

EXECUTIVE SUMMARY

West-Tech Finishing Inc. (West-Tech) operates a metal finishing facility located at 8065 Huntington Road, Unit 3, Vaughan, Ontario (the “Facility”).

The Facility operates under an Environmental Compliance Approval (ECA) (Air & Noise) (ECA No. 9824-9ZSJLM, issued October 13, 2015) for the metal finishing plant at its current location. The original application was prepared in response to a notice of violation received from the Ontario Ministry of the Environment, Conservation and Parks (MECP) on March 13, 2013. A site-wide emissions inventory was prepared to reflect the current operations at the Facility.

This updated ESDM report has been prepared to meet the requirements of Ontario Regulation 419/05 (O.Reg.419) Section 25 and address the updated dispersion modelling and meteorological data processor version (AERMOD and AERMET version 19191), adopted by MECP in April of 2020.

The emission rates for the Contaminants of Concern (COC) from the Facility remain unchanged and have been estimated based on the emission estimation methodology published in the Michigan Department of Environmental Quality, Environmental Science and Services Divisions *Electroplating Operations, Emission Calculation Fact Sheet* #9840 (Rev. 11/05), manufacturer specifications and engineering calculations based on typical operations at the Facility. The Source Summary Table for the Facility is presented in Appendix B, Table B1.

All eligible comfort heating equipment has been registered in the Environmental Activity and Sector Registry (EASR), including one (1) air make up unit, two (2) heating units and one (1) air conditioning unit. Confirmation of registration is provided in Appendix H, MECP Forms and Documents.

The Facility’s North American Industry Classification System (NAICS) code is 332810, “Coating, Engraving, Heat Treating and Allied Activities” which falls under Schedule 5 of O. Reg.419 requiring it to meet Schedule 3 standards with advanced dispersion modelling. As such, (POI) concentrations for the contaminant emissions from the Facility were determined using the Lakes Environmental AERMOD View (Version 9.5.0) air dispersion modelling software, running AERMOD version 19191 and MECP meteorological data pre-processed with AERMET 19191, as per the MECP Guideline A-11: Air Dispersion Modelling Guide for Ontario (ADGMO).

Same structure contamination has been addressed using the ASHRAE (Chapter 46 Building Air Intake and Exhaust Design [2019]) method to determine the maximum predicted concentrations of COC's at the nearest air intakes on the roof of the shared building.

A comparison of the predicted off-site ground level POI and same structure concentrations with applicable MECP criteria indicates that impacts of Facility emissions, based on the maximum emission scenario, are expected to be in compliance with the relevant MECP O.Reg. 419 limits

EMISSION SUMMARY TABLE

Contaminant Name	CAS#	Total Facility Emission Rate (g/s)	Source Group	Maximum POI Conc. ($\mu\text{g}/\text{m}^3$)	Averaging Period	POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Regulation Schedule #	Percentage of Limit	Conc. At Exhaust ($\mu\text{g}/\text{m}^3$)	Conc. At Intake ($\mu\text{g}/\text{m}^3$)	% of Limit @ Intake
Acetic Acid	64-19-7	1.1E-02	Stack 1*	1.78	24	2,500	Odour	POI Guideline	0.07%	1306	6E+00	0.24%
Glycolic Acid	79-14-1	5.4E-10	Stack 2*	8.5E-08	24	4	N/A	JSL	<0.01%	4.8E-05	2.2E-07	0.00%
Hydrofluoric Acid	7664-39-3	2.1E-07	Stack 1*	3.4E-05	24	0.86	Vegetation	Schedule 3	<0.01%	2.5E-02	1.2E-04	0.01%
				9.4E-06	30 day	0.34	Vegetation	Schedule 3	<0.01%	N/A	N/A	N/A
Nitric Acid	7697-37-2	2.4E-03	N/A	0.45	24	35	Corrosion	Schedule 3	1.28%	392	3.2E-01	0.91%
Sulphuric Acid	7664-93-9	6.4E-07	Stack 1*	1.0E-04	24	5	Health	Schedule 3	<0.01%	5.6E-02	2.5E-04	0.01%
*Maximum POI concentrations have been determined based on unit emission rate modelling runs for each source. Individual compound POI concentrations are calculated by multiplying the compound emission rate by the appropriate Unit Dispersion Factor from the Table below.												
Unit Dispersion Factors												
Source Group	Unit POI Conc. ($\mu\text{g}/\text{m}^3$)											
	24 hr avg.						30 day avg.					
Scrubber Stack No. 1	160						43.7					
Scrubber Stack No. 2	157											

Regulatory Schedule Notes:

Schedule 3 refers to Schedule 3 of O.Reg. 419 as summarized in the document "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", dated April 2018.

JSL refers to the jurisdictional screening levels identified in the document "as summarized in the document "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", dated April 2018.

Guideline refers to Point of Impingement Guideline of O.Reg. 419 as summarized in the document " as summarized in the document "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", dated April 2018.