

PSPC

# Project Specific Designated Substances Survey – Hogs Back Fixed Bridge & Dam Rehabilitation – Rideau Canal, Ottawa, ON

## Report

**Prepared by:**

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July 10, 2018

**Project No: 60546404**  
**Regarding: Project Specific Designated Substances Survey – Hogs Back Fixed Bridge & Dam Rehabilitation – Rideau Canal, Ottawa, ON**

Please find enclosed a final version of AECOM's Report entitled "Project Specific Designated Substances Survey – Hogs Back Fixed Bridge & Dam Rehabilitation – Rideau Canal, Ottawa, ON".

Should you have questions, concerns or wish to discuss, please contact the undersigned at your convenience.

Sincerely,

**AECOM Canada Ltd.**



**Stéphane Lemay, P. Eng.**  
Project Director - Environment

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AECOM: 2015-04-13

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# Authors

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Project Director - Environment

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# Executive Summary

AECOM Canada Ltd. (AECOM) was retained by Public Services Propage executement Canada. (PSPC) to complete a project specific designated substance survey (DSS) prior to upcoming work for the Hogs Back Fixed Bridge & Dam Rehabilitation – Rideau Canal Ottawa, Ontario (herein referred to as the 'Site').

The objective of this DSS was to provide a comprehensive summary of designated substances that will require removal and/or management prior to the rehabilitation of the structure of the South West and South East retaining walls of the Dam at the Site. The DSS included paint samples to determine the presence or absence of lead. Furthermore, the Site was investigated visually for the potential presence of additional designated substances as defined by *Ontario Regulation 490/09* (O. Reg. 490/09).

Based on AECOM's DSS, the following results were identified:

- No susceptible asbestos-containing materials were identified on Site;
- The grey paints (dark and light) on concrete of the South-West retaining wall are not lead paint based (< 90 ppm).
- The black paint on the railing present on both sites is lead paint based (>6,800 ppm).
- Silica is present in the concrete of the dam's retaining walls.
- No other designated substances were observed on Site.

## Sommaire exécutif

AECOM Canada Ltd. (AECOM) a été retenue par Services publics Approvisionnement Canada. (SPAC) pour terminer un inventaire des substances désignées (DSS) propre au projet avant les travaux à venir pour la réfection du pont et de la digue fixes de Hogs Back - Canal Rideau, Ottawa (Ontario) (ci-après le «site»).

L'objectif de cet inventaire est de fournir un résumé complet des substances désignées qui nécessiteront un retrait et/ou la gestion avant le projet de réhabilitation des murs de soutènement sud-ouest et sud-est du barrage. L'inventaire comprend la collecte d'échantillons de peinture pour déterminer la présence ou l'absence de plomb. De plus, le site a fait l'objet d'une inspection visuelle sur la présence potentielle de substances désignées additionnelles au sens du Règlement de l'Ontario 490/09 (Règlement de l'Ontario 490/09).

Basé sur le DSS d'AECOM, les résultats suivants ont été identifiés:

- Aucun matériau susceptible de contenir de l'amiante n'a été identifié sur le site;
- Les peintures grises (foncé et pâle) sur le béton du mur de soutènement Sud-Ouest ne sont pas des peintures au plomb (<90 ppm);
- La peinture noire sur les gardes corps présente sur les deux cotés est à base de plomb (> 6 800 ppm);
- La silice est présente dans le béton des murs de soutènement du barrage;
- Aucune autre substance désignée n'a été observée sur le site.

# Table of Contents

	<u>Page</u>
<b>Executive Summary</b>	<b>i</b>
<b>1. Introduction</b> .....	<b>1</b>
1.1 Terms of Reference .....	1
1.2 Objective.....	1
1.3 Applicable Regulations and Guidelines .....	1
1.4 Scope of Work .....	2
1.5 Safety, Health and the Environment.....	2
1.6 Survey and Reporting Limitations .....	2
<b>2. Methodology</b> .....	<b>2</b>
2.1 Asbestos Survey .....	2
2.2 Lead Survey .....	3
2.3 Additional Designated Substances and Hazardous Materials .....	3
<b>3. Results</b> .....	<b>3</b>
3.1 Asbestos-containing materials (ACMs) .....	3
3.2 Lead and Coatings.....	4
3.3 Silica .....	4
3.4 Mercury.....	4
3.5 Additional Designated Substances and Hazardous Materials .....	4
<b>4. Recommendations</b> .....	<b>5</b>
4.1 Asbestos.....	5
4.2 Lead .....	5
4.3 Silica.....	5

## List of Tables

Table 1: Lead Sampling Results, Hogs Back Dam, Ottawa, ON .....	4
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## Appendices

Appendix A. Site Photographs	
Appendix B. Laboratory Certificates of Analysis	

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# 1. Introduction

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## 1.1 Terms of Reference

AECOM Canada Ltd. (AECOM) was retained by Public Services Procurement Canada. (PSPC) to complete a project specific designated substance survey (DSS) prior to upcoming work for the Hogs Back Fixed Bridge & Dam Rehabilitation – Rideau Canal Ottawa, Ontario (herein referred to as the 'Site').

## 1.2 Objective

The objective of this DSS was to provide a comprehensive summary of designated substances that will require removal and/or management prior to the renovations within three commercial zones as part of the CFRC Relocation and Fit-up project at the Site. The DSS included the collection of building material samples suspected of containing asbestos fibres and paint samples to determine the presence or absence of lead. Furthermore, the Site was investigated visually for the potential presence of additional designated substances as defined by *Ontario Regulation 490/09* (O. Reg. 490/09) including:

- Acrylonitrile
- Ethylene Oxide
- Arsenic
- Lead
- Benzene
- Silica
- Asbestos
- Mercury
- Isocyanates
- Coke Oven Emissions
- Vinyl Chloride

## 1.3 Applicable Regulations and Guidelines

The DSS was completed to address the following applicable regulatory requirements and guidelines for the management of designated substances.

- Ontario Occupational Health & Safety Act – R.S.O. 1990, as amended (OHSA), including :
  - Designated Substances – Ontario Regulation 490/09, as amended (O. Reg. 490/09);
  - Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations – Ontario Regulation 278/05 (O. Reg. 278/05);
  - Ontario Regulation 213/91 – Regulation for Construction Projects. (O. Reg. 213/91).
- Ontario Environmental Protection Act – R.S.O. 1990, as amended (EPA), including :
  - General – Waste Management R.R.O. 1990, Ontario Regulation 347, as amended (O. Reg. 347).
- Environmental Abatement Council of Ontario (EACO) *Lead Guideline for Construction, Renovation, Maintenance and Repair*, October 2014.
- Ministry of Labour Guidelines “*Lead on Construction Projects*”, dated April 2011 (Lead Guidelines).
- Ministry of Labour Guidelines “*Silica on Construction Projects*”, dated April 2011 (Silica Guidelines).
- Canadian Consumer Product Safety Act – Surface Coating Materials Regulation (SOR/2005-109) (Lead Paint Regulation).

## 1.4 Scope of Work

In order to complete the Scope of Work for this DSS, AECOM completed the following tasks for the Site:

- Visually identifying and inventorying suspected designated substances associated with building materials that may be disturbed during the renovations at the Site through non-destructive means;
- Inspection for suspected asbestos-containing materials (ACMs)
- Collecting lead-based paints (LBPs) samples and submitting these samples to an independent accredited laboratory for analysis;
- Providing approximate quantifications of ACMs, LBPs, and mercury-containing items at the Site; and,
- Preparation of a DSS report for the Site.

## 1.5 Safety, Health and the Environment

Prior to commencing the field component of this DSS, AECOM completed a general walk-through of the Site in order to confirm location, layout, access issues, as well as overall potential health and safety issues. No specific health and safety concerns were identified that would pose unsafe or hazardous working conditions. Safe work practices were implemented throughout the project, and no injuries or impairment to the environment was recorded.

## 1.6 Survey and Reporting Limitations

The possibility remains that unexpected designated substances may be encountered at the Site in locations not specifically observed or investigated. Materials underwater and material outside of the scope of the project were not investigated as a component of this DSS.

AECOM makes no other evaluations whatsoever, including those concerning the legal significance of designated substances. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with one's own legal counsel.

The DSS was completed with the assumption that there was no additional historical information available regarding the presence/or potential presence of any designated substances as well as any other hazardous materials presence in the industrial building included in this project. The results of the DSS completed by AECOM are provided in the following appropriate sections of this report.

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# 2. Methodology

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## 2.1 Asbestos Survey

The Site assessment was non-intrusive in nature to document the general composition of building materials. ACM surveys generally include the assumption, accepted as industry standard practice that various building materials are known to contain asbestos fibres, and are not sampled if they cannot be accessed and sampled safely.

Bulk samples are collected from building materials suspected to contain asbestos fibres as prescribed by O. Reg. 278/05. Sufficient samples were collected for laboratory analytical requirements, including a minimum of three samples and a maximum of seven samples from homogeneous areas (i.e., samples from materials considered to

be similar based on colour and texture). Samples were submitted to the independent laboratory EMSL Analytical, Inc. (NVLAP Lab Accreditation No. 201040–0) for analysis using U.S. Environmental Protection Agency Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, June 1993.

O. Reg. 278/05 defines an asbestos containing material as a material that contains 0.5 per cent or more asbestos by dry weight.

## 2.2 Lead Survey

Surfaces suspected of being coated with lead paint were inspected and random samples were collected for lead analysis to determine the potential risk of exposure to lead as prescribed by O. Reg. 490/09. Samples were relinquished to EMSL Analytical, Inc. (AIHA Lab Certification No. 196142) for analysis using Flame Atomic Absorption Spectrophotometry (AAS) SW846 Test Method 7000B.

In 1976, the *Hazardous Products Act* limited the amount of lead in interior paint and in paint accessible to children to 0.5% by dry weight. In October 2010, the federal *Hazardous Products Act Surface Coating Materials Regulation (SOR/2005-109)* limited the allowable concentration of total lead present in a surface coating material to 90 mg/kg (or 90 ppm). This regulation does not apply to anti-corrosive coatings, touch-ups, traffic signs, and many commercial products used by children. AECOM has adopted to use this current regulation to provide guidance to the Client regarding paints and other coatings that are considered lead based. Adoption of this regulation by the Client does not necessarily require any further action regarding remediation and/or management of lead containing coatings or other paints as it applies to the DSS completed under the Ontario OHSA.

## 2.3 Additional Designated Substances and Hazardous Materials

AECOM reviewed the immediate vicinity of the project area to visually identify potential exposure concerns to designated substances including mercury, vinyl chloride, benzene, arsenic, silica, acrylonitrile, isocyanates, coke oven emissions, and ethylene oxide.

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# 3. Results

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The survey was completed on June 29, 2018 by AECOM Site Assessor Mr. Danny Dupuis. Photographs taken during the survey are provided in **Appendix A**.

## 3.1 Asbestos-containing materials (ACMs)

During the DSS of the Site, AECOM did not observed susceptible asbestos-containing material on site.

## 3.2 Lead and Coatings

Paint samples were collected from the following locations at the Site:

- Black paint on the South West railing;
- Black paint on the South East railing;
- Light grey on concrete wall (South West);
- Dark grey on concrete wall (South West).

AECOM collected four (4) bulk samples of interior paint materials observed at the Site as potentially containing lead. Table 1 presents the results of the laboratory lead testing on the paint sample. The Laboratory Certificate of Analysis is provided in **Appendix B**.

**Table 1: Lead Sampling Results, Hogs Back Dam, Ottawa, ON**

Sample ID	Paint Description and Sample Location	Lead Concentration %	
		wt	ppm
1	Black paint on the South West railing	0,68 %	6,800
2	Black paint on the South East railing	2,4 %	24,000
3	Light grey on concrete wall (South West)	<0,0082	<82
4	Dark grey on concrete wall (South West)	< 0,0081	<81

The laboratory results indicated that the light and dark grey paint samples collected on the concrete South West retaining wall did not contain concentrations of lead in excess of the limit of 90 ppm and are therefore not considered to be lead-containing materials. The black paint collected on the iron cast railing on both sides of the dam contains lead in excess of the recommended limit and is therefore considered to be a lead-containing material.

## 3.3 Silica

Concrete used in the construction of the structure are assumed to contain silica. The concrete and cementitious products in use at the Site were noted to be in good condition with no significant deterioration or damage observed.

## 3.4 Mercury

During the DSS, AECOM did not observed potential mercury-containing fluorescent light tubes throughout the Site.

## 3.5 Additional Designated Substances and Hazardous Materials

No potential exposure concerns to designated substances including vinyl chloride, benzene, arsenic, acrylonitrile, isocyanates, coke oven emissions, and/or ethylene oxide were identified with respect to the Site.

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## 4. Recommendations

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### 4.1 Asbestos

No asbestos-containing materials were identified at the Site. However, in the event that additional materials not observed as part of this DSS are discovered during the project, the materials should be considered asbestos-containing until sampled and can be proven otherwise.

### 4.2 Lead

Lead based paints (Black paint on railing) were identified during the DSS at the Site. Work that will disrupt (drilling, cutting, grinding or abrading) this material must follow the recommendations provided in the EACO Lead Abatement Guidelines (dated 2014) or the Ministry of Labour Guideline for Lead on Construction Projects, dated September 2011. The lead painted surfaces should be handled with appropriate health and safety precautions so as to comply with requirements of the Designated Substances Regulation, O. Reg. 490/09, and disposal of these materials must also comply with the requirements of O. Reg. 347 – General – Waste Management.

### 4.3 Silica

Silica is generally assumed to be contained in concrete, plaster, drywall, mortar, and other building materials. The concrete and plaster present in the project area were not sampled for silica, as this is not industry practice, but can be assumed to contain silica. Specific disturbance (e.g. drilling, cutting, breaking or demolishing) of silica containing components must following Silica on Construction Projects Guidelines (2011).

Exposure to fine dust containing airborne silica becomes a health issue when inhaled. In the event that concrete is to be disturbed as part of renovations, engineering controls, such as wetting materials and supplemental ventilation during demolition/construction activities should be used in order to limit the accumulation of dust.

As of July 1, 2016, Ontario Regulation 833 / 90 - *Control of Exposure to Biological and Chemical Agents* applies to all construction sites. Exposure limits for silica are provided and employers are encouraged to use the Silica on Construction Projects Guideline – 2011 for guidance on how to protect the health and safety of their workers and comply with the Ontario Occupational Health and Safety Act.

## **Appendix A Site photographs**

Appendix A : Site photographs



**Photograph 1. ↑**  
Cast Iron rail on the South East retaining wall –  
Black paint



**Photograph 2. ↑**  
Cast Iron rail on the South West retaining wall and dark  
grey paint on the concrete wall.



**Photograph 3. ↑**  
Light grey and dark grey paint on retaining wall  
South East

## **Appendix B Laboratory Certificates of Analysis**



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Phone: (613) 820-8338  
 Fax:  
 Received: 07/03/18 11:48 AM  
 Collected:

Project: **60546404-RS9**

**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>Lead Concentration</i>
1	551807748-0001 Site: SW-rail-black	7/4/2018	7/4/2018	0.2435 g	0.68 % wt
2	551807748-0002 Site: SW-rail-black	7/4/2018	7/4/2018	0.2463 g	2.4 % wt
3	551807748-0003 Site: SW-Conc-grey	7/4/2018	7/4/2018	0.2428 g	<0.0082 % wt
4	551807748-0004 Site: SW-Conc-light grey	7/4/2018	7/4/2018	0.2469 g	<0.0081 % wt

Rowena Fanto, Lead Supervisor  
or other approved signatory

\*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 07/06/2018 10:13:17

