50	D	Yes
			Evening	33	No	50		Yes
			Evening	22	No	45		Yes

Table 3b: Assessment of Impacts for "Impulsive" Noise Sources [1] - Rail Car Switching

Point of Reception ID	Point of Reception Description	Class of Area	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Performance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)
POR1	House to Southwest	1	Daytime	59	No	65	D	Yes
POR2	House to West	1	Daytime	65	No	65	D	Yes
POR3	House ot Northwest	1	Daytime	65	No	65	D	Yes
POR4	Prison to East	1	Daytime	60	No	65	D	Yes

APPENDIX B – FACILITY 15





APPLICATION
SITE-SPECIFIC STANDARD FOR HEXAVALENT CHROMIUM
OWENS CORNING COMPOSITE MATERIALS CANADA LP
GUELPH PLANT

Prepared for: **OWENS CORNING COMPOSITE MATERIALS CANADA LP**

Prepared by: **MONTROSE ENVIRONMENTAL SOLUTIONS CANADA INC.**

March 2025
Point Edward, Ontario

Suite 210, 704 Mara St.
Point Edward, ON N7V 1X4
T 519.336.4101
www.montrose-env.com



1 APPLICATION FORM

**2 EMISSION SUMMARY AND
DISPERSION MODELLING
REPORT**

**3 TECHNOLOGY BENCHMARKING
REPORT**

**TABLE OF
ATTACHMENTS**

4 PUBLIC CONSULTATION REPORT

5 ACTION PLAN

Attachment 1
Site-Specific Standard Application Form

General Information

Information requested in this form is collected under the authority of the *Environmental Protection Act*, R.S.O. 1990 (EPA) and the *Environmental Bill of Rights*, C. 28, Statutes of Ontario, 1993, (EBR) and will be used to evaluate requests for approval of a site-specific standard under Section 35 of Ontario Regulation 419/05: Air Pollution – Local Air Quality (the Regulation) made under the EPA. This form must be completed with respect to all requirements listed below and in accordance with the requirements of sections 32 to 34.1 of the Regulation in order for it to be considered a request. The Ministry of the Environment, Conservation and Parks may request additional information from the requestor during the technical review of any form accepted as complete.

1. Requestors are responsible for ensuring that they complete the most recent request form. Request forms and supporting documentation are available from the Client Services and Permissions Branch (CSPB) toll free at 1-800-461-6290 (locally at 416-314-8001), from your local District Office of the Ministry of the Environment, Conservation and Parks, and on the Ministry website on [rules for complying with the local air quality regulation](#).
2. Technical questions regarding the site-specific standard process may be directed to the Technical Assessment and Standards Development Branch (TASDB) at the address below. Questions regarding completion and submission of this request should be directed to either Technical Assessment and Standards Development Branch or the Environmental Permissions Branch of the Ministry of the Environment, Conservation and Parks at the address below or to your local Ministry of the Environment, Conservation and Parks District Office which has jurisdiction over the area where the facility is located. A list of these [District Offices](#) is available on the Ministry Internet site.
3. A complete request package consists of a completed, signed request form and all supporting information required by the Regulation and any additional information requested by the Ministry identified in this form and the guidance material.
4. Three copies of the request package must be submitted to the Ministry of the Environment, Conservation and Parks.

The original should be sent to:

Ministry of the Environment, Conservation and Parks
Director, Local Air Quality Regulation, s.35
Technical Assessment and Standards
Development Branch
40 St. Clair Avenue West, 7th Floor
Toronto ON M4V 1M2
Phone : 416-327-5519
Toll Free: 1 800 461-6290
Email: SDB-REG419@ontario.ca

A copy should be sent to:

Ministry of the Environment, Conservation and Parks
Director, Local Air Quality Regulation, s.35
Environmental Permissions Branch
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5
Phone: 416-314-8001
Toll Free: 1-800-461-6290
Email: enviropemissions@ontario.ca

A copy of this request package must also be sent to the local [District Office](#) that has jurisdiction over the area where the facilities are located.

5. Information contained in this request form is not considered confidential and will be made available to the public upon request. Information submitted as supporting information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FIPPA) and the EBR. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment, Conservation and Parks may make the information available to the public without further notice to you. For more information, please refer to Section 2.10.1 of Guideline A-12: Guideline for the Implementation of Air Standards in Ontario (GIAO).

Cette publication hautement spécialisée (Request for Approval Under s. 35(1) of Local Air Quality Regulation for a Site-Specific Standard) n'est disponible qu'en anglais conformément au Règlement 671/92, selon lequel il n'est pas obligatoire de la traduire en vertu de la Loi sur les services en français. Pour obtenir des renseignements en français, veuillez communiquer avec le Ministère de l'Environnement, de la Protection de la nature et des Parcs au 416 314-8001 ou par courriel à enviropemissions@ontario.ca.

Instructions

This form should be used to request a site-specific standard in accordance with the Local Air Quality Regulation and should be accompanied by a description of the circumstances surrounding this request. In accordance with s. 32(1), a person who cannot comply with provincial air standard(s) within the phase-in period(s) may be eligible to request a site-specific standard under section 35 of the Regulation. A site-specific standard, if approved, replaces the standard in Schedule 3 as the compliance point for a facility for a period of five to ten years.

For more information about the site-specific standards process, please refer to the "Guide for Requesting A Site-Specific Standard" (GRSSS); sections 32 to 37.1 of the Regulation; and the "Guideline A-12: Guideline for the Implementation of Air Standards in Ontario" (GASO). These documents and other related publications are available on the Ministry of the Environment, Conservation and Parks Internet site on [rules for complying with the local air quality regulation](#).

Note: Pre-submission consultation with Technical Assessment and Standards Development Branch will be required for facilities that are requesting a site-specific standard.

Regulatory Authority

Subsection 35(1) of the Local Air Quality Regulation states:

35. (1) The Director may approve a request under section 32 and set a site-specific standard for the contaminant that is the subject of the request if,

- (a) the person making the request has complied with sections 32 to 34.1; and
- (b) the Director is of the opinion that,
 - (i) the person making the request cannot comply with section 20 with respect to the standard set out in Schedule 3 for the contaminant for the averaging period specified under paragraph 0.1 of subsection 33 (1) because,
 - (A) it is not technically feasible for the person to comply, in the case of a person who is relying on any paragraph of subsection 32 (1), or
 - (B) it is not economically feasible for the person to comply, in the case of a person who is relying on a paragraph of subsection 32 (1) other than paragraph 4,
 - (ii) the difference between the standard set out in Schedule 3 for the contaminant for the averaging period specified in paragraph 0.1 of subsection 33 (1) and the site-specific standard set by the Director for the contaminant is the minimum difference necessary to enable the person to comply with section 20 with respect to the contaminant, and
 - (iii) there is no public interest reason sufficient to require the denial of the request.

Section 1. Requestor Information (Owner of works/facility)

Requestor Name (legal name of individual or organization as evidenced by legal documents) Owens Corning Composite Materials Canada LP	Business Number 837230366
--	--

Business Name (the name under which the entity is operating or trading if different from the Requestor Name - also referred to as trade name) Owens Corning Guelph Glass Plant

Requestor Type

- | | | |
|---|--|--|
| ☒ Corporation | ☐ Federal Government | ☐ Individual |
| ☐ Municipal Government | ☐ Partnership | ☐ Provincial Government |
| ☐ Sole Proprietor | ☐ Other (describe): _____ | |

Primary North American Industry Classification System (NAICS) Code 327214	Other NAICS Code
--	------------------

Business Activity Description (a description of the business endeavour, this should include products sold, services provided or machinery/equipment used, etc.) Manufacturing of textile glass and glass fiber for reinforcement products

Contact Name Jeff Taylor	Telephone Number 519-823-7328
---	--

Section 2. Requestor Physical Address

Civic Address – Street information
(address that has civic numbering and street information includes street number, name, type and direction)

Civic Number	Street Number 247	Street Name York Road
Type	Direction	

Unit identifier (i.e. suite or unit number)

Survey Address (Used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory. Not required if Street Information is provided).

Lot and Concession: Used to indicate location within a subdivided township and consists of a lot number and a concession number

Lot	Concession
-----	------------

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.

Part	Reference Plan
------	----------------

Municipality/Unorganized Township or Territory Upper Tier/District

Guelph

Province Ontario	Country Canada	Postal Code N1H 6P6
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Section 3. Site Information - (location where activity/works requested for is to take place)

Site Name Guelph Glass Plant	MECP District Office Guelph District Office
---------------------------------	--

Address Information

Same as Requestor Physical Address

☒ Yes ☐ No (If no, please provide site address information below)

Non Address Information (includes any additional information to clarify requestor's physical location)

Telephone Number (including area code)	ext.	Fax Number (including area code)
--	------	----------------------------------

Mobile Number (including area code)	Email Address
-------------------------------------	---------------

Geo Reference (Mandatory)

Description of Location Main Entrance	Map Datum NAD83	Zone 17	
Accuracy Estimate +/- 50m	Geo Referencing Method Google Earth	UTM Easting 562058m E	UTM Northing 4821731m N

Section 4. Technical Contact

Name Penny McInnis	Company Montrose Environmental Solutions Canada Inc.
-----------------------	---

Address Information

Same as Requestor Physical Address? ☐ Yes ☒ No If no, please provide technical information contact address information below.

Civic Address – Street information (address that has civic numbering and street information includes street number, name, type and direction)

Civic Number	Street Number 704	Street Name Mara Street
Type	Direction	Unit Identifier (i.e. suite or apartment number) Suite 210

Delivery Designator: If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery (i.e., RR#3)

Municipality Point Edward		Postal Station	
Province/State Ontario	Country Canada	Postal Code N7V 1X4	

Telephone Number (including area code)
519-336-4101

ext.245

Fax Number (including area code)
519-336-4311

Mobile Number (including area code)

Email Address
pemcinnis@montrose-env.com

Section 5. Project Information

Type of Request

- ☐ Initial Request for Approval of Site-Specific Standard ☐ Request to Amend Existing Site-Specific Standard
- ☒ A Site-Specific Standard has been issued for this site.
This is a subsequent request.

Current Site-Specific Standard Reference Number(s) (Please attach a separate list if more space is required)

Approval Number: 210-16-rv0, Reference Number: 8061-9YNNY9

Current Site-Specific Standard Date(s) of Issue (yyyy/mm/dd)

2016/05/06

Current Expiry Date(s) for Site-Specific Standard(s) (yyyy/mm/dd)

2026/06/30

Summary of Basis for Requesting a Site-Specific Standard

(This summary will be used in the EBR posting notice. Please attach a separate summary if more space is required.)

See attached description

Contaminant Name(s) and CAS Number(s) that is (are) the subject of the Request for an Approval of a Site-Specific Standard:
Hexavalent Chromium (CAS number 18540-29-9)

Reason(s) for Request for a Site-Specific Standard:

Is the facility affected by the mandatory use of an approved dispersion model (in accordance with section 6 of the Regulation)?

- ☐ Yes (If yes, identify the date that the advanced air dispersion models are required to be used (yyyy/mm/dd)) ►
- ☒ No

Is the facility affected by the implementation of air standard(s) included in Schedule 7 of the Regulation?

- ☐ Yes (If yes, identify the date(s) that the new air standard(s) comes into force (yyyy/mm/dd)) ►
- ☒ No

Has the facility been issued an order that requires them to submit a request for a site-specific standard?

- ☐ Yes (If yes, identify the date(s) in the order and attach a copy. (yyyy/mm/dd)) ►
- ☒ No

Has the facility been issued an order that requires them to submit a request for a site-specific standard?

- ☐ Yes (If yes, identify the date(s) that the new air standard(s) comes into force (yyyy/mm/dd)) ►
- ☒ No

Other Supporting Information:

Was the site-specific meteorological data approved prior to completing the Emission Summary and Dispersion Modelling (ESDM) Report (in accordance with s.13(1) of the Regulation)?

- ☒ Yes (If yes, please attach a copy of the Ministry's Acceptance Letter or s. 13 notice)
- ☐ No (If no, please provide reason) ▼

Was Source Testing done in support of the ESDM Report? ☒ Yes ☐ No

If yes, was the Source Testing Pre-Test Plan approved prior to completing the Source Testing (in accordance with s.11 (1)2 of the Regulation)?

- ☒ Yes (If yes, please attach a copy of the Ministry's Acceptance Letter)
- ☐ No (If no, please provide reason) ▼

Was specific criteria developed for the assessment of negligible source(s) under Chapter 7.3 of the Procedure for Preparing an Emission Summary and Dispersion Modelling Report?

☐ Yes (If yes, please attach a copy of the Ministry's Acceptance Letter)

☒ No

Was the plan for the combined assessment of modelled and monitored results approved by the Ministry (in accordance with s.11 (1)3 of the Regulation)?

☐ Yes (If yes, please attach a copy of the Ministry's Acceptance Letter)

☒ No (If no, please provide reason) ▼

All sources at this facility can be measured accurately using source testing, therefore a CAMM program is not beneficial or necessary for the site-specific standard application.

Has an application for a Environmental Compliance Approval under s.20.2 of the *Environmental Protection Act* for the necessary process modifications identified in the Action Plan been submitted to the Ministry?

☐ Yes (If yes, please provide the Ministry Reference Number)

☒ No

Section 6. Public Consultation/Notification

Separate list attached? ☒ Yes ☐ No

Specify all public consultation/notification activities (such as public meetings, discussions with First Nations, etc.) related to the project that have been completed or are in the process of being completed. Please attach a separate list describing each of these consultation activities and the results achieved. The summary of comments must be in the Public Consultation Report (see below).

Public consultation included Public Liaison Committee meetings, proactive outreach to local government, and maintenance and promotion of a plant website focused on the site-specific standard. Details of the public consultation are included in the Public Consultation Report in this application.

Section 7. List of Attachments - This is a list of all supporting information to this request and is subject to the *Freedom of Information and Privacy Protection Act* and the *Environmental Bill of Rights*.

Attachment	Attached	Reference	Can be Disclosed
Pre-submission Requirements			
Ministry's Acceptance Letter for Site-Specific Meteorological Data or s. 13 notice	☒ Yes ☐ No		☐ Yes ☐ No
Ministry's Acceptance Letter for Source Testing Pre-Test Plan	☒ Yes ☐ No		☐ Yes ☒ No
Ministry's Acceptance Letter for Specific Criteria developed for the assessment of negligible source(s) under Chapter 7.3 of the ESDM Procedure Document.	☐ Yes ☒ No		☐ Yes ☐ No
Ministry's Acceptance Letter for the plan for the combined assessment of modelled and monitored results.	☐ Yes ☒ No		☐ Yes ☐ No
Information Supporting Site-Specific Standard Request			
Emission Summary and Dispersion Modelling (ESDM) Report in accordance with s.33 of the Regulation	☒ Yes		☐ Yes ☒ No
Technology Benchmarking Report	☒ Yes		☐ Yes ☒ No

Attachment	Attached	Reference	Can be Disclosed
Economic Feasibility Report (Optional)	☐ Yes ☒ No		☐ Yes ☐ No
Action Plan	☒ Yes		☐ Yes ☒ No
Public Consultation Report	☒ Yes		☐ Yes ☒ No
Risk Scoring (Optional)	☐ Yes ☒ No		☐ Yes ☐ No

Section 8. Statement of Requestor

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted in support of this request is complete and accurate in every way, and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- The Technical Contact identified in section 4 of this form is authorized to act on my behalf for the purpose of obtaining approval for a site-specific standard under Section 35 of the Local Air Quality Regulation for the equipment/processes identified herein.
- I have used the most recent request form (as obtained from the Ministry Internet site on [rules for complying with the local air quality regulation](#) or the Client Services and Permissions Branch at 1-800-461-6290) and I have included all necessary information required by the Regulation, identified on this form and in the guidance material.

Name of Signing Authority (please print)

Jeff Taylor

Title

Plant Leader

Signature

Date (yyyy/mm/dd)

2025/03/25

Address Information

Same as Requestor Physical Address? ☒ Yes ☐ No If no, please provide technical information contact address information below.

Telephone Number (including area code)

519-823-7328

ext.

Fax Number (including area code)

Email Address

Jeff.Taylor@owenscoming.com

Description of Request

The Owens Corning Guelph Glass Plant is requesting an interim site-specific annual standard for hexavalent chromium under Section 32 of Ontario Regulation 419/05. The facility produces fiberglass reinforcements for commercial and industrial markets worldwide. This facility is the sole producer of fiberglass for reinforcements in Ontario and Canada and has been operating in Guelph since 1951. The facility is located at 247 York Road, Guelph, Ontario in the Township of Guelph/Eramosa and Wellington County.

On July 1, 2016, the existing hexavalent chromium air standard came into effect at 0.00014 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) on an annual average basis. Owens Corning applied for and received a site-specific standard of 0.0024 $\mu\text{g}/\text{m}^3$ until June 30, 2026.

Owens Corning has conducted technology benchmarking as part of this site-specific standard renewal application and due to technical feasibility challenges remains unable to achieve the Schedule 3 standard for hexavalent chromium. However, Owens Corning is committed to reducing POI concentrations of hexavalent chromium, and has developed a combination of options for implementation to achieve additional reductions below the existing site-specific standard.

Owens Corning is requesting a more stringent site-specific annual hexavalent chromium standard of 0.00133 $\mu\text{g}/\text{m}^3$ with additional future reductions down to 0.00068 $\mu\text{g}/\text{m}^3$ over a 10 year period.

**Ministry of the Environment,
Conservation and Parks**

Environmental Monitoring and
Reporting Branch

125 Resources Road
Etobicoke ON M9P 3V6
Tel.: 416 235-6300

**Ministère de l'Environnement, de
la Protection de la nature et des
Parcs**

Direction de la Surveillance
Environnementale

125, chemin Resources
Etobicoke ON M9P 3V6
Tél. : 416 235-6300



May 16, 2023
Jeff Taylor, Plant Leader
Owens Corning Composite Materials Canada - LP
247 York Road
Guelph, Ontario
N1H 6P6

Dear Madam/Sir:

**Re: Request for Approval under Paragraph 3 of section 13(1) of Regulation 419/05
For use of Site-specific Meteorological Data:
Owens Corning Composite Materials Canada - LP - Owens Corning Guelph Glass Plant (located at
247 York Road, Guelph, Ontario).**

In accordance with the application for approval under s.13(1) of Regulation 419/05 for use of site-specific meteorological data, I am approving the use of site-specific data for the above-referenced site as requested by the Owens Corning Composite Materials Canada - LP in the application dated March 2, 2023.

The site-specific meteorological data referenced as the Guelph Turfgrass data is a reasonable reflection of the meteorological conditions for the proposed modelling assessment.

A 5-year (2016 to 2020) meteorological dataset has been prepared by the Ministry of the Environment, Conservation and Parks with wind-sector dependent land use specific to the site identified in the application. The upper air and surface data is from the U.S. National Weather Service's Buffalo and the Environment and Climate Change Canada's Guelph Turfgrass stations respectively, with cloud cover data from the Toronto International airport station.

This site-specific meteorological data was prepared in response to a request submitted under O. Reg. 419/05 and is approved for use at this specific facility until such time as there are significant land use changes in vicinity of the facility.

This meteorological dataset was prepared using the AERMET 22112 meteorological pre-processor computer program. It is to be used in conjunction with the corresponding version of AERMOD to model discharges from the above-referenced facility. You are reminded that this dataset must be reprocessed when the Ministry adopts a newer version of AERMET. The Ministry can provide reprocessed meteorological data upon request.

This s.13(1) approval revokes and replaces the s.13(1) approval in appendix A, issued on November 27, 2014.

Should you have any comments or questions relating to the above site specific meteorological dataset, please send an e-mail to MetDataENE@ontario.ca within 30 days of the date of this correspondence with details, so that this dataset can be modified, if necessary.

Yours truly,

A handwritten signature in blue ink, appearing to read 'Abby Salb', with a stylized, cursive script.

Abby Salb
Director, Section 13, O. Reg. 419/05

cc: District Manager, Guelph District Office
Director, Section 9, Environmental Protection Act
Environmental Permissions Branch
LEHDER Environmental Services Limited

Ministry of the Environment
and Climate Change

Ministère de l'Environnement et de
l'Action en matière de changement
climatique



Environmental Monitoring and
Reporting Branch

Direction de la Surveillance
Environnementale

125 Resources Road
Etobicoke ON M9P 3V6
Tél. : 416 235-6300
Fax: 416 235-6235

125, chemin Resources
Etobicoke ON M9P 3V6
Tél. : 416 235-6300
Téléc. : 416 235-6235

November 27, 2014
Robert Nixon, Engineering Leader
Owens Corning Composite Materials Canada - LP
247 York Road
Guelph, Ontario
N1H 6P6

Dear Madam/Sir:

**Re: Request for Approval under Paragraph 3 of section 13(1) of Regulation 419/05
For use of Site Specific Meteorological Data:
Owens Corning Composite Materials Canada - LP-Owens Corning Guelph Glass Plant (located at
247 York Road, Guelph, Ontario)**

In accordance with the application for approval under s.13(1) of Regulation 419/05 for use of site specific meteorological data, I am approving the use of site specific data in preparing an Emission Summary Dispersion Modelling (ESDM) as requested by Owens Corning Composite Materials Canada - LP and signed by you dated November 17, 2014.

The site specific meteorological data referenced as the Guelph Turfgrass data is an accurate reflection of the meteorological conditions for the proposed modelling assessment, given the proximity of the meteorological station to the facility's location.

A fully processed meteorological data set for the 5 years from 2009 to 2013 has been prepared by the Ministry of the Environment and Climate Change with wind-sector dependent land use specific to the application area, using wind and temperature data from the Guelph Turfgrass station and other variables from the Waterloo, Kitchener/Waterloo and Toronto Pearson International airport station. This meteorological dataset was prepared using the AERMET 14134 meteorological pre-processor computer program, and can be used to run the AERMOD model. It has been prepared to model discharges only from the above-referenced facility.

The data were prepared in reply to a request submitted in relation to the preparation of an ESDM report under O. Reg. 419/05 and is approved for use in subsequent ESDM reports for this specific facility until such time as (i) the ministry officially adopts a new regulatory version of the AERMET computer program or (ii) there are significant land use changes in vicinity of the facility.

Yours truly,

A handwritten signature in black ink, appearing to read "Yvonne Hall".

Yvonne Hall
Director, Section 13, O. Reg. 419/05

cc: District Manager, Guelph District Office
Director, Section 9, Environmental Protection Act
Environmental Approvals Branch

Ministry of the Environment,
Conservation and Parks
Technical Assessment and
Standards Development Branch
40 St. Clair Avenue West
7th Floor
Toronto ON M4V 1M2
Phone: 416.327.5519
Fax: 416.327.2936

Ministère de l'Environnement, de
la Protection de la nature et des Parcs
Direction des évaluations techniques et de
l'élaboration des normes
40, avenue St. Clair Ouest
7^e étage
Toronto, ON M4V 1M2
Tél: 416 .327.5519
Téléc: 416. 327.2936



Via email: gubastien@montrose-env.com

TSS File No.: WCR:SA: 110230:24

2024/01/24

Guy Bastien
Montrose Environmental

Dear Mr. Bastien

Subject: Pre-test plan review for source testing to be conducted at Owens Corning
Guelph Glass

We received your pre-test plan (Project #032615), dated January 17, 2024, prepared on behalf of Owens Corning Guelph Glass (Owens Corning) and referring to source testing to be conducted at their facility in Guelph, Ontario.

Source testing is a requirement under amended Environmental Compliance Approval No. 4548-AA3QXU issued June 22, 2016. The testing program will be conducted in two phases in 2024 to assess potential seasonal differences in emissions.

Sources to be tested:

- Source B24- T105 West Furnace Stack
- Source B25- T105 East Furnace Stack
- Source B38- T105 Forehearth Stack
- Source B33- Furnace Hall General Exhaust
- Source B34- Furnace Hall General Exhaust
- Source C79- Furnace Hall General Exhaust

Target contaminant:

- Hexavalent Chromium (Cr⁺⁶)

Reference methods to be used:

Stack gas parameters Cr ⁺⁶	Ontario Source Testing Code (OSTC) Methods ON-1-ON-4 US EPA Method 0061
--	--

General facility description:

The Owens Corning plant produces textile glass yarn and fiberglass for reinforcements for the commercial and industrial market. This facility is the sole producer of Continuous Filament Mat (CFM) in Ontario and Canada.

Testing strategy

T105 furnace exhaust gases are exhausted to atmosphere via two stacks. To assess hexavalent chromium emissions from this source, both furnace stacks will be sampled concurrently.

For the first mobilization, Fan C79 will be operated at a constant exhaust rate throughout the program; other roof ventilation fans will not be operated during sampling. For the second mobilization, Fans B33, B34 and C79 will all be operated at constant exhaust rates.

The stacks will be sampled over a period of 80 minutes, while the furnace hall ventilation will be sampled over a period of seven hours per test run at a constant sampling rate and single sampling point.

Operating conditions:

Data related to the operation of Furnace T105 will be monitored during each sampling period. During sampling, the facility will operate at the expected production rate at the time of testing. The expected glass pull rate for the February 2024 testing is 1,175 kg/hr which is approximately 65% of the maximum pull rate for the facility. Hexavalent chromium emissions are primarily related to asset degradation, and not production rates.

Data expected in the final report, consistent with previous testing programs, are listed below:

- T105 Furnace/Forehearth glass pull rate
- Melter O2 flow rate
- Melter glass flow rate
- Forehearth O2 flow rate
- Forehearth gas flow rate

The pre-test plan is approved as the proposed reference methodologies/sampling strategies are acceptable.

We have noted the sampling schedule to commence February 12, 2024. If changes to this schedule occur, please notify both the MECP's Guelph District Office and the Source Testing Group.

Just a reminder that the source testing report is required to be submitted in electronic format to the district office and to the source testing group at sourcetesting@ontario.ca.

If you have any questions with regards to this assessment, I can be reached by phone at 437-995-2835 or by email at sourcetesting@ontario.ca

Sincerely,

A handwritten signature in dark ink, appearing to read "Caitlyn", is positioned above a horizontal line.

Caitlyn Ruddy
Source Assessment Specialist
Technology Standards Section

cc: J. Taylor- Owens Corning (jeff.taylor@owenscorning.com)
J. Lamport- Guelph District Office (jacqueline.lamport@ontario.ca)
J. McKerrall –TSS (jeffrey.mckerrall@ontario.ca)
B. Fullerton- TSS (bill.fullerton@ontario.ca)

File AQ-02 (Owens Corning- Guelph)

Doc.Mgmt # 5AH010009

Subject : [External] - RE: 032615 - Owens Corning Guelph Glass Plant Hexavalent Chromium Notification of Intent to Test
Date : Monday, May 27, 2024 11:32 am
Linked to : Protocols and Notification E-mail
From : "Source Testing (MECP)" <SOURCETESTING@ontario.ca>
To : Guy Bastien <gubastien@montrose-env.com>
Cc : Jeff Taylor <Jeff.Taylor@owenscorning.com>; Penny McInnis <PeMcinnis@montrose-env.com>; Evan Metcalfe <EvMetcalfe@montrose-env.com>; "Lamport, Jacqueline (MECP)" <Jacqueline.Lamport@ontario.ca>; "McKerrall, Jeffrey (MECP)" <Jeffrey.McKerrall@ontario.ca>; "Fullerton, Bill (MECP)" <Bill.Fullerton@ontario.ca>
Attachments : u:\pmcinnis\attach\2024\05\image001(58).png

Some people who received this message don't often get email from sourcetesting@ontario.ca. [Learn why this is important](#)

Guy,

We have noted the second round of testing at Owens Corning scheduled for June 17, 2024. The only change from the previous round will be that the three roof ventilation sources will be operating and will be sampled concurrently. We have noted the lab change for this round of testing.

If changes to the sampling schedule occur please notify both the Guelph District Office and the Source Testing Group.

Caitlyn Ruddy

Source Assessment Specialist | Technical Assessment and Standards Development Branch
Ministry of the Environment, Conservation and Parks | Ontario Public Service
437-995-2835 | caitlyn.ruddy@ontario.ca

Taking pride in strengthening Ontario, its places and its people

From: Guy Bastien <gubastien@montrose-env.com>
Sent: Friday, May 17, 2024 12:37 PM
To: Source Testing (MECP) <SOURCETESTING@ontario.ca>; Lamport, Jacqueline (MECP) <Jacqueline.Lamport@ontario.ca>
Cc: Jeff Taylor <Jeff.Taylor@owenscorning.com>; Penny McInnis <PeMcinnis@montrose-env.com>; Evan Metcalfe <EvMetcalfe@montrose-env.com>
Subject: 032615 - Owens Corning Guelph Glass Plant Hexavalent Chromium Notification of Intent to Test

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.
To Whom It May Concern:

Owens Corning Guelph Glass (OC Guelph) has retained Montrose Environmental Group, Ltd. (Montrose) to conduct **hexavalent chromium emissions testing** from selected sources servicing the T105 production line at the facility located at 247 York Road, Guelph, Ontario.

Attached please find a previously approved Test Protocol for the source sampling program. Please note that the Protocol submission included **Business Confidential** Information, which was provided as a separate file for review.

This Test Protocol was originally submitted in January 2024, and was approved for a February 2024 sampling campaign. Attached please find a copy of the Ministry PTP review letter.

Montrose is scheduled to repeat this sampling program over the period of **June 17 - 20, 2024**, with the following changes:

- Three (3) roof ventilation sources will be operating and will be sampled concurrently. The three sources and the areas they service are identified in the January 2024 Test Protocol. The remainder of the sampling program will remain as described in the Test Protocol.

- Subsequent to the completion of the February 2024 sampling program, Bureau Veritas discontinued providing stack sample analytical services. The analytical laboratory will now be as shown below:

Laboratory: **ALS Environmental**

Contact: **Ron McLeod**

Phone: (905) 331-3111, Ext. 222

Ron is based in the ALS Burlington, ON laboratory. However, I believe hexavalent chromium analyses are performed in the ALS Environmental Waterloo, ON Laboratory.

If you have any questions or concerns regarding the proposed sampling program, please feel free to contact me.

Respectfully submitted,

Guy Bastien, P.Eng.
Senior Environmental Engineer
Montrose Environmental
704 Mara Street, Suite 210, Point Edward, ON, N7V 1X4 | CA Eastern Time
Office: 1-519-336-4101 ext. 248 | Mobile: 1-519-330-1240
gubastien@montrose-env.com | montrose-env.com

-- NextPart -----

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CONFIDENTIALITY NOTICE: The contents of this email message and any attachments are intended solely for the addressee(s) and may contain confidential, proprietary and/or privileged information and may be legally protected from disclosure. If you are not the intended recipient of this message or their agent, or if this message has been addressed to you in error, please immediately alert the sender by reply email and then delete this message and any attachments and the reply from your system. If you are not the intended recipient, you are hereby notified that any disclosure, use, dissemination, copying, or storage of this message or its attachments is strictly prohibited.

Attachment 2
Emission Summary and Dispersion Modelling
Report



EMISSION SUMMARY & DISPERSION MODELLING REPORT FOR A SITE-SPECIFIC STANDARD GUELPH PLANT

Prepared for: **OWENS CORNING COMPOSITE MATERIALS CANADA LP**

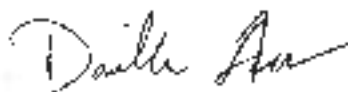
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Prepared for Owens Corning Composite Materials Canada LP, March 2025



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VERSION CONTROL

Version	Date	Issue Type	Filename	Description
V0.1	21-Mar-2025	Draft	41296-526 ESDMR 2025-03-21 draft V0.1.docx	Issued to client for review
V1.0	28-Mar-2025	Final	41296-526 ESDMR - Public 2025-03-28 final V1.0.docx	Issued to client

EXECUTIVE SUMMARY

The Owens Corning Composite Materials Canada LP Guelph Glass facility is requesting a renewal of the site-specific annual standard for hexavalent chromium under Section 32 of Ontario Regulation 419/05: Air Pollution – Local Air Quality (O. Reg. 419/05). The Owens Corning Guelph Glass facility is located at 247 York Road, Guelph, Ontario in the Township of Guelph/Eramosa and Wellington County. This Emission Summary and Dispersion Modelling Report (EDSMR) is a required element of Owens Corning's request. This facility currently operates under Amended Environmental Compliance Approval Number 2625-BNET4H.

The NAICS code for the Owens Corning Guelph facility is 327214, Glass Manufacturing, and is required to demonstrate compliance using advanced dispersion models (AERMOD).

The facility produces textile glass yarn and fiberglass for reinforcements for commercial and industrial markets worldwide. This facility is the sole producer of fiberglass for reinforcements in Ontario and Canada and has been operating in Guelph since 1951. Due to the nature of the process, the facility operates continuously 24 hours per day, 365 days per year. The facility has a maximum production capacity of approximately 16,000 tonnes of molten glass per year.

Glass fibers are produced by melting raw materials in gas fired furnaces and transporting the molten glass through forehearth channels to "bushings" where it is mechanically pulled to form the fibers. Subsequently, the fibers are used to make glass yarns, mat and reinforcements. The raw materials used to manufacture these high-tech glass fibers consist of dry solids, in powder and granular form, including clay, sand, limestone, and dolomite.

This ESDM Report contains all significant sources of contaminants present at the facility. Sources of emissions include:

- Raw materials handling and storage
- Glass melting operations
- Production of textile glass
- Production of textile glass products
- Packaging of products

Owens Corning Guelph has an annual site-specific standard of 0.0024 ($\mu\text{g}/\text{m}^3$) for hexavalent chromium. A site-specific standard is a modelled air concentration at a selected Point of Impingement (POI) developed and approved using site-specific emissions, meteorological data, and an approved air dispersion model, combined with a site-specific Action Plan. This compliance approach focuses on actions the facility can take to reduce hexavalent chromium concentrations to the extent possible, taking into consideration available technology and best practices. A site-specific standard is an interim standard established for a specific period of time to ensure continued review of available and feasible technologies.

Several documents are provided as part of the request for a site-specific standard for hexavalent chromium.

These documents include:

- Emission Summary and Dispersion Modelling Report (ESDMR)
- Technology Benchmarking Report
- Action Plan for achieving reductions

For the Owens Corning Guelph facility, emission estimates for hexavalent chromium are based on validated source testing conducted in 2024 on all sources of hexavalent chromium including the glass melting furnace, forehearth, and furnace hall general ventilation. These emission estimates were then modelled using the AERMOD air dispersion model Version 22112 and a 5 year site-specific meteorological dataset processed by the Ontario Ministry of Environment, Conservation and Parks (MECP).

The Action Plan for the Owens Corning Guelph Glass Plant includes a combination of material substitution, process and design changes as well as re-engineering of exhaust stacks. Due to the continuous nature of the process, the material substitution and process changes will be implemented during the next scheduled shutdown for the assets. The modifications to the exhaust stacks is planned for completion in 2026 as it is expected these can be done while the facility continues to operate normally.

The following table summarizes the current facility emissions and POI concentrations as well as the post-Action Plan concentrations.

Emission Summary Table - Hexavalent Chromium

Contaminant	Averaging Time	Emission Rate	Location of Point of Impingement (POI)	Maximum Modelled Concentration	MECP POI Criteria	Schedule	Limiting Effect	% of Criteria
		(g/s)		(ng/m³)	(ng/m³)			
Hexavalent Chromium (Current Average)	24-hour	1.16E-04	All Receptors	4.67	70	URT	Health	6.7%
			Sensitive receptor	3.36	70	URT	Health	4.8%
	Annual		All Receptors	1.06	2.4	SSS	Health	44.1%
			Sensitive receptor	0.41	2.4	SSS	Health	17.1%
Hexavalent Chromium (Current with Uncertainty)	24-hour	1.37E-04	All Receptors	5.67	70	URT	Health	8.1%
			Sensitive receptor	3.97	70	URT	Health	5.7%
	Annual		All Receptors	1.33 ^[1]	2.4	SSS	Health	55.5%
			Sensitive receptor	0.49	2.4	SSS	Health	20.3%
Hexavalent Chromium (After Action Plan)	24-hour	1.31E-04	All Receptors	2.61	70	URT	Health	3.7%
			Sensitive receptor	2.16	70	URT	Health	3.1%
	Annual		All Receptors	0.68	1.33 ^[2]	Proposed SSS	Health	51.4%
			Sensitive receptor	0.23	1.33 ^[2]	Proposed SSS	Health	17.3%

^[1] Proposed SSS concentration

^[2] Owens Corning is applying for this value as the site-specific standard for hexavalent chromium

Current Emission Summary Table – 1 hour Average (All Other Compounds)

Contaminant	CAS #	1 Hour Emission Rate (g/s)	1 hr Facility MAX GLC (ug/m ³)	1 Hour POI Criteria (ug/m ³)	Schedule	Limiting Effect	% of Criteria
SULPHUR DIOXIDE	7446-09-05	6.15E-01	3.78E+01	100	Schedule 3	Health & Vegetation	37.8%
NITROGEN OXIDES (EXPRESSED AS NO ₂)	10102-44-0	1.16E+00	6.61E+01	400	Schedule 3	Health	16.5%

Current Emission Summary Table – 24 hour Average (All Other Compounds)

Contaminant	CAS #	24 Hour Emission Rate (g/s)	24 hr Facility MAX GLC (ug/m ³)	24 Hour POI Criteria (ug/m ³)	Schedule	Limiting Effect	% of Criteria
PM - PARTICULATE MATTER	N/A - M08	4.52E-01	8.59E+01	120	Schedule 3	Visibility	71.6%
HYDROGEN FLUORIDE -GASEOUS-GROWING SEASON GS [1]	7664-39-3	6.41E-03	1.95E-01	0.86	Schedule 3	Vegetation	22.6%
NITROGEN OXIDES (EXPRESSED AS NO ₂)	10102-44-0	1.16E+00	3.77E+01	200	Schedule 3	Health	18.9%
Chromium Compounds (Di-,Tri-,metallic)	7440-47-3	7.93E-05	7.89E-03	0.5	Schedule 3	Health	1.6%
HYDROGEN CHLORIDE	7647-01-0	4.01E-03	1.22E-01	20	Schedule 3	Health	0.6%
2,2-dibromo-3-nitrilopropionamide	10222-01-2	6.01E-03	6.07E-01	1	Screening Level	Health	<Screening Level
5-Chloro-2-methyl-2H-isothiazol-3-one	55965-84-9	3.45E-03	4.65E-01	1.35	Screening Level	Health	<Screening Level
5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4	1.19E-03	1.60E-01	0.5	Screening Level	Health	<Screening Level
2-Methyl-4-Isothiazolin-3-one	2682-20-4	1.19E-03	1.60E-01	0.5	Screening Level	Health	<Screening Level
MAGNESIUM NITRATE	10377-60-3	4.48E-03	5.69E-01	2	Screening Level	Health	<Screening Level
Dibromoacetone	3252-43-5	1.45E-03	3.43E-01	1.65	Screening Level	Health	<Screening Level
1-Propanol, 3-(trimethoxysilyl)-, methacrylate	2530-85-0	6.41E-04	6.48E-02	0.5	Screening Level	Health	<Screening Level
Diallyl Phthalate	131-17-9	4.77E-03	5.74E-01	5	Screening Level	Health	<Screening Level
Sodium acetate	127-09-3	1.20E-02	1.57E+00	15	Screening Level	Health & Particulate	<Screening Level
Polyethylene glycol	25322-68-3	1.80E-02	1.82E+00	40	Screening Level	Health	<Screening Level
Sodium Bromide	7647-15-6	5.03E-02	5.12E+00	120	Screening Level	Health & Particulate	<Screening Level
BENZOYL PEROXIDE	94-36-0	4.45E-03	8.42E-01	25	Screening Level	Health	<Screening Level
3-(Triethoxysilyl)propylamine	919-30-2	1.95E-02	2.54E+00	80	Screening Level	Health	<Screening Level
Acid Solubilized Fatty Acid Amide (Prop1)	NA	2.79E-02	7.97E+00	8.261	FL/APOIC	NA	<FL/APOIC
Acid Solubilized Fatty Acid Amide (Prop2)	NA	1.24E-02	3.54E+00	3.672	FL/APOIC	NA	<FL/APOIC
Benzenamine, N-[3-(trimethoxysilyl)propyl]-	3068-76-6	6.72E-03	8.75E-01	1.114	FL/APOIC	NA	<FL/APOIC

[1] Assessed against the most stringent criteria for Gaseous Growing Season

Current Emission Summary Table – 30 Day Average (All Other Compounds)

Contaminant	CAS #	30 Day Emission Rate (g/s)	Facility MAX GLC ($\mu\text{g}/\text{m}^3$)	30 Day POI Criteria ($\mu\text{g}/\text{m}^3$)	Schedule	Limiting Effect	% of Criteria
HYDROGEN FLUORIDE -GASEOUS-GROWING SEASON GS [1]	7664-39-3	6.41E-03	7.59E-02	0.34	Schedule 3	Health	22.3%

[1] assessed against the most stringent criteria for Gaseous Growing Season

Current Emission Summary Table – Annual Average (All Other Compounds)

Contaminant	CAS #	Annual Emission Rate (g/s)	Annual Facility MAX GLC ($\mu\text{g}/\text{m}^3$)	Annual POI Criteria ($\mu\text{g}/\text{m}^3$)	Schedule	Limiting Effect	% of Criteria
SULPHUR DIOXIDE	7446-09-05	6.15E-01	2.13E+00	10	Schedule 3	Health & Vegetation	21.3%

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1 INTRODUCTION

The purpose of this Emission Summary and Dispersion Modelling Report (ESDMR) is to provide an accurate and representative estimate of emissions from the Owens Corning Composite Materials Canada LP (Owens Corning) facility located in Guelph, Ontario. This document was developed in accordance with s.32 of O. Reg. 419/05 and the guidance in the following Ontario Ministry of Environment, Conservation and Parks (MECP) documents *Procedure for Preparing an Emission Summary and Dispersion Modelling Report* (Guidance Document) dated March 2018, *Air Dispersion Modelling Guideline for Ontario* (Dispersion Modelling Guideline) dated February 2017, and *Guide to Requesting a Site-Specific Standard* dated February 2017.

The objectives of this ESDMR are to:

- Support a renewal application for a site-specific standard for hexavalent chromium under Section 32 of O. Reg. 419/05
- Demonstrate compliance with Section 20 of O. Reg. 419/05 – General Air Pollution

1.1 Site-Specific Standard

O. Reg. 419/05 has provisions to request approval of an alteration to a Schedule 3 standard. The facility currently has an annual site-specific standard of 0.0024 ($\mu\text{g}/\text{m}^3$) for hexavalent chromium which was approved in 2016. The Owens Corning Guelph facility is applying for a site-specific standard renewal for hexavalent chromium emissions. The intention of this report is to communicate current and future emission rate estimates from the sources of hexavalent chromium for the purpose of a Site-specific Standard Renewal Application.

Owens Corning has conducted an assessment of all available pollution control options and established a control strategy for hexavalent chromium to achieve the best technically and economically feasible reductions at this time. This assessment was based upon a jurisdictional review of air pollution requirements, available pollution control methods, and the results outlined in this report.

1.2 Scope of ESDMR

This report includes all activities at this site:

- All raw and intermediate material handling and transfer sources
- All process-related sources, including:
 - Furnace
 - Forehearth
 - Binder preparation and application
 - Continuous Filament Mat (CFM) Process
 - Wet Chopped Strand (WUCS) Process
- All Pollution Control equipment, including:
 - Curing Oven Regenerative Thermal Oxidizer (RTO)
 - NGF RTO (1)

- o Cyclones (2)
- o Filter Box
- o Raw Material Dust Collectors
- All non-process-related sources, including:
 - o Cooling towers
 - o Comfort heating and cooling
 - o Emergency and non-emergency electrical generation

Additionally, this report includes assessment of the proposed reduction activities for hexavalent chromium to support the renewal application for the site-specific standard. All other contaminants are assessed in this report as the current (maximum) operating scenario.

1.3 Revision History

The versions of this ESDMR are listed in the following table.

Version	Date	Description of Change
Revision 13	March 2025	• Removed zinc oxide to update from historical batch change • Updated binder application rates • Updated di tri chromium emission rates using the June 2024 validated source testing • Incorporated multiple hexavalent chromium emission scenarios based on June 2024 validated source testing and proposed Action Plan
Revision 12	June 2024	• Updated di tri and hexavalent chromium emission rates using the February 2024 validated source testing • Updated modelling using the flowrates and temperatures for sources included in the February 2024 validated source testing program

2 FACILITY DESCRIPTION

2.1 General Description

The Owens Corning - Guelph Glass Plant is located at 247 York Road in Guelph, Ontario. The facility produces textile glass yarn and fiberglass for reinforcements for commercial and industrial markets worldwide. This facility is the sole producer of CFM in Canada. Owens Corning - Guelph has been in operation since 1951 and is recognized as the world's leading producer of high quality CFM.

The NAICS code for the Owens Corning Guelph facility is 327214, Glass Manufacturing. All sources at this location are stationary. The adjacent lands have mixed zoning, including industrial, commercial, residential, and parkland. This facility operates 24 hours a day, 7 days a week, 52 weeks a year. The facility has production capacity of approximately 16,000 tonnes of molten glass per year.

Glass fibers are produced by melting raw materials in gas-fired furnaces and transporting the molten glass through forehearth channels to "bushings" where it is mechanically pulled to form the fibers. Subsequently, the fibers are used to make glass yarns, mat and reinforcements.

The raw materials used to manufacture these high-tech glass fibers consist of dry solids in powder and granular form, including clay, sand, limestone, and dolomite.

The main manufacturing operations currently include:

- Raw materials handling and storage
- Glass melting operations
- Production of textile glass
- Production of textile glass products
- Packaging of products

A process flow diagram is provided in Appendix A. The individual process operations are briefly described in the following sections.

Scaled drawings showing air emission sources and the extent of the property line is included in Appendix B.

2.2 Production Rate

This facility has slightly variable operations due to customer demand, however, glass melting and fiber forming activities must operate continuously. The maximum molten glass production rate is 1826 kg/hour (16,000 tonnes/year).

2.3 Current Operations

2.3.1 Raw Materials Storage and Handling

Raw materials, including clay, silica sand and limestone, are received in bulk and stored in silos. These materials are automatically weighed and mixed to form a mixed batch. The mixed batch is then pneumatically conveyed to a storage hopper located above the melting unit (furnace). The transfer of raw materials and mixed batch generates particulate, which is controlled through the use of dust collectors.

2.3.2 Glass Melting & Transfer

The glass melting itself takes place in a natural gas-fired furnace. This furnace (T105) is operated using oxygen/natural gas-fired systems and with supplemental electrical energy (e-boost system).

The batch of mixed raw material is fed into the rear of the furnace and it melts to form a molten homogenous glass. Chemical components in the batch cause gas bubbling in the mixture, and result in particulate and gaseous emissions.

2.3.3 Molten Glass Transfer

The molten glass flows from the melters via channels into the forehearth leading to the fiber forming area. The forehearth areas are also heated with oxygen/ natural gas to maintain the molten state of the glass. All forehearth exhaust gases are directed out a single forehearth stack (Source ID B38).

2.3.4 Oxygen Storage & Generation

The facility currently uses oxygen in the combustion systems for the furnaces, channels, and forehearths. All oxygen is received by truck and stored onsite.

2.3.5 Production of Glass Fibers

The molten glass flows to electrically heated bushings, which contain a large number of small holes through which the glass is drawn.

After the continuous glass fibers are drawn through the bushings they enter one of two forming areas (WUCS or CFM). In both forming channels the glass fibers are cooled before being drawn over a roller applicator, which applies a coating of a water-soluble sizing and/or coupling agent.

2.3.6 Production of Wet Chopped Strand (WUCS)

After the glass fibers are coated with sizing/coupling agent, they are simply chopped directly into boxes for resale.

2.3.7 Production of Continuous Filament Mats (CFM Line)

A continuous filament mat product is manufactured on the CFM line. For the CFM line, glass strands are drawn directly from the CFM forming area and laid down continuously as a mat. The mat is coated with a powdered polyester resin dispersed in water and conveyed through a gas-fired oven, where the resin is cured to bind the fibers into a mat. The oven exhaust is directed through an RTO prior to discharge to the atmosphere. The mat is then cut to length, rolled up and packaged for transport to a customer.

2.4 Site Plans and Area Maps

The mandated plans and map are located in Appendix B. These plans and maps satisfy the requirement in subparagraph 9 of Section 26 of O. Reg. 419/05 (as per subparagraph 1 of Section 33). These include:

- Site plan in UTM coordinates, drawn to scale, showing the locations of all emission sources, buildings (including elevations above grade) and property lines.
- Area map to a distance of 1,000 m.
- Land use zoning maps. The adjacent lands are zoned industrial, commercial, residential, and parkland.

3 INITIAL IDENTIFICATION OF SOURCES AND CONTAMINANTS

A review of all processes and operations at the site was conducted to identify all emission points to the atmosphere as required by subparagraphs 2 to 4 of Section 26 of O. Reg. 419/05. The table below details all sources at the facility with the contaminants expected to be emitted from each.

TABLE 1 Sources and Contaminants Identification

Source Information		Expected Contaminants	Include in Model?	Rationale
Description	General Location	Contaminants	(Y/N)	
Batch House Dust Collectors (Source IDs G40, G45, G65, G79, G78, G81, G84)	Batch House Area	PM, silica	N	No external discharge
Batch House Dust Collectors (Source IDs G61, G63, & G90)	Batch House Area	PM	Y	
		Silica, Sulphuric acid disodium salt	N	7.1.2
T105 Furnace Stacks (Source ID B24 & B25)	Southwest Quadrant	PM, NOx, SO ₂ , acid gases, di-trivalent chromium, hexavalent chromium	Y	
		CO	N	7.1.2
Furnace Hall General Ventilation (Source IDs B33, B34, C79, & C80)	Southwest Quadrant	di-trivalent chromium, hexavalent chromium	Y	
B Wing Forming Scrap Tunnel Exhausts (Source ID B39, B16)	Southwest Quadrant	PM, VOCs	Y	
		Ethanol, Ammonia, Insignificant VOCs, magnesium chloride	N	7.1.2
T105 Forehearth (Source ID B38)	Southwest Quadrant	NOx, di-trivalent chromium, hexavalent chromium	Y	
		PM	N	7.1.1
Binder Circ. Tank Exhaust (Source ID C60)	South-Central Area	VOCs, magnesium nitrate	Y	
		Ammonia, Ethanol, Insignificant VOCs, magnesium chloride	N	7.1.2
CFM Forming Tunnels (Source ID C100, C101, C72, C99)	Southwest Quadrant	PM, VOCs, sodium bromide	Y	
		Insignificant VOCs	N	7.1.2
CFM Binder Cyclone (Source ID C73)	Northwest Quadrant	PM, benzoyl peroxide	Y	
CFM RTO Oven (Source ID C75)	Northwest Quadrant	NOx, VOCs, benzoyl peroxide, PM, sodium bromide, magnesium nitrate	Y	
		Ammonia, Insignificant VOCs, magnesium chloride	N	7.1.2
Filter Box Louvre Exhaust (Source ID D64)	Northeast Quadrant	PM	Y	
NGF Tire Cord Line #1 RTO (Source ID G13)	NGF Building (near center)	NOx	Y	

Source Information		Expected Contaminants	Include in Model?	Rationale
CFM End-of-Line Checker (electric) Oven Exhaust (Source ID C77)	Northwest Quadrant	PM	N	Table B-3A
QA Muffle Electric Oven Fumehood Exhaust (Source ID F14)	Southwest Quadrant	PM	N	Table B-3A
Cooling Towers (Source ID A06, A58)	South-Central Area	PM	Y	
Natural Gas Combustion – Process Sources (Source ID C114, C115, C119)	Various	NOx	Y	
		Minor products of combustion	N	7.1.1
Natural Gas Combustion – Comfort Heating	Various	NOx	N	Table B-3B
Alloy Shop Finishing Room Exhaust (Source ID D80)	Northeast Quadrant	--	N	7.3
Non-Emergency Natural Gas Generators (Source ID A61 & A62_1/A62_2)	Southwest Quadrant	NOx	Y	

The rationale reference numbers refer to sections of the Guidance Document.

For a complete listing of sources with Source ID numbers, please refer to the Source Inventory Table in Appendix C. The locations of the sources are presented on the site plan in Appendix B.

3.1 Source Inventory

The source inventory tables are provided in Appendix C. These include:

- source ID
- description
- UTM coordinates
- exhaust stack diameter, flow rate, temperature, height above roof, and grade
- type of source

Sources of “uncontaminated” air exhausting into the atmosphere, for example roof exhausts, room vents, and air intakes, are included in the summary table; however, no emission data is provided.

In combination with the Emission Inventory in Appendix D, the source inventory satisfies subparagraph 8 of Section 26 of O. Reg. 419/05.

3.2 Emission Inventory

The Emission Inventory is provided in Appendix D. For all significant sources and contaminants, it presents:

- contaminant name and CAS#
- source ID number and description

- maximum contaminant emission rate
- estimation method
- data quality classification
- percentage of overall facility emissions
- averaging period

In combination with the Source Inventory in Appendix C, the Emission Inventory satisfies subparagraph 8 of Section 26 of O. Reg. 419/05.

4 ASSESSMENT OF THE SIGNIFICANCE OF CONTAMINANTS AND SOURCES

There are several sources and contaminants that are considered to be “emitted in negligible amounts” or “insignificant relative to total emissions.” They are described in more detail in the following sections as required by subparagraph 5 of Section 26 of O. Reg. 419/05.

The calculations can be found in Appendix E.

4.1 Natural Gas Combustion

Section 7.1.1 of the MECP Guidance Document specifies that NO_x is the only significant contaminant from natural gas-fired combustion equipment. Therefore, all other products of combustion are negligible.

4.2 Sources that Emit Contaminants in Negligible Amounts

4.2.1 Insignificant Sources Based on Table B-3A

Table B-3A of the Guidance Document lists sources that can be considered to be insignificant because they “emit contaminants in negligible amounts.” The following sources at the facility are listed in Table B-3A.

- Fume hoods that are used for quality control and quality assurance purposes:
 - o Q/A Muffle (electric) Oven Fume Hood (Source ID F14)
 - o CFM End-of-Line Checker (electric) Oven Exhaust

In accordance with Section 8 of O. Reg. 419/05, emission rate calculations and dispersion modelling does not have to be performed for emissions from negligible sources. However, these sources are listed in the Source Inventory in Appendix C for completeness.

4.2.2 Insignificant Sources Based on Table B-3B

Table B-3B of the Guidance Document lists sources that can be considered to be insignificant because they “emit contaminants in negligible amounts.” The following sources at the facility are listed on Table B-3B: Comfort Heating Sources (less than 20 MKJ/hour)

Refer to Appendix E for insignificant sources documentation. In accordance with Section 8 of O. Reg. 419/05, emission rate calculations and dispersion modelling does not have to be performed for

emissions from negligible sources. However, these sources are listed in the Source Inventory in Appendix C for completeness.

4.3 Sources that are Insignificant Relative to Total Emissions

4.3.1 Roof Exhausts

Roof exhausts remove air from a number of non-production areas including the warehouse. The likelihood of the concentration of particulate, combustion products and volatile organic contaminants being elevated above ambient levels is minimal. According to the rationale presented in Section 7.3 of the guidance document, contaminant emissions from these sources are considered negligible.

4.3.2 Room Vents

Room vents are non-powered louver vents found throughout the plant. Contaminant concentrations in these areas are low and as such would be insignificant with respect to the stack exhaust and natural gas-fired equipment. According to the rationale presented in Section 7.3 of the guidance document, contaminant emissions from these sources are considered negligible.

In accordance with Section 8 of O. Reg. 419/05, dispersion modelling does not have to be performed for emissions of contaminants in negligible amounts. This source is listed in the Source Inventory in Appendix C for completeness.

4.4 Insignificant Contaminants Based Upon Emission Threshold Calculations

Section 7.1.2 of the Guidance Document describes the methodology for identifying negligible emissions using emission thresholds.

The first step is to convert the 1 hour rural dispersion factor from Table B-1, Appendix B for a length of approximately 20 m from a source to a receptor (property line) to the other applicable averaging times.

The conversion was performed using the following equation:

$$C_0 = C_1 \times F$$

Where:

C_0 = the concentration at the averaging period t_0

C_1 = the concentration at the averaging period t_1

F = factor to convert from averaging period t_1 to $t_0 = (t_1/t_0)^n$

$n = 0.28$

From Table B-1, the rural dispersion factor for a receptor that is up to 20 m from a source is 10,000 $\mu\text{g}/\text{m}^3$ per g/s emission. The converted factors are shown in the table below.

Averaging Time	Dispersion Factor
1 hour	10,000
24 hours	4,100

The second step is to utilize the calculation provided in Section 7.1.2 of the Guidance to evaluate insignificance. The original formula is shown below.

$$\text{Emission Threshold (g/s)} = \frac{0.5 \times \text{MECP POI Limit } (\mu\text{g/m}^3)}{\text{Dispersion Factor } (\mu\text{g/m}^3 \text{ per g/s})}$$

When the actual facility-wide emission rate is less than the calculated Emission Threshold, the contaminant emission is insignificant as shown below:

$$\text{Actual Emission Rate (g/s) must be less than } \frac{0.5 \times \text{MECP POI Limit } (\mu\text{g/m}^3)}{\text{Dispersion Factor } (\mu\text{g/m}^3 \text{ per g/s})}$$

This formula can be manipulated to demonstrate insignificance as follows:

$$[\text{Actual Emission Rate (g/s)} * \text{DF } (\mu\text{g/m}^3 \text{ per g/s})] \text{ must be less than } [\text{MECP POI Limit } (\mu\text{g/m}^3) * 0.5]$$

or

$$[\text{Actual Emission Rate (g/s)} * \text{DF } (\mu\text{g/m}^3 \text{ per g/s}) * 2] \text{ must be less than MECP POI Limit } (\mu\text{g/m}^3)$$

The left side of this mathematical statement has been labelled “Screening Concentration” as follows:

$$\text{Screening Concentration } (\mu\text{g/m}^3) = \frac{\text{Actual Emission Rate (g/s)} * \text{DF } (\mu\text{g/m}^3 \text{ per g/s})}{2}$$

Montrose has calculated **Screening Concentrations** for all contaminants and **compared directly to the MECP POI Limit** in order to assess significance. When the Screening Concentration ($\mu\text{g/m}^3$) is less than the POI limit, the contaminant is defined as insignificant in accordance with Section 7.1.2. The insignificant contaminants are listed in Appendix E.

5 OPERATING CONDITIONS AND DATA QUALITY

The operating conditions for each contaminant are outlined at the beginning of each section. The methodology used to develop the emission estimates is discussed in the following sections. The discussion includes a statement concerning data quality and estimation techniques for each process and associated source(s). This section satisfies subparagraphs 6 and 7 of Section 26 of O. Reg. 419/05.

Several terms and acronyms are used repeatedly throughout this section. Definitions are provided below.

Term	Definition
Conversion Factor	In most cases, emission factors and process throughput are provided in units that require conversion to get to g/s. The conversion factor is used to convert the units to the desired output.
Flexibility Factor	A factor used when the content of raw material may vary.
Uncertainty Factor	A factor used to account for possible changes in production rate when source testing measurements were made.
Data Quality	Highest Above Average Average Marginal
Estimation Technique	EF = Emission Factor EC = Engineering Calculations VST = Validated Source Test MB = Mass Balance

Two operating conditions (current and future) for hexavalent chromium are presented in this ESDM Report. In the case of hexavalent chromium, the current operating condition is the same as the maximum operating condition and therefore only two scenarios have been provided.

The maximum operating condition has been presented for all other compounds emitted from the facility.

5.1 Transitional Operating Conditions (TOC)

O. Reg. 419/05 was modified effective July 1, 2018 to expand the requirements for operating conditions that should be assessed in the ESDMR. The new requirements in Section 10 of O. Reg. 419/05 focus on considering emissions of contaminants during transitional operating conditions (TOC) that may result in the highest concentration of a contaminant at a point of impingement.

Operating conditions to be considered when assessing compliance under paragraph 1 of subsection 10 (1) currently include:

- Scenarios that assume operating conditions that reflect the maximum design capacity of the facility
- Scenarios that assume planned start-up operating conditions of a facility or part of a facility
- Scenarios that assume planned shutdown operating conditions of a facility or part of a facility
- Any other scenario that occurs when the facility is operating normally

Several potential start-up and shutdown situations have been identified and considered. Details are provided in Appendix F.

6 HEXAVALENT CHROMIUM

6.1 Site-specific Standard Considerations

An ESDMR for a Section 32 request must contain the following information for the contaminant that is the subject of the request (hexavalent chromium):

- An assessment of the POI concentrations at both of the operating conditions described in subsection 10 (1) of O. Reg. 419/05 paragraphs 1 and 2.
 - p1 A scenario that assumes operating conditions for the facility that would result, for the relevant contaminant, in the highest concentration of the contaminant at a point of impingement that the facility is capable of
 - p2 A scenario that uses actual operating data for the facility for the occasion when the highest concentration of the contaminant at a point of impingement resulted during:
 - the year preceding the year in which the model is being used
 - the year in which the model is being used, if the facility did not operate at any time during the preceding year
- An assessment of the POI concentrations at the currently approved operating condition if this is different than the above.

The scenario that results in the highest POI concentration for this facility is also the scenario that reflects the previous year (2024) and the currently approved operating condition of a maximum production rate of 16,000 tonnes per year.

6.2 Process Overview

The furnace and forehearth structures that contain and transport molten glass are lined with various types of refractory brick. Chromium-containing refractory is universally used by the glass manufacturing industry as the material to construct the channels that contain molten glass due to its superior corrosion resistance which significantly reduces waste and provides acceptable operational efficiency. This refractory is a source of di- and tri-valent chromium which is partially converted to the hexavalent form in the furnace and forehearth prior to emission.

6.3 Process Emission Sources

The process sources consist of a furnace and a forehearth. The facility operates a single glass melting furnace (T105) with two exhaust stacks (Source ID B24 and B25). The forehearth is an enclosed channel structure for transporting the molten glass from the furnace to the fiber forming process. Emissions from the forehearth are exhausted through a single stack (Source ID B38). Both the furnace and forehearth are heated using natural gas and oxygen (oxy/gas firing) with the furnace also having supplemental electrical energy (e-boost).

6.4 General Ventilation Emission Sources

The general ventilation consists of the following sources:

- Source ID B33 (above the furnace)
- Source ID B34 (near the WUCS forehearth to the west)
- Sources C79 & C80 (over the CFM forehearth)

These general ventilation exhausts are not generation points but a location where fugitive emissions from the furnace and forehearth structures are exhausted to atmosphere. General ventilation is needed for the area due to extreme temperatures in the furnace and forehearth and the need to exhaust heat to protect workers and prevent damage to the roof deck due to overheating.

These exhaust fans are variable speed and temperature controlled. The operation and speed of each fan are seasonally dependent with summer requiring the operation of all four fans simultaneously. Conversely in the colder months, in some cases only a single fan (B33) will be required to maintain appropriate inside temperatures.

If none of the general ventilation fans are operating, all fugitive emissions are expected to be drawn into the furnace and forehearth stacks at the shroud due to heat differential and venturi effects. However, when any given ventilation fan is operating, it has the potential to draw in air from the process area and thereby exhaust a portion of the hexavalent chromium that would have otherwise gone out of the process stacks.

The CFM forehearth is isolated in a narrow hallway with air intakes at the entrance to the CFM channel and the ventilation fans at the end of the channels as seen in Figure 1. The proximity of these two sources to each other supports that the emission rates from C79 and C80 are expected to be equivalent.



FIGURE 1 Ventilation Fans Relative to Processes

6.5 Combined Assessment of Modelled and Monitored Results (CAMM)

As outlined in the “Guide to Requesting a Site-Specific Standard” dated February 2017, a Plan for a Combined Modelling/Monitoring (CAMM) Results Assessment should be submitted prior to completing an ESDMR as part of a Section 32 request.

The purpose of a CAMM Plan is to obtain emission estimates with the highest data quality. These emission estimates are then incorporated into a refined ESDM Report. However, CAMM programs are intended for (and more ideally suited for) facilities with fugitive emissions that cannot accurately be measured.

All sources at this facility can be measured accurately using source testing; therefore, a CAMM program is not beneficial or necessary for the site-specific standard application. This is consistent with the original site-specific standard application submitted in 2015. Additionally, the MECP reviewed and approved the pre-test plans for the validated source testing programs conducted in 2024.

6.6 Current (Average) Emission Scenario

6.6.1 Furnace & Forehearth

In February 2024 and June 2024, source testing was performed on all known sources of hexavalent chromium. During the June source testing, the following operating conditions (compared to February) are worth noting:

- Increased fuel usage to furnace in June
- Increase in ambient temperatures in June
- Increased ventilation exhaust required in June to protect the roof from heat damage
- Increased glass pull rate from 1,314 to 1,713 kg/hour

The maximum emissions scenario for this ESDMR is based on the June 2024 stack testing data which had the highest average emission rates from the two stack testing programs.

The current average emission rates for the three process stacks were estimated as the mean of the six emission rates measured per stack during the June testing campaign. These emission rates are of the highest data quality as they are based on validated source testing.

Calculations are outlined in Appendix H and the validated source testing report is located in Appendix R.

6.6.2 General Ventilation

During the June 2024 stack testing campaign, triplicate samples were collected from three of the four general ventilation sources (Source ID: B33, B34, and C79). Emission rates were calculated as the mean of the three samples. Due to parity with C79, the emission rate from C80 was assumed to be the same as C79. While the general ventilation sources do not all operate continuously throughout the year, all four fans were operating during the June 2024 source testing campaign, which is expected to represent the maximum emissions and POI concentrations.

Annualizing the emission rates from each fan presented challenges due to the variable nature of the fan operation. Assuming continuous emissions from these fans throughout the year is considered a reasonable approach as the distribution between the four fans may vary; however, the overall emissions from the process are expected to be relatively constant.

The general ventilation fans are exhaust points to the atmosphere however, they do not influence the generation of hexavalent chromium from the process. These emission rates are of the highest data quality as they are based on validated source testing.

Calculations are outlined in Appendix H and the validated source testing report is in Appendix R.

6.7 Current (Average) Emissions Scenario with Uncertainty

All datasets collected during source testing contain natural variability. The data collected during the June 2024 testing showed some variability in the emission rates across the number of samples collected. To account for variability in measured emission rates, a one-tailed t-test was used to estimate the uncertainty on the mean of the measured emission rates in accordance with the *Alberta Air Monitoring Directive (AMD) Chapter 5* and generally accepted practices. This provides an estimate for the range in which the mean of future measurements would be expected, assuming that variations in hexavalent chromium emission rates are normally distributed. Due to the small sample size, a t-distribution is considered more appropriate instead of a z-distribution to estimate uncertainty because the t-distribution accounts for the additional uncertainty in the estimate of the standard deviation from a small sample size.

The current site-specific standard of $0.0024 \mu\text{g}/\text{m}^3$ approved by the MECP in 2016 was developed using this same approach for incorporating measurement uncertainty, setting a precedent for this as acceptable methodology.

Uncertainty was calculated using a confidence interval of 95%. The 95% upper confidence limit for the mean of the measured emission rates was selected for modelling to account for variation in the sample mean from the true mean. This provides a statistically representative emission rate for modelling that creates confidence that the sample mean from the next source testing campaign (under identical conditions) is highly likely to be less than or equal to the modelled emission rates.

These emission rates are considered to be of the highest data quality as they are directly based on validated source testing. The incorporation of uncertainty provides a level of conservatism which is appropriate when setting standards where future source testing will be the mechanism for determining compliance.

Calculations including the documentation of uncertainty are outlined in Appendix H.

6.8 Future Emissions Scenario

The future operating condition was defined by the outcomes of the Technology Benchmarking assessment and is referred to as the Preferred Option.

6.8.1 Technology Benchmarking

Technology benchmarking is a key component of the Site-Specific Standard Application. The purpose of the Technology Benchmarking Report (TBR) is to identify all possible pollution control options, develop pollution control strategies (by source) and determine a default or preferred pollution control combination for the facility. The feasibility of all pollution control options must be assessed and all feasible options ranked to determine the most effective option for the facility.

The following tasks were completed as part of the technology benchmarking:

- Identified and quantified all sources of hexavalent chromium emissions
- Identified all possible pollution control options in the following categories:
 - Material Substitution
 - Process Change
 - Add-on Controls
 - Dispersion improvements (optional)
- Assessed the technical feasibility of each option and combination of options for each source including ranking of POI reductions
- Evaluated and ranked the technically feasible pollution control combinations for the facility

Each option was reviewed for technical feasibility. For technically feasible options, emission calculations were completed, followed by ranking based on the expected reduction efficiency. Technically feasible control strategies (including material substitutions, process changes, add-on control and optionally dispersion improvements) for each source were developed and ranked as shown in Figure 2 below.



FIGURE 2 Default Technically Feasible Pollution Control Strategy by Source

Finally, combinations of these source strategies are assessed and ranked according to the POI reduction achieved, creating pollution control combinations. Figure 3 below provides an overview of how the strategies by source are used to create pollution control combinations.

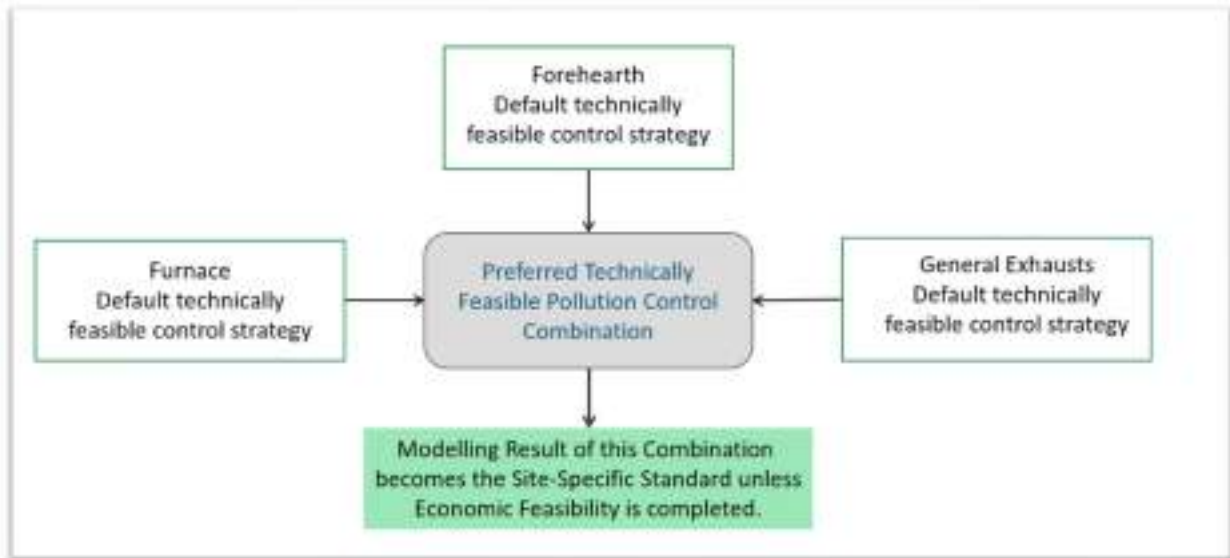


FIGURE 3 Pollution Control Combination Development

The combination that achieves the best POI reduction becomes the default pollution control combination. In the absence of an economic feasibility assessment, the default pollution control combination is the Preferred Pollution Control Combination which determines the Action Plan for the facility.

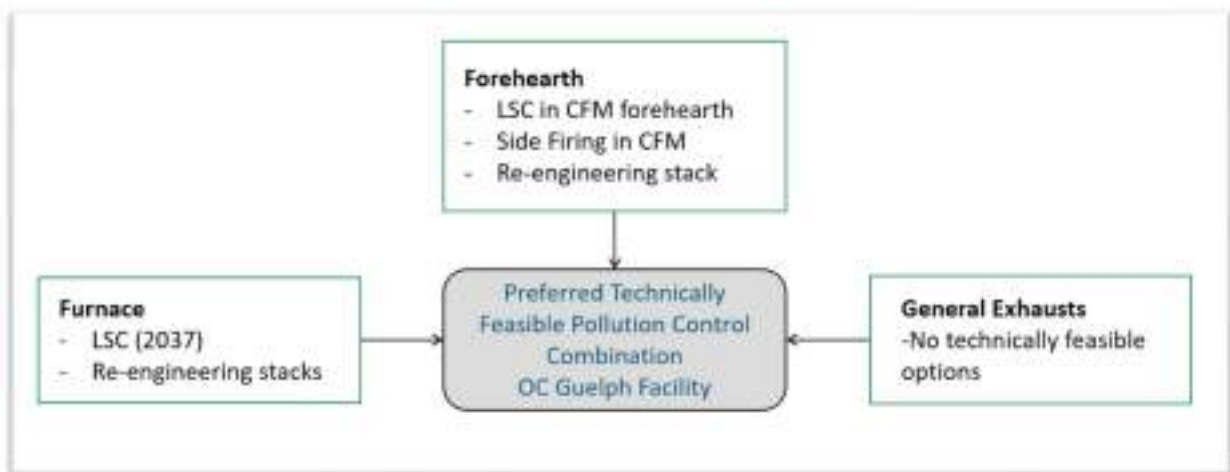


FIGURE 4 OC Guelph Preferred Technically Feasible Pollution Control Combination

Additional details are provided in the TBR and Appendix O.

6.8.2 Future Scenario Emission Rates

The future emissions scenario is developed by applying emission reduction estimates to the current emissions scenario (with uncertainty).

Re-engineering the stacks does not directly impact emission rates and therefore is not included in this section.

The substitution of low sublimation chromium (LSC) refractory for the side rails is technically feasible for the WUCS and CFM forehearth as well as the furnace. However, based on rebuild schedules for these assets, this material substitution is included for the CFM forehearth only prior to the end of 2036.

A trial was initiated in 2013 with the installation of LSC for the side rail refractory in the CFM forehearth. However, no discernable reduction in hexavalent chromium emissions (at the stack) could be assigned specifically to this material substitution. The LSC refractory remains in service in the CFM forehearth.

Other limited R&D data did not indicate a statistically significant difference between the combustion space hexavalent chromium concentrations for the typical chromic oxide and LSC refractory.

Despite the absence of data, OC Guelph intends to install LSC refractory in the forehearth side rails on the basis that it is likely considered the best available technology. Due to the lack of performance data, a reduction in hexavalent chromium emissions has not been quantified for this action.

The future emissions scenario includes the implementation of a horizontal burner configuration for the forehearth. This re-design involves repositioning the current “top fired” burners to horizontal “side fired” positioning. This re-design will also include the replacement of the existing burners with smaller, more frequently spaced burners to reduce peak surface temperatures. Thermodynamic modelling of the re-design predicts a meaningful reduction in exhaust gas velocity at the freeboard face. R&D performed by Owens Corning and documented in several other publications indicates that a relationship exists between the temperature and velocity at the freeboard and hexavalent chromium emission generation. Based on rebuild schedules for these assets, this process change is included for the CFM forehearth only prior to the end of 2036.

The emission reduction estimate for this modification is provided below for the CFM forehearth:

CFM Forehearth Reduction efficiency (%) =

$$\frac{(\text{Portion of Forehearth that is CFM (\%)}) \times (\text{Side Firing Reduction Efficiency estimate (\%)})}{\text{Uncertainty Factor}}$$

$$\text{CFM Reduction efficiency (\%)} = \frac{(54 (\%)) \times (25(\%))}{2}$$

An uncertainty factor of 2 has been applied to this estimate as this is an emerging design change for the industry. This emission reduction is an engineering estimate with a high degree of uncertainty.

7 PARTICULATE MATTER

7.1 Operating Condition for Maximum POI

The maximum operating condition for particulate matter (PM) is the scenario where all significant sources of PM are operating simultaneously at their individual maximum rates of

production/throughput. All calculations were based on a maximum 24-hour average operating condition.

The sources of PM at this facility include:

- Material Handling, Mixing and Transfer Dust collectors (Source IDs G61, G63, and G90)
- Furnace Exhaust Stacks (Source IDs B24 and B25)
- CFM Binder Cyclone (Source ID C73)
- CFM Curing Oven (Source ID C75)
- Forming Sources (Source IDs B39, B16, C72, C99, C100, and C101)
- Cooling Towers (Source IDs A06 and A58)
- Scrap Processing (Source ID D64)

7.2 Material Handling, Mixing and Transfer

Raw materials, mainly in powder or granular form, such as clay, silica sand and limestone are received in bulk and stored in silos. These materials are automatically weighed and discharged into a mixer. The mixed batch is then pneumatically conveyed to a storage hopper located above the melting furnace.

The major emissions from raw materials handling are fugitive dust and particles generated at each of the material transfer points. At this facility, fabric filter dust collectors control emissions from these points with a removal efficiency of 99.9%.

Particulate emissions rates are calculated based on transfer rate, filter efficiency and emission factors from AP-42 Chapter 11.13, Table 11.13-1 for unloading and conveying. All dust collectors are assumed to be always operating simultaneously. The general equation is shown below:

$$ER, \frac{g}{s} = \left(Transfer\ Rate, \frac{kg}{24hr} \right) \times (1 - Efficiency) \times \left(Emission\ Factor, \frac{g}{kg} \right) \times (Conversion\ Factors)$$

An example calculation is provided below for particulate emissions from offloading to the salt cake silo, Source ID G63:

$$ER, \frac{g}{s} = \left(Transfer\ Rate, \frac{kg}{24\ hr} \right) \times (1 - Efficiency) \times \left(Emission\ Factor, \frac{g}{kg} \right) \times \left(\frac{1\ min}{60\ sec} \right) \times \left(\frac{1\ hr}{60\ min} \right)$$

$$ER, \frac{g}{s} = \left(1,400 \frac{kg}{24\ hr} \right) \times (1 - 0.999) \times \left(\frac{1.5\ g\ PM}{kg} \right) \times \left(\frac{1\ min}{60\ sec} \right) \times \left(\frac{1\ hr}{60\ min} \right)$$

$$ER, \frac{g}{s} = 2.43 \times 10^{-5}$$

The emission rate estimates for the dust collectors are considered an engineering calculation because they are based on both efficiency and AP42 emission factors with a rating of B. The data quality is above average.

7.3 Glass Melting

The glass melting takes place in a natural gas-fired furnace. The batch of mixed raw material is fed into the rear of the furnace and melts to form a molten homogeneous glass. The emissions from the glass melting process include PM entrained in the furnace flue gas.

The PM from glass melting discharges through the dual T105 furnace stacks (Source IDs B24 and B25).

The emission factor used was developed from source testing. Source testing for the T105 furnace was conducted in 1996 (project # 97222).

The general methodology for estimating PM from glass melting is shown in the equation below: The emissions are equally divided between the two T105 furnace stacks.

$$ER, \frac{g}{s} = \left(\text{Emission Rate}, \frac{g \text{ PM}}{s} \right) \times (\text{Flexibility Factor})$$

An example calculation is provided for Source B24:

$$ER, \frac{g}{s} = \left(0.033 \frac{g \text{ PM}}{s} \right) \times (1.25)/(2)$$

$$ER, \frac{g}{s} = 0.021$$

The particulate emissions from the furnaces are estimated using engineering calculations based upon source testing. These emission rate estimates are of marginal data quality, but conservative because a flexibility factor was applied.

7.4 Scrap Processing

Air from the edge trimming process in the CFM line is directed to a cyclone that discharges inside the building. The solids removed from the airstream in the cyclone are directed to a compactor. A pollution reduction device (PRD) and a filter box are used to reduce any particulate emissions from this process (Source ID D64).

The particulate emission rate is calculated based on transfer rate (compactor throughput), control device efficiencies and emission factors from AP-42 Chapter 11.13, Table 11.13-1 for unloading and conveying. The PM emissions rate calculation methodology is:

$$ER, \frac{g}{s} = \left(\text{Glass Loading Rate}, \frac{kg}{hr} \right) \times (1 - \text{PRD Eff.}) \times (1 - \text{Filter Box Eff.}) \times \left(\text{Emission Factor}, \frac{g}{kg} \right) \\ \times \left(\frac{1 \text{ hr}}{3,600 \text{ s}} \right) \times (\text{Uncertainty Factor})$$

An example calculation is provided for the D64 particulate emission rate:

$$ER, \frac{g}{s} = \left(62.8 \frac{kg}{hr}\right) \times (1 - 0.90) \times (1 - 0.60) \times \left(\frac{1.5 gPM}{kg \text{ loading}}\right) \times \left(\frac{1 hr}{3,600 s}\right) \times 2$$

$$ER, \frac{g}{s} = 0.0021$$

Supporting data for the emission factor and loading rate are located in Appendix G.

The emission rate estimates for the scrap processing (through the filter box louver) are considered an engineering calculation because they are based on both efficiency and AP42 emission factors with a rating of B. In this case the AP42 emission factor was applied to a slightly modified application and the data quality has been modified to average and conservative.

7.5 Cooling Towers

Cooling towers (Source IDs A06 and A58) remove excess heat from process water by trickling the heated water over “fins” in the towers. The emissions from this process are heat and water vapour (which are not considered contaminants), and particulate.

The PM emission rate is calculated based the total liquid drift, tower recirculation rate and the concentration of dissolved solids. The emissions are primarily PM₁₀, however for this application the PM₁₀ is reported as total PM and is modelled as such. All cooling towers are equipped with drift eliminators. The AP42 emission factor from Chapter 13, Table 13.4-1 was used in the calculation.

$$ER, \frac{g}{s} = \left(\text{Recirculation Rate, } \frac{gal}{min}\right) \times (\% \text{ Drift}) \times (\text{Conversion Factors}) \\ \times (\text{Dissolved Solids Fraction})$$

The following assumptions are used to calculate emissions from the cooling towers at this facility.

- Recirculation rate for each tower = 5450 L/min
- Dissolved solids concentration = 1200 ppm
- Percent Drift = 0.002 %

$$ER, \frac{g}{s} = \left(5450 \frac{L}{min}\right) \times \left(\frac{0.00002 L \text{ Drift}}{L \text{ Circulating}}\right) \times \left(\frac{1200 mg}{L}\right) \times \left(\frac{1 g}{1,000 mg}\right) \times \left(\frac{1 min}{60 s}\right)$$

$$ER, \frac{g}{s} = 0.002$$

All supporting calculations and data are in Appendix I.

The emission estimates for particulate from the cooling towers is based upon AP42 emission factors with a rating of “C.” Therefore, these estimates are of average data quality.

7.6 CFM Binder Cyclone

During the CFM process the mat and chain are flooded to impregnate the mat with the binder consisting of a powdered polyester resin dispersed in a water based solution. Air is drawn through the mat to remove the excess binder. This air stream is passed through a cyclone that recovers the binder

solids and liquids for reuse. The treated exhaust air is discharged to atmosphere through the CFM Binder Cyclone stack (Source ID C73).

For the purposes of estimating particulate emissions from the cyclone, engineering calculations are used. It is assumed that the particles and droplets will be relatively large with a diameter greater than 50 microns. At this size range the cyclone efficiency is approximately 97%. The particulate emission rate calculation is shown below:

The particulate emission rate calculation is shown below:

$$ER, \frac{g}{s} = \left(\text{Inlet Loading, } \frac{\text{grains}}{ft^3} \right) \times (1 - \text{Removal Efficiency}) \times \left(\text{Exhaust Flow Rate, } \frac{ft^3}{min} \right) \times (\text{Conversion Factors})$$

$$ER, \frac{g}{s} = \left(1 \frac{\text{grain}}{ft^3} \right) \times (1 - 0.97) \times \left(2.1 \frac{m^3}{s} \right) \times \left(\frac{0.0648 \text{ grams}}{\text{grain}} \right) \times \left(\frac{35.3 ft^3}{m^3} \right)$$

$$ER, \frac{g}{s} = 0.144$$

Supporting data for the emission factor and loading rate are located in Appendix G.

Emissions of particulate from the CFM Binder Cyclone are estimated using an engineering calculation. The data quality is considered average and conservative.

7.7 CFM Curing Oven

Glass fibers are cured in a curing oven before the cooling stage. The emissions from the curing oven are directed to a natural gas-fired RTO to reduce VOC emissions (Source IDs C75).

The emissions of PM from Source C75 are based on source testing that was conducted in 2005 at the inlet to the RTO. Section 7.1.1 of the MECP Guidance Document specifies that NO_x is the only significant contaminant from natural gas-fired combustion equipment. Therefore, it was assumed that combustion in the RTO does not contribute to the emissions of PM. An uncertainty factor of 25% was applied to the emissions of PM from the RTO to account for the potentially lower glass fiber curing rate during stack testing in 2005.

The particulate emission rate calculation is shown below:

$$ER \frac{g}{s} = \left(\text{Tested Emission Rate, } \frac{kg}{hr} \right) \times (\text{Conversion Factors}) \times (\text{Uncertainty Factor})$$

$$ER \frac{g}{s} = \left(0.2 \frac{kg}{hr} \right) \times \left(\frac{1,000 g}{1 kg} \right) \times \left(\frac{1 hr}{3,600 s} \right) \times (1.25)$$

$$ER \frac{g}{s} = 0.069$$

Emissions of particulate from the CFM RTO Exhaust are estimated using un-validated source testing with an uncertainty factor applied to it. The data quality is considered marginal but conservative.

Additional data is provided in Appendix G.

7.8 Forming Sources

Emissions of PM created in the CFM and WUCS Forming lines are based on textile forming emission factors obtained from US EPA AP42 Chapter 11.13, Table 11.13-1. Before being emitted to the atmosphere, the emissions from the two forming lines pass through a filter with an estimated particulate removal efficiency of 25%.

PM emissions from CFM line sources C72, C99, C100, C101, and WUCS line sources B39 and B16 were estimated using the AP42 emission factor, filter removal efficiency and glass production rate as shown below (for Source C72). The emissions were divided equally between all the stacks in the respective forming line.

$$ER \frac{g}{s} = \left(\text{Emission Factor, } \frac{kg}{tonne \text{ glass produced}} \right) \times \left(\text{Glass Pull Rate, } \frac{tonne}{hr} \right) \times (\text{Conversion Factors}) \times (100 - \text{Filter Efficiency, \%})/4$$

$$ER \frac{g}{s} = \left(0.5 \frac{kg}{tonne} \right) \times \left(1.38 \frac{tonne}{hr} \right) \times \left(\frac{1,000 g}{1 kg} \right) \times \left(\frac{1 hr}{3,600 s} \right) \times (100 - 25, \%) / 4$$

$$ER \frac{g}{s} = 0.036$$

Emissions of particulate from the forming lines are estimated using emission factors with a rating of B. The data quality is therefore considered above average

Additional data is provided in Appendix G.

8 DI-TRIVALENT CHROMIUM

8.1 Operating Condition for Maximum POI

Similar to hexavalent chromium, emissions of di/trivalent chromium are present at the facility. The maximum operating condition for di/trivalent chromium is the scenario where all significant sources are operating simultaneously at their individual maximum rates. All calculations were based on a maximum 24-hour average operating condition.

The sources of di-trivalent chromium at this facility include:

- Furnace Exhaust Stacks (Source IDs B24 and B25)
- Forehearth Exhaust Stack (Source ID B38)
- Furnace Hall General Ventilation (Source IDs B33, B34, C79, and C80)

8.1.1 Furnace and Forehearth

Emissions of di- and trivalent forms of chromium have been estimated from the furnace and forehearth stacks. The most recent emission rate estimates are based on source measurements collected in June 2024. The difference between the measured emission rates for total chromium and hexavalent chromium was used to represent di and trivalent forms.

The calculation methodology is outlined in the formula presented below:

$$ER = \text{Total chromium average} - \text{Hexavalent chromium average}$$

All supporting calculations and data are located in Appendix J.

The emission rates for di- and trivalent chromium were estimated based on validated source testing for hexavalent chromium. The data quality of the emissions estimates is considered average due to the method used to measured total chromium.

8.1.2 General Ventilation

During the June 2024 stack testing campaign, triplicate samples were collected from three of the four general ventilation sources (Source IDs: B33, B34, and C79) and analyzed for both total chromium and hexavalent chromium. The emission rates were calculated by subtracting the mean hexavalent chromium emission rate from the mean total chromium emission rate. Due to parity with C79, the emission rate from C80 was assumed to be the same as C79.

While the general ventilation sources do not all operate continuously throughout the year, all four fans were operating during the June 2024 source testing campaign, which is expected to represent the maximum.

Annualizing the emission rates from each fan presented challenges due to the variable nature of the fan operation. However, the emissions from the general ventilation fans are produced in the furnace and forehearth and are simply exhausted from the general ventilation fans. Assuming continuous emissions from these fans throughout the year is considered a reasonable approach as the distribution between the fans may vary however the overall emissions from the process are expected to be relatively constant.

The data quality of the emissions estimates is considered average due to the method used to measured total chromium. All supporting calculations and data are located in Appendix J.

9 SPECIATED PM EMISSIONS FROM MATERIAL HANDLING

9.1 Operating Condition for Maximum POI

Silica and sulphuric acid disodium salt, which are contained in some of the raw materials being handled are emitted along with PM. Therefore, the maximum operating scenario is established in the same manner as particulate – where all material handling sources are operating simultaneously at their individual maximum rates of production/throughput. The silos handling raw material with

speciated PM content (Source IDs G63 and G90) were included in the worst-case emission scenario. All calculations were based on a maximum 24 hour average operating condition.

9.2 Material Handling, Mixing and Transfer

The emission rates for silica are calculated in a method identical to particulate emissions rates - based on transfer rate, filter efficiency and emission factors from AP-42 Chapter 11.13, Table 11.13-1 for unloading and conveying. In addition, the non-PM content of the raw material is considered to be the same as that of PM, except for silica, which is based on the silica content in the raw material.

All supporting calculations and data are located in Appendix I. An example calculation for silica emissions from G90 is presented below:

$$ER, \frac{g}{s} = \left(Transfer\ Rate, \frac{kg}{24\ hr} \right) \times (1 - Efficiency) \times Conversion\ Factors \times \% Silica$$

$$ER, \frac{g}{s} = \left(4,763 \frac{kg}{24\ hr} \right) \times (1 - 0.999) \times \left(\frac{1.5\ g\ PM}{kg} \right) \times \left(\frac{1\ min}{60\ sec} \right) \times \left(\frac{1\ hr}{60\ min} \right) \times (62\%)$$

$$ER, \frac{g}{s} = 0.000051$$

The emission rate estimates for the dust collectors are considered an engineering calculation because they are based on both efficiency and AP42 emission factors with a rating of B. The data quality is considered to be above average.

10 NITROGEN OXIDES

The maximum operating condition for nitrogen oxides (NO_x) is the scenario where all significant sources of NO_x are operating simultaneously at their individual maximum rates of production/throughput. All calculations were based on a maximum one hour average operating condition.

The sources of NO_x at this facility include:

- T105 Furnace Exhaust Stacks (Source IDs B24 and B25)
- Forehearth burners (Source ID B38)
- Thermal Oxidizers (Source IDs G13 and C75)
- Natural Gas-Fired Process Heaters (Source IDs C114, C115, and C119)
- Non-Emergency Generators (Source IDs A61 and A62)

10.1 Glass Melting Furnace and Forehearth Burners

The T105 furnace and all forehearth channels use oxygen instead of air for combustion to reduce NO_x emissions.

The current NO_x emission estimates are based upon source testing conducted in November 2018. The source testing results have been modified using an uncertainty factor of 1.25 to account for

limited test data and potential fluctuations in NO_x emissions. The forehearth emission rate has been scaled up by an additional 4.3% to account for the increased forehearth burner capacity added during the 2022 furnace rebuild. The implementation of e-boost is likely to reduce NO_x emissions from the furnace. However, emission estimates have not been reduced at this time. The following methodology has been used to calculate the NO_x emission rate:

$$ER \text{ for B24, } \frac{g}{s} = (\text{Source Testing Result}) \times (\text{Uncertainty factor})$$

$$ER \text{ for B24, } \frac{g}{s} = \left(0.14 \frac{g}{s}\right) \times (1.25)$$

$$ER \text{ for B24, } \frac{g}{s} = 0.18$$

All supporting calculations and data are located in Appendix K.

The NO_x emissions estimates for the furnace and forehearth are based on non-validated source testing and are considered to be of below average data quality.

10.2 Thermal Oxidizers and Other Natural Gas-Fired Process Heaters

The facility uses a natural gas-fired RTO to reduce VOC emissions from the curing oven (Source ID C75). The facility also has a number of natural gas-fired process heaters. As per MECP guidance, only NO_x emissions were calculated for these sources. The NO_x emission estimate from the natural gas-fired sources is based upon the equipment heat input rating and AP42 emission factors for small uncontrolled boilers.

In addition to the sources operated by Owens Corning, NO_x emissions are also generated from an RTO (Source ID G13) operated by NGF Canada and located within the Owens Corning property line. The NO_x emissions from the Source G13 is based on name plate heat input of 12 MMBtu/hour obtained from the NGF Canada CofA Amendment Application dated October 2006. This application was approved by CofA # 5214-6XTSFD, January 31, 2007.

An example calculation for NO_x emissions from C75 (including the RTO burner and the upstream oven burners) is presented below:

$$ER, \frac{g}{s} = \left(\text{Heat Input, } \frac{MMBTU}{hr}\right) \times \left(\text{Emission Factor, } \frac{lb_{NOx}}{10^6 ft^3}\right) \times (\text{Conversion Factors})$$

$$ER, \frac{g}{s} = \left(31 \frac{MMBTU}{hr}\right) \times \left(100 \frac{lb_{NOx}}{10^6 ft^3}\right) \times \left(1,020 \frac{10^6 ft^3}{MMBTU}\right) \times \left(0.126 \frac{g/s}{lb/hr}\right)$$

$$ER, \frac{g}{s} = 0.383$$

All supporting calculations and data are located in Appendix K.

10.3 Non-Emergency Natural Gas Generators

There are two natural gas-fired generators at the Owens Corning facility which will be used to generate electricity for non-emergency purposes. The Generac SG350 generator with a rating of 636 hp will exhaust to the atmosphere through source A61 and the Generac SG500 generator rated at 777 hp will exhaust to the atmosphere through two stacks A62_1 and A62_2 (one for each bank of cylinders). Both the generators have been included in the worst-case emissions scenario.

Emissions of nitrogen oxides (NO_x) were calculated using manufacturer supplied emission factors as shown below (for Source A61).

$$ER \frac{g}{s} = \left(\text{Emission Factor}, \frac{g}{hp-hr} \right) \times (\text{Conversion Factors}) \times (\text{Rated Horsepower}, hp)$$

$$ER \frac{g}{s} = \left(0.14, \frac{g}{hp-hr} \right) \times \left(\frac{1 hr}{3,600 s} \right) \times (636, hp)$$

$$ER, \frac{g}{s} = 0.025$$

The emissions from the non-emergency generators were determined to comply with the Ontario Emission Limits for non-emergency generators. These sources were tested in January 2023 at 100% load. Emission rates during testing were determined to be less than those provided in the manufacturer specifications. The more conservative manufacturer specifications continue to be used in this ESDM Report. This assessment can be found in Appendix K.

10.4 Assessment of NO_x Data Quality

All NO_x emission estimates (except for the furnace and forehearth) are based upon AP42 or manufacturers emission factors. The data quality is considered to be above average, based upon the emission factor rating of "B." The data quality of NO_x emissions from the furnace and forehearth are considered to be below average.

11 SULPHUR DIOXIDE

Sulphur dioxide (SO₂) emissions from the furnace occur due to the presence of sulphur bearing species in the mixed batch. The only significant source of SO₂ at this facility is the T105 furnace (Source IDs B24 and B25).

The maximum operating condition for SO₂ is the scenario where the T105 furnace is operating at maximum capacity. All calculations were based on a maximum one hour average operating condition and divided between the two furnace stacks. The sulphur dioxide emissions from the batch (for Source ID B24) were calculated using the following equation:

$$ER_{SO_2} = \left(\text{Furnace Pull Rate, } \frac{kg}{hr} \right) \times \sum [(\% \text{ Each RM in Batch}) \times (\% \text{ of S, as } SO_3, \text{ in each RM})] \\ \times \left(\frac{MW SO_2}{MW SO_3} \right) \times (\text{Conversion Factors}) \times \left(\frac{100}{\% \text{ Furnace Yield}} \right) \times (\text{Flexibility Factor}) / 2$$

Where: RM = raw material.

An example calculation of sulphur dioxide emissions from the batch used in the T105 furnace is provided below:

$$ER_{SO_2} = \left(1826 \frac{kg}{hr} \right) \times \left[\begin{array}{l} (\% RM_1 \times RM_1 \% SO_3) + (\% RM_2 \times RM_2 \% SO_3) \\ + (\% RM_3 \times RM_3 \% SO_3) + (\% RM_4 \times RM_4 \% SO_3) \\ + (\% RM_5 \times RM_5 \% SO_3) + (\% RM_6 \times RM_6 \% SO_3) \end{array} \right] \\ \times \left(\frac{64.06 g/gmol}{80.06 g/gmol} \right) \times \left(\frac{1 hr}{3,600 s} \right) \times \left(\frac{1 kg}{1,000 g} \right) \times \left(\frac{100}{95.59} \right) \times (1.25) / 2$$

$$ER_{SO_2} = 0.3075 \frac{g}{s}$$

The emission rate for SO₂ from the furnace was estimated using a mass balance with 100% of sulphur in the batch raw materials being converted to SO₂ and emitted to atmosphere. In addition, a flexibility factor of 1.25 was applied to account for fluctuations in the composition of the batch raw materials. Therefore, the emission estimate for SO₂ is of the highest data quality and very conservative.

No additional information is provided in the appendices as they involve confidential data related to the glass formulation.

12 CARBON MONOXIDE

Carbon monoxide (CO) is emitted in from the glass melting process.

The maximum operating condition for CO is the scenario where the T105 furnace is operating at maximum capacity. All calculations were based on a maximum half hour average operating condition. The only significant source of CO at this facility is the T105 furnace (Source IDs B24 and B25).

The emission rate estimates are based upon furnace 107 source testing from 1998 without any adjustment for reduced production capacity in the new T105 furnace and equally divided between the two furnace stacks. The general formula for the calculation is presented below:

$$ER, \frac{g}{s} = \left(1998 \text{ Furnace 107 Emission Rate, } \frac{g}{s} \right) \times (\text{Flexibility Factor}) / 2$$

$$ER, \frac{g}{s} = \left(0.029, \frac{g}{s} \right) \times (2) / 2$$

$$ER, \frac{g}{s} = 0.029$$

The emission rate used for the 107 furnace was the measured emission rate multiplied by an uncertainty factor of 2.

All supporting calculations and data are located in Appendix K.

The CO emissions from the furnaces are estimated using engineering calculations (based upon source testing). These emission rate estimates are considered to be of marginal data quality, but conservative because an uncertainty factor was applied and no adjustments have been made for a smaller capacity furnace.

13 VOLATILE ORGANIC COMPOUNDS

The emissions from the preparation, application and curing of binder and size materials include volatile organic compounds (VOCs).

The maximum operating condition for these components is the scenario where all significant sources of VOCs are operating simultaneously at their individual maximum rates of production/throughput. All calculations are based on maximum realistic 1 hour and 24 hour averages.

Binder emission discharge through the following sources identified on the source inventory:

- Binder Recirculation Tank (Source ID C60)
- Main Forming Scrap Tunnel Exhaust - WUCS (Source IDs B39 and B16)
- CFM Line – (Source IDs C72, C73, and C99 through C101)
- CFM Line Oven/RTO – (Source ID C75)

13.1 Binder Application Rates

Application rates for each binder material were developed using monthly 2018 data from the facility. Data provided was the amount of specific binders mixed per month and the associated kg of glass melted for that product line. The maximum ratio of binder/glass melted for each product line was used to calculate the binder application rates. The maximum application rate was then increased by 10% for additional conservatism and variability.

13.2 WUCS Binder VOC Emissions

Several binders are used in the Wet Use Chopped Strand (WUCS) product line. The WUCS process line is at ambient temperature when the binder is applied to the formed glass strands. This product line does not pass through any curing ovens and there is no processing at elevated temperatures after the binder is applied.

Generally, 10% of the binder emissions are expected to exhaust from the binder mixing tank (Source ID C60), with the remaining 90% allocated to the WUCS forming exhaust stacks (Source IDs B39 and B16). A mass balance with 100% loss to atmosphere is assumed for most WUCS binder ingredients. In a few cases, the material properties were reviewed to determine that emission to the atmosphere would not occur.

All supporting calculations, assumptions, and data are located in Appendix L.

13.3 CFM Binder VOC Emission Estimates

Three different binders are applied at various stages of the CFM forming process. Binder 440 is applied first, prior to the forming tunnel and therefore has the potential to emit during the mixing, forming, and curing stages. Binder T250X5 is applied after the forming tunnel and has the potential to emit during the mixing and curing stages only. A solid binder (E240) is suspended in water with the T250X5 liquid binder and remains in suspension until reacting in the curing oven. The curing oven is equipped with an RTO system for the destruction of VOCs.

The calculation of the contaminant emission rates is based upon the maximum percentage of any contaminant in the various binders used. This maximum percentage is used in combination with the application rate (g binder/kg glass pull) and glass pull rate (kg glass/hr). The following equation represents the methodology used to develop the emission rates used for all VOC binder losses.

$$ER, \frac{g \text{ contaminant}}{s} = (Max \text{ Fraction of Component}) \times \left(Max \text{ Appln Rate}, \frac{g \text{ binder}}{kg \text{ glass pull}} \right) \times Max \text{ Glass Pull Rate for product line}, \frac{kg \text{ Glass}}{hr} \times \% \text{ Loss} \times Conversion \text{ Factors}$$

The glass strands are cooled to ambient temperature before any binders are applied in the forming area. Several of the binder ingredients have very low vapour pressures and will not emit to atmosphere during the application progress, but may emit during curing. Percentage losses at each stage of processing are adjusted based on vapour pressure, chemical reactions and other physical properties. The curing oven RTO is expected to have a minimum destruction efficiency of 97%.

All supporting calculations and data are located in Appendix L.

13.4 Binder Chemical Reactions

Silanes are used in the binder materials at this facility. Silanes have ethoxy and methoxy groups that are liberated once mixed with water. These ethoxy and methoxy groups react with the water to form methanol and ethanol. Calculations were conducted on a molar basis to calculate the maximum amount of ethanol and methanol generated assuming full conversion of all ethoxy and methoxy groups. All methanol and ethanol that could be generated as a result of these reactions were added to the emissions from the binder materials.

Magnesium nitrate is present in some of the binders. It may be possible for the magnesium nitrate to form ammonia under certain conditions. Potential emissions of ammonia (based on 100% mass balance conversion) have been estimated to ensure conservatism.

The E240 binder contains a thermally activated catalyst that reacts with the polyesters (in other binders) to promote the crosslinking required for the product properties. This catalyst gets consumed in the reaction with any remaining becoming part of the product. Emission calculations conservatively estimate 5% of the catalyst remains unreacted in the curing oven. Additionally, particulate emitted at the CFM Binder Cyclone will contain proportional amounts of the catalyst.

Supporting calculations are located in Appendix L.

13.5 Assessment of Data Quality

There are several levels of conservatism incorporated into the calculations. The emissions are based on the maximum fraction of any given contaminant, and in most cases very little binder is attributed to the final product or the process water stream.

The calculation methodology is an engineering calculation which is based upon the assumption of 100% VOC losses for components that are likely to emit to atmosphere. The emission estimates are considered to be of average data quality and conservative.

14 ACID GASES

The emissions from the glass melting process include acid gases from the raw materials entrained in the furnace flue gas. Based on the composition of the batch materials used, the acid gases anticipated to be present in significant quantities are hydrogen chloride (HCl) and hydrogen fluoride (HF). The only significant source of HCl and HF at this facility is the T105 furnace (Source IDs B24 and B25).

The maximum operating condition for acid gases is the scenario where the T105 furnace is operating at maximum capacity. All calculations are based on a maximum one hour average operating condition.

The emission rate estimates are based upon an emission factor developed from furnace 107 source testing in 1998. The emissions are equally divided between the two stacks.

The general formula for the calculation is presented below:

$$ER, \frac{g}{s} = \left(105 \text{ Pull Rate}, \frac{kg}{hr} \right) \times \left(1998 \text{ furnace 107 Emission Factor}, \frac{g \text{ HCL}}{kg \text{ glass pull}} \right) \times (\text{Conversion Factor}) \times (\text{Flexibility Factor}) / 2$$

An example calculation for hydrogen chloride (HCl) from the T105 furnace stack B24 is presented below:

$$ER_{HCl} = \left(1826 \frac{kg}{hr} \right) \times \left(0.0063 \frac{g \text{ HCl}}{kg \text{ glass pull}} \right) \times \left(\frac{1 \text{ hr}}{3,600 \text{ s}} \right) \times (1.25) / 2$$

$$ER, \frac{g}{s} = 0.002$$

All supporting calculations and data are located in Appendix I.

The emission rate for acid gases from the furnace were estimated using furnace 107 source testing performed in 1998, and adjusted for the maximum glass pull rate. In addition, a flexibility factor of 25% was applied to account for fluctuations in the composition of the batch raw materials. Therefore, the emission estimates are of average data quality and conservative.

15 DISPERSION MODELLING

This section provides a description of how the modelling was conducted as required by subparagraphs 10 to 13 of Section 26 of O. Reg. 419/05. Modelling was conducted using the US EPA AERMOD

dispersion model Version 22112. The modelling interface employed was Lakes AERMOD View which incorporates AERMAP Version 18081. The methodologies used in this study are discussed in the following sections.

For this modelling exercise, all sources that emitted contaminants in significant amounts were modelled. Due to the large number of contaminants, the modelling was conducted in a staged approach.

In Stage 1, a conservative approach to modelling was applied by using a dispersion factor for each source, multiplying it by the emission rate of each contaminant from that source and summing the product for each contaminant. The dispersion factor was generated by modelling each source at an emission rate of 1 g/s. In general, any contaminant 50% or more of a MECP Standard using this very conservative approach was assessed in the Stage 2 modelling.

Stage 2 modelling consisted of assigning the worst-case emission for each significant contaminant to the appropriate source and then modelling using AERMOD.

Stage 2 modelling was conducted for the following contaminants:

- Particulate Matter
- Nitrogen Oxides (Expressed as NO₂)
- Acid Solubilized Fatty Acid Amides
- Hexavalent Chromium

The Stage 1 and Stage 2 documentation and modelling files are located in Appendix P and Q, respectively.

The results are anticipated to provide a reasonable estimate of the facility's impact on the surrounding area under local meteorological conditions. The following sections describe how the models were set up and run.

15.1 Source and Emissions Data

The source parameters and contaminant emission estimates used in the half-hour, 1 hour, 24 hour and annual dispersion modelling scenarios are listed in Appendix C and Appendix D. The methods used to calculate the emissions have been described in previous sections of this report.

15.2 Topography

The Owens Corning Guelph facility is adjacent to park areas and a river approximately 240 m east of the facility. Digital terrain data was obtained from the MECP for the region surrounding the facility (DEM file 040P). This data was used to generate base elevations for sources, buildings and receptors in the model.

15.3 Land Use

The Owens Corning facility is situated at 247 York Road in Guelph, Ontario. The adjacent lands have mixed zoning including industrial, commercial, residential and parkland. Neighbouring facilities are

primarily involved in chemical distribution, packaging and welding. The nearest sensitive receptors are dwellings adjacent to the west property line, however all sensitive receptors surrounding the facility were considered in the modelling, including new residences to the north.

The AERMOD model requires specification of urban or rural meteorological algorithms. The urban algorithm is based upon the influence of a 'heat island' produced typically by a heavily populated area. Based on analysis of the area as previously discussed with the MECP, the surrounding land use is considered rural for the purposes of dispersion modelling based on the predominance of low density residential areas, open fields and green space the within the 3-km radius.

15.4 Meteorology

The AERMOD model requires a meteorological data set consisting of hourly wind speed and direction, Pasquill stability class, and mixing heights. It is recommended that 5 years of meteorological data be used.

Modelling was conducted using a site-specific meteorological dataset processed using AERMET Version 22112. The facility has a Section 13.1 approval for this meteorological data set representing years 2016-2020.

15.5 Building and Source Dimensions

Montrose extracted the source and building dimensions and coordinates using a site plan which included:

- The facility property line
- Location of buildings and structures on the property
- Source locations and parameters

Source coordinates and dimensions are included in Appendix C.

15.6 Building Downwash

The effect of buildings on dispersion was considered by using the U.S. EPA BPIPPRM program to calculate the wind direction specific building downwash values to be used as an input to the AERMOD models.

15.7 Receptor Grid

The AERMOD model requires the user to select the points (receptors) at which ground level concentrations are to be calculated. The receptor grid was defined in accordance with the MECP guidance as follows:

- a fenceline grid with 10 m spacing
- a grid with 20 m spacing extending 200 m out from the sources
- a grid with 50 m spacing from 200 m to 500 m
- a grid with 100 m spacing from 500 m to 1,000 m

- a grid with 200 m spacing from 1,000 m to 2,000 m
- a grid with 500 m spacing from 2,000 m to 5,000 m

The facility is located in an area with a number of sensitive receptors to the north, west and east of the facility. In addition to residential areas, there is a community center and a school nearby to the north. The nearest sensitive receptors are dwellings adjacent to the west property line of the facility. Sensitive receptors are defined in O.Reg.419/05 Section 30(8) as:

- Dwellings
- Educational facilities
- Health care facilities
- A senior citizens' residence or long-term care facilities
- Childcare facilities

Parkland and recreational facilities are not considered sensitive receptors for the purposes of evaluating averaging times for Upper Risk Threshold comparisons.

The modelling included assessment of concentrations at elevated locations representing open windows at multi-story buildings.

15.8 Annual Modelling Results

For conservatism and as preferred by the Ministry, the annual modelling uses the highest value predicted from the 5 year runs. Therefore, the maximum predicted concentration will be reported from the associated year of meteorological data. For the purposes of documentation and presentation of concentration contour plots, only the year with the maximum concentration is presented.

TABLE 2 AERMOD Dispersion Modelling Input Summary Table

Section of Reg.	Section Title	Description Of How The Approved Dispersion Model Was Used
6	Approved Air Dispersion Model	AERMOD Version 22112 was used for all modelling.
8	Negligible Sources	Negligible and insignificant sources outlined in Section 4 of this report have not been included in the models.
9	Same Structure Contamination	The facility is the only tenant in the building; therefore same structure contamination does not apply to this site.
10	Operating Conditions	Operating conditions that generate the maximum POI concentrations are outlined in the Emission Estimate Sections of this report for each contaminant (See sections 5 to 14).
11	Source of Contaminant Emission Rates	The methods used to calculate the emission rates are provided in the corresponding Emission Estimate sections, along with a comment regarding the accuracy of the methods (See sections 5 to 14 of this report).
12	Combined Effect of Assumptions for Operating Conditions and Emission Rates	The operating conditions were estimated in accordance with Section 10(1)1 and Section 11(1)1 of O. Reg. 419/05 and are therefore considered to result in the highest concentration at POI that the facility is capable of.
13	Meteorological Conditions	Site-specific meteorological data processed with AERMET Version 22112 provided by the MECP.

Section of Reg.	Section Title	Description Of How The Approved Dispersion Model Was Used
14	Area of Modelling Coverage	The receptor grid for this modelling extends to 5000 m from the facility.
15	Stack height for Certain New Sources of Contaminant	All stacks are less than the height allowable under Section 15 of Reg 419 and building impacts on point sources were considered by running BPIP.
16	Terrain Data	Digital terrain data was obtained from MECP terrain DEM 040P.
17	Averaging Periods	The averaging periods for the air dispersion model were consistent with the standards for each contaminant - either 30-minute, 1 hour, 24 hour, 30 day or annual averaging periods.

15.9 Source Contributions to Current POI Concentration

The tables in this section have been prepared in accordance with Section 3.3 of the *Guide to Requesting a Site-specific Standard*, dated February 2017.

These tables outline the source contributions of the current emissions (with uncertainty) at the maximum POI location, as well as at the three (3) most impacted sensitive receptors, which in this case are dwellings. The maximum POI location is along the southeast fenceline.

TABLE 3 24 Hour Hexavalent Chromium Modelling Results by Source

Source (Group)	Emission Rate (g/s)	Percent of Total Emissions (%)	Contribution to Point of Impingement Concentrations			
			Point of Maximum Concentration (Statistical High) (ng/m ³)	Receptor 1 (ng/m ³)	Receptor 2 (ng/m ³)	Receptor 3 (ng/m ³)
All	1.37E-04	100%	5.67	3.97	3.86	3.86
Forehearth	8.98E-05	66%	3.45	2.75	2.75	2.67
Furnace ¹	3.11E-05	23%	0.05	0.63	0.50	0.61
General Ventilation ²	1.61E-05	12%	2.16	0.59	0.61	0.57
Date of Maximum			1/4/2017	5/25/2017	5/2/2018	5/25/2017

¹Source group of furnace exhausts (Source IDs B24 & B25)

²Source group of general exhausts (Source IDs B33, B34, C79 and C80)

The 24 hour limit (URT) for hexavalent chromium is 70 ng/m³. All 24 hour modelling predictions are less than 9% of the URT.

TABLE 4 Annual Hexavalent Chromium Modelling Results by Source

Source (Group)	Emission Rate	Percent of Total Emissions	Contribution to Point of Impingement Concentrations			
			Point of Maximum Concentration	Receptor 1	Receptor 2	Receptor 3
	(g/s)	(%)	(ng/m ³)	(ng/m ³)	(ng/m ³)	(ng/m ³)
All	1.37E-04	100%	1.33	0.49	0.47	0.46
Forehearth	8.98E-05	66%	0.64	0.33	0.32	0.30
Furnace ¹	3.11E-05	23%	0.06	0.07	0.07	0.07
General Ventilation ²	1.61E-05	12%	0.63	0.09	0.08	0.08
Date and Time of Maximum (year) ³			2017	2018	2018	2018

¹Source group of furnace exhausts (Source IDs B24 and B25)

²Source group of general exhausts (Source IDs B33, B34, C79 and C80)

³The Schedule 3 standard for hexavalent chromium is an annual standard therefore a year is provided rather than the date and time

15.10 Exceedance Frequency - Current Annual Modelling

The average and median POI concentrations provide additional context to the POI concentration and assist with understanding the potential impact on nearby receptors. The following table outlines this data for the current case (with uncertainty) at the maximum POI location and the three most impacted sensitive receptors for the annual averaging period.

Since hexavalent chromium has an annual standard, the frequency refers to the percentage of the 5 years of modelling that are above the standard.

TABLE 5 Frequency, Average, and Median Annual Concentrations

All Sources	Units	Maximum Receptor	Receptor 1	Receptor 2	Receptor 3
Frequency above Schedule 3 Annual Standard ^[1]	(%)	100%	100%	100%	100%
Average Concentration over 5 years	(ng/m ³)	1.277	0.431	0.418	0.407
Median Concentration over 5 years	(ng/m ³)	1.279	0.430	0.413	0.409

¹ % of time exceedance occurs at the receptor. Since hexavalent chromium has an annual standard, the frequency refers to the % of modelled years above the standard.

There are no exceedances of the 24-hour URT at any locations and all 24 hour modelled concentrations are less than 9% of the URT.

The default pollution control combination was developed according to the POI concentration from the AERMOD assessment. The location of the maximum concentration, as well as the most impacted sensitive receptors, were assessed for each option. The following table summarizes the current average scenarios and future default pollution control combination scenario at the most impacted sensitive receptors.

TABLE 6 Comparison to Standard and Frequency of Exceedances

Ranking	Overall % of Sch 3 Standard at the Maximum POI Location	% of Sch 3 Standard at the Most Impacted Sensitive Receptor	POI Exceedance Frequency ²
Current (Mean)	756%	293 % (at 95 Toronto St)	100% (at 95 Toronto St)
Current Request (with uncertainty)	952%	348 % (at 95 Toronto St)	100% (at 95 Toronto St)
Best (Default) Technically Feasible PCC ¹	489%	165 % (at 83/79 Toronto St)	100% (at 83/79 Toronto St)

¹ PCC is Pollution Control Combination

² % of time exceedance occurs at the receptor. Since hexavalent chromium has an annual standard, the frequency refers to the % of modelled years above the standard.

Additional details are included in Appendix O.

16 EMISSION SUMMARY TABLES

The Emission Summary Table is provided below as required by subparagraph 14 of Section 26 of O. Reg. 419/05.

The data presented includes:

- Contaminant name
- CAS number
- Total emission rate for each contaminant (aggregate for facility) in g/s
- Aggregate POI concentration predicted by AERMOD
- POI limit with appropriate averaging time(s)
- Limiting Effect
- Percentage of Criteria; percentage ratio of the aggregate POI concentration estimate to the POI criteria

TABLE 7 Emission Summary Table - Hexavalent Chromium

Contaminant	Averaging Time	Emission Rate	Location of Point of Impingement (POI)	Maximum Modelled Concentration	MECP POI Criteria	Schedule	Limiting Effect	% of Criteria
		(g/s)		(ng/m ³)	(ng/m ³)			
Hexavalent Chromium (Current Average)	24-hr	1.16E-04	All Receptors	4.67	70	URT	Health	6.7%
			Sensitive receptor	3.36	70	URT	Health	4.8%
	Annual		All Receptors	1.06	2.4	SSS	Health	44.1%
			Sensitive receptor	0.41	2.4	SSS	Health	17.1%
Hexavalent Chromium (Current with Uncertainty)	24-hr	1.37E-04	All Receptors	5.67	70	URT	Health	8.1%
			Sensitive receptor	3.97	70	URT	Health	5.7%
	Annual		All Receptors	1.33 ^[1]	2.4	SSS	Health	55.5%
			Sensitive receptor	0.49	2.4	SSS	Health	20.3%
Hexavalent Chromium (After Action Plan)	24-hr	1.31E-04	All Receptors	2.61	70	URT	Health	3.7%
			Sensitive receptor	2.16	70	URT	Health	3.1%
	Annual		All Receptors	0.68	1.33 ^[2]	Proposed SSS	Health	51.4%
			Sensitive receptor	0.23	1.33 ^[2]	Proposed SSS	Health	17.3%

^[1] Proposed SSS concentration

^[2] Owens Corning is applying for this value as the site-specific standard for hexavalent chromium

TABLE 8 Current Emission Summary Table – 1hr Average (All Other Compounds)

Contaminant	CAS #	1 Hour Emission Rate (g/s)	1 hr Facility MAX GLC (ug/m ³)	1 Hour POI Criteria (ug/m ³)	Schedule	Limiting Effect	% of Criteria
SULPHUR DIOXIDE	7446-09-05	6.15E-01	3.78E+01	100	Schedule 3	Health & Vegetation	37.8%
NITROGEN OXIDES (EXPRESSED AS NO ₂)	10102-44-0	1.16E+00	6.61E+01	400	Schedule 3	Health	16.5%

TABLE 9 Current Emission Summary Table – 24hr Average (All Other Compounds)

Contaminant	CAS #	24 Hour Emission Rate (g/s)	24 hr Facility MAX GLC (ug/m ³)	24 Hour POI Criteria (ug/m ³)	Schedule	Limiting Effect	% of Criteria
PM - PARTICULATE MATTER	N/A - M08	4.52E-01	8.59E+01	120	Schedule 3	Visibility	71.6%
HYDROGEN FLUORIDE -GASEOUS-GROWING SEASON GS [1]	7664-39-3	6.41E-03	1.95E-01	0.86	Schedule 3	Vegetation	22.6%
NITROGEN OXIDES (EXPRESSED AS NO ₂)	10102-44-0	1.16E+00	3.77E+01	200	Schedule 3	Health	18.9%
Chromium Compounds (Di-,Tri-,metallic)	7440-47-3	7.93E-05	7.89E-03	0.5	Schedule 3	Health	1.6%
HYDROGEN CHLORIDE	7647-01-0	4.01E-03	1.22E-01	20	Schedule 3	Health	0.6%
2,2-dibromo-3-nitripropionamide	10222-01-2	6.01E-03	6.07E-01	1	Screening Level	Health	<Screening Level
5-Chloro-2-methyl-2H-isothiazol-3-one	55965-84-9	3.45E-03	4.65E-01	1.35	Screening Level	Health	<Screening Level
5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4	1.19E-03	1.60E-01	0.5	Screening Level	Health	<Screening Level
2-Methyl-4-Isothiazolin-3-one	2682-20-4	1.19E-03	1.60E-01	0.5	Screening Level	Health	<Screening Level
MAGNESIUM NITRATE	10377-60-3	4.48E-03	5.69E-01	2	Screening Level	Health	<Screening Level
Dibromoacetonitrile	3252-43-5	1.45E-03	3.43E-01	1.65	Screening Level	Health	<Screening Level
1-Propanol, 3-(trimethoxysilyl)-, methacrylate	2530-85-0	6.41E-04	6.48E-02	0.5	Screening Level	Health	<Screening Level
Diallyl Phthalate	131-17-9	4.77E-03	5.74E-01	5	Screening Level	Health	<Screening Level
Sodium acetate	127-09-3	1.20E-02	1.57E+00	15	Screening Level	Health & Particulate	<Screening Level
Polyethylene glycol	25322-68-3	1.80E-02	1.82E+00	40	Screening Level	Health	<Screening Level
Sodium Bromide	7647-15-6	5.03E-02	5.12E+00	120	Screening Level	Health & Particulate	<Screening Level
BENZOYL PEROXIDE	94-36-0	4.45E-03	8.42E-01	25	Screening Level	Health	<Screening Level
3-(Triethoxysilyl)propylamine	919-30-2	1.95E-02	2.54E+00	80	Screening Level	Health	<Screening Level
Acid Solubilized Fatty Acid Amide (Prop1)	0	2.79E-02	7.97E+00	8.261	FL/APOIC	NA	<FL/APOIC
Acid Solubilized Fatty Acid Amide (Prop2)	0	1.24E-02	3.54E+00	3.672	FL/APOIC	NA	<FL/APOIC
Benzenamine, N-[3-(trimethoxysilyl)propyl]-	3068-76-6	6.72E-03	8.75E-01	1.114	FL/APOIC	NA	<FL/APOIC

[1] Assessed against the most stringent criteria for Gaseous Growing Season

TABLE 10 Current Emission Summary Table –30 Day Average (All Other Compounds)

Contaminant	CAS #	30 Day Emission Rate (g/s)	Facility MAX GLC ($\mu\text{g}/\text{m}^3$)	30 Day POI Criteria ($\mu\text{g}/\text{m}^3$)	Schedule	Limiting Effect	% of Criteria
HYDROGEN FLUORIDE -GASEOUS-GROWING SEASON GS [1]	7664-39-3	6.41E-03	7.59E-02	0.34	Schedule 3	Health	22.3%

[1] Assessed against the most stringent criteria for Gaseous Growing Season

TABLE 11 Current Emission Summary Table – Annual Average (All Other Compounds)

Contaminant	CAS #	Annual Emission Rate (g/s)	Annual Facility MAX GLC ($\mu\text{g}/\text{m}^3$)	Annual POI Criteria ($\mu\text{g}/\text{m}^3$)	Schedule	Limiting Effect	% of Criteria
SULPHUR DIOXIDE	7446-09-05	6.15E-01	2.13E+00	10	Schedule 3	Health & Vegetation	21.3%

17 CONCLUSIONS

Table 7 summarizes the output from the AERMOD modelling to predict the maximum ground level concentration for hexavalent chromium emissions related to the preferred technical feasible pollution control combination at the Owens Corning Guelph facility. The data provided in this report supports the application for an alteration of a Schedule 3 standard under Section 32 of Ontario Regulation 419/05: Air Pollution – Local Air Quality (O. Reg. 419/05).

The Owens Corning Guelph facility is requesting a 10-year site-specific air standard for hexavalent chromium of 1.33 ng/m³ (annual average) at any offsite location. Modelling predicts this would result in a maximum annual average concentration of 0.49 ng/m³ at any sensitive receptor.

Table 8 through Table 11 summarize the output from the modelling to predict the maximum ground level concentrations for all other significant emissions from the Owens Corning Guelph facility. The results indicate that all other contaminants at the facility comply with the O. Reg. 419/05 Schedule 3 standards and guidelines at the maximum (current) operating scenario.

18 REFERENCES

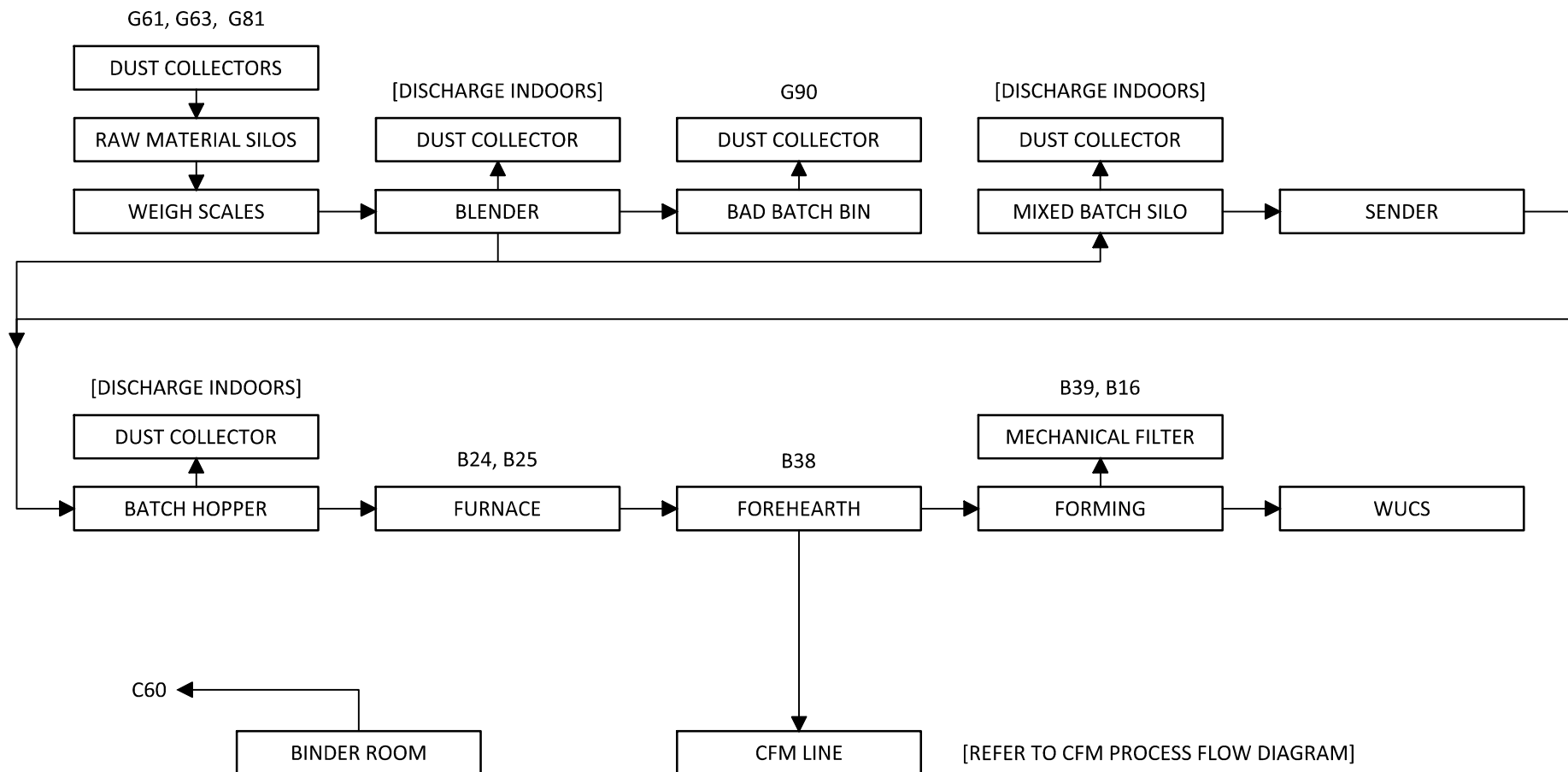
The following references were used in preparation of this document:

MECP	Guideline for Air Dispersion Modelling in Ontario, Version 3.0 MECP, February 2017
MECP	Procedure for Preparing an ESDM Report, Version 4.1 MECP, March 2018
MECP	Air Contaminants Benchmarks List. Version 3, April 2023
MECP	Guide to Requesting a Site-Specific Standard (GRSSS), Version 2.0, February 2017
MECP	Technical Bulletin - O.Reg. 419/05 Methodology for Using "Assessment Values" for Contaminants with Annual Air Standards MECP, February 2017
MECP	Guideline for the Implementation of Air Standards in Ontario (GIASO) Version 3.0, February 2017
EPA	USEPA AP-42: Section 1.4 – Natural Gas Combustion (July 1998) Section 3.3 – Gasoline and Diesel Industrial Engines (October 1996) Section 11.13 – Glass Fiber Manufacturing (1985) Section 13.4 – Wet Cooling Towers (1995)
LEHDER	Source Testing Program Reports – multiple 1995-2013 Projects 96127 and 99429
Montrose	Approach for Source Testing Program (validated) for Generators January 2023 Project 22022668
Montrose	Evaluation of Hexavalent Chromium Emissions from Selected Sources, Owens Corning Guelph Glass Plant – February 2024 May 2024 Project 24032615
Montrose	Evaluation of Hexavalent Chromium Emissions from Selected Sources, Owens Corning Guelph Glass Plant – June 2024 August 2024 Project 24032615
Owens Corning	Information provided by Owens Corning related to all aspects of the Site-Specific Standard project and ECA post-rebuild

APPENDIX A

Process Flow Diagrams





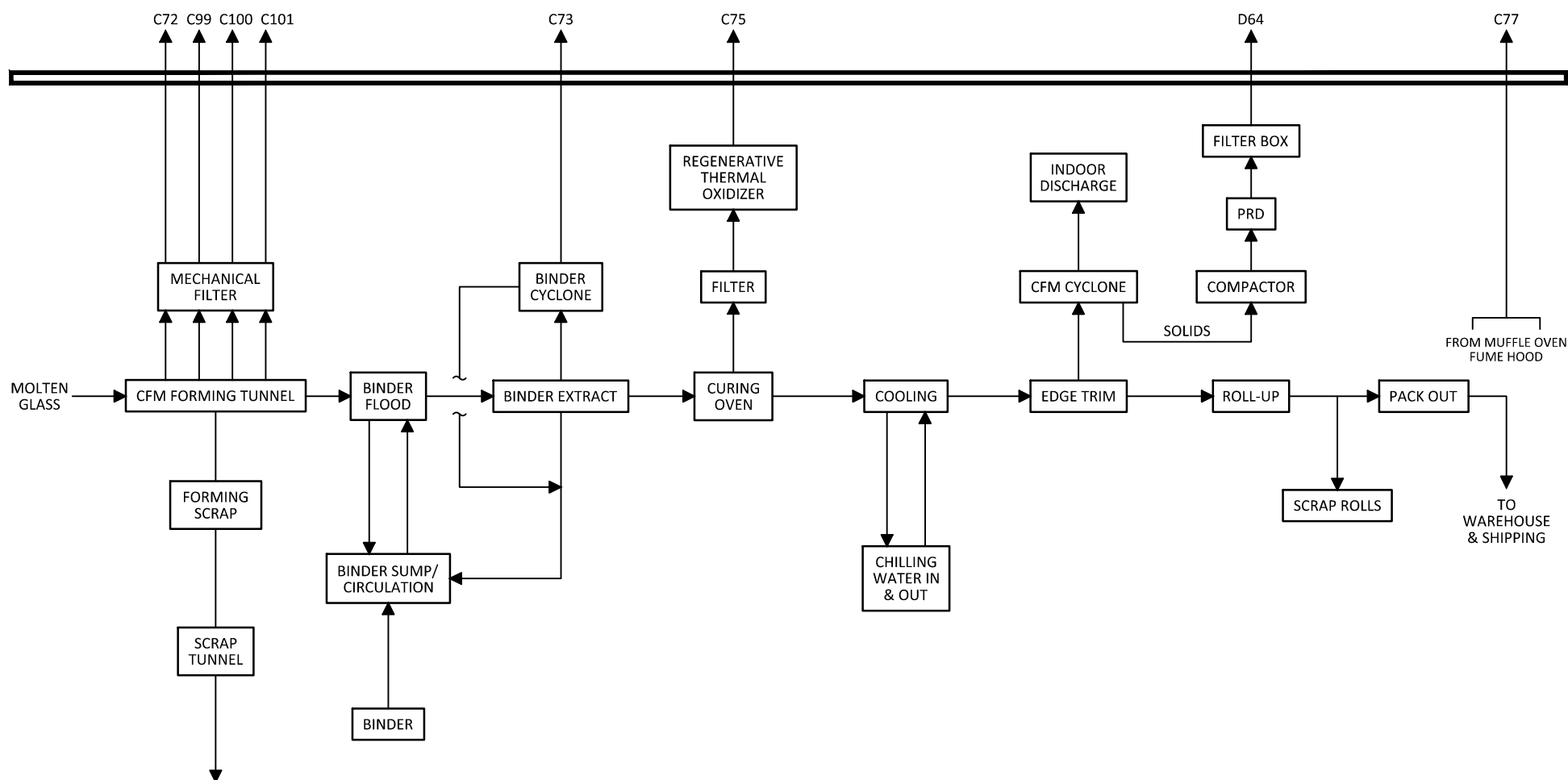
Owens Corning Composite Materials Canada LP
Guelph Glass Plant

Raw Material, Melting & Forming Process Flow Diagram

Date:	March 2025	Project:	41296	Submitter:	D. Agar	Reviewer:	P. McInnis
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Appendix
A1



Owens Corning Composite Materials Canada LP
Guelph Glass Plant

CFM Process Flow Diagram

Date:	March 2025	Project:	41296	Submitter:	D. Agar	Reviewer:	P. McInnis
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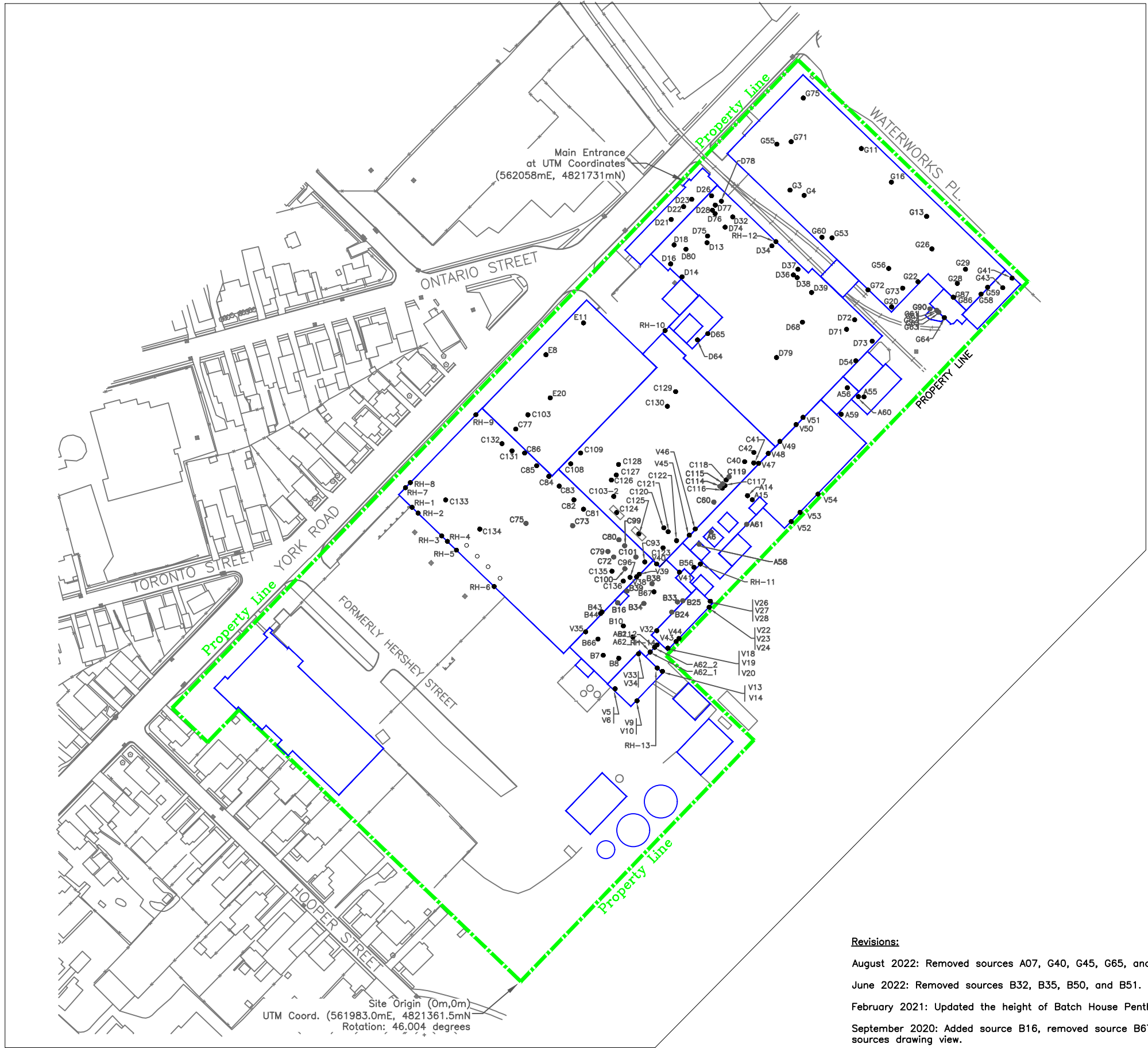
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Appendix
A2

APPENDIX B

Site Drawings





Legend
● Emissions Source



- Revisions:**
- August 2022: Removed sources A07, G40, G45, G65, and G81.
 - June 2022: Removed sources B32, B35, B50, and B51.
 - February 2021: Updated the height of Batch House Penthouse building.
 - September 2020: Added source B16, removed source B67 from modelled sources drawing view.
 - October 2019: Removed source G23, B35 and B51. Added sources B33, A62_1, A62_2 and volume source D64. Moved source G13.

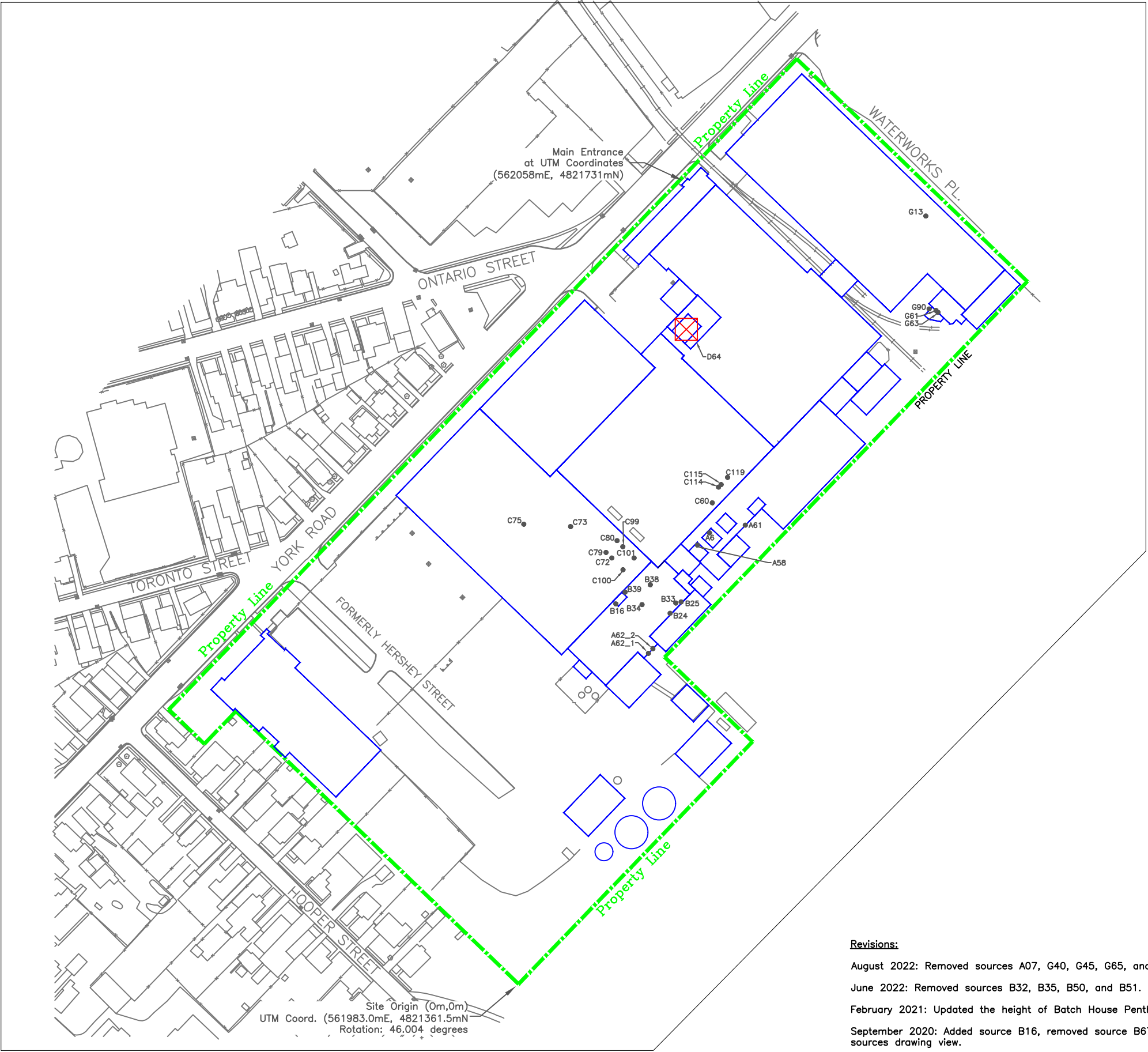
Reference:



Owens Corning Composite Materials Canada LP
Guelph Glass Plant

Site Plan and Emission Source Inventory

Date:	March 2025	Project:	41296	Submitter:	D. Agar	Reviewer:	P. McInnis
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- Legend**
- Emissions Source (In Service)
 - ⊠ Volume Source



Revisions:

- August 2022: Removed sources A07, G40, G45, G65, and G81.
- June 2022: Removed sources B32, B35, B50, and B51.
- February 2021: Updated the height of Batch House Penthouse building.
- September 2020: Added source B16, removed source B67 from modelled sources drawing view.
- October 2019: Removed source G23, B35 and B51. Added sources B33, A62_1, A62_2 and volume source D64. Moved source G13.

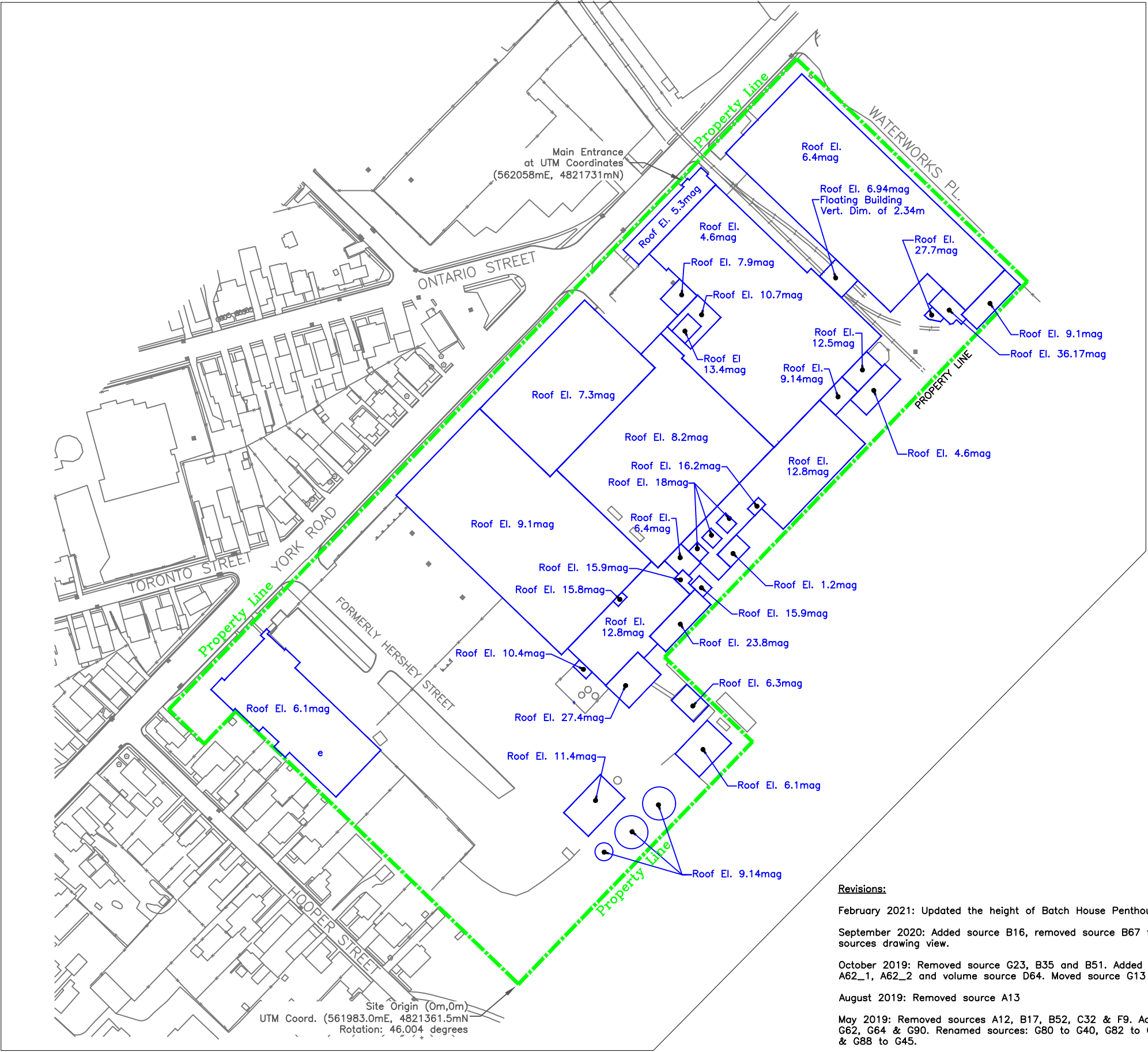
Reference:



Owens Corning Composite Materials Canada LP
Guelph Glass Plant

Site Plan Showing Modeled Sources

Date:	March 2025	Project:	41296	Submitter:	D. Agar	Reviewer:	P. McInnis
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Revisions:

- February 2021: Updated the height of Batch House Penthouse building.
- September 2020: Added source B16, removed source B67 from modelled sources drawing view.
- October 2019: Removed source G23, B35 and B51. Added sources B33, A62_1, A62_2 and volume source D64. Moved source G13
- August 2019: Removed source A13
- May 2019: Removed sources A12, B17, B52, C32 & F9. Added sources G62, G64 & G90. Renamed sources: G80 to G40, G82 to G65, G89 to G61 & G88 to G45.
- April 2019: Corrected Street Names and changed source ID B65 to B11
- October 2018: General drawing update from roof survey conducted by LEHDER on Oct.1, 2018 (Project 180077).

Reference:



Owens Corning Composite Materials Canada LP
Guelph Glass Plant

**Site Plan with Property Line
and Roof Elevations**

Date:	March 2025	Project:	41296	Submitter:	D. Agar	Reviewer:	P. McInnis
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APPENDIX C

Source Inventory



Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Source Inventory Table - Current Hexavalent Chromium

Source ID	Description	UTM Easting	UTM Northing	Volumetric Flowrate (m ³ /s)	Stack Dimensions (L x W)	Temp. (C)	Height Above Roof (m)	Height Above Grade (m)	Source Type
B24	105 Furnace Stack (West)	562052.6	4821531.7	1.55	0.33 x	288	11.3	35.1	Process Exhaust
B25	105 Furnace Stack (East)	562057.7	4821536.9	1.43	0.33 x	283	11.3	35.1	Process Exhaust
B33	General Ventilation above T107 Furnace	562055.2	4821536.4	18.40	1.41 x	42	5.2	18.0	General Ventilation
B34	General Exhaust Above T107A F/H	562039.7	4821535.7	17.63	1.41 x	42	5.2	18.0	General Ventilation
B38	105 Forehearth Stack	562043.5	4821544.8	3.632	0.75 x	118	15.2	28.0	Process Exhaust
C79	General Exhaust West CFM F/H	562023.2	4821559.6	17.25	1.41 x	42	2.4	11.5	General Ventilation
C80	General Exhaust East CFM F/H	562028.3	4821565.0	14.76	1.41 x	42	2.4	11.5	General Ventilation

Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Source Inventory Table - Future Hexavalent Chromium

Source ID	Description	UTM Easting	UTM Northing	Volumetric Flowrate (m ³ /s)	Stack Dimensions (L x W)	Temp. (C)	Height Above Roof (m)	Height Above Grade (m)	Source Type
B24	105 Furnace Stack (West)	562052.6	4821531.7	5.13	0.33 x	72	11.3	35.1	Process Exhaust
B25	105 Furnace Stack (East)	562057.7	4821536.9	5.13	0.33 x	72	11.3	35.1	Process Exhaust
B33	General Ventilation above T107 Furnace	562055.2	4821536.4	18.40	1.41 x	42	5.2	18.0	General Ventilation
B34	General Exhaust Above T107A F/H	562039.7	4821535.7	17.63	1.41 x	42	5.2	18.0	General Ventilation
B38	105 Forehearth Stack	562043.5	4821544.8	11.00	0.75 x	51	19.2	32.0	Process Exhaust
C79	General Exhaust West CFM F/H	562023.2	4821559.6	17.25	1.41 x	42	2.4	11.5	General Ventilation
C80	General Exhaust East CFM F/H	562028.3	4821565.0	14.76	1.41 x	42	2.4	11.5	General Ventilation

Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Source Summary Table A – Source Inventory Table

Source ID	Description	UTM Easting	UTM Northing	Volumetric Flowrate (m ³ /s)	Stack Dimensions (L x W)	Temp. (C)	Height Above Roof (m)	Height Above Grade (m)	Source Type
A06	Cooling Tower #1	562070.7	4821568.6	70.750	2.97 x	25	5.5	18.3	Wet Cooling Tower
A58	Cooling Tower #4	562065.1	4821562.9	70.750	2.97 x	25	5.5	18.3	Wet Cooling Tower
A61	NG Generator #1 Exhaust	562087.1	4821572.1	0.821	0.20 x	366	3.5	16.3	Combustion - Electrical Generation
A62_1	Generac SG500 Natural Gas Generator Exhaust 1	562042.6	4821513.3	0.553	0.15 x	414	2.4	15.2	Combustion - Electrical Generation
A62_2	Generac SG500 Natural Gas Generator Exhaust 2	562044.7	4821515.4	0.553	0.15 x	414	2.4	15.2	Combustion - Electrical Generation
B16	107B Forming Scrap Tunnel Exhaust	562027.7	4821535.9	16.500	1.22 x	27	4.7	17.5	Process Exhaust
B24	105 Furnace Stack (West)	562052.6	4821531.7	1.547	0.33 x	288	11.3	35.1	Process Exhaust
B25	105 Furnace Stack (East)	562057.7	4821536.9	1.434	0.33 x	283	11.3	35.1	Process Exhaust
B33	General Ventilation above T107 Furnace	562055.2	4821536.4	18.400	1.41 x	42	5.2	18.0	General Ventilation
B34	General Exhaust Above T107A F/H	562039.7	4821535.7	17.600	1.41 x	42	5.2	18.0	General Ventilation
B38	105 Forehearth Stack	562043.5	4821544.8	3.632	0.75 x	118	15.2	28.0	Process Exhaust

Source ID	Description	UTM Easting	UTM Northing	Volumetric Flowrate (m ³ /s)	Stack Dimensions (L x W)	Temp. (C)	Height Above Roof (m)	Height Above Grade (m)	Source Type
B39	107A Forming Scrap Tunnel Exhaust	562031.9	4821541.4	14.000	0.91 x	27	5.0	17.8	Process Exhaust
C100	CFM Forming Tunnel (South-West)	562031.0	4821551.6	2.360	0.55 x	25	5.3	14.4	Process Exhaust
C101	CFM Forming Tunnel (South-East)	562036.1	4821557.0	2.360	0.55 x	25	5.3	14.4	Process Exhaust
C114	DI Boilers	562074.8	4821589.6	0.004	0.15 x	100	0.5	8.7	Process Exhaust
C115	DI Boilers	562076.0	4821590.8	0.004	0.15 x	100	0.5	8.7	Process Exhaust
C119	Binder Heater	562079.0	4821594.0	0.002	0.10 x	100	1.1	9.3	Process Exhaust
C60	Binder Circ. Tank Exhaust	562072.0	4821582.4	0.980	0.51 x	28	14.6	22.8	Process Exhaust
C72	CFM Forming Tunnel (North-West)	562025.8	4821557.0	2.360	0.55 x	25	5.3	14.4	Process Exhaust
C73	CFM Binder Cyclone	562006.9	4821571.4	2.100	0.50 x	21	4.0	13.1	Process Exhaust
C75	CFM RTO - Oven	561985.4	4821572.6	11.000	0.60 x	245	5.5	14.6	Process Exhaust
C79	General Exhaust West CFM F/H	562023.2	4821559.6	17.200	1.41 x	42	2.4	11.5	General Ventilation
C80	General Exhaust East CFM F/H	562028.3	4821565.0	14.800	1.41 x	42	2.4	11.5	General Ventilation
C99	CFM Forming Tunnel (North - East)	562030.9	4821562.3	2.360	0.55 x	25	5.3	14.4	Miscellaneous (lunch room, plumbing vents, etc.)
D64	Filter Box Louvre Exhaust	562060.0	4821662.4			20	1.0	12.1	Process Exhaust
G13	NGF Tire Cord Line #1 RTO	562170.0	4821714.0	12.000	0.83 x	585	11.6	18.0	Process Exhaust
G61	D/C Exhaust - Soda Ash Silo (Bin 18)	562174.6	4821670.7	0.240	0.14 x	15		21.6	Process Exhaust
G63	D/C Exhaust - Salt Cake Silo (Bin 20)	562175.6	4821669.8	0.240	0.14 x	15		21.6	Process Exhaust

Source ID	Description	UTM Easting	UTM Northing	Volumetric Flowrate (m ³ /s)	Stack Dimensions (x_m)	Temp. (C)	Height Above Roof (m)	Height Above Grade (m)	Source Type
G90	D/C Exhaust - Bad Batch Bin	562171.5	4821671.4	0.490	0.20 x	15		5.8	Process Exhaust

APPENDIX D

Emission Inventories



Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Averaging Period: Annual, 24 hour

Source Summary Table B – Emission Inventory Table – Current with Uncertainty

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
205	CHROMIUM (VI) COMPOUNDS	18540-29-9						
			B24	105 Furnace Stack (West)	1.169E-05	V-ST	Highest	8.53
			B25	105 Furnace Stack (East)	1.946E-05	V-ST	Highest	14.20
			B33	General Ventilation above T107 Furnace	6.457E-06	V-ST	Highest	4.71
			B34	General Exhaust Above T107A F/H	4.686E-06	V-ST	Highest	3.42
			B38	105 Forehearth Stack	8.982E-05	V-ST	Highest	65.55
			C79	General Exhaust West CFM F/H	2.460E-06	V-ST	Highest	1.79
			C80	General Exhaust East CFM F/H	2.460E-06	V-ST	Highest	1.79
				Scenario Total:	1.370E-04			100

Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Averaging Period: Annual, 24 hour

Source Summary Table B – Emission Inventory Table – Current Mean

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
205	CHROMIUM (VI) COMPOUNDS	18540-29-9						
			B24	105 Furnace Stack (West)	8.866E-06	V-ST	Highest	7.65
			B25	105 Furnace Stack (East)	1.495E-05	V-ST	Highest	12.91
			B33	General Ventilation above T107 Furnace	3.061E-06	V-ST	Highest	2.64
			B34	General Exhaust Above T107A F/H	4.106E-06	V-ST	Highest	3.54
			B38	105 Forehearth Stack	8.075E-05	V-ST	Highest	69.69
			C79	General Exhaust West CFM F/H	2.068E-06	V-ST	Highest	1.78
			C80	General Exhaust East CFM F/H	2.068E-06	V-ST	Highest	1.78
				Scenario Total:	1.159E-04			100

Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Averaging Period: Annual, 24 hour

Source Summary Table B – Emission Inventory Table – Future

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
205	CHROMIUM (VI) COMPOUNDS	18540-29-9						
			B24	105 Furnace Stack (West)	1.169E-05	V-ST	Highest	8.92
			B25	105 Furnace Stack (East)	1.946E-05	V-ST	Highest	14.86
			B33	General Ventilation above T107 Furnace	6.457E-06	V-ST	Highest	4.93
			B34	General Exhaust Above T107A F/H	4.686E-06	V-ST	Highest	3.58
			B38	105 Forehearth Stack	8.376E-05	EC	Average	63.95
			C79	General Exhaust West CFM F/H	2.460E-06	V-ST	Highest	1.88
			C80	General Exhaust East CFM F/H	2.460E-06	V-ST	Highest	1.88
				Scenario Total:	1.310E-04			100

Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Averaging Period: 30 Minute

Source Summary Table B – Emission Inventory Table

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
7	CARBON MONOXIDE	630-08-0						
			B24	105 Furnace Stack (West)	2.900E-02	EC	Marginal	50.00
			B25	105 Furnace Stack (East)	2.900E-02	EC	Marginal	50.00
				Scenario Total:	5.800E-02			100

Site Name: Owen's Guelph Composite Materials Canada LP

Site Location: Guelph, Ontario

Averaging Period: 1 Hour

Source Summary Table B – Emission Inventory Table

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
316	ETHANOL (ETHYL ALCOHOL)	64-17-5	B16	107B Forming Scrap Tunnel Exhaust	5.468E-03	EC	Average	45.00
			B39	107A Forming Scrap Tunnel Exhaust	5.468E-03	EC	Average	45.00
			C60	Binder Circ. Tank Exhaust	1.215E-03	EC	Average	10.00
				Scenario Total:	1.215E-02			100
4	NITROGEN OXIDES (EXPRESSED AS NO2)	10102-44-0	A61	NG Generator #1 Exhaust	2.473E-02	EF	Above-Avg	2.13
			A62_1	Generac SG500 Natural Gas Generator Exhaust 1	7.554E-03	EF	Above-Avg	0.65
			A62_2	Generac SG500 Natural Gas Generator Exhaust 2	7.554E-03	EF	Above-Avg	0.65
			B24	105 Furnace Stack (West)	1.769E-01	EC	Marginal	15.27
			B25	105 Furnace Stack (East)	9.528E-02	EC	Marginal	8.22

14-Feb-25

Scenario Name: 24035387_1hr_R0

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Estimation Techniques: MB- Mass Balance Calculation, EF- Emission Factor Calculation, V-ST- Validated Source Testing, EC- Engineering Calculation

Confidential Commercially Sensitive Information

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
			B38	105 Forehearth Stack	2.956E-01	EF	Above-Avg	25.51
			C114	DI Boilers	6.176E-03	EF	Above-Avg	0.53
			C115	DI Boilers	6.176E-03	EF	Above-Avg	0.53
			C119	Binder Heater	7.412E-03	EF	Above-Avg	0.64
			C75	CFM RTO - Oven	3.829E-01	EF	Above-Avg	33.05
			G13	NGF Tire Cord Line #1 RTO	1.482E-01	EF	Above-Avg	12.79
			Scenario Total:		1.159E+00			100
5	SULPHUR DIOXIDE	7446-09-5						
			B24	105 Furnace Stack (West)	3.073E-01	MB	Highest	50.00
			B25	105 Furnace Stack (East)	3.073E-01	MB	Highest	50.00
			Scenario Total:		6.147E-01			100

Site Name: Owen's Corning Composite Materials Canada LP

Site Location: Guelph, Ontario

Averaging Period: 24 Hour

Source Summary Table B – Emission Inventory Table

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
1698	1-Propanol, 3-(trimethoxysilyl)-, methacrylate	2530-85-0	C75	CFM RTO - Oven Scenario Total:	6.414E-04 6.414E-04	EC	Average	100.00 100
3555	2,2-dibromo-3-nitrilopropionamide	10222-01-2	C75	CFM RTO - Oven Scenario Total:	6.014E-03 6.014E-03	EC	Average	100.00 100
1933	2-Methyl-4-Isothiazolin-3-one	2682-20-4	B16	107B Forming Scrap Tunnel Exhaust	5.165E-04	EC	Average	43.30
			B39	107A Forming Scrap Tunnel	5.165E-04	EC	Average	43.30

14-Feb-25

Scenario Name: 24035387_24hr_R0

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Estimation Techniques: MB- Mass Balance Calculation, EF- Emission Factor Calculation, V-ST- Validated Source Testing, EC- Engineering Calculation

Confidential Commercially Sensitive Information

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
1706	3-(Triethoxysilyl)propylamine	919-30-2		Exhaust				
			C60	Binder Circ. Tank Exhaust	1.502E-04	EC	Average	12.59
			C75	CFM RTO - Oven	9.562E-06	EC	Average	0.80
				Scenario Total:	1.193E-03			100
7553	5-Chloro-2-methyl-2H-isothiazol-3-one	55965-84-9		Exhaust				
			B16	107B Forming Scrap Tunnel Exhaust	8.758E-03	EC	Average	45.00
			B39	107A Forming Scrap Tunnel Exhaust	8.758E-03	EC	Average	45.00
			C60	Binder Circ. Tank Exhaust	1.946E-03	EC	Average	10.00
				Scenario Total:	1.946E-02			100
	5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4		Exhaust				
			B16	107B Forming Scrap Tunnel Exhaust	1.485E-03	EC	Average	43.05
			B39	107A Forming Scrap Tunnel Exhaust	1.485E-03	EC	Average	43.05
			C60	Binder Circ. Tank Exhaust	4.482E-04	EC	Average	12.99
			C75	CFM RTO - Oven	3.187E-05	EC	Average	0.92
				Scenario Total:	3.451E-03			100

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
			B16	107B Forming Scrap Tunnel Exhaust	5.165E-04	EC	Average	43.30
			B39	107A Forming Scrap Tunnel Exhaust	5.165E-04	EC	Average	43.30
			C60	Binder Circ. Tank Exhaust	1.502E-04	EC	Average	12.59
			C75	CFM RTO - Oven	9.562E-06	EC	Average	0.80
				Scenario Total:	1.193E-03			100
318	ACETIC ACID	64-19-7	B16	107B Forming Scrap Tunnel Exhaust	9.657E-03	EC	Average	5.26
			B39	107A Forming Scrap Tunnel Exhaust	9.657E-03	EC	Average	5.26
			C100	CFM Forming Tunnel (South-West)	3.199E-02	EC	Average	17.42
			C101	CFM Forming Tunnel (South-East)	3.199E-02	EC	Average	17.42
			C60	Binder Circ. Tank Exhaust	3.207E-02	EC	Average	17.47
			C72	CFM Forming Tunnel (North-West)	3.199E-02	EC	Average	17.42
			C75	CFM RTO - Oven	4.241E-03	EC	Average	2.31
			C99	CFM Forming Tunnel (North - East)	3.199E-02	EC	Average	17.42
				Scenario Total:	1.836E-01			100
7917	Acid Solubilized Fatty Acid Amide (Prop1)							

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
7918	Acid Solubilized Fatty Acid Amide (Prop2)		C100	CFM Forming Tunnel (South- West)	5.694E-03	EC	Average	20.42
			C101	CFM Forming Tunnel (South- East)	5.694E-03	EC	Average	20.42
			C60	Binder Circ. Tank Exhaust	4.555E-03	EC	Average	16.34
			C72	CFM Forming Tunnel (North- West)	5.694E-03	EC	Average	20.42
			C75	CFM RTO - Oven	5.466E-04	EC	Average	1.96
			C99	CFM Forming Tunnel (North - East)	5.694E-03	EC	Average	20.42
				Scenario Total:	2.788E-02			100
426	AMMONIA	7664-41-7	C100	CFM Forming Tunnel (South- West)	2.531E-03	EC	Average	20.42
			C101	CFM Forming Tunnel (South- East)	2.531E-03	EC	Average	20.42
			C60	Binder Circ. Tank Exhaust	2.025E-03	EC	Average	16.34
			C72	CFM Forming Tunnel (North- West)	2.531E-03	EC	Average	20.42
			C75	CFM RTO - Oven	2.429E-04	EC	Average	1.96
			C99	CFM Forming Tunnel (North - East)	2.531E-03	EC	Average	20.42
				Scenario Total:	1.239E-02			100

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
7543	Benzenamine, N-[3-(trimethoxysilyl)propyl] -	3068-76-6	B16	107B Forming Scrap Tunnel Exhaust	1.706E-04	EC	Average	33.15
			B39	107A Forming Scrap Tunnel Exhaust	1.706E-04	EC	Average	33.15
			C60	Binder Circ. Tank Exhaust	5.146E-05	EC	Average	10.00
			C75	CFM RTO - Oven	1.220E-04	EC	Average	23.71
				Scenario Total:	5.146E-04			100
512	BENZOYL PEROXIDE	94-36-0	B16	107B Forming Scrap Tunnel Exhaust	3.023E-03	EC	Average	45.00
			B39	107A Forming Scrap Tunnel Exhaust	3.023E-03	EC	Average	45.00
			C60	Binder Circ. Tank Exhaust	6.717E-04	EC	Average	10.00
				Scenario Total:	6.717E-03			100
205	CHROMIUM (VI) COMPOUNDS	18540-29-9	C73	CFM Binder Cyclone	2.617E-03	EC	Average	58.75
			C75	CFM RTO - Oven	1.838E-03	EC	Average	41.25
				Scenario Total:	4.455E-03			100

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
368	Chromium Compounds (Di-,Tri-,metallic)	7440-47-3	B24	105 Furnace Stack (West)	1.169E-05	EC	Average	8.53
			B25	105 Furnace Stack (East)	1.946E-05	EC	Average	14.20
			B33	General Ventilation above T107 Furnace	6.457E-06	EC	Average	4.71
			B34	General Exhaust Above T107A F/H	4.686E-06	EC	Average	3.42
			B38	105 Forehearth Stack	8.982E-05	V-ST	Highest	65.55
			C79	General Exhaust West CFM F/H	2.460E-06	EC	Average	1.79
			C80	General Exhaust East CFM F/H	2.460E-06	EC	Average	1.79
				Scenario Total:	1.370E-04			100
			B24	105 Furnace Stack (West)	1.530E-05	EC	Average	19.29
			B25	105 Furnace Stack (East)	2.553E-05	EC	Average	32.18
3230	Diallyl Phthalate	131-17-9	B33	General Ventilation above T107 Furnace	3.664E-06	EC	Average	4.62
			B34	General Exhaust Above T107A F/H	1.994E-05	EC	Average	25.14
			B38	105 Forehearth Stack	9.199E-06	EC	Average	11.60
			C79	General Exhaust West CFM F/H	2.842E-06	EC	Average	3.58
			C80	General Exhaust East CFM F/H	2.842E-06	EC	Average	3.58
				Scenario Total:	7.932E-05			100
			C60	Binder Circ. Tank Exhaust	5.473E-04	EC	Average	11.48
			C75	CFM RTO - Oven	4.222E-03	EC	Average	88.52

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
Scenario Total:					4.770E-03			100
3554	Dibromoacetonitrile	3252-43-5						
			C100	CFM Forming Tunnel (South-West)	7.189E-06	EC	Average	0.50
			C101	CFM Forming Tunnel (South-East)	7.189E-06	EC	Average	0.50
			C60	Binder Circ. Tank Exhaust	1.117E-03	EC	Average	77.22
			C72	CFM Forming Tunnel (North-West)	7.189E-06	EC	Average	0.50
			C75	CFM RTO - Oven	3.007E-04	EC	Average	20.79
			C99	CFM Forming Tunnel (North - East)	7.189E-06	EC	Average	0.50
			Scenario Total:		1.446E-03			100
60	ETHYLENE GLYCOL	107-21-1						
			B16	107B Forming Scrap Tunnel Exhaust	5.153E-02	EC	Average	45.00
			B39	107A Forming Scrap Tunnel Exhaust	5.153E-02	EC	Average	45.00
			C60	Binder Circ. Tank Exhaust	1.145E-02	EC	Average	10.00
			Scenario Total:		1.145E-01			100
421	HYDROGEN CHLORIDE	7647-01-0						
			B24	105 Furnace Stack (West)	2.005E-03	EC	Average	50.00
			B25	105 Furnace Stack (East)	2.005E-03	EC	Average	50.00

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
Scenario Total:					4.009E-03			100
423	HYDROGEN FLUORIDE - GASEOUS-GROWING SEASON GS	7664-39-3						
			B24	105 Furnace Stack (West)	3.207E-03	EC	Average	50.00
			B25	105 Furnace Stack (East)	3.207E-03	EC	Average	50.00
			Scenario Total:		6.415E-03			100
330	ISO-PROPANOL	67-63-0						
			B16	107B Forming Scrap Tunnel Exhaust	5.153E-02	EC	Average	45.00
			B39	107A Forming Scrap Tunnel Exhaust	5.153E-02	EC	Average	45.00
			C60	Binder Circ. Tank Exhaust	1.145E-02	EC	Average	10.00
			Scenario Total:		1.145E-01			100
1978	Magnesium chloride	7786-30-3						
			B16	107B Forming Scrap Tunnel Exhaust	4.456E-04	EC	Average	33.15
			B39	107A Forming Scrap Tunnel Exhaust	4.456E-04	EC	Average	33.15
			C60	Binder Circ. Tank Exhaust	1.344E-04	EC	Average	10.00
			C75	CFM RTO - Oven	3.187E-04	EC	Average	23.71
			Scenario Total:		1.344E-03			100

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
1367	MAGNESIUM NITRATE	10377-60-3						
			B16	107B Forming Scrap Tunnel Exhaust	1.485E-03	EC	Average	33.15
			B39	107A Forming Scrap Tunnel Exhaust	1.485E-03	EC	Average	33.15
			C60	Binder Circ. Tank Exhaust	4.482E-04	EC	Average	10.00
			C75	CFM RTO - Oven	1.062E-03	EC	Average	23.71
				Scenario Total:	4.482E-03			100
329	METHANOL (METHYL ALCOHOL, WOOD ALCOHOL)	67-56-1						
			B16	107B Forming Scrap Tunnel Exhaust	1.101E-03	EC	Average	0.81
			B39	107A Forming Scrap Tunnel Exhaust	1.101E-03	EC	Average	0.81
			C100	CFM Forming Tunnel (South-West)	2.479E-02	EC	Average	18.22
			C101	CFM Forming Tunnel (South-East)	2.479E-02	EC	Average	18.22
			C60	Binder Circ. Tank Exhaust	2.971E-02	EC	Average	21.84
			C72	CFM Forming Tunnel (North-West)	2.479E-02	EC	Average	18.22
			C75	CFM RTO - Oven	4.981E-03	EC	Average	3.66
			C99	CFM Forming Tunnel (North - East)	2.479E-02	EC	Average	18.22
				Scenario Total:	1.361E-01			100

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
4	NITROGEN OXIDES (EXPRESSED AS NO2)	10102-44-0						
			A61	NG Generator #1 Exhaust	2.473E-02	EF	Above-Avg	2.13
			A62_1	Generac SG500 Natural Gas Generator Exhaust 1	7.554E-03	EF	Above-Avg	0.65
			A62_2	Generac SG500 Natural Gas Generator Exhaust 2	7.554E-03	EF	Above-Avg	0.65
			B24	105 Furnace Stack (West)	1.769E-01	EC	Marginal	15.27
			B25	105 Furnace Stack (East)	9.528E-02	EC	Marginal	8.22
			B38	105 Forehearth Stack	2.956E-01	EF	Above-Avg	25.51
			C114	DI Boilers	6.176E-03	EF	Above-Avg	0.53
			C115	DI Boilers	6.176E-03	EF	Above-Avg	0.53
			C119	Binder Heater	7.412E-03	EF	Above-Avg	0.64
			C75	CFM RTO - Oven	3.829E-01	EF	Above-Avg	33.05
			G13	NGF Tire Cord Line #1 RTO	1.482E-01	EF	Above-Avg	12.79
				Scenario Total:	1.159E+00			100
1	PM - PARTICULATE MATTER	N/A - M08						
			A06	Cooling Tower #1	2.180E-03	EF	Average	0.48
			A58	Cooling Tower #4	2.180E-03	EF	Average	0.48
			B16	107B Forming Scrap Tunnel Exhaust	2.313E-02	EF	Above-Avg	5.12
			B24	105 Furnace Stack (West)	2.063E-02	EC	Marginal	4.56
			B25	105 Furnace Stack (East)	2.063E-02	EC	Marginal	4.56
			B39	107A Forming Scrap Tunnel Exhaust	2.313E-02	EF	Above-Avg	5.12
			C100	CFM Forming Tunnel (South-	3.602E-02	EF	Above-Avg	7.97

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
				West)				
			C101	CFM Forming Tunnel (South-East)	3.602E-02	EF	Above-Avg	7.97
			C72	CFM Forming Tunnel (North-West)	3.602E-02	EF	Above-Avg	7.97
			C73	CFM Binder Cyclone	1.441E-01	EC	Average	31.87
			C75	CFM RTO - Oven	6.944E-02	EC	Marginal	15.36
			C99	CFM Forming Tunnel (North - East)	3.602E-02	EF	Above-Avg	7.97
			D64	Filter Box Louvre Exhaust	2.093E-03	EC	Average	0.46
			G61	D/C Exhaust - Soda Ash Silo (Bin 18)	4.340E-04	EC	Above-Avg	0.10
			G63	D/C Exhaust - Salt Cake Silo (Bin 20)	2.431E-05	EC	Above-Avg	0.01
			G90	D/C Exhaust - Bad Batch Bin	8.270E-05	EC	Above-Avg	0.02
				Scenario Total:	4.521E-01			100
1808	Polyethylene glycol	25322-68-3						
			C75	CFM RTO - Oven	1.804E-02	EC	Average	100.00
				Scenario Total:	1.804E-02			100
190	SILICA-RESPIRABLE (<10um DIAMETER), QUARTZ	14808-60-7						
			G90	D/C Exhaust - Bad Batch Bin	5.127E-05	EC	Above-Avg	100.00
				Scenario Total:	5.127E-05			100

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
2159	Sodium acetate	127-09-3						
			B16	107B Forming Scrap Tunnel Exhaust	5.422E-03	EC	Average	45.00
			B39	107A Forming Scrap Tunnel Exhaust	5.422E-03	EC	Average	45.00
			C60	Binder Circ. Tank Exhaust	1.205E-03	EC	Average	10.00
				Scenario Total:	1.205E-02			100
3556	Sodium Bromide	7647-15-6						
			C100	CFM Forming Tunnel (South-West)	3.595E-05	EC	Average	0.07
			C101	CFM Forming Tunnel (South-East)	3.595E-05	EC	Average	0.07
			C72	CFM Forming Tunnel (North-West)	3.595E-05	EC	Average	0.07
			C75	CFM RTO - Oven	5.011E-02	EC	Average	99.71
			C99	CFM Forming Tunnel (North - East)	3.595E-05	EC	Average	0.07
				Scenario Total:	5.026E-02			100
2393	Sulfuric acid disodium salt	7757-82-6						
			G63	D/C Exhaust - Salt Cake Silo (Bin 20)	2.431E-05	EC	Above-Avg	100.00
				Scenario Total:	2.431E-05			100

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
5	SULPHUR DIOXIDE	7446-09-5						
			B24	105 Furnace Stack (West)	3.073E-01	MB	Highest	50.00
			B25	105 Furnace Stack (East)	3.073E-01	MB	Highest	50.00
				Scenario Total:	6.147E-01			100
3383	Vinyltrimethoxysilane	2768-02-7						
			C60	Binder Circ. Tank Exhaust	3.417E-03	EC	Average	76.92
			C75	CFM RTO - Oven	1.025E-03	EC	Average	23.08
				Scenario Total:	4.442E-03			100

Site Name: Owen's Corning Composite Materials Canada LP

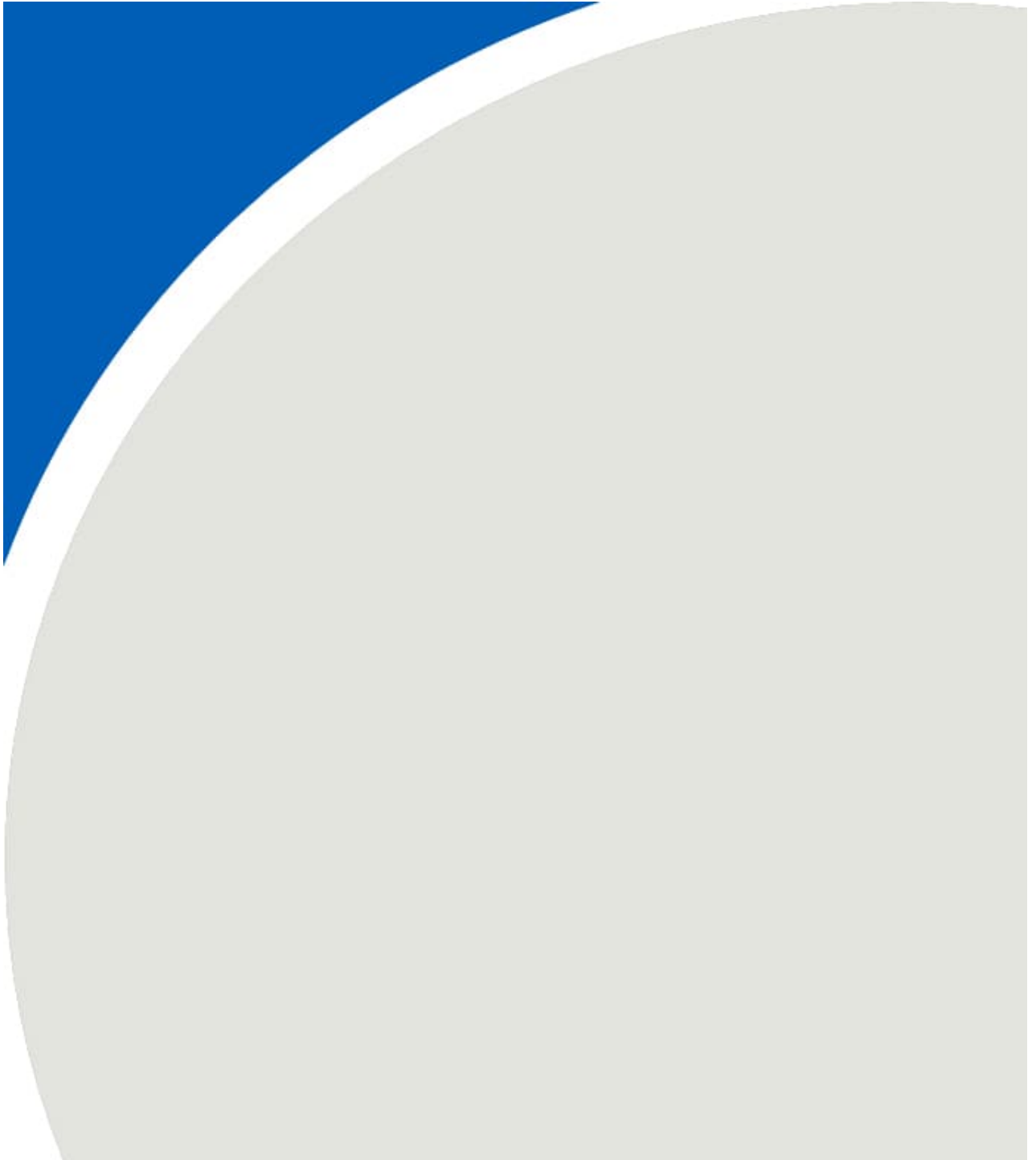
Site Location: Guelph, Ontario

Averaging Period: Annual

Source Summary Table B – Emission Inventory Table

Contam. ID	Contaminant Name	CAS#	Source ID	Source Description	Emission Rate (g/s)	Estimation Technique	Data Quality	% of Facility Emissions
205	CHROMIUM (VI) COMPOUNDS	18540-29-9						
			B24	105 Furnace Stack (West)	1.169E-05	V-ST	Highest	8.53
			B25	105 Furnace Stack (East)	1.946E-05	V-ST	Highest	14.20
			B33	General Ventilation above T107 Furnace	6.457E-06	V-ST	Highest	4.71
			B34	General Exhaust Above T107A F/H	4.686E-06	V-ST	Highest	3.42
			B38	105 Forehearth Stack	8.982E-05	V-ST	Highest	65.55
			C79	General Exhaust West CFM F/H	2.460E-06	V-ST	Highest	1.79
			C80	General Exhaust East CFM F/H	2.460E-06	V-ST	Highest	1.79
				Scenario Total:	1.370E-04			100
5	SULPHUR DIOXIDE	7446-09-5						
			B24	105 Furnace Stack (West)	3.073E-01	MB	Highest	50.00
			B25	105 Furnace Stack (East)	3.073E-01	MB	Highest	50.00
				Scenario Total:	6.147E-01			100

APPENDIX B – FACILITY 16





Ministry of the Environment, Conservation and Parks
Operations Division

Confirmation of Registration

Registration Number: R-010-9111485186

Version Number: 002

Update Date: Oct 02, 2020 13:32:30 PM

Dear Sir/Madam,

139 MORRIS STREET LIMITED

178 ST. GEORGE Street
TORONTO ON M5R 2M7

You have registered, in accordance with Section 20.21(1) (a) of the *Environmental Protection Act*, the use, operation, construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing that is located at the facility noted below, or the alteration of a process or rate of production at the facility, including the activities set out in schedule 'A'.

250 York Road GUELPH ON N1E 5M6

Please note that the facility noted above is subject to the applicable provisions of O. Reg. 245/11, and O. Reg.1/17.

The activity related information provided during the registration process is included as part of the confirmation of registration as schedule 'A'.

Dated on Oct 02, 2020

Director

Environmental Approvals Access and Service Integration Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5

Any questions related to this registration and the Environmental Activity and the Sector Registry should be directed to:

Ministry of the Environment, Conservation and Parks

Customer Service Representative

Environmental Approvals Access and Service Integration Branch

Phone:(416) 314-8001

Toll free: 1-800-461-6290

Schedule 'A'

Part 3 - Activity Information

3.1 Industry Eligibility Check

a. Please select the facility's primary North American Industry Classification System (NAICS) code.	531111
b. Does the facility have any other applicable NAICS codes?	☐ Yes ☒ No
b. i. If yes, please select the facility's secondary NAICS code(s), and confirm any other applicable NAICS code(s).	
c. Are you engaged in an activity at the facility that may discharge or from which may be discharged a contaminant into any part of the natural environment other than water?	☒ Yes ☐ No
d. Is the activity exempt from requiring an Environmental Compliance Approval (ECA) under section 9 (1) of the Environmental Protection Act (EPA) other than an activity that has been prescribed by an EASR regulation under Part II.2 of the Act?	☐ Yes ☒ No
e. Are the only activities engaged in at the facility, other than activities described in question 3.1d above, prescribed under a single other EASR regulation?	☐ Yes ☒ No
f. Is an alternative low-carbon fuel site within the meaning of Ontario Regulation (O. Reg.) 79/15 (Alternative Low-Carbon Fuels) operated at the facility?	☐ Yes ☒ No
g. Is the activity a renewable energy project as defined in the EPA?	☐ Yes ☒ No
h. Is an end-of-life vehicle waste disposal site within the meaning of O. Reg. 85/16 operated at the facility?	☐ Yes ☒ No

3.2 Facility Related Information

a. Has a site-specific air standard ever been set for a contaminant discharged from the facility? (section 35 of O. Reg. 419/05 (Air Pollution -- Local Air Quality))	☐ Yes ☒ No
b. Has a person ever been registered in the Ministry's Technical Standards Registry – Air Pollution under section 39 of O. Reg. 419/05 (Air Pollution – Local Air Quality) in respect of the facility?	☐ Yes ☒ No
c. Do all of the activities to be registered occur exclusively at the site? <i>Please Note: Discrete activities that involve the use of equipment that is intended to be moved from one site to another to perform the same function (such as the use of mobile rock crushing equipment or mobile PCB destruction equipment) are not prescribed for the purpose of the Environmental Activity and Sector Registry, and an Environmental Compliance Approval may be required.</i>	☒ Yes ☐ No
d. Is the facility located on a property that has been deemed a single property under subsection 4 (2) of O. Reg. 419/05?	☐ Yes ☒ No
e. Is the facility located in an area of development control within the Niagara Escarpment Planning Area?	☐ Yes ☒ No
e. i. If yes, has a development permit required under section 24 of the Niagara Escarpment Planning and Development Act (NEPDA) in respect of the facility been issued?	☐ Yes ☐ No
f. Is there a landfilling site that is no longer permitted to accept waste for disposal located on the site on which the facility is located?	☐ Yes ☒ No
g. Is the activity part of an undertaking to which the Environmental Assessment Act applies?	☐ Yes ☒ No
g. i. If yes, is one or more of the following conditions met: - All class EA requirements have been completed, including decisions on any Part II order requests; OR - The facility has received approval to proceed with the undertaking.	☐ Yes ☐ No

h. Please provide a description of the facility. The description should include a summary of operations and activities at the facility that discharge contaminants, as well as what is produced, if applicable.

The Facility is planned to be a three story apartment building with a partial basement. A sub surface vapour mitigation system is to be installed beneath the building to prevent passive off gassing of contaminants from the ground seeping into the building. The vapour mitigation system includes a fan for active gas extraction, which is vented through a rooftop stack. The Facility is located at 250 York Road in Guelph, Ontario in an area zoned residential. The land use immediately surrounding the Facility is also zoned business use, parking and residential.

The operating company has a NAICS code of 531111, "Lessors of residential buildings and dwellings (except social housing projects)"

i. Please enter the date on which the facility commenced or will commence operations.

2020-10-02

j. Is the facility located in a multi-tenant building?

☐ Yes

☒ No

3.3 Activity Related Information

a. Does the land disposal of waste as defined in Regulation 347 General – Waste Management occur at the facility?

☐ Yes

☒ No

b. Does the facility process or dispose of waste by way of thermal treatment, other than the thermal treatment of wood fuel that meets the specifications in Chapter 5 of the EASR publication in a wood-fired combustor?

☐ Yes

☒ No

c. Does the facility use a wood-fired combustor?

☐ Yes

☒ No

c. i. If yes, does the wood-fired combustor have a nominal load heat input capacity of less than 3 megawatts?

☐ Yes

☐ No

c. ii. If yes, was the wood-fired combustor installed at the facility on or after January 31, 2017?

☐ Yes

☐ No

c. iii. If yes, does the wood-fired combustor exclusively use one or more of the following as fuel:

- Wood chips that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood briquettes that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood pellets that meet the specifications set out in Chapter 5 of the EASR publication.

☐ Yes

☐ No

d. Does the facility have any plating processes that use cadmium, cyanide, chromium or nickel, including chrome plating, electroplating or electroless plating?

☐ Yes

☒ No

e. Is an electrolytic stripping process that removes cadmium, chromium or nickel from an object used at the facility?

☐ Yes

☒ No

f. Are metals processed outdoors at the facility, including torching, shearing, shredding or plasma cutting, other than for the purpose of routine maintenance carried out at the facility on any plant, structure, equipment, apparatus or thing?

☐ Yes

☒ No

g. Is a fossil-fuel electric power generation facility with a maximum electrical power output capacity equal to or greater than 25 megawatts operated at the facility?

☐ Yes

☒ No

h. Is a combustion source that uses biogas, biomass, coal, petroleum coke or waste as a fuel, or that uses a fuel derived from biogas, biomass, coal, petroleum coke or waste other than a small wood-fired combustor operated at the facility?

☐ Yes

☒ No

i. Is a combustion turbine used at the facility?

☐ Yes

☒ No

Part 4 - Operational Information

4.1 Air

a. Does the EASR Emission Summary and Dispersion Modelling (ESDM) Report provide for modifications that have not yet been implemented at the facility? ☐ Yes ☒ No

a. i. If yes, please provide the date on which the modifications will be completed.

b. Has an instrument under O. Reg. 419/05 been issued in respect of the facility? ☐ Yes ☒ No

b. i. If yes, what type(s) of instruments (including any notices, orders or approvals) has (have) been issued? (select all that apply)

ss. 7(1) Specified Dispersion Models ☐

ss. 8(2) Negligible Sources ☐

ss. 10(2) Operating Conditions ☐

ss. 11(2) Refined Emission Rates ☐

ss. 13.1 Value of Dispersion Modelling Parameters ☐

ss. 13(1) Meteorological Data ☐

ss. 14(6) Area of Modelling Coverage ☐

ss. 20(5) Speed-up Order ☐

Other ☐

List all that have been issued

c. To what standard did the licensed engineering practitioner assess compliance of the facility's emissions (please select the applicable box(es)):

Section 19 of O. Reg. 419/05 (Schedule 2) ☒

Section 20 of O. Reg. 419/05 (Schedule 3) ☒

N/A – The amount of any contaminant discharged from the site is negligible ☐

N/A – Source(s) discharge only sound as a contaminant ☐

N/A – Source(s) discharge sound as a contaminant and the amount of any other contaminant discharged is negligible ☐

d. Please select all applicable boxes that apply to a discharge of a contaminant(s) to air from the facility:

Contaminant(s) belonging to Benchmark 1 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant ☒

Contaminant(s) belonging to Benchmark 1 category of ACB list is above the concentration for a specified averaging period set out for the contaminant ☐

By exceeding a Benchmark 1 contaminant limit(s), you must also notify your local District Office and take appropriate action in accordance with Reg. 419/05. Please see <https://www.ontario.ca/page/rules-air-quality-and-pollution#section-4> for more details under "Notification of Exceedances".

Contaminant(s) belonging to Benchmark 2 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant ☒

Contaminant(s) belonging to Benchmark 2 category of ACB list is above the concentration for a specified averaging period set out for the contaminant	☐
The concentration of the contaminant(s) does not have a Ministry standard, guideline, or screening level set out for the contaminant	☐
N/A – The amount of any contaminant discharged from the site is negligible	☐
N/A – Source(s) discharge only sound as a contaminant	☐
N/A – Source(s) discharge sound as a contaminant and the amount of any other contaminant discharged is negligible	☐

e. Does the facility operate a generator for non-emergency purposes? ☐ Yes ☒ No

f. Does the facility use or operate a large boiler or heater greater than 10.5 gigajoules per hour? ☐ Yes ☒ No

g. Will an Emissions Summary Table be uploaded? ☒ Yes ☐ No
Please Note: An Emissions Summary Table is required to be uploaded at the time of registration. An Emissions Summary Table is also required to be uploaded if any modifications to the facility require an update to the EASR ESDM. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Emissions Summary Table is required to be uploaded.

h. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the EASR ESDM Report and made statements in the EASR ESDM Report Supplement and the date signed.

First Name	Last Name	Licence Number(s)	Date Signed
Gordon	Reusing	90330911	2019-07-18

4.2 Fugitive Dust Control

a. Does the EASR ESDM Report prepared for the facility identify a source of fugitive dust? ☐ Yes ☒ No

a. i. If yes, has a licensed engineering practitioner signed and sealed a Best Management Practice Plan (BMPP) for fugitive dust control? ☐ Yes ☐ No

b. Has a BMPP for fugitive dust control been prepared as a result of a written notice from the Director issued under O. Reg. 1/17? ☐ Yes ☒ No

c. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for fugitive dust control and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

4.3 Noise

a. Please select the noise assessment method that was completed for the facility:

The facility meets the 1000m setback distance ☐

Primary Noise Screening Method ☐

Secondary Noise Screening Method ☒

Acoustic Assessment Report ☐

a. i. If the Primary Noise Screening Method was used, is the actual separation distance from the facility to the closest Point of Noise Reception equal to or greater than the minimum separation distance as determined by the Primary Noise Screening Method? ☐ Yes ☐ No

a. ii. If the Secondary Noise Screening Method was used, is the combined sound level from the facility at each affected Point of Noise Reception as determined by the Secondary Noise Screening Method less than or equal to the applicable sound level limit set out in Chapter 3 of the EASR publication? ☒ Yes ☐ No

a. iii. If an acoustic assessment was completed, did the acoustic assessment determine that the combined sound level from the facility at each affected Point of Noise Reception less than or equal to of the applicable sound level limit set out in Chapter 3 of the EASR publication? ☐ Yes ☐ No

a. iii. a) If no, has a Noise Abatement Action Plan been developed for the facility? ☐ Yes ☐ No

a. iii. b) If yes, please provide the title of the Noise Abatement Action Plan and the date it was prepared.

Name of NAAP	Date Prepared

b. Has an Acoustic Audit Report been prepared as a result of a written notice from the Director? ☐ Yes ☒ No

b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the acoustic audit report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Will an Acoustic Assessment Summary Table be uploaded? ☐ Yes ☒ No

Please Note: An Acoustic Assessment Summary Table is required to be uploaded at the time of registration if an Acoustic Assessment was completed for the facility. An Acoustic Assessment Summary Table is also required to be uploaded if any modifications to the facility require an update to the facility's noise report. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Acoustic Assessment Summary Table is required to be uploaded.

d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the noise report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed
Michael	Masschaele	100508855	2019-07-18

4.4 Odour

a. Did the Odour Screening Report indicate that a circumstance which requires a BMPP for odour to be prepared exists at the facility? ☐ Yes ☒ No

b. Did the Odour Screening Report indicate that a circumstance which requires an Odour Control Report (OCR) to be prepared exists at the facility? ☐ Yes ☐ No

b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the Odour Control Report and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Has a BMPP for odour been prepared as a result of a written notice from the Director issued under O. Reg. 1/17? ☐ Yes ☒ No

d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for odour and the date signed and sealed.

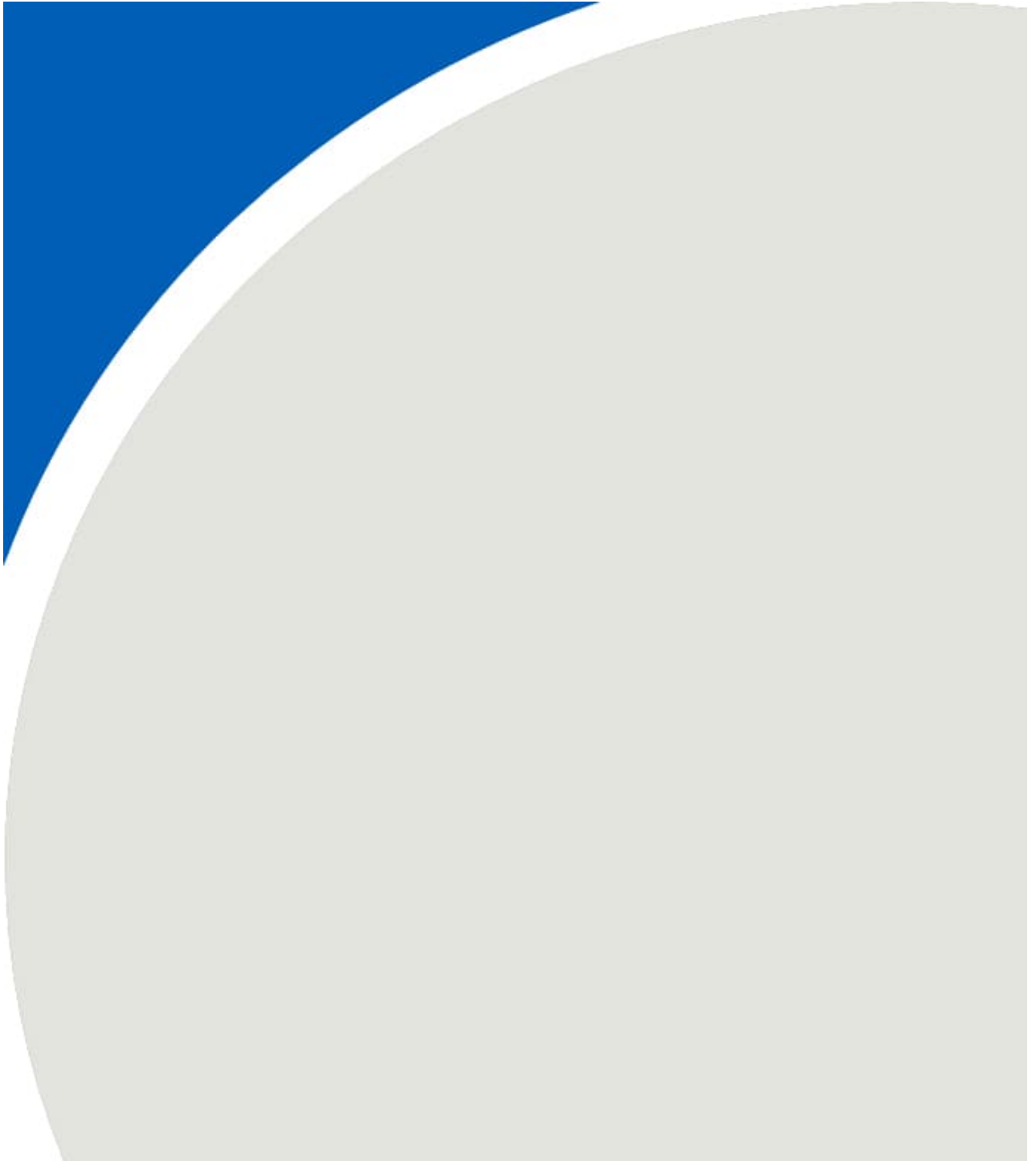
First Name	Last Name	Licence Number(s)	Date Signed

Emission Summary Table

Emission Summary Table - Maximum Emissions Scenario 139 Morris Street Limited Partnership Guelph, Ontario

Contaminant	CAS Number	Total Facility Emission Rate	Maximum POI Concentration	Air Dispersion Model Used	Averaging Period	MECP POI Limit	Limiting Effect	Regulation Schedule	Percentage of MECP POI Limit
		(g/s)	(µg/m³)			(µg/m³)			
1,3-Butadiene	106-99-0	2.60E-07	1.54E-04	AERMOD	annual	2	Health	B1, Standard	0.0%
Benzene	71-43-2	5.00E-06	2.97E-03	AERMOD	annual	0.45	Health	B1, Standard	0.7%

APPENDIX B – FACILITY 17





Ministry of the Environment, Conservation and Parks
Operations Division

Confirmation of Registration

Registration Number: R-010-6114153031

Version Number: 001

Date Registration Filed: May 06, 2022 13:58:34 PM

Dear Sir/Madam,

LOST AVIATOR COFFEE COMPANY INC.

20 Mac Avenue (av)
Guelph ON N1H 1M9

You have registered, in accordance with Section 20.21(1) (a) of the *Environmental Protection Act*, the use, operation, construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing that is located at the facility noted below, or the alteration of a process or rate of production at the facility, including the activities set out in schedule 'A'.

404 York Road Guelph ON N1E 3H4

Please note that the facility noted above is subject to the applicable provisions of O. Reg. 245/11, and O. Reg. 1/17.

The activity related information provided during the registration process is included as part of the confirmation of registration as schedule 'A'.

Dated on May 06, 2022

Director

Environmental Approvals Access and Service Integration Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5

Any questions related to this registration and the Environmental Activity and the Sector Registry should be directed to:

Ministry of the Environment, Conservation and Parks

Customer Service Representative

Environmental Approvals Access and Service Integration Branch

Phone: (416) 314-8001

Toll free: 1-800-461-6290

Schedule 'A'

Part 3 - Activity Information

3.1 Industry Eligibility Check

a. Please select the facility's primary North American Industry Classification System (NAICS) code.	311920
b. Does the facility have any other applicable NAICS codes?	☐ Yes ☒ No
b. i. If yes, please select the facility's secondary NAICS code(s), and confirm any other applicable NAICS code(s).	
c. Are you engaged in an activity at the facility that may discharge or from which may be discharged a contaminant into any part of the natural environment other than water?	☒ Yes ☐ No
d. Is the activity exempt from requiring an Environmental Compliance Approval (ECA) under section 9 (1) of the Environmental Protection Act (EPA) other than an activity that has been prescribed by an EASR regulation under Part II.2 of the Act?	☐ Yes ☒ No
e. Are the only activities engaged in at the facility, other than activities described in question 3.1d above, prescribed under a single other EASR regulation?	☐ Yes ☒ No
f. Is an alternative low-carbon fuel site within the meaning of Ontario Regulation (O. Reg.) 79/15 (Alternative Low-Carbon Fuels) operated at the facility?	☐ Yes ☒ No
g. Is the activity a renewable energy project as defined in the EPA that does not meet the small wood-fired combustor criteria set out in O. Reg. 1/17?	☐ Yes ☒ No
h. Is an end-of-life vehicle waste disposal site within the meaning of O. Reg. 85/16 operated at the facility?	☐ Yes ☒ No

3.2 Facility Related Information

a. Has a site-specific air standard ever been set for a contaminant discharged from the facility? (section 35 of O. Reg. 419/05 (Air Pollution -- Local Air Quality))	☐ Yes ☒ No
b. Has a person ever been registered in the Ministry's Technical Standards Registry – Air Pollution under section 39 of O. Reg. 419/05 (Air Pollution – Local Air Quality) in respect of the facility?	☐ Yes ☒ No
c. Do all of the activities to be registered occur exclusively at the site? <i>Please Note: Discrete activities that involve the use of equipment that is intended to be moved from one site to another to perform the same function (such as the use of mobile rock crushing equipment or mobile PCB destruction equipment) are not prescribed for the purpose of the Environmental Activity and Sector Registry, and an Environmental Compliance Approval may be required.</i>	☒ Yes ☐ No
d. Is the facility located on a property that has been deemed a single property under subsection 4 (2) of O. Reg. 419/05?	☐ Yes ☒ No
e. Is the facility located in an area of development control within the Niagara Escarpment Planning Area?	☐ Yes ☒ No
e. i. If yes, has a development permit required under section 24 of the Niagara Escarpment Planning and Development Act (NEPDA) in respect of the facility been issued?	☐ Yes ☐ No
f. Is there a landfilling site that is no longer permitted to accept waste for disposal located on the site on which the facility is located?	☐ Yes ☒ No
g. Is the activity part of an undertaking to which the Environmental Assessment Act applies?	☐ Yes ☒ No
g. i. If yes, is one or more of the following conditions met: - All class EA requirements have been completed, including decisions on any Part II order requests; OR - The facility has received approval to proceed with the undertaking.	☐ Yes ☐ No
h. Please provide a description of the facility. The description should include a summary of operations and activities at the facility that discharge contaminants, as well as what is produced, if applicable.	

We are operating a small scale coffee roasting operation. Emissions include coffee roasting emissions and noise. Which have been reduced due to a smoke removal system and a sound suppressor.

i. Please enter the date on which the facility commenced or will commence operations.

2022-02-04

j. Is the facility located in a multi-tenant building?

☒ Yes ☐ No

3.3 Activity Related Information

a. Does the land disposal of waste as defined in Regulation 347 General – Waste Management occur at the facility?

☐ Yes ☒ No

b. Does the facility process or dispose of waste by way of thermal treatment, other than the thermal treatment of wood fuel that meets the specifications in Chapter 5 of the EASR publication in a wood-fired combustor?

☐ Yes ☒ No

c. Does the facility use a small wood-fired combustor that meets the design criteria set out in Chapter 5 of the EASR Publication?

☐ Yes ☒ No

c. i. If yes, does the small wood-fired combustor have a nominal load heat input capacity reported on a higher heating value basis of less than 3 megawatts?

☐ Yes ☐ No

c. ii. If yes, was the small wood-fired combustor installed on or after January 31, 2017?

☐ Yes ☐ No

c. iii. If yes, does the small wood-fired combustor exclusively use one or more of the following as fuel:

- Wood chips that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood briquettes that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood pellets that meet the specifications set out in Chapter 5 of the EASR publication.

☐ Yes ☐ No

d. Does the facility have any plating processes that use cadmium, cyanide, chromium or nickel, including chrome plating, electroplating or electroless plating?

☐ Yes ☒ No

e. Is an electrolytic stripping process that removes cadmium, chromium or nickel from an object used at the facility?

☐ Yes ☒ No

f. Are metals processed outdoors at the facility, including torching, shearing, shredding or plasma cutting, other than for the purpose of routine maintenance carried out at the facility on any plant, structure, equipment, apparatus or thing?

☐ Yes ☒ No

g. Is a fossil-fuel electric power generation facility with a maximum electrical power output capacity equal to or greater than 25 megawatts operated at the facility?

☐ Yes ☒ No

h. Is a combustion source that uses biogas, biomass, coal, petroleum coke or waste as a fuel, or that uses a fuel derived from biogas, biomass, coal, petroleum coke or waste other than a small wood-fired combustor or a combustion turbine operated at the facility?

☐ Yes ☒ No

i. Is a combustion turbine used at the facility?

☐ Yes ☒ No

i. i. Is the fuel burned in the combustion turbine natural gas or other gaseous fuel that meets the following criteria:

- It is at least 90 per cent methane by volume.
- It has an energy content of at least 35 megajoules per cubic metre.
- It has a total sulphur content of less than 120 milligrams per cubic metre.

☐ Yes ☐ No

i. ii. Does the combustion turbine have, or if there is more than one combustion turbine at the facility do all of them have when taken together, a maximum combined electrical and mechanical power output capacity of less than 25 megawatts?

☐ Yes ☐ No

i. iii. Does the combustion turbine have an auxiliary burner?

☐ Yes ☐ No

i. iv. If yes, is the auxiliary burner only fueled by natural gas or other gaseous fuel that meets the following criteria:

- It is at least 90 per cent methane by volume.
- It has an energy content of at least 35 megajoules per cubic metre.
- It has a total sulphur content of less than 120 milligrams per cubic metre.

☐ Yes ☐ No

i. v. If yes, is the maximum fuel input capacity of the auxiliary burner less than the maximum fuel input capacity of the combustion turbine?

☐ Yes ☐ No

Part 4 - Operational Information

4.1 Air

a. Does the EASR Emission Summary and Dispersion Modelling (ESDM) Report provide for modifications that have not yet been implemented at the facility?	☐ Yes	☒ No
a. i. If yes, please provide the date on which the modifications will be completed.		
b. Has an instrument under O. Reg. 419/05 been issued in respect of the facility?	☐ Yes	☒ No
b. i. If yes, what type(s) of instruments (including any notices, orders or approvals) has (have) been issued? (select all that apply)		
ss. 7(1) Specified Dispersion Models	☐	
ss. 8(2) Negligible Sources	☐	
ss. 10(2) Operating Conditions	☐	
ss. 11(2) Refined Emission Rates	☐	
ss. 13.1 Value of Dispersion Modelling Parameters	☐	
ss. 13(1) Meteorological Data	☐	
ss. 14(6) Area of Modelling Coverage	☐	
ss. 20(5) Speed-up Order	☐	
Other	☐	
List all that have been issued		
c. To what standard did the licensed engineering practitioner assess compliance of the facility's emissions (please select the applicable box(es)):		
Section 19 of O. Reg. 419/05 (Schedule 2)	☐	
Section 20 of O. Reg. 419/05 (Schedule 3)	☐	
N/A – The amount of any contaminant discharged from the site is negligible	☒	
N/A – Source(s) discharge only sound as a contaminant	☐	
N/A – Source(s) discharge sound as a contaminant and the amount of any other contaminant discharged is negligible	☐	
d. Please select all applicable boxes that apply to a discharge of a contaminant(s) to air from the facility:		
Contaminant(s) belonging to Benchmark 1 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant	☐	
Contaminant(s) belonging to Benchmark 1 category of ACB list is above the concentration for a specified averaging period set out for the contaminant	☐	
By exceeding a Benchmark 1 contaminant limit(s), you must also notify your local District Office and take appropriate action in accordance with Reg. 419/05. Please see https://www.ontario.ca/page/rules-air-quality-and-pollution#section-4 for more details under "Notification of Exceedances".		
Contaminant(s) belonging to Benchmark 2 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant	☐	

Contaminant(s) belonging to Benchmark 2 category of ACB list is above the concentration for a specified averaging period set out for the contaminant	☐		
The concentration of the contaminant(s) does not have a Ministry standard, guideline, or screening level set out for the contaminant	☐		
N/A – The amount of any contaminant discharged from the site is negligible	☒		
N/A – Source(s) discharge only sound as a contaminant	☐		
N/A – Source(s) discharge sound as a contaminant and the amount of any other contaminant discharged is negligible	☐		
e. Does the facility operate a generator for non-emergency purposes?	☐ Yes	☒ No	
f. Does the facility use or operate a large boiler or heater greater than 10.5 gigajoules per hour?	☐ Yes	☒ No	
g. Will an Emissions Summary Table be uploaded? <i>Please Note: An Emissions Summary Table is required to be uploaded at the time of registration. An Emissions Summary Table is also required to be uploaded if any modifications to the facility require an update to the EASR ESDM. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Emissions Summary Table is required to be uploaded.</i>	☐ Yes	☒ No	
h. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the EASR ESDM Report and made statements in the EASR ESDM Report Supplement and the date signed.			
First Name	Last Name	Licence Number(s)	Date Signed
Gayle	Giesbrecht	100035427	2022-04-29

4.2 Fugitive Dust Control

a. Does the EASR ESDM Report prepared for the facility identify a source of fugitive dust?	☐ Yes	☒ No	
a. i. If yes, has a licensed engineering practitioner signed and sealed a Best Management Practice Plan (BMPP) for fugitive dust control?	☐ Yes	☐ No	
b. Has a BMPP for fugitive dust control been prepared as a result of a written notice from the Director issued under O. Reg. 1/17?	☐ Yes	☒ No	
c. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for fugitive dust control and the date signed and sealed.			
First Name	Last Name	Licence Number(s)	Date Signed

4.3 Noise

a. Please select the noise assessment method that was completed for the facility:		
The facility meets the 1000m setback distance	☐	
Primary Noise Screening Method	☐	
Secondary Noise Screening Method	☐	
Acoustic Assessment Report	☒	
a. i. If the Primary Noise Screening Method was used, is the actual separation distance from the facility to the closest Point of Noise Reception equal to or greater than the minimum separation distance as determined by the Primary Noise Screening Method?	☐ Yes	☐ No
a. ii. If the Secondary Noise Screening Method was used, is the combined sound level from the facility at each affected Point of Noise Reception as determined by the Secondary Noise Screening Method less than or equal to the applicable sound level limit set out in Chapter 3 of the EASR publication?	☐ Yes	☐ No

a. iii. If an acoustic assessment was completed, did the acoustic assessment determine that the combined sound level from the facility at each affected Point of Noise Reception less than or equal to of the applicable sound level limit set out in Chapter 3 of the EASR publication?	☒ Yes	☐ No
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a. iii. a) If no, has a Noise Abatement Action Plan been developed for the facility?	☐ Yes	☐ No
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a. iii. b) If yes, please provide the title of the Noise Abatement Action Plan and the date it was prepared.

Name of NAAP	Date Prepared
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b. Has an Acoustic Audit Report been prepared as a result of a written notice from the Director?	☐ Yes	☒ No
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b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the acoustic audit report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Will an Acoustic Assessment Summary Table be uploaded?
Please Note: An Acoustic Assessment Summary Table is required to be uploaded at the time of registration if an Acoustic Assessment was completed for the facility. An Acoustic Assessment Summary Table is also required to be uploaded if any modifications to the facility require an update to the facility's noise report. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Acoustic Assessment Summary Table is required to be uploaded.

	☒ Yes	☐ No
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d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the noise report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed
Stephen	Kuchma	100014750	2022-05-04

4.4 Odour

a. Did the Odour Screening Report indicate that a circumstance which requires a BMPP for odour to be prepared exists at the facility?	☒ Yes	☐ No
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b. Did the Odour Screening Report indicate that a circumstance which requires an Odour Control Report (OCR) to be prepared exists at the facility?	☐ Yes	☒ No
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b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the Odour Control Report and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Has a BMPP for odour been prepared as a result of a written notice from the Director issued under O. Reg. 1/17?

	☐ Yes	☒ No
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d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for odour and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed
Kuchma	Stephen	100014750	2022-05-05

Table 1A: Emission Summary Table - AERMOD

Contaminant Name	CAS #	Total Facility Emission Rate (g/s)	Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Source	Category	% of POI Limit (%)
No Significant Sources of Air Emissions										

Table 1B: Emission Summary Table - ASHRAE (Roaster Stack to York Rd Door)

Contaminant Name	CAS #	Emission Rate (g/s)	Dispersion Model Used	Maximum POI Concentration ² ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Source	Category	% of POI Limit (%)
Particulate Matter	-	5.78E-04	ASHRAE 2019	9.65	24	120	Visibility	Standard	B1	8.04%
Total VOCs (as Methane) ¹	74-82-8	7.22E-04		12.06	24	37330	Health	SL-PA	B2	0.03%
Carbon Dioxide	124-38-9	1.51E-01		2524.32	24	255800	Health	SL-PA	B2	0.99%

Notes:

¹ Compared against the POI Limit for Methane since USEPA Total VOC emission factor documented 'as methane'.

² ASHRAE Calculations were completed for a 1 g/s emission rate, resulting in the following dispersion factors:

1 hr averaging periods: 40656.79 $\mu\text{g}/\text{m}^3$ per 1 g/s

24 hr averaging period: 16698.36 $\mu\text{g}/\text{m}^3$ per 1 g/s

Table 1C: Emission Summary Table - ASHRAE (Roaster Stack to Tenant Window)

Verification that it's not the worst-case

Contaminant Name	CAS #	Emission Rate (g/s)	Dispersion Model Used	Maximum POI Concentration ² ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Source	Category	% of POI Limit (%)
Particulate Matter	-	5.78E-04	ASHRAE 2019	1.11	24	120	Visibility	Standard	B1	0.92%
Total VOCs (as Methane) ¹	74-82-8	7.22E-04		1.39	24	37330	Health	SL-PA	B2	0.004%
Carbon Dioxide	124-38-9	1.51E-01		290.36	24	255800	Health	SL-PA	B2	0.11%

Notes:

¹ Compared against the POI Limit for Methane since USEPA Total VOC emission factor documented 'as methane'.

² ASHRAE Calculations were completed for a 1 g/s emission rate, resulting in the following dispersion factors:

1 hr averaging periods: 4676.54 $\mu\text{g}/\text{m}^3$ per 1 g/s

24 hr averaging period: 1920.73 $\mu\text{g}/\text{m}^3$ per 1 g/s

Table 4: Acoustic Assessment Summary Table (Stationary Noise Sources)

Point of Reception	Description of Reception Point	Time of Day	Facility Leq (dBA)	Sound Level Limit (dBA)	Compliance with Performance Limit	Acoustical Classification of Area	Verified by Acoustic Audit
POR1a	Residence Yard (@ 1.5 m)	Day	32	50	Yes	Class 1	No
		Evening	32	50	Yes	Class 1	No
POR1b	Residence Window (@ 4.5 m)	Day	42	50	Yes	Class 1	No
		Evening	42	50	Yes	Class 1	No
		Night	42	45	Yes	Class 1	No
POR2a	Residence Yard (@ 1.5 m)	Day	37	50	Yes	Class 1	No
		Evening	37	50	Yes	Class 1	No
POR2b	Residence Window (@ 7.5 m)	Day	36	50	Yes	Class 1	No
		Evening	36	50	Yes	Class 1	No
		Night	36	45	Yes	Class 1	No
POR3a	Residence Yard (@ 1.5 m)	Day	40	50	Yes	Class 1	No
		Evening	40	50	Yes	Class 1	No
POR3b	Residence Window (@ 1.5 m)	Day	37	50	Yes	Class 1	No
		Evening	37	50	Yes	Class 1	No
		Night	37	45	Yes	Class 1	No
POR4a	Residence Yard (@ 1.5 m)	Day	37	50	Yes	Class 1	No
		Evening	37	50	Yes	Class 1	No
POR4b	Residence Window (@ 4.5 m)	Day	36	50	Yes	Class 1	No
		Evening	36	50	Yes	Class 1	No
		Night	36	45	Yes	Class 1	No

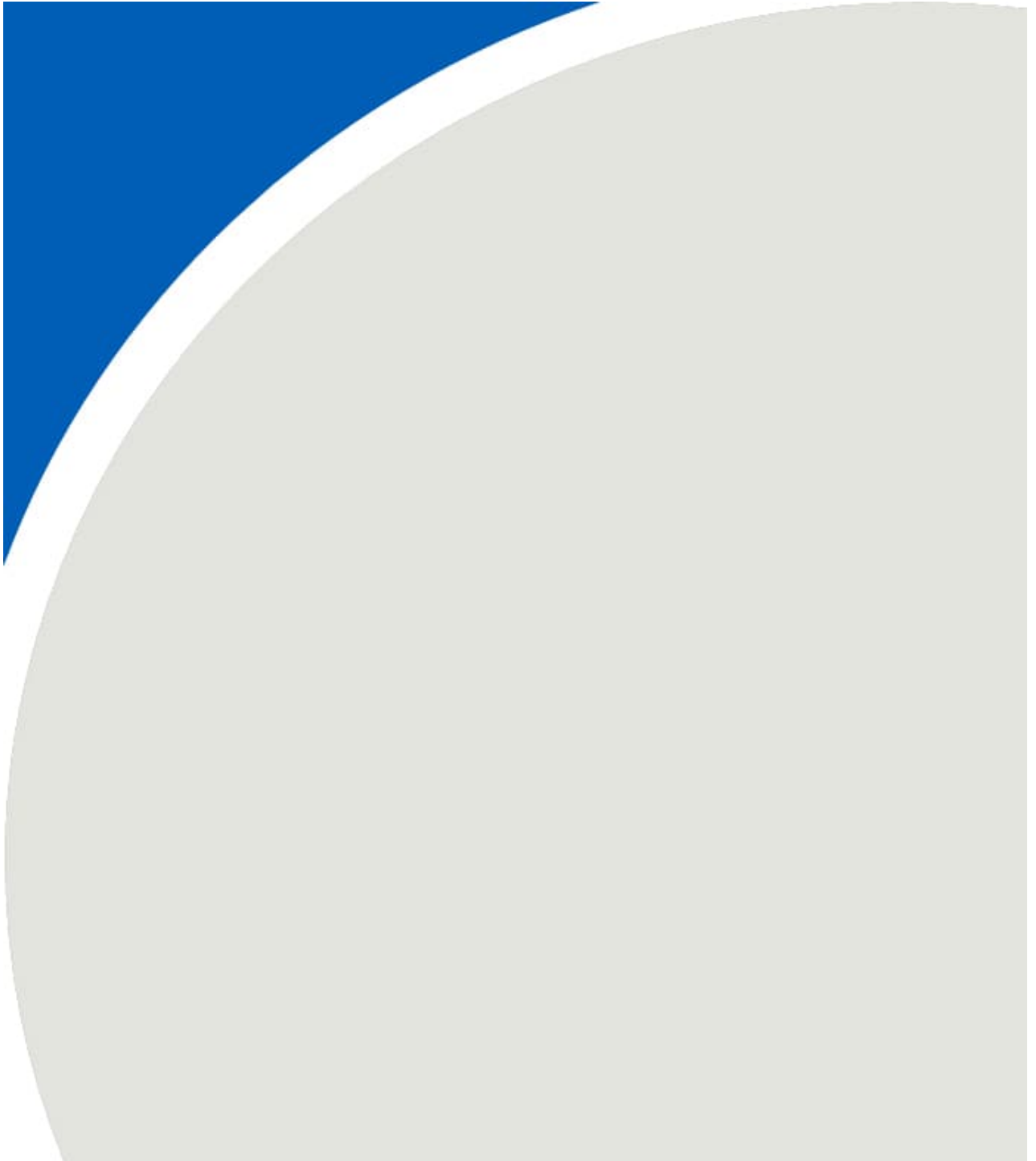
4 Conclusions

Based on the results of the acoustic assessment, it can be concluded that the noise impacts at the identified sensitive points of reception are less than the applicable noise criteria at all sensitive points of reception. Noise mitigation measures are not required for the facility, beyond those specified in this report. The acoustic assessment report was prepared to confirm the criterion in subparagraph 8 iv of subsection 17 (1) was met. The combined sound level resulting from sound discharged from the facility at each affected point of noise reception, as determined in the acoustic assessment, is less than the applicable sound level limit set out in Chapter 3 of the EASR publication.

5 Statement of Accuracy

The information included in this Noise Report is accurate as of the date it was signed and sealed by the licensed engineering practitioner responsible for its preparation. The signature and professional seal are located on the signature sheet following the covering page of this document.

APPENDIX B – FACILITY 18





Ministry of the Environment and Climate Change
Operations Division

Confirmation of Registration

Registration Number: R-010-5110118612

Version Number: 001

Date Registration Filed: Apr 13, 2017 13:25:21 PM

Dear Sir/Madam,

JEREMY MARKS

704 - 141 WOOLWICH ST
GUELPH ON N1H 8M5

You have registered, in accordance with Section 20.21(1) (a) of the *Environmental Protection Act*, the use, operation, construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing that is located at the facility noted below, or the alteration of a process or rate of production at the facility, including the activities set out in schedule 'A'.

490 YORK Road GUELPH ON N1E 6V1

Please note that the facility noted above is subject to the applicable provisions of O. Reg. 245/11, and O. Reg.1/17.

The activity related information provided during the registration process is included as part of the confirmation of registration as schedule 'A'.

Dated on Apr 13, 2017

Director

Environmental Approvals Access and Service Integration Branch
Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5

Any questions related to this registration and the Environmental Activity and the Sector Registry should be directed to:

Ministry of the Environment and Climate Change

Customer Service Representative

Environmental Approvals Access and Service Integration Branch

Phone:(416) 314-8001

Toll free: 1-800-461-6290

Schedule 'A'

Part 3 - Activity Information

3.1 Industry Eligibility Check

a. Please select the facility's primary North American Industry Classification System (NAICS) code.	811420
b. Does the facility have any other applicable NAICS codes?	☐ Yes ☒ No
b. i. If yes, please select the facility's secondary NAICS code(s), and confirm any other applicable NAICS code(s).	
c. Are you engaged in an activity at the facility that may discharge or from which may be discharged a contaminant into any part of the natural environment other than water?	☒ Yes ☐ No
d. Is the activity exempt from requiring an Environmental Compliance Approval (ECA) under section 9 (1) of the Environmental Protection Act (EPA) other than an activity that has been prescribed by an EASR regulation under Part II.2 of the Act?	☐ Yes ☒ No
e. Are the only activities engaged in at the facility, other than activities described in question 3.1d above, prescribed under a single other EASR regulation?	☐ Yes ☒ No
f. Is an alternative low-carbon fuel site within the meaning of Ontario Regulation (O. Reg.) 79/15 (Alternative Low-Carbon Fuels) operated at the facility?	☐ Yes ☒ No
g. Is the activity a renewable energy project as defined in the EPA?	☐ Yes ☒ No
h. Is an end-of-life vehicle waste disposal site within the meaning of O. Reg. 85/16 operated at the facility?	☐ Yes ☒ No

3.2 Facility Related Information

a. Has a site-specific air standard ever been set for a contaminant discharged from the facility? (section 35 of O. Reg. 419/05 (Air Pollution -- Local Air Quality))	☐ Yes ☒ No
b. Has a person ever been registered in the Ministry's Technical Standards Registry – Air Pollution under section 39 of O. Reg. 419/05 (Air Pollution – Local Air Quality) in respect of the facility?	☐ Yes ☒ No
c. Do all of the activities to be registered occur exclusively at the site? <i>Please Note: Discrete activities that involve the use of equipment that is intended to be moved from one site to another to perform the same function (such as the use of mobile rock crushing equipment or mobile PCB destruction equipment) are not prescribed for the purpose of the Environmental Activity and Sector Registry, and an Environmental Compliance Approval may be required.</i>	☒ Yes ☐ No
d. Is the facility located on a property that has been deemed a single property under subsection 4 (2) of O. Reg. 419/05?	☐ Yes ☒ No
e. Is the facility located in an area of development control within the Niagara Escarpment Planning Area?	☐ Yes ☒ No
e. i. If yes, has a development permit required under section 24 of the Niagara Escarpment Planning and Development Act (NEPDA) in respect of the facility been issued?	☐ Yes ☐ No
f. Is there a landfilling site that is no longer permitted to accept waste for disposal located on the site on which the facility is located?	☐ Yes ☒ No
g. Is the activity part of an undertaking to which the Environmental Assessment Act applies?	☐ Yes ☒ No
g. i. If yes, is one or more of the following conditions met: - All class EA requirements have been completed, including decisions on any Part II order requests; OR - The facility has received approval to proceed with the undertaking.	☐ Yes ☐ No

h. Please provide a description of the facility. The description should include a summary of operations and activities at the facility that discharge contaminants, as well as what is produced, if applicable.

An owner operated wood furnishings restoration shop specializing in the repair, resurfacing and refinishing of wooden antique furniture, reclaimed flooring and millwork, and interior architectural elements. Woodworking operations such as sawing, drilling, shaping and sanding are conducted on hardwood and softwood base stocks using manual and power hand tools and benchtop machines. An open face crossdraft spray booth, fitted with dry type exhaust filters for overspray control, discharges solvent vapours to the outdoors during the application of varnish, lacquer, wiping stain and topcoat to prepared components.

i. Please enter the date on which the facility commenced or will commence operations.

2009-08-17

j. Is the facility located in a multi-tenant building?

☒ Yes

☐ No

3.3 Activity Related Information

a. Does the land disposal of waste as defined in Regulation 347 General – Waste Management occur at the facility?

☐ Yes

☒ No

b. Does the facility process or dispose of waste by way of thermal treatment, other than the thermal treatment of wood fuel that meets the specifications in Chapter 5 of the EASR publication in a wood-fired combustor?

☐ Yes

☒ No

c. Does the facility use a wood-fired combustor?

☐ Yes

☒ No

c. i. If yes, does the wood-fired combustor have a nominal load heat input capacity of less than 3 megawatts?

☐ Yes

☐ No

c. ii. If yes, was the wood-fired combustor installed at the facility on or after January 31, 2017?

☐ Yes

☐ No

c. iii. If yes, does the wood-fired combustor exclusively use one or more of the following as fuel:

- Wood chips that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood briquettes that meet the specifications set out in Chapter 5 of the EASR publication.
- Wood pellets that meet the specifications set out in Chapter 5 of the EASR publication.

☐ Yes

☐ No

d. Does the facility have any plating processes that use cadmium, cyanide, chromium or nickel, including chrome plating, electroplating or electroless plating?

☐ Yes

☒ No

e. Is an electrolytic stripping process that removes cadmium, chromium or nickel from an object used at the facility?

☐ Yes

☒ No

f. Are metals processed outdoors at the facility, including torching, shearing, shredding or plasma cutting, other than for the purpose of routine maintenance carried out at the facility on any plant, structure, equipment, apparatus or thing?

☐ Yes

☒ No

g. Is a fossil-fuel electric power generation facility with a maximum electrical power output capacity equal to or greater than 25 megawatts operated at the facility?

☐ Yes

☒ No

h. Is a combustion source that uses biogas, biomass, coal, petroleum coke or waste as a fuel, or that uses a fuel derived from biogas, biomass, coal, petroleum coke or waste other than a small wood-fired combustor operated at the facility?

☐ Yes

☒ No

i. Is a combustion turbine used at the facility?

☐ Yes

☒ No

Part 4 - Operational Information

4.1 Air

a. Does the EASR Emission Summary and Dispersion Modelling (ESDM) Report provide for modifications that have not yet been implemented at the facility?	☒ Yes	☐ No
a. i. If yes, please provide the date on which the modifications will be completed.	2017-08-01	
b. Has an instrument under O. Reg. 419/05 been issued in respect of the facility?	☐ Yes	☒ No
b. i. If yes, what type(s) of instruments (including any notices, orders or approvals) has (have) been issued? (select all that apply)		
ss. 7(1) Specified Dispersion Models	☐	
ss. 8(2) Negligible Sources	☐	
ss. 10(2) Operating Conditions	☐	
ss. 11(2) Refined Emission Rates	☐	
ss. 13.1 Value of Dispersion Modelling Parameters	☐	
ss. 13(1) Meteorological Data	☐	
ss. 14(6) Area of Modelling Coverage	☐	
ss. 20(5) Speed-up Order	☐	
Other	☐	
List all that have been issued		
c. To what standard did the licensed engineering practitioner assess compliance of the facility's emissions (please select the applicable box(es)):		
Section 19 of O. Reg. 419/05 (Schedule 2)	☒	
Section 20 of O. Reg. 419/05 (Schedule 3)	☐	
d. Please select all applicable boxes that apply to a discharge of a contaminant(s) to air from the facility:		
Contaminant(s) belonging to Benchmark 1 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant	☒	
Contaminant(s) belonging to Benchmark 2 category of ACB list is at or below the concentration for each specified averaging period set out for the contaminant	☒	
Contaminant(s) belonging to Benchmark 2 category of ACB list is above the concentration for a specified averaging period set out for the contaminant	☐	
The concentration of the contaminant(s) does not have a Ministry standard, guideline, or screening level set out for the contaminant	☒	
e. Does the facility operate a generator for non-emergency purposes?	☐ Yes	☒ No
f. Does the facility use or operate a large boiler or heater greater than 10.5 gigajoules per hour?	☐ Yes	☒ No
g. Will an Emissions Summary Table be uploaded?	☒ Yes	☐ No
<i>Please Note: An Emissions Summary Table is required to be uploaded at the time of registration. An</i>		

Emissions Summary Table is also required to be uploaded if any modifications to the facility require an update to the EASR ESDM. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Emissions Summary Table is required to be uploaded.

h. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the EASR ESDM Report and made statements in the EASR ESDM Report Supplement and the date signed.

First Name	Last Name	Licence Number(s)	Date Signed
Steven	Challoner	90279241	2017-04-13

4.2 Fugitive Dust Control

a. Does the EASR ESDM Report prepared for the facility identify a source of fugitive dust? ☐ Yes ☒ No

a. i. If yes, has a licensed engineering practitioner signed and sealed a Best Management Practice Plan (BMPP) for fugitive dust control? ☐ Yes ☐ No

b. Has a BMPP for fugitive dust control been prepared as a result of a written notice from the Director issued under O. Reg. 1/17? ☐ Yes ☒ No

c. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for fugitive dust control and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

4.3 Noise

a. Please select the noise assessment method that was completed for the facility:

The facility meets the 1000m setback distance ☐

Primary Noise Screening Method ☐

Secondary Noise Screening Method ☒

Acoustic Assessment Report ☐

a. i. If the Primary Noise Screening Method was used, is the actual separation distance from the facility to the closest Point of Noise Reception equal to or greater than the minimum separation distance as determined by the Primary Noise Screening Method? ☐ Yes ☐ No

a. ii. If the Secondary Noise Screening Method was used, is the combined sound level from the facility at each affected Point of Noise Reception as determined by the Secondary Noise Screening Method less than or equal to the applicable sound level limit set out in Chapter 3 of the EASR publication? ☒ Yes ☐ No

a. iii. If an acoustic assessment was completed, did the acoustic assessment determine that the combined sound level from the facility at each affected Point of Noise Reception less than or equal to of the applicable sound level limit set out in Chapter 3 of the EASR publication? ☐ Yes ☐ No

a. iii. a) If no, has a Noise Abatement Action Plan been developed for the facility? ☐ Yes ☐ No

a. iii. b) If yes, please provide the title of the Noise Abatement Action Plan and the date it was prepared.

Name of NAAP	Date Prepared

b. Has an Acoustic Audit Report been prepared as a result of a written notice from the Director? ☐ Yes ☒ No

b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the acoustic audit report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Will an Acoustic Assessment Summary Table be uploaded? ☐ Yes ☒ No

Please Note: An Acoustic Assessment Summary Table is required to be uploaded at the time of

registration if an Acoustic Assessment was completed for the facility. An Acoustic Assessment Summary Table is also required to be uploaded if any modifications to the facility require an update to the facility's noise report. Additionally, as part of the 10 year review required by O. Reg. 1/17, an updated Acoustic Assessment Summary Table is required to be uploaded.

d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the noise report, and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed
Steven	Challoner	90279241	2017-04-13

4.4 Odour

a. Did the Odour Screening Report indicate that a circumstance which requires a BMPP for odour to be prepared exists at the facility? ☒ Yes ☐ No

b. Did the Odour Screening Report indicate that a circumstance which requires an Odour Control Report (OCR) to be prepared exists at the facility? ☐ Yes ☒ No

b. i. If yes, please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the Odour Control Report and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed

c. Has a BMPP for odour been prepared as a result of a written notice from the Director issued under O. Reg. 1/17? ☐ Yes ☒ No

d. Please provide the Name(s) and Licence Number(s) of the Licensed Engineering Practitioner(s) that signed and sealed the BMPP for odour and the date signed and sealed.

First Name	Last Name	Licence Number(s)	Date Signed
Steven	Challoner	90279241	2017-04-13

	Contaminant Name	CAS RN	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	Ministry POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Sch. 2 or Sch. 3	Source	Benchmark	% of POI Limit	Notes	Name of Contaminant	Confirmation that contaminant above a B2 or without benchmark not likely to cause an adverse effect?	Version Date of ACB List
1	Naphtha, petroleum, heavy aromatic solvent	64742-94-5	0.027	O.Reg 346 Appendix	200.5	1/2-hour	3072	Health		SL-JSL	B2	7%				13-Dec-16
2	Naphtha, petroleum, light aromatic solvent	64742-95-6	0.027	O.Reg 346 Appendix	200.5	1/2-hour	915	Health		SL-JSL	B2	22%				13-Dec-16
3	Isobutanol	78-83-1	0.048	O.Reg 346 Appendix	360.7	1/2-hour	13800	Health	Sch. 2	Standard	B1	3%	ACB List (Note 2URT - Note 4, Table 4)			13-Dec-16
4	Butanol, n-	71-36-3	0.027	O.Reg 346 Appendix	204	1/2-hour	2760	Health	Sch. 2	Standard	B1	7%	ACB List (Note 2 URT - Note 4, Table 4)			13-Dec-16
5	Butyl acetate, n-	123-86-4	0.087	O.Reg 346 Appendix	652	1/2-hour	735	Odour	Sch. 2	Guideline	B1	89%	ACB List (Note 2, 3)			13-Dec-16
6	Ethyl acetate	141-78-6	0.000482	O.Reg 346 Appendix	3.59	1/2-hour	19000	Odour	Sch. 2	Standard	B1	0%				13-Dec-16
7	Ethanol (Ethyl alcohol)	64-17-5	0.094	O.Reg 346 Appendix	704.1	1/2-hour	19000	Odour	Sch. 2	Guideline	B1	4%	ACB List (To be updated - Note 5)			13-Dec-16
8	Ethyl benzene	100-41-4	0.012	O.Reg 346 Appendix	89.3	1/2-hour	1400	Odour	Sch. 2	Standard	B1	6%	ACB List (Note 2URT - Note 4, Table 4)			13-Dec-16
9	Formaldehyde	50-00-0	0.000928	O.Reg 346 Appendix	6.92	1/2-hour	65	Odour & Irritatic	Sch. 2	Standard	B1	11%				13-Dec-16
10	No Criteria (Complete Columns AC and AD)	8052-41-3	0.03	O.Reg 346 Appendix	221.5	1/2-hour								mineral spirits		
11	Naphthalene	91-20-3	0.00467	O.Reg 346 Appendix	34.81	1/2-hour		36	Odour	Sch. 2	Guideline	B1	97%	ACB List (Note 2, 3)		13-Dec-16
12	No Criteria (Complete Columns AC and AD)	9004-70-0	0.016	O.Reg 346 Appendix	118.5									nitrocellulose		
13	Isopropanol (Isopropyl alcohol)	67-63-0	0.01	O.Reg 346 Appendix	77.94	1/2-hour	22000	Health	Sch. 2	Standard	B1	0%	ACB List (URT - Note 4, Table 4)			13-Dec-16
14	Polyoxyethylene lauryl ether	9002-92-0	0.00309	O.Reg 346 Appendix	23.05	1/2-hour	36	Health		SL-JSL	B2	64%				13-Dec-16
15	Propylene glycol methyl ether	107-98-2	0.00467	O.Reg 346 Appendix	34.81	1/2-hour	89000	Odour	Sch. 2	Guideline	B1	0%	ACB List (Note 3)			13-Dec-16
16	Propylene glycol monomethyl ether acetate	108-65-6	0.096	O.Reg 346 Appendix	718.4	1/2-hour	5000	Odour	Sch. 2	Guideline	B1	14%	ACB List (To be updated - Note 5)			13-Dec-16
17	Toluene	108-88-3	0.063	O.Reg 346 Appendix	468.2	1/2-hour	2000	Odour	Sch. 2	Standard	B1	23%				13-Dec-16
18	Trimethylbenzene, 1,2,4- (individual isomer or Trimeth	95-63-6	0.00121	O.Reg 346 Appendix	9.02	1/2-hour	660	Health	Sch. 2	Standard	B1	1%	ACB List (URT - Note 4, Table 4)			13-Dec-16
19	m-Xylene	108-38-3	0.00467	O.Reg 346 Appendix	34.81	1/2-hour	300	Health		SL-JSL	B2	12%				13-Dec-16
20	p-Xylene	106-42-3	0.00182	O.Reg 346 Appendix	13.58	1/2-hour	300	Health		SL-JSL	B2	5%				13-Dec-16
21	Xylenes	1330-20-7	0.137	O.Reg 346 Appendix	1020.1	1/2-hour	2200	Health	Sch. 2	Standard	B1	46%	ACB List (Note 2URT - Note 4, Table 4)			13-Dec-16
22	Isobutanol	78-83-1	0.048	O.Reg 346 Appendix	360.7	1/2-hour	1720	Odour	Sch. 2	Guideline	B1	21%	ACB List (Note 2, 3)			13-Dec-16
23	Butanol, n-	71-36-3	0.027	O.Reg 346 Appendix	204	1/2-hour	1540	Odour	Sch. 2	Guideline	B1	13%	ACB List (Note 2, 3)			13-Dec-16