



**greenough**  
environmental consulting inc.

**PROJECT SPECIFIC DESIGNATED SUBSTANCE REPORT  
CANADIAN FOOD INSPECTION AGENCY (CFIA)  
BACKFLOW PREVENTER PROJECT  
3851 FALLOWFIELD ROAD  
OTTAWA, ONTARIO**

**ATTENTION:  
JASON JOSS  
PROJECT LEADER**

**GEC PROJECT No. 33072  
February 6, 2023**

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## 1.0 INTRODUCTION

Greenough Environmental Consulting Inc. (GEC) was commissioned by The Canadian Food Inspection Agency (Client) under the direction of Mr. Jason Joss (Project Leader), to conduct a project specific Designated Substance Survey and Report (DSR) for the upcoming Backflow Preventer Project located at 3851 Fallowfield Road in Ottawa, Ontario.

The purpose of the investigation was to identify the quantity, location, and condition of designated substances within specified areas which may be impacted as part of the aforementioned project.

## 2.0 SCOPE OF WORK

The scope of work followed during the assessment was completed in accordance with the scope of work agreed upon by GEC and the Client. The survey was non-destructive. The survey specifically included identification and sampling (where appropriate) of the eleven designated substances in Ontario as follows:

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

The survey was conducted by Ms. Amanda Eliot and Ms. Madeline Burnatowski of GEC on January 20<sup>th</sup>, 2023. The survey areas were defined in consultation with the CFIA representative and specifically included the following:

- Select floor, walls, ceiling and piping located inside the water entry mechanical rooms of the following buildings: 128, 129, 130, 138, 141, 142, 158, 169, 201, 206, 210, 211, 220, the Guardhouse, and the Central Heating Plant.

For the purposes of this project, GEC referenced the following historical reports:

- DST Consulting Engineers “Asbestos-Containing Materials Survey: Canadian Food Inspection Agency Complex: 3851 Fallowfield Road”: DST File No.: GV-SO-026315, November 2016.
- Greenough Environmental Consulting Inc. (GEC) “Project Specific Designated Substance Report Canadian Food Inspection Agency (CFIA) Backflow Preventer Project: 3851 Fallowfield Road”: GEC Project No.: 32063, February 2021.

All work will be completed in accordance with provincial regulations (O. Reg 490/09 and 278/05), the PSPC Asbestos Management Standard and the Canada Labour Code.

Additional details regarding the methodology and scope of work can be found in [Appendix D](#).

### 3.0 FINDINGS

A summary of the designated substance survey results is presented in **Table 1**.

TABLE 1 – SUMMARY OF FINDINGS AND RECOMMENDATIONS			
3851 FALLOWFIELD ROAD, OTTAWA ONTARIO			
SITE SURVEYOR: AMANDA ELIOT & MADELINE BURNATOWSKI		DATE OF ASSESSMENT: JANUARY 20 <sup>TH</sup> , 2023	
PROJECT SCOPE: BACKFLOW PREVENTER PROJECT			
Item	Comments	Conclusions & Recommendations	Photos Appendix C
Asbestos	<p>Based on the on-site assessment and laboratory results, the following <b>Asbestos-Containing Materials (ACMs) were identified</b> and anticipated to be disturbed within the project areas:</p> <ul style="list-style-type: none"> <li>• <b>Friable Grey cement compound [Sample ID: 201-AS-02A-C]</b> sampled from the pipe fittings and end caps in the A-Wing Mechanical Room of Building 201 was confirmed to contain <b>65% Chrysotile Asbestos</b>. The material was assessed to be in good condition and is present in nine (9) pipe fittings, and twelve (12) end caps in the project area.</li> </ul> <p><b>The following assumed asbestos containing materials were identified in the project areas (insufficient sample volume):</b></p> <ul style="list-style-type: none"> <li>• Concealed gaskets throughout the project areas.</li> <li>• Pipe insulation connected to the boiler in building 141 is assumed to contain asbestos. The boiler and associated plumbing is not anticipated to be a part of the renovations.</li> </ul> <p>Based on the on-site assessment and laboratory results, <b>no Asbestos-Containing Materials (ACMs) were identified</b> in the following materials anticipated to be disturbed within the project areas:</p> <ul style="list-style-type: none"> <li>• <b>Drywall joint compound [Sample ID: 129-AS-01A-C]</b> located on the walls in the Mechanical Room in Building 129.</li> </ul>	<p><u>Project Specific Recommendations:</u></p> <p>Disturbance / removal of identified ACMs must be performed in accordance with the procedures outlined in Ontario Regulations 278/05, PSPC Asbestos Management Standard (AMS), the Canada Labour Code (CLC) and project-specific asbestos abatement specifications.</p> <p>Suspect materials, identified herein and/or identified during future projects not discussed in this report, should be treated as ACMs unless proven otherwise through material specific sampling and analysis in accordance with the requirements of Ontario Regulation 278/05, PSPC Asbestos Management Standard and the Canada Labour Code.</p> <p>The roles and responsibility of “the owner” as stipulated in Section 8 of Ontario Regulation 278/05 must be recognized and adhered to including, but not limited to, notification to occupiers and workers as well as training.</p> <p>General recommendations for asbestos, including PSPC’s AMS Classifications &amp; Action definitions can be found in Section 2.1 of <b>Appendix D</b>.</p>	<p><b>Figure 1:</b> Representative photograph of the project area in the Mechanical Room in Building 128. <b>Grey paint on the floor [Sample ID: 128-LP-01; 1,460 ppm lead]</b> and <b>beige paint on the wall [Sample ID: 128-LP-02; 1,010 ppm lead]</b> confirmed to contain high levels of lead. Pipe insulation observed to be non asbestos containing foam.</p> <p><b>Figure 2:</b> Representative photographs of the project area in the Mechanical Room in Building 129. Non-asbestos containing drywall joint compound located on the wall [Sample ID: 129-AS-01A-C]. <b>Grey paint on the floor [Sample ID: 129-LP-01; 458 ppm lead]</b> confirmed to contain higher levels of lead, and the beige paint on the wall [Sample ID:</p>

**TABLE 1 – SUMMARY OF FINDINGS AND RECOMMENDATIONS**  
 3851 FALLOWFIELD ROAD, OTTAWA ONTARIO

**SITE SURVEYOR: AMANDA ELIOT & MADELINE BURNATOWSKI**  
**PROJECT SCOPE: BACKFLOW PREVENTER PROJECT**

**DATE OF ASSESSMENT: JANUARY 20<sup>TH</sup>, 2023**

Item	Comments	Conclusions & Recommendations	Photos Appendix C
	<ul style="list-style-type: none"> <li>• <b>White caulking [Sample ID: 138-AS-01A-C]</b> located on the seam of the floor and the wall of the Mechanical Room in Building 138.</li> <li>• <b>Drywall joint compound [Sample ID: 141-AS-01A-C]</b> located on the walls and ceiling in the Mechanical Room in Building 141.</li> <li>• <b>Drywall joint compound [Sample ID: 142-AS-01A-C]</b> located on the walls and ceiling in the Mechanical Room in Building 142.</li> <li>• <b>Cement compound [Sample ID: 158-AS-01A-C]</b> sampled from the steam line pipe fitting in the Mechanical Room of Building 158. Other fittings were observed in the mechanical room that are suspected to contain asbestos. Only one fitting was tested at the request of the client.</li> <li>• <b>Concrete block mortar [Sample ID: 169-AS-01A-C]</b> located on the walls in the Mechanical Room in Building 169.</li> <li>• <b>Black tar paper [Sample ID: 201-AS-01A-C]</b> sampled from the pipe fitting located in the C-Wing Corridor of the Mechanical Room in Building 201.</li> <li>• <b>Concrete block mortar [Sample ID: 206-AS-01A-C]</b> located on the walls in Mechanical Room C in Building 206.</li> <li>• <b>Concrete block mortar [Sample ID: 210-AS-01A-C]</b> located on the walls in the Seed Storage Area of Building 210.</li> <li>• <b>White skim coating [Sample ID: 220-AS-01A-C]</b> located on the walls of the Office and Animal Room in Building 220.</li> <li>• <b>Drywall joint compound [Sample ID: AS-03A-C]</b> sampled within the Guardhouse</li> <li>• <b>Beige mastic [Sample ID: AS-04A-C]</b> applied to ceramic floor tiles within the Guardhouse.</li> </ul>		<p>129-LP-02; 6 ppm lead] contains low levels of lead.</p> <p><b>Figure 3:</b> Representative photographs of the Mechanical Room in Building 130. <b>Grey paint</b> on the floor [<b>Sample ID: 130-LP-01; 569 ppm lead</b>] and <b>beige paint</b> on the wall [<b>Sample ID: 130-LP-02; 168 ppm lead</b>] confirmed to contain high levels of lead. Pipe insulation confirmed to be non asbestos containing fibreglass.</p> <p><b>Figure 4:</b> Representative photograph of the Mechanical Room in Building 138. Non-asbestos containing white caulking located at the seam between the floor and the wall [<b>Sample ID: 138-AS-01A-C</b>]. <b>White paint</b> on the wall [<b>Sample ID: 138-LP-01; 362 ppm lead</b>] and <b>grey paint</b> on the floor [<b>Sample ID: 138-LP-02; 2,320 ppm lead</b>] confirmed to contain high levels of lead.</p>

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Item	Comments	Conclusions & Recommendations	Photos Appendix C
	<p>Unless specified above, all pipe insulation within the project area to be immediately impacted by the backflow installations, were confirmed to non asbestos containing fibreglass or bare metal.</p> <p>A summary of sample results, descriptions, locations and results can be found in <a href="#">Appendix A</a></p>		<p><b>Figure 5:</b> Representative photographs of the Mechanical Room in Building 141. Non-asbestos containing drywall joint compound located on the wall and ceiling [Sample ID: 141-AS-01A-C]. <b>White paint on the wall [Sample ID: 141-LP-01; 1,900 ppm lead]</b> confirmed to contain high levels of lead.</p>
Lead	<p>A surface coating is considered to be lead-containing, with a concentration of lead more than 90 ppm (µg/g) based on Federal regulation SOR/2016-193.</p> <p>Based on the on-site assessment and laboratory results, the following <b>lead-based</b> paints were identified within the buildings:</p> <ul style="list-style-type: none"> <li>• Grey Paint sampled from the floor in the Mechanical Room of Building 128 contains 1,460 ppm lead [<b>Sample ID: 128-LP-01</b>].</li> <li>• Beige Paint sampled from the wall in the Mechanical Room of Building 128 contains 1,010 ppm lead [<b>Sample ID: 128-LP-02</b>].</li> <li>• Grey Paint sampled from the floor in the Mechanical Room of Building 129 contains 458 ppm lead [<b>Sample ID: 129-LP-01</b>].</li> <li>• Grey Paint sampled from the floor in the Mechanical Room of Building 130 contains 569 ppm lead [<b>Sample ID: 130-LP-01</b>].</li> <li>• Beige Paint sampled from the wall in the Mechanical Room of Building 130 contains 168 ppm lead [<b>Sample ID: 130-LP-02</b>].</li> <li>• White Paint sampled from the wall in the Mechanical Room of Building 138 contains 362 ppm lead [<b>Sample ID: 138-LP-01</b>].</li> </ul>	<p>The Ontario Ministry of Labour Guideline - Lead on Construction Projects dated April 2011 does not require removal of lead paint or lead-containing materials unless work on these materials is likely to produce lead fumes or dust, for example, during welding, torch cutting, grinding, drilling, sanding, or sand blasting.</p> <p>Disturbance of lead-containing materials and paints identified must be performed in accordance with the Classifications of Work Operations in Section 5 of the Ministry of Labour: Lead on Construction Projects Guideline as well as Section 7 of the EACC Lead Guideline. Alternatively, a hygiene or exposure assessment can be performed to determine procedures that are required.</p> <p>Regardless of low or elevated lead content, if any work is conducted that has the potential to create airborne lead, every employer shall take all necessary measures and procedures by means of engineering controls, work practices and hygiene practices and facilities to ensure that the time-weighted average exposure of a worker to airborne lead, except tetraethyl lead, shall not exceed 0.05 milligrams lead per cubic metre of air, and in the case of exposure to tetraethyl lead 0.10 milligrams lead per cubic metre of air. O. Reg. 490/09, as amended.</p>	<p><b>Figure 6:</b> Representative photographs of the Mechanical Room in Building 142. Non-asbestos containing drywall joint compound located on the wall and ceiling [Sample ID: 142-AS-01A-C]. Beige paint on the wall [Sample ID: 142-LP-01; 8 ppm lead] contains low levels of lead. Pipe insulation confirmed to be non asbestos containing fibreglass. Suspected mould observed on the fibreglass pipe at the water entry.</p> <p><b>Figure 7:</b> Representative photographs of the</p>

**TABLE 1 – SUMMARY OF FINDINGS AND RECOMMENDATIONS**

3851 FALLOWFIELD ROAD, OTTAWA ONTARIO

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**PROJECT SCOPE: BACKFLOW PREVENTER PROJECT**

**DATE OF ASSESSMENT: JANUARY 20<sup>TH</sup>, 2023**

Item	Comments	Conclusions & Recommendations	Photos Appendix C
	<ul style="list-style-type: none"> <li>• Grey Paint sampled from the floor in the Mechanical Room of Building 138 contains 2,320 ppm lead [Sample ID: 138-LP-02].</li> <li>• White Paint sampled from the wall in the Mechanical Room of Building 141 contains 1,900 ppm lead [Sample ID: 141-LP-01].</li> <li>• Grey Paint sampled from the floor in the Mechanical Room of Building 158 contains 1,270 ppm lead [Sample ID: 158-LP-01].</li> <li>• Grey Paint sampled from the floor in the Mechanical Room C of Building 206 contains 1,310 ppm lead [Sample ID: 206-LP-01].</li> <li>• Grey Paint sampled from the floor in the Mechanical Room of Building 211 contains 2,250 ppm lead [Sample ID: 211-LP-01].</li> <li>• Grey Paint sampled from the floor in the Office Space in Building 220 contains 566 ppm lead [Sample ID: 220-LP-02].</li> <li>• White Paint sampled from the wall in the Mechanical Room of the Central Heating Plant contains 1,200 ppm lead [Sample ID: CHP-LP-02].</li> </ul> <p>Lead in paint was not sampled in the South Guardhouse during the 2020 assessment, and should all be treated as lead containing unless testing proves otherwise.</p> <p>Based on the on-site assessment and laboratory results, <b><u>low levels of lead</u></b> within the following paints were identified at the buildings:</p> <ul style="list-style-type: none"> <li>• Beige Paint sampled from the wall in the Mechanical Room of Building 129 contains 6 ppm lead [Sample ID: 129-LP-02].</li> </ul>	<p>Waste materials from paints with an elevated lead content and the materials to which they are applied, should be sampled and undergo Toxicity characteristic leaching procedure (TCLP) laboratory analysis to assess disposal requirements.</p> <p>General recommendations for lead can be found in Section 2.2 of <b>Appendix D</b>.</p>	<p>Mechanical Room in Building 158. Non-asbestos containing cement compound located on the pipe fitting [Sample ID: 158-AS-01A-C]. Only one fitting was tested as per client request. <b>Grey paint on the floor [Sample ID: 158-LP-01; 1,270 ppm lead]</b> confirmed to contain high levels of lead. Pipe insulation on the water entry pipe confirmed to be non asbestos containing fibreglass. No other pipe insulation was assessed as it is not anticipated to be disturbed as part of the backflow installation project.</p> <p><b>Figure 8:</b> Representative photograph of the Mechanical Room in Building 169. Non-asbestos containing concrete block mortar located on the wall [Sample ID: 169-AS-01A-C]. Beige paint on the wall [Sample ID: 169-LP-01; 41 ppm lead] contains low levels of lead.</p>





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	<ul style="list-style-type: none"> <li>• Beige Paint sampled from the wall in the Mechanical Room of Building 142 contains 8 ppm lead [Sample ID: 142-LP-01].</li> <li>• Beige Paint sampled from the wall in the Mechanical Room of Building 169 contains 41 ppm lead [Sample ID: 169-LP-01].</li> <li>• Beige Paint sampled from the wall in the Mechanical Room C of Building 206 contains 31 ppm lead [Sample ID: 206-LP-02].</li> <li>• Beige Paint sampled from the wall in the Seed Storage Room in Building 210 contains 12 ppm lead [Sample ID: 210-LP-01].</li> <li>• Beige Paint sampled from the wall in the Office Space in Building 220 contains 8 ppm lead [Sample ID: 220-LP-01].</li> <li>• Grey Paint sampled from the floor in the Mechanical Room of the Central Heating Plant contains 74 ppm lead [Sample ID: CHP-LP-01].</li> </ul> <p>Based on the age of the building and historical applications, lead is assumed <b>to be present in emergency lighting batteries, solder on joints of copper piping &amp; electrical wiring</b> (where observed within the project areas).</p> <p><b>Note:</b> Lead seals in cast iron pipe joints may be concealed within wall cavities.</p> <p>A summary of sample results, descriptions, locations and results can be found in <a href="#">Appendix B</a></p>		<p><b>Figure 9:</b> Representative photograph of the project area in the Mechanical Room in the C-Wing of Building 201. Tar paper under fibreglass insulation was confirmed to be non asbestos containing – 201-AS-01A-C.</p> <p><b>Figure 10:</b> Representative photograph of the project area in the Mechanical Room in the A-Wing of Building 201. Grey cement compound located on the pipe fitting and end caps confirmed to contain <b>65% chrysotile asbestos</b> [Sample ID: 201-AS-02A-C]. Suspect mould on pipe insulation (blue arrow).</p> <p><b>Figure 11:</b> Representative photographs of the project area in Mechanical Room C in Building 206. Non-asbestos containing concrete block mortar located on the wall [Sample ID: 206-AS-01A-C]. <b>Grey paint on the floor</b> [Sample ID: 206-LP-01; 1,310 ppm lead] confirmed to contain</p>
Mercury	Mercury is assumed to be present in the thermometers observed in the project areas.	<p>Mercury vapour within equipment poses no risk to occupants provided the mercury containers remain intact.</p> <p>If removal of the tubes is to be completed, it should be conducted in accordance with the most stringent</p>	

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**PROJECT SCOPE: BACKFLOW PREVENTER PROJECT**

**DATE OF ASSESSMENT: JANUARY 20<sup>TH</sup>, 2023**

Item	Comments	Conclusions & Recommendations	Photos Appendix C
		requirements of the MoL document: <i>The Safe Handling of Mercury: A Guide for the Construction Industry</i> and the MOECC document <i>Code of Practice: Environmentally Sound Management of End-of-Life Lamps Containing Mercury</i> .  General recommendations for mercury can be found in Section 2.3 of <a href="#">Appendix C</a> .	higher levels of lead, and the beige paint on the wall [Sample ID: 206-LP-02; 31 ppm lead] contains low levels of lead.  <b>Figure 12:</b> Representative photograph of the project area in the Seed Storage Room in Building 210. Non-asbestos containing concrete block mortar located on the wall [Sample ID: 210-AS-01A-C]. Beige paint on the wall [Sample ID: 210-LP-01; 12 ppm lead] contains low levels of lead.
Silica	Silica is assumed to be present in concrete components drywall and drywall joint compound, and mortars.	Silica dust can be generated by drilling, coring, blasting, grinding, crushing and sandblasting silica-containing materials.  Should the above noted manipulation of the potential silica-containing materials be completed, ensure that all necessary measures and procedures by means of engineering controls, work practices and hygiene practices and facilities are implemented to ensure that the TWAEV of a worker to silica is reduced to the lowest practical level and , in any event, shall not exceed 0.05 milligrams per cubic metre of air by volume for cristobalite and tridymite, and 0.10 milligrams silica per cubic metre of air by volume for quartz and tripoli.  General recommendations for silica can be found in Section 2.4 of <a href="#">Appendix D</a> .	<b>Figure 13:</b> Representative photograph of the project area in the Mechanical Room in Building 211. <b>Grey paint on the floor [Sample ID: 211-LP-01; 2,250 ppm lead] confirmed to contain high levels of lead.</b>
Mould	Suspect staining consistent with mould growth was observed in the fiberglass insulation around the pipes in the C-Wing Mechanical Room of Building 201. Suspected mould/water staining observed on the fibreglass pipe at the water entry in the mechanical closet in Building 142. (Less than 1m <sup>2</sup> observed in both buildings.	Conduct sampling to determine if mould is present. Delineate to determine the extent of suspected impacted materials.  In the absence of any federal or provincial regulations pertaining to mould remediation, industry standards are abided. GEC recommends any mould impacted materials to be remediated following the procedures outlined in the following documents:  1) "EACO Mould Abatement Guidelines, Edition 3, 2015" – Environmental Abatement Council of Ontario (EACO). 2) 'Mould Guidelines For The Canadian Construction	<b>Figure 14:</b> Representative photograph of the project area in the Office Space of Building 220. <b>Grey paint on the floor [Sample ID: 220-LP-02; 566 ppm lead] confirmed to contain</b>

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3851 FALLOWFIELD ROAD, OTTAWA ONTARIO			
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Item	Comments	Conclusions & Recommendations	Photos <a href="#">Appendix C</a>
		Industry, 2018' – Canadian Construction Association (CCA). 3) “Standard for Professional Mould Remediation, S-520” prepared by the Institute of Inspection Cleaning and Restoration Certification (2015).  If any changes occur with respect to the presence of moisture/water within the building, expert assessment should be sought immediately to identify potential health concerns and associated appropriate actions.  General recommendations for silica can be found in Section 2.5 of <a href="#">Appendix D</a> .	higher levels of lead, and the beige paint on the wall [Sample ID: 220-LP-01; 8 ppm lead] contains low levels of lead.  <b>Figure 15:</b> Representative photograph of the Animal Room in Building 220. Non-asbestos containing white skim coating located on the wall, see photo on the right [Sample ID: 220-AS-01A-C].
Other Designated Substances	The following Designated Substances were not identified in quantities or forms which are anticipated to be impacted as part of the current project scope of work:  Acrylonitrile Arsenic Benzene Coke Oven Emissions Ethylene Oxides Isocyanates Vinyl Chloride	No recommendations warranted.	<b>Figure 16:</b> Representative photograph of the project area in the Mechanical Room of the Central Heating Plant. <b>White paint</b> on the wall [Sample ID: CHP-LP-02; 1,200 ppm lead] confirmed to contain higher levels of lead, and the grey paint on the floor [Sample ID: CHP-LP-01; 74 ppm lead] contains low levels of lead. Thermometer suspected to contain <b>mercury</b> . Pipe insulation in the project area confirmed to be non asbestos containing.

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**PROJECT SCOPE: BACKFLOW PREVENTER PROJECT**

**DATE OF ASSESSMENT: JANUARY 20<sup>TH</sup>, 2023**

<b>Item</b>	<b>Comments</b>	<b>Conclusions &amp; Recommendations</b>	<b>Photos</b> <a href="#">Appendix C</a>

## 4.0 SURVEY LIMITATIONS

This report reflects the observations of accessed areas only, as they relate to the current scope of work. It is possible that additional designated substances and hazardous materials exist outside the survey area, but they are beyond the scope of this survey.

**GEC cannot warrant against the discovery of additional ACMs concealed in wall cavities, internal pipe lining etc. due to the non-destructive nature of this survey.**

Various building materials that may contain asbestos were not sampled during the survey due to accessibility (i.e., require dismantling or demolishing). These include, but are not limited to; underground mechanical piping, high voltage wiring, various adhesives, bell fittings, components and wiring within motors and lights, and mechanical gaskets.

Limited access was obtained into the following areas of the project area:

- No/Limited Access: Materials which will not be impacted by the backflow installation project.
- Crawl spaces such as manholes in select buildings.

GEC cannot warrant against the discovery of additional designated substances and hazardous materials in inaccessible wall cavities, pipe penetrations, closed bulkheads and ceilings due to the limited-intrusive nature of this assessment. If suspect materials are discovered in areas not accessed during the survey (i.e., within fire doors, beneath carpets, etc.), they should be treated as asbestos-containing materials until proven otherwise through sampling and subsequent laboratory analysis.

## 5.0 CLOSURE

This report has been prepared for the sole benefit of the Client and their intended use. The report may not be relied upon by any other person or entity without the written consent of Greenough Environmental Consulting Inc. (GEC), and the Client.

GEC accepts no responsibility for any use that an outside party makes of this report and any reliance on decisions made based on it, are the responsibility of such parties.

This report was not intended to provide direction or procedures for the handling of designated substances and hazardous materials. Only persons with documented, current training in the safe handling of the designated substances and hazardous materials should handle them. Persons handling any of the designated substances and/or hazardous materials identified in this survey, or conducting work in the vicinity of these materials are advised to consult this survey and individuals with appropriate experience and training, prior to doing so.

The conclusions presented represent the best judgment of the assessor based on current environmental standards. Due to the nature of the investigation and the limited data available, the assessor cannot warrant against undiscovered environmental liabilities.

We trust that the report meets your current requirements. Should you have any questions or concerns regarding the above, please do not hesitate to contact the undersigned.

Yours truly,

### **GREENOUGH ENVIRONMENTAL CONSULTING INC.**

Reported By:



Madeline Burnatowski, B.Sc. (Hons)  
Environmental Technician

Reviewed By



Amanda Eliot, B.Sc. (EP)  
Project Manager

# **APPENDIX A**

**SUMMARY OF RESULTS & CERTIFICATES OF LABORATORY ANALYSIS:**

**ASBESTOS**



## **Summary of Results & Certificates of Laboratory Analysis: Asbestos**

The sampling completed for the purpose of this project-specific DSR is outlined in **Table 2** below.

<b>TABLE 2 – RESULTS OF ASBESTOS ANALYSIS 3851 FALLOWFIELD ROAD, OTTAWA ONTARIO</b>				
<b>Sample Reference</b>	<b>Building Material Description of Material</b>	<b>Application of Material</b>	<b>Location of Sample</b>	<b>Result &amp; Type</b>
129-AS-01A	Drywall Joint Compound	Wall	Mechanical Room, Building 129	ND
129-AS-01B				ND
129-AS-01C				ND
138-AS-01A	Caulking (white)	Floor and Wall Seam	Mechanical Room, Building 138	ND
138-AS-01B				ND
138-AS-01C				ND
141-AS-01A	Drywall Joint Compound	Wall/Ceiling	Mechanical Room, Building 141	ND
141-AS-01B				ND
141-AS-01C				ND
142-AS-01A	Drywall Joint Compound	Wall/Ceiling	Mechanical Room, Building 142	ND
142-AS-01B				ND
142-AS-01C				ND
158-AS-01A	Cement Compound	Steam Line Pipe Fitting	Mechanical Room, Building 158	ND
158-AS-01B				ND
158-AS-01C				ND
169-AS-01A	Concrete Block Mortar	Wall	Mechanical Room, Building 169	ND
169-AS-01B				ND



<b>TABLE 2 – RESULTS OF ASBESTOS ANALYSIS 3851 FALLOWFIELD ROAD, OTTAWA ONTARIO</b>				
<b>Sample Reference</b>	<b>Building Material Description of Material</b>	<b>Application of Material</b>	<b>Location of Sample</b>	<b>Result &amp; Type</b>
169-AS-01C				ND
201-AS-01A	Tar Paper (black)	Pipe Fitting	C-Wing Corridor in Mechanical Room, Building 201	ND
201-AS-01B				ND
201-AS-01C				ND
<b>201-AS-02A</b>				<b>Grey Cement Compound</b>
<b>201-AS-02B</b>	<b>Sampled from the end cap in the A-Wing Mechanical Room, Building 201</b>	<b>Positive Stop</b>		
<b>201-AS-02C</b>	<b>Sampled from the pipe fitting in the A-Wing Mechanical Room, Building 201</b>	<b>Positive Stop</b>		
206-AS-01A	Concrete Block Mortar	Wall	Mechanical Room C, Building 206	ND
206-AS-01B				ND
206-AS-01C				ND
210-AS-01A	Concrete Block Mortar	Wall	Seed Storage Room, Building 210	ND
210-AS-01B				ND
210-AS-01C				ND
220-AS-01A	Skim Coating (white)	Wall	Office and Animal Room, Building 220	ND
220-AS-01B				ND
220-AS-01C				ND

**Note:**

ND = No Asbestos Detected.

CH = Chrysotile Asbestos.

An "Asbestos-containing material," as defined by the Ontario Ministry of Labour Regulation 278/05, is any material found to contain 0.5% or greater asbestos by dry weight.

Based on the laboratory analysis and historically sampled materials, the following **Asbestos-Containing Materials (ACMs)** were identified during the survey:

**Friable ACMs:**

- **Grey cement compound [Sample ID: 201-AS-02A-C]** sampled from the pipe fittings and end caps in the A-Wing Mechanical Room of Building 201 was confirmed to contain **65% chrysotile asbestos**. The material was assessed to be in good condition and is present in nine (9) pipe fittings, and twelve (12) end caps in the project area.

The following **assumed asbestos containing materials** were identified in the project areas (insufficient sample volume):

- Concealed gaskets throughout the project areas.  
Pipe insulation connected to the boiler in building 141 is assumed to contain asbestos. The boiler and associated plumbing is not anticipated to be a part of the renovations.

Based on laboratory analysis, the following **non-asbestos containing** materials were identified during the survey:

- **Drywall joint compound [Sample ID: 129-AS-01A-C]** located on the walls in the Mechanical Room in Building 129.
- **White caulking [Sample ID: 138-AS-01A-C]** located on the seam of the floor and the wall of the Mechanical Room in Building 138.
- **Drywall joint compound [Sample ID: 141-AS-01A-C]** located on the walls and ceiling in the Mechanical Room in Building 141.
- **Drywall joint compound [Sample ID: 142-AS-01A-C]** located on the walls and ceiling in the Mechanical Room in Building 142.
- **Cement compound [Sample ID: 158-AS-01A-C]** sampled from the steam line pipe fitting in the Mechanical Room of Building 158. Other fittings were observed in the mechanical room that are suspected to contain asbestos. Only one fitting was tested at the request of the client.
- **Concrete block mortar [Sample ID: 169-AS-01A-C]** located on the walls in the Mechanical Room in Building 169.
- **Black tar paper [Sample ID: 201-AS-01A-C]** sampled from the pipe fitting located in the C-Wing Corridor of the Mechanical Room in Building 201.
- **Concrete block mortar [Sample ID: 206-AS-01A-C]** located on the walls in Mechanical Room C in Building 206.
- **Concrete block mortar [Sample ID: 210-AS-01A-C]** located on the walls in the Seed Storage Area of Building 210.
- **White skim coating [Sample ID: 220-AS-01A-C]** located on the walls of the Office and Animal Room in Building 220.
- **Drywall joint compound [Historical GEC Sample ID: AS-03A-C]** sampled within the Guardhouse
- **Beige mastic [Historical GEC Sample ID: AS-04A-C]** applied to ceramic floor tiles within the Guardhouse.

Unless specified above, all pipe insulation within the project area to be immediately impacted by the backflow installations, was confirmed to non asbestos containing fibreglass or bare metal.

**GEC cannot warrant against the discovery of additional ACMs in wall cavities, closed bulkheads and closed ceilings due to the non-destructive nature of this survey.**

## Certificate of Analysis

**Greenough Environmental Consulting Inc.**

29 Capital Drive  
Ottawa, ON K2C 0E7  
Attn: Madeline Burnatowski

Client PO: 3851 Fallowfield Road, Ottawa, ON  
Project: 33072  
Custody:

Report Date: 26-Jan-2023  
Order Date: 20-Jan-2023

**Order #: 2303505**

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Parcel ID	Client ID
2303505-01	129-AS-01A
2303505-02	129-AS-01B
2303505-03	129-AS-01C
2303505-04	138-AS-01A
2303505-05	138-AS-01B
2303505-06	138-AS-01C
2303505-07	141-AS-01A
2303505-08	141-AS-01B
2303505-09	141-AS-01C
2303505-10	142-AS-01A
2303505-11	142-AS-01B
2303505-12	142-AS-01C
2303505-13	158-AS-01A
2303505-14	158-AS-01B
2303505-15	158-AS-01C
2303505-16	169-AS-01A
2303505-17	169-AS-01B
2303505-18	169-AS-01C
2303505-19	201-AS-01A
2303505-20	201-AS-01B
2303505-21	201-AS-01C
2303505-22	201-AS-02A
2303505-23	201-AS-02B
2303505-24	201-AS-02C
2303505-25	206-AS-01A
2303505-26	206-AS-01B

Approved By:



Emma Diaz  
Senior Analyst

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Client: **Greenough Environmental Consulting Inc.**

Client PO: **3851 Fallowfield Road, Ottawa, ON**

Report Date: 26-Jan-2023

Order Date: 20-Jan-2023

Project Description: **33072**

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2303505-27	206-AS-01C
2303505-28	210-AS-01A
2303505-29	210-AS-01B
2303505-30	210-AS-01C
2303505-31	220-AS-01A
2303505-32	220-AS-01B
2303505-33	220-AS-01C

Certificate of Analysis

Report Date: 26-Jan-2023

Client: Greenough Environmental Consulting Inc.

Order Date: 20-Jan-2023

Client PO: 3851 Fallowfield Road, Ottawa, ON

Project Description: 33072

**Asbestos, PLM Visual Estimation    \*\*MDL - 0.5%\*\***

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2303505-01	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 129-AS-01A</b> Non-Fibers	100
2303505-02	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 129-AS-01B</b> Non-Fibers	100
2303505-03	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 129-AS-01C</b> Non-Fibers	100
2303505-04	20-Jan-23	White	Caulking	No	<b>Client ID: 138-AS-01A</b> Non-Fibers	100
2303505-05	20-Jan-23	White	Caulking	No	<b>Client ID: 138-AS-01B</b> Non-Fibers	100
2303505-06	20-Jan-23	White	Caulking	No	<b>Client ID: 138-AS-01C</b> Non-Fibers	100
2303505-07	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 141-AS-01A</b> Non-Fibers	100
2303505-08	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 141-AS-01B</b> Non-Fibers	100
2303505-09	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 141-AS-01C</b> Non-Fibers	100
2303505-10	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 142-AS-01A</b> Non-Fibers	100
2303505-11	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 142-AS-01B</b> Non-Fibers	100
2303505-12	20-Jan-23	Grey	Drywall Joint Compound	No	<b>Client ID: 142-AS-01C</b> Non-Fibers	100

Certificate of Analysis  
 Client: **Greenough Environmental Consulting Inc.**  
 Client PO: **3851 Fallowfield Road, Ottawa, ON**

Report Date: 26-Jan-2023  
 Order Date: 20-Jan-2023  
 Project Description: **33072**

**Asbestos, PLM Visual Estimation    \*\*MDL - 0.5%\*\***

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2303505-13	20-Jan-23	Brown	Cement Compound	No	<b>Client ID: 158-AS-01A</b>	[Z-01]
					Cellulose	10
					MMVF	1
					Non-Fibers	89
2303505-14	20-Jan-23	Brown	Cement Compound	No	<b>Client ID: 158-AS-01B</b>	[Z-01]
					Cellulose	10
					MMVF	1
					Non-Fibers	89
2303505-15	20-Jan-23	Brown	Cement Compound	No	<b>Client ID: 158-AS-01C</b>	[Z-01]
					Cellulose	10
					MMVF	1
					Non-Fibers	89
2303505-16	20-Jan-23	Grey	Mortar	No	<b>Client ID: 169-AS-01A</b>	
					Non-Fibers	100
2303505-17	20-Jan-23	Grey	Mortar	No	<b>Client ID: 169-AS-01B</b>	
					Non-Fibers	100
2303505-18	20-Jan-23	Grey	Mortar	No	<b>Client ID: 169-AS-01C</b>	
					Non-Fibers	100
2303505-19	20-Jan-23	Black	Tar Paper	No	<b>Client ID: 201-AS-01A</b>	[AS-PRE]
					Cellulose	60
					MMVF	3.9
					Non-Fibers	36.1
2303505-20	20-Jan-23	Black	Tar Paper	No	<b>Client ID: 201-AS-01B</b>	[AS-PRE]
					Cellulose	35
					MMVF	6.58
					Non-Fibers	58.42

Certificate of Analysis

Report Date: 26-Jan-2023

Client: Greenough Environmental Consulting Inc.

Order Date: 20-Jan-2023

Client PO: 3851 Fallowfield Road, Ottawa, ON

Project Description: 33072

**Asbestos, PLM Visual Estimation    \*\*MDL - 0.5%\*\***

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2303505-21	20-Jan-23	Black	Tar Paper	No	<b>Client ID: 201-AS-01C</b>	
						[AS-PRE]
					Cellulose	60
					MMVF	4.02
					Non-Fibers	35.98
2303505-22	20-Jan-23	Grey	Cement Compound	Yes	<b>Client ID: 201-AS-02A</b>	
					Chrysotile	65
					Non-Fibers	35
2303505-23	20-Jan-23	Grey	Cement Compound		<b>Client ID: 201-AS-02B</b>	
					not analyzed, positive stop	
2303505-24	20-Jan-23	Grey	Cement Compound		<b>Client ID: 201-AS-02C</b>	
					not analyzed, positive stop	
2303505-25	20-Jan-23	Grey	Mortar	No	<b>Client ID: 206-AS-01A</b>	
					Non-Fibers	100
2303505-26	20-Jan-23	Grey	Mortar	No	<b>Client ID: 206-AS-01B</b>	
					Non-Fibers	100
2303505-27	20-Jan-23	Grey	Mortar	No	<b>Client ID: 206-AS-01C</b>	
					Non-Fibers	100
2303505-28	20-Jan-23	Grey	Mortar	No	<b>Client ID: 210-AS-01A</b>	
					Non-Fibers	100
2303505-29	20-Jan-23	Grey	Mortar	No	<b>Client ID: 210-AS-01B</b>	
					Non-Fibers	100
2303505-30	20-Jan-23	Grey	Mortar	No	<b>Client ID: 210-AS-01C</b>	
					Non-Fibers	100
2303505-31	20-Jan-23	White	Skim Coat	No	<b>Client ID: 220-AS-01A</b>	
					Non-Fibers	100

Certificate of Analysis

Client: **Greenough Environmental Consulting Inc.**

Client PO: **3851 Fallowfield Road, Ottawa, ON**

Report Date: 26-Jan-2023

Order Date: 20-Jan-2023

Project Description: **33072**

**Asbestos, PLM Visual Estimation    \*\*MDL - 0.5%\*\***

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2303505-32	20-Jan-23	White	Skim Coat	No	<b>Client ID: 220-AS-01B</b>	
					Non-Fibers	100
2303505-33	20-Jan-23	White	Skim Coat	No	<b>Client ID: 220-AS-01C</b>	
					Non-Fibers	100

\* MMVF: Man Made Vitreous Fibers: Fiberglass, Mineral Wool, Rockwool, Glasswool

\*\* Analytes in bold indicate asbestos mineral content.

**Analysis Summary Table**

Analysis	Method Reference/Description	Lab Location	Lab Accreditation	Analysis Date
Asbestos, PLM Visual Estimation	AppE to SubE of 40CFR Part753 and EPA/600/R-93/116	2 - Ottawa West	CALA 1262	25-Jan-23

Ottawa West Lab: 25 Northside Rd, Unit C Nepean, Ontario K2H 8S1

**Qualifier Notes**

Sample Qualifiers :

AS-PRE: Due to the difficult nature of the bulk sample (interfering fibers/binders), additional NOB preparation was required prior to analysis

Z-01: Sample contains vermiculite. Low sample volume.

**Work Order Revisions | Comments**

None



Parcel ID: 2303505



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.com

Chain of Custody  
(Lab Use Only)

Page 1 of 1

Client Name: Greenough Environmental Consulting Inc.	Project Reference: 33072
Contact Name: Madeline Burnatowski	Quote #:
Address: 29 Capital Drive Ottawa, ON	PO #: 3851 Fallowfield Road, Ottawa, ON
Telephone: 613-2525928	Email Address: mburnatowski@greenough.ca admin@greenough.ca aeliot@greenough.ca

**Turnaround Time:**

Immediate     1 Day  
 4 Hour        2 Day  
 8 Hour        3 Day  
 Regular

Date Required: \_\_\_\_\_

**ASBESTOS & MOLD ANALYSIS**

Matrix:  Air  Bulk  Tape Lift  Swab  Other    Regulatory Guideline:  ON  QC  AB  SK  Other:

Analyses:  Microscopic Mold  Culturable Mold  Bacteria GRAM  PCM Asbestos  PLM Asbestos  Chatfield Asbestos  TEM Asbestos

Parcel Order Number:

Sample ID	Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk	
				Identify Distinct Building Materials to Be Analyzed (if not specified, all materials identified will be analyzed) *	Positive Stop?
1 129-AS-01 (A-C)	20/01/23		PLM	Drywall Joint Compound	<input type="checkbox"/>
2 138-AS-01 (A-C)	20/01/23		PLM	Caulking (white)	<input checked="" type="checkbox"/>
3 141-AS-01 (A-C)	20/01/23		PLM	Drywall Joint Compound	<input checked="" type="checkbox"/>
4 142-AS-01 (A-C)	20/01/23		PLM	Drywall Joint Compound	<input checked="" type="checkbox"/>
5 158-AS-01 (A-C)	20/01/23		PLM	Grey Cement Compound (pipe fitting)	<input checked="" type="checkbox"/>
6 169-AS-01 (A-C)	20/01/23		PLM	Concrete Block Mortar	<input checked="" type="checkbox"/>
7 201-AS-01 (A-C)	20/01/23		PLM	Tar paper (black)	<input checked="" type="checkbox"/>
8 201-AS-02 (A-C)	20/01/23		PLM	Grey Cement Compound (pipe fitting)	<input checked="" type="checkbox"/>
9 206-AS-01 (A-C)	20/01/23		PLM	Concrete Block Mortar	<input checked="" type="checkbox"/>
10 210-AS-01 (A-C)	20/01/23		PLM	Concrete Block Mortar	<input checked="" type="checkbox"/>
11 220-AS-01 (A-C)	20/01/23		PLM	Concrete Block Mortar	<input checked="" type="checkbox"/>
12			PLM	Skim Coating (sample skim coat only, not wood)	<input checked="" type="checkbox"/>

\* If left blank, all distinct materials identified in the samples will be analyzed and reported separately as per EPA 600/R-93/116. Additional charges will apply.

Comments:

Method of Delivery:

*PARACEL COURIER*

Relinquished By (Sign): <i>M. Burnatowski</i>	Received at Depot: <i>A. FLOUSE</i>	Received at Lab: <i>[Signature]</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): Madeline Burnatowski	Date/Time: 20/01/23 13:20	Date/Time: 01/20/23 1:56pm	Date/Time: 01/20/23 3:41pm

## **APPENDIX B**

**SUMMARY OF RESULTS & CERTIFICATES OF LABORATORY ANALYSIS:**

**LEAD**

## Summary of Results & Certificates of Laboratory Analysis: Lead

**Table 3** provides a summary of the lead analytical results collected for the purpose of this survey. The analytical results follow this table.

TABLE 3 – SUMMARY OF LEAD ANALYTICAL RESULTS 3851 FALLOWFIELD ROAD, OTTAWA ONTARIO			
Sample Reference	Location & Item	Surface Colour	Results (µg/g Lead)
128-LP-01	Paint – Building 128 Mechanical Room, Floor	Grey	1460
128-LP-02	Paint – Building 128 Mechanical Room, Wall	Beige	1010
129-LP-01	Paint – Building 129 Mechanical Room, Floor	Grey	458
129-LP-02	Paint – Building 129 Mechanical Room, Wall	Beige	6
130-LP-01	Paint – Building 130 Mechanical Room, Floor	Grey	569
130-LP-02	Paint – Building 130 Mechanical Room, Wall	Beige	168
138-LP-01	Paint – Building 138 Mechanical Room, Wall	White	362
138-LP-02	Paint – Building 138 Mechanical Room, Floor	Grey	2320
141-LP-01	Paint – Building 141 Mechanical Room, Wall	White	1900
142-LP-01	Paint – Building 142 Mechanical Room, Wall	Beige	8
158-LP-01	Paint – Building 158 Mechanical Room, Floor	Grey	1270
169-LP-01	Paint – Building 169 Mechanical Room, Wall	Beige	41
206-LP-01	Paint – Building 206 Mechanical Room C, Floor	Grey	1310
206-LP-02	Paint – Building 206 Mechanical Room C, Wall	Beige	31
210-LP-01	Paint – Building 210 Seed Storage Room, Wall	Beige	12
211-LP-01	Paint – Building 211 Mechanical Room, Floor	Grey	2250
220-LP-01	Paint – Building 220 Office Space, Wall	Beige	8
220-LP-02	Paint – Building 220 Office Space, Floor	Grey	566
CHP-LP-01	Paint – Central Heating Plant Mechanical Room, Floor	Grey	74
CHP-LP-02	Paint – Central Heating Plant Mechanical Room, Wall	White	1200

A surface coating is considered to be lead-containing, with a concentration of lead more than 90 ppm (µg/g) based on Federal regulation SOR/2016-193.

As indicated in the table above, twenty (20) lead samples were collected from within the project areas and submitted for laboratory analysis.

Based on laboratory analysis identified in **Table 3**, the following lead-based paints were identified within the buildings:

- Grey Paint sampled from the floor in the Mechanical Room of Building 128 contains 1,460 ppm lead [**Sample ID: 128-LP-01**].
- Beige Paint sampled from the wall in the Mechanical Room of Building 128 contains 1,010 ppm lead [**Sample ID: 128-LP-02**].
- Grey Paint sampled from the floor in the Mechanical Room of Building 129 contains 458 ppm lead [**Sample ID: 129-LP-01**].
- Grey Paint sampled from the floor in the Mechanical Room of Building 130 contains 569 ppm lead [**Sample ID: 130-LP-01**].
- Beige Paint sampled from the wall in the Mechanical Room of Building 130 contains 168 ppm lead [**Sample ID: 130-LP-02**].
- White Paint sampled from the wall in the Mechanical Room of Building 138 contains 362 ppm lead [**Sample ID: 138-LP-01**].

- Grey Paint sampled from the floor in the Mechanical Room of Building 138 contains 2,320 ppm lead [**Sample ID: 138-LP-02**].
- White Paint sampled from the wall in the Mechanical Room of Building 141 contains 1,900 ppm lead [**Sample ID: 141-LP-01**].
- Grey Paint sampled from the floor in the Mechanical Room of Building 158 contains 1,270 ppm lead [**Sample ID: 158-LP-01**].
- Grey Paint sampled from the floor in the Mechanical Room C of Building 206 contains 1,310 ppm lead [**Sample ID: 206-LP-01**].
- Grey Paint sampled from the floor in the Mechanical Room of Building 211 contains 2,250 ppm lead [**Sample ID: 211-LP-01**].
- Grey Paint sampled from the floor in the Office Space in Building 220 contains 566 ppm lead [**Sample ID: 220-LP-02**].
- White Paint sampled from the wall in the Mechanical Room of the Central Heating Plant contains 1,200 ppm lead [**Sample ID: CHP-LP-02**].

Lead in paint was not sampled in the South Guardhouse during the 2020 assessment, and should all be treated as lead containing unless testing proves otherwise.

Based on laboratory analysis identified in **Table 3**, the following **low levels of lead** within the following paints were identified within the buildings:

- Beige Paint sampled from the wall in the Mechanical Room of Building 129 contains 6 ppm lead [**Sample ID: 129-LP-02**].
- Beige Paint sampled from the wall in the Mechanical Room of Building 142 contains 8 ppm lead [**Sample ID: 142-LP-01**].
- Beige Paint sampled from the wall in the Mechanical Room of Building 169 contains 41 ppm lead [**Sample ID: 169-LP-01**].
- Beige Paint sampled from the wall in the Mechanical Room C of Building 206 contains 31 ppm lead [**Sample ID: 206-LP-02**].
- Beige Paint sampled from the wall in the Seed Storage Room in Building 210 contains 12 ppm lead [**Sample ID: 210-LP-01**].
- Beige Paint sampled from the wall in the Office Space in Building 220 contains 8 ppm lead [**Sample ID: 220-LP-01**].
- Grey Paint sampled from the floor in the Mechanical Room of the Central Heating Plant contains 74 ppm lead [**Sample ID: CHP-LP-01**].

Disturbance of lead-containing materials identified must be performed in accordance with the Classifications of Work Operations in Section 5 of the Ministry of Labour: Lead on Construction Projects Guideline as well as Section 7 of the EACC Lead Guideline. Alternatively, a hygiene or exposure assessment can be performed to determine procedures that are required.

**Note:** Some paints could not be sampled as they were in good condition and sampling without matrix interference (i.e., removing the paint without the substrate material) would have proved difficult. Other paints shall be assumed to contain detectable concentrations of lead, unless specific bulk sampling and laboratory analysis confirms otherwise.

Based on the age of the buildings and historical applications, lead is assumed to be present in cast-iron joint caulking, electrical wiring, and solder on the joints of copper piping (where observed within the project areas).

## Certificate of Analysis

**Greenough Environmental Consulting Inc.**

29 Capital Drive  
Ottawa, ON K2C 0E7

Attn: Madeline Burnatowski

Client PO: 3851 Fallowfield Road, Ottawa, ON

Project: 33072

Custody:

Report Date: 26-Jan-2023

Order Date: 20-Jan-2023

**Order #: 2303512**

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Parcel ID	Client ID
2303512-01	158-LP-01 (Grey)
2303512-02	169-LP-01 (Beige)
2303512-03	206--LP-01 (Grey)
2303512-04	206--LP-02 (Beige)
2303512-05	210--LP-01 (Beige)
2303512-06	211-LP-01 (Grey)
2303512-07	220--LP-01 (Beige)
2303512-08	220--LP-02 (Grey)
2303512-09	CHP-LP-01 (Grey)
2303512-10	CHP-LP-02 (White)
2303512-11	128-LP-01 (Grey)
2303512-12	128-LP-02 (beige)
2303512-13	129-LP-01 (Grey)
2303512-14	129-LP-02 (White)
2303512-15	130-LP-01 (Grey)
2303512-16	130-LP-02 (beige)
2303512-17	138-LP-01 (White)
2303512-18	138-LP-02 (Grey)
2303512-19	141-LP-01 (White)
2303512-20	142-LP-01 (Beige)

Approved By:



Dale Robertson, BSc  
Laboratory Director

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

Certificate of Analysis

Report Date: 26-Jan-2023

Client: Greenough Environmental Consulting Inc.

Order Date: 20-Jan-2023

Client PO: 3851 Fallowfield Road, Ottawa, ON

Project Description: 33072

**Analysis Summary Table**

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	25-Jan-23	25-Jan-23

**Qualifier Notes:**

*Sample Qualifiers :*

- 1 : Complete separation of paint from substrate not possible for this sample and a small amount of substrate has been included in the paint digestion.

**Sample Data Revisions**

None

**Work Order Revisions/Comments:**

None

**Other Report Notes:**

- n/a: not applicable
- ND: Not Detected
- MDL: Method Detection Limit
- Source Result: Data used as source for matrix and duplicate samples
- %REC: Percent recovery.
- RPD: Relative percent difference.

Certificate of Analysis

Report Date: 26-Jan-2023

Client: Greenough Environmental Consulting Inc.

Order Date: 20-Jan-2023

Client PO: 3851 Fallowfield Road, Ottawa, ON

Project Description: 33072

## Sample Results

Lead					Matrix: Paint	
Parcel ID	Client ID	Sample Date	Units	MDL	Result	
2303512-01	158-LP-01 (Grey)	20-Jan-23	ug/g	5	1270	
2303512-02	169-LP-01 (Beige)	20-Jan-23	ug/g	5	41	
2303512-03	206--LP-01 (Grey)	20-Jan-23	ug/g	5	1310	
2303512-04	206--LP-02 (Beige)	20-Jan-23	ug/g	5	31	
2303512-05	210--LP-01 (Beige)	20-Jan-23	ug/g	5	12	
2303512-06	211-LP-01 (Grey)	20-Jan-23	ug/g	5	2250 [1]	
2303512-07	220--LP-01 (Beige)	20-Jan-23	ug/g	5	8	
2303512-08	220--LP-02 (Grey)	20-Jan-23	ug/g	5	566	
2303512-09	CHP-LP-01 (Grey)	20-Jan-23	ug/g	5	74	
2303512-10	CHP-LP-02 (White)	20-Jan-23	ug/g	5	1200	
2303512-11	128-LP-01 (Grey)	20-Jan-23	ug/g	5	1460	
2303512-12	128-LP-02 (beige)	20-Jan-23	ug/g	5	1010	
2303512-13	129-LP-01 (Grey)	20-Jan-23	ug/g	5	458	
2303512-14	129-LP-02 (White)	20-Jan-23	ug/g	5	6	
2303512-15	130-LP-01 (Grey)	20-Jan-23	ug/g	5	569	
2303512-16	130-LP-02 (beige)	20-Jan-23	ug/g	5	168	
2303512-17	138-LP-01 (White)	20-Jan-23	ug/g	5	362	
2303512-18	138-LP-02 (Grey)	20-Jan-23	ug/g	5	2320	
2303512-19	141-LP-01 (White)	20-Jan-23	ug/g	5	1900	
2303512-20	142-LP-01 (Beige)	20-Jan-23	ug/g	5	8	

## Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Matrix Blank</b>									
Lead	ND	5	ug/g						
<b>Matrix Duplicate</b>									
Lead	ND	5	ug/g	ND			NC	50	
<b>Matrix Spike</b>									
Lead	42.4	5.00	ug/g	ND	84.6	70-130			





TRU  
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RELIABLE.

Parcel ID: 2303512



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St. Laurent Blvd.  
Ontario K1G 4J8  
749-1947  
lab.paracellabs.com

**Chain of Custody**  
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Page 1 of 1

Client Name: Greenough Environmental Consulting Inc.	Project Reference: 33072	<b>Turnaround Time:</b> <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Madeline Burnatowski	Quote #	
Address: 29 Capital Drive Ottawa, Ontario	PO # 3851 Fallowfield Road, Ottawa, ON	
Telephone: 613-252-6928	Email Address: aelot@greenough.ca mburnatowski@greenough.ca <i>admin@greenough.ca</i>	

Criteria:  O. Reg. 153/04 (As Amended) Table     RSC Filing     O. Reg. 558/00     PWQO     CCME     SUB (Storm)     SUB (Sanitary)    Municipality: \_\_\_\_\_     Other: \_\_\_\_\_

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)      **Required Analyses**

Parcel Order Number: <i>2303512</i>		Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	Cr-VI	B (HWS)	Lead						
Sample ID/Location Name					Date	Time														
1	158-LP-01 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	169-LP-01 (Beige)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	206-LP-01 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	206-LP-02 (Beige)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	210-LP-01 (Beige)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	211-LP-01 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	220-LP-01 (Beige)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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9	CHP-LP-01 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	CHP-LP-02 (White)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_ Method of Delivery: *PARACEL COURIER*

Relinquished By (Sign): <i>M. Burnatowski</i>	Received by Driver/Depot: <i>A. FLOUJE</i>	Received at Lab: <i>Scotch Demain</i>	Verified By: _____
Relinquished By (Print): Madeline Burnatowski	Date/Time: <i>20/01/23 13:26</i>	Date/Time: <i>Jan 20 4:00</i>	Date/Time: _____
Date/Time: January 20, 2023 12:15PM	Temperature: _____ °C	Temperature: _____ °C	pH Verified [ ] By: _____



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Parcel ID: 2303512



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Chain of Custody  
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Page 1 of 1

Client Name: Greenough Environmental Consulting Inc.	Project Reference: 33072	<b>Turnaround Time:</b> <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Madeline Burnatowski	Quote #	
Address: 29 Capital Drive Ottawa, Ontario	PO # 3851 Fallowfield Road, Ottawa, ON	
Telephone: 613-252-5928	Email Address: aelot@greenough.ca mburnatowski@greenough.ca admin@greenough.ca	

Criteria:  O. Reg. 153/04 (As Amended) Table  RSC Filing  O. Reg. 558/00  PWQO  CCME  SUB (Storm)  SUB (Sanitary) Municipality: \_\_\_\_\_  Other: \_\_\_\_\_

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other) **Required Analyses**

Parcel Order Number: 2303512		Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	Lead						
Sample ID/Location Name					Date	Time														
1	128-LP-01 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	128-LP-02 (beige)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	129-LP-01 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	129-LP-02 (White)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	130-LP-01 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	130-LP-02 (beige)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	138-LP-01 (White)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	138-LP-02 (Grey)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	141-LP-01 (White)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	142-LP-01 (Beige)	P		1	20/01/23	AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_ Method of Delivery: PARACEL COURIER

Relinquished By (Sign): <i>M. Burnatowski</i>	Received by Driver/Depot: <i>A. LOUHE</i>	Received at Lab: <i>Sandra Demcain</i>	Verified By: <i>Sandra Demcain</i>
Relinquished By (Print): Madeline Burnatowski	Date/Time: 20/01/23 13:26	Date/Time: Jan 20 4:00	Date/Time: Jan 20 4:11
Date/Time: January 20, 2023 12:15PM	Temperature: _____ °C	Temperature: _____ °C	pH Verified [ ] By: _____

**APPENDIX C**  
**REPRESENTATIVE PHOTOGRAPHS**

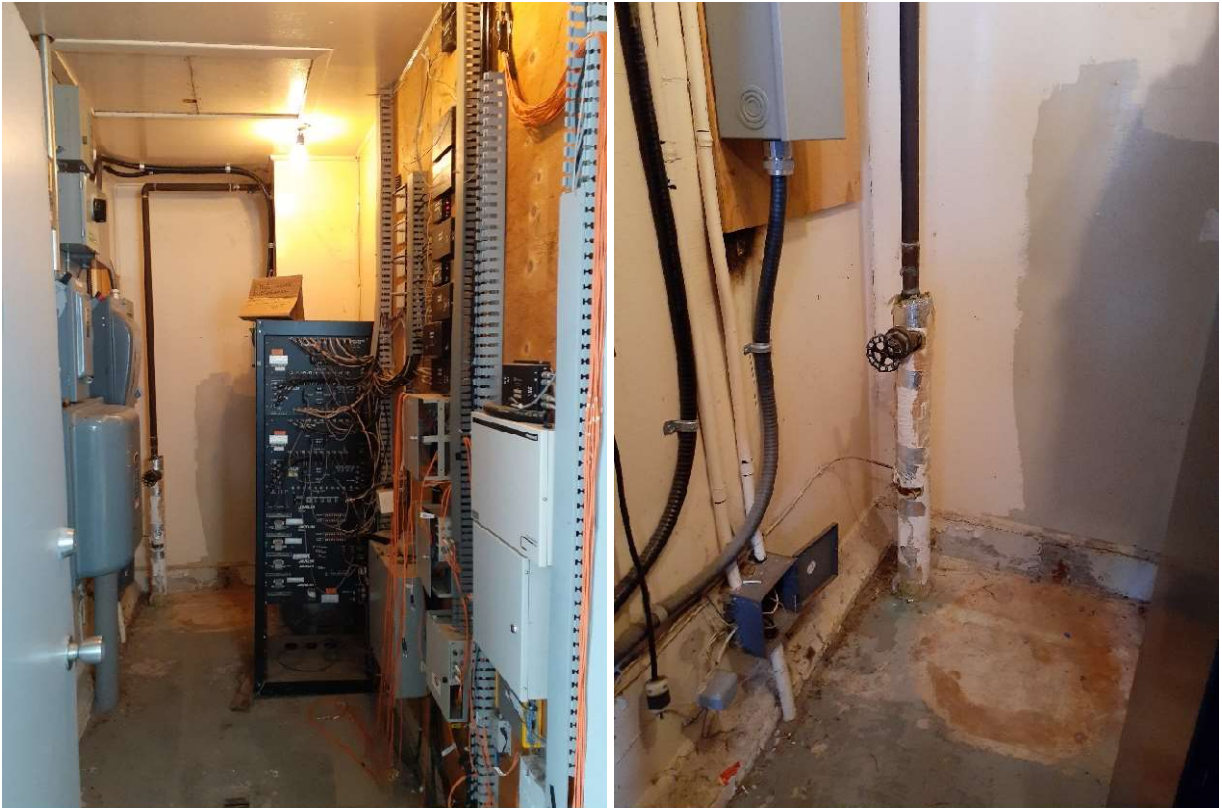




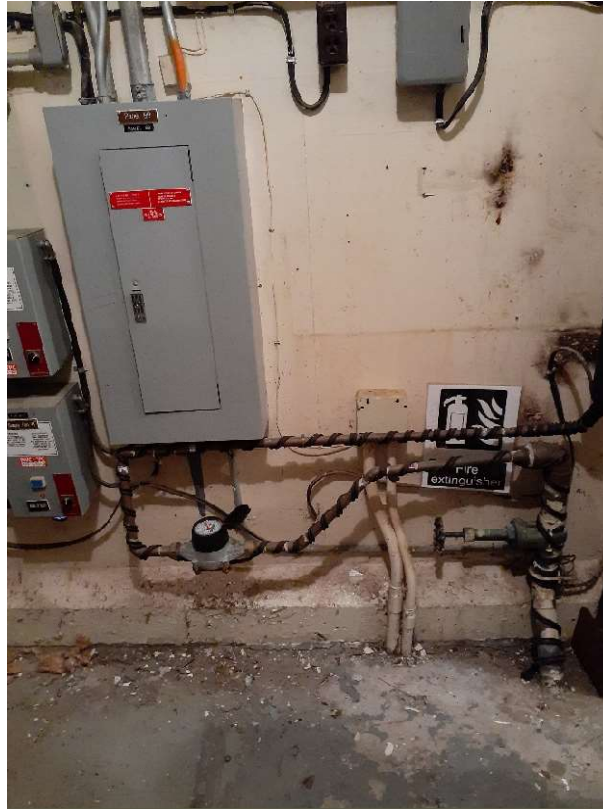
**Figure 1:** Representative photograph of the project area in the Mechanical Room in Building 128. **Grey paint** on the floor [Sample ID: 128-LP-01; 1,460 ppm lead] and **beige paint** on the wall [Sample ID: 128-LP-02; 1,010 ppm lead] confirmed to contain high levels of lead. Pipe insulation observed to be non asbestos containing foam.



**Figure 2:** Representative photographs of the project area in the Mechanical Room in Building 129. Non-asbestos containing drywall joint compound located on the wall [Sample ID: 129-AS-01A-C]. **Grey paint** on the floor [**Sample ID: 129-LP-01; 458 ppm lead**] confirmed to contain higher levels of lead, and the beige paint on the wall [Sample ID: 129-LP-02; 6 ppm lead] contains low levels of lead.



**Figure 3:** Representative photographs of the Mechanical Room in Building 130. **Grey paint on the floor [Sample ID: 130-LP-01; 569 ppm lead]** and **beige paint on the wall [Sample ID: 130-LP-02; 168 ppm lead]** confirmed to contain high levels of lead. Pipe insulation confirmed to be non asbestos containing fibreglass.

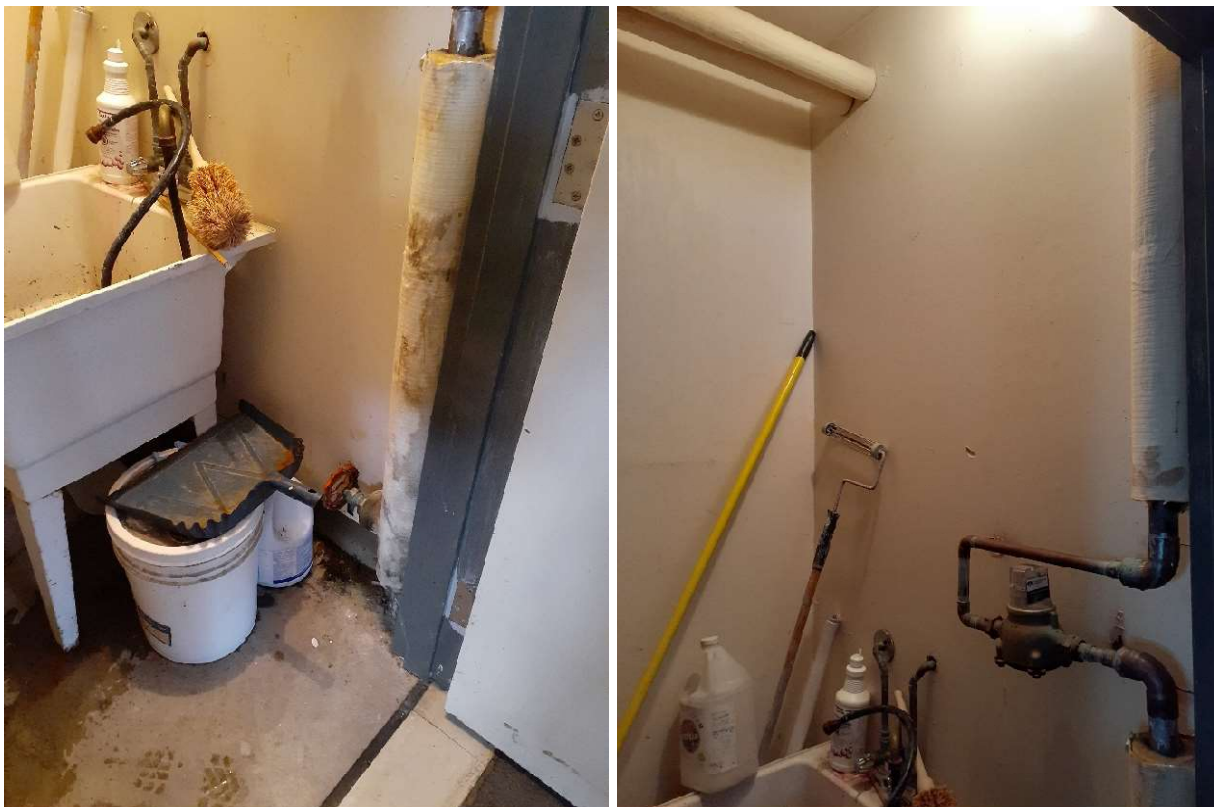


**Figure 4:** Representative photograph of the Mechanical Room in Building 138. Non-asbestos containing white caulking located at the seam between the floor and the wall [Sample ID: 138-AS-01A-C]. **White paint on the wall [Sample ID: 138-LP-01; 362 ppm lead]** and **grey paint on the floor [Sample ID: 138-LP-02; 2,320 ppm lead]** confirmed to contain high levels of lead.

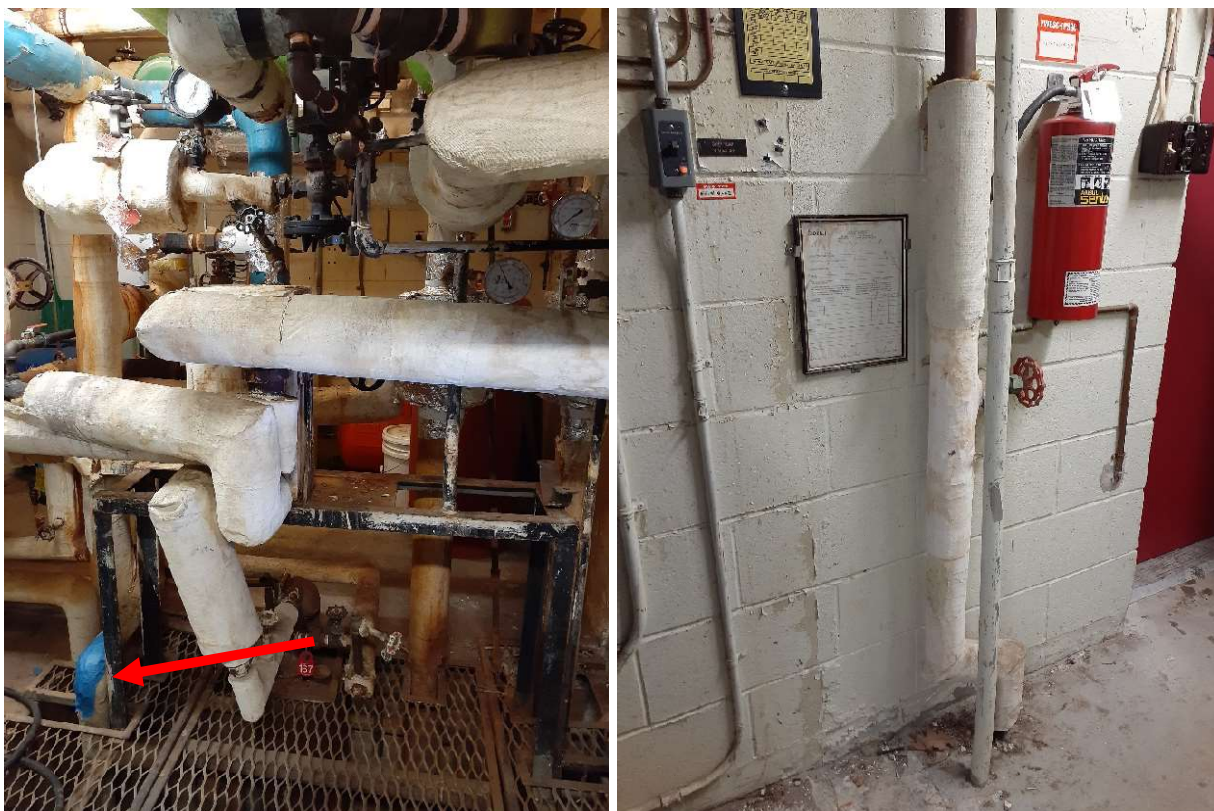


**Figure 5:** Representative photographs of the Mechanical Room in Building 141. Non-asbestos containing drywall joint compound located on the wall and ceiling [Sample ID: 141-AS-01A-C]. **White paint on the wall [Sample ID: 141-LP-01; 1,900 ppm lead]** confirmed to contain high levels of lead.





**Figure 6:** Representative photographs of the Mechanical Room in Building 142. Non-asbestos containing drywall joint compound located on the wall and ceiling [Sample ID: 142-AS-01A-C]. Beige paint on the wall [Sample ID: 142-LP-01; 8 ppm lead] contains low levels of lead. Pipe insulation confirmed to be non asbestos containing fibreglass. Suspected mould observed on the fibreglass pipe at the water entry.



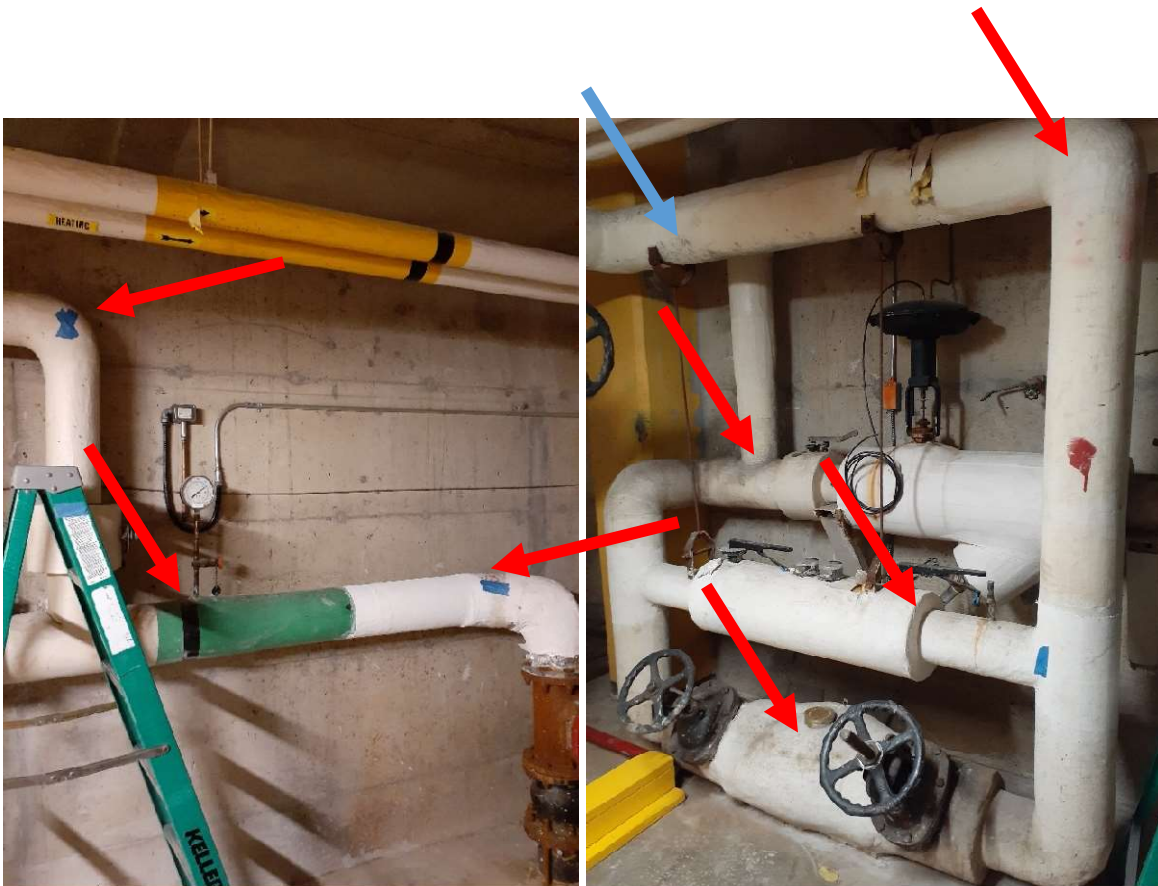
**Figure 7:** Representative photographs of the Mechanical Room in Building 158. Non-asbestos containing cement compound located on the pipe fitting [Sample ID: 158-AS-01A-C]. Only one fitting was tested as per client request. **Grey paint** on the floor [Sample ID: 158-LP-01; 1,270 ppm lead] confirmed to contain high levels of lead. Pipe insulation on the water entry pipe confirmed to be non asbestos containing fibreglass. No other pipe insulation was assessed as it is not anticipated to be disturbed as part of the backflow installation project.



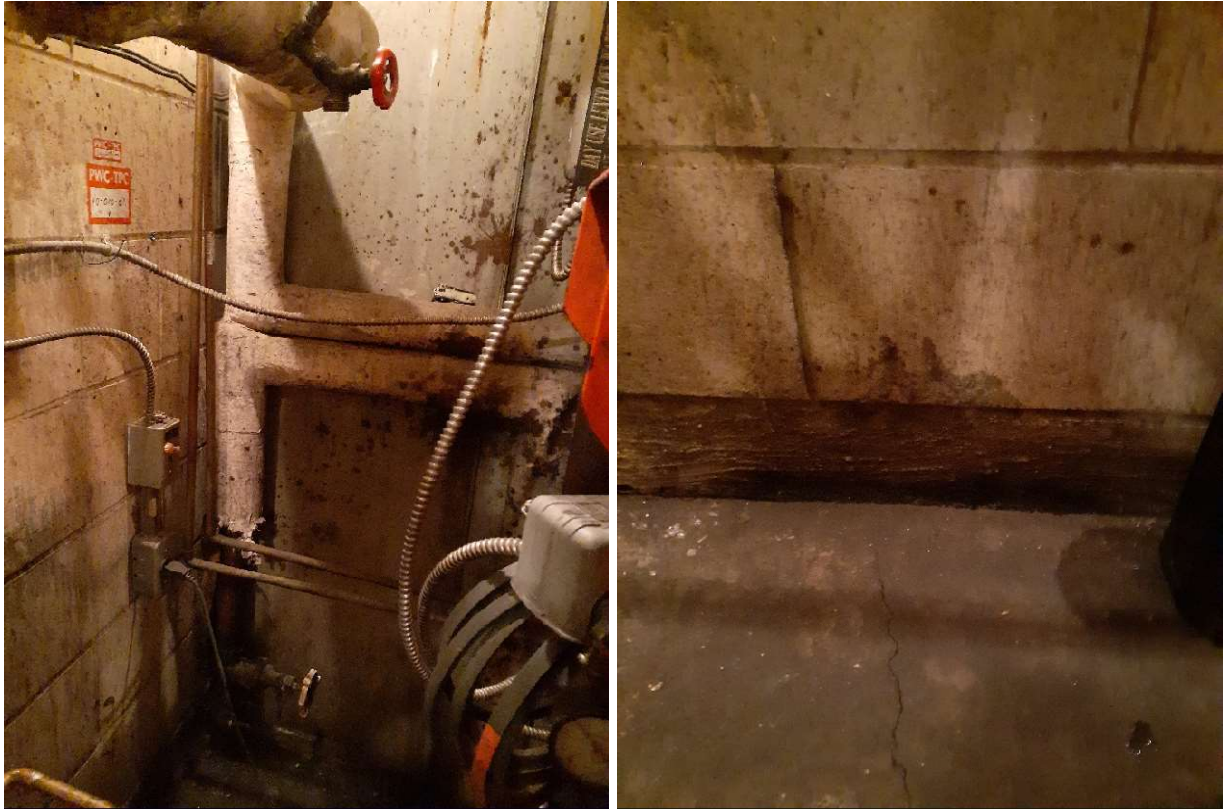
**Figure 8:** Representative photograph of the Mechanical Room in Building 169. Non-asbestos containing concrete block mortar located on the wall [Sample ID: 169-AS-01A-C]. Beige paint on the wall [Sample ID: 169-LP-01; 41 ppm lead] contains low levels of lead.



**Figure 9:** Representative photograph of the project area in the Mechanical Room in the C-Wing of Building 201. Tar paper under fibreglass insulation was confirmed to be non asbestos containing – 201-AS-01A-C.



**Figure 10:** Representative photograph of the project area in the Mechanical Room in the A-Wing of Building 201. Grey cement compound located on the pipe fitting and end caps confirmed to contain **65% chrysotile asbestos [Sample ID: 201-AS-02A-C]**. Suspect mould on pipe insulation (blue arrow).



**Figure 11:** Representative photographs of the project area in Mechanical Room C in Building 206. Non-asbestos containing concrete block mortar located on the wall [Sample ID: 206-AS-01A-C]. **Grey paint** on the floor [Sample ID: 206-LP-01; **1,310 ppm lead**] confirmed to contain higher levels of lead, and the beige paint on the wall [Sample ID: 206-LP-02; 31 ppm lead] contains low levels of lead.



**Figure 12:** Representative photograph of the project area in the Seed Storage Room in Building 210. Non-asbestos containing concrete block mortar located on the wall [Sample ID: 210-AS-01A-C]. Beige paint on the wall [Sample ID: 210-LP-01; 12 ppm lead] contains low levels of lead.

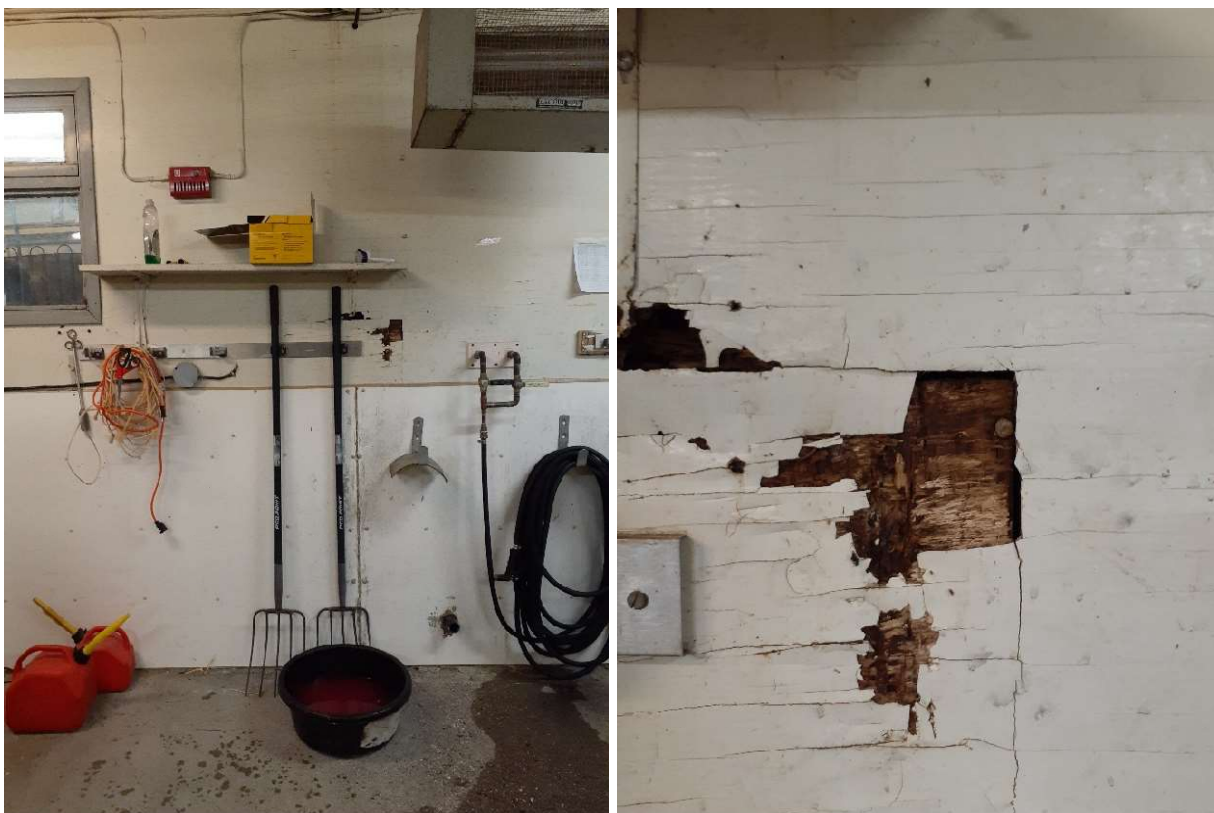


**Figure 13:** Representative photograph of the project area in the Mechanical Room in Building 211. **Grey paint** on the floor [Sample ID: 211-LP-01; 2,250 ppm lead] confirmed to contain high levels of lead.



**Figure 14:** Representative photograph of the project area in the Office Space of Building 220. **Grey paint** on the floor [**Sample ID: 220-LP-02; 566 ppm lead**] confirmed to contain higher levels of lead, and the beige paint on the wall [Sample ID: 220-LP-01; 8 ppm lead] contains low levels of lead.





**Figure 15:** Representative photograph of the Animal Room in Building 220. Non-asbestos containing white skim coating located on the wall, see photo on the right [Sample ID: 220-AS-01A-C].



**Figure 16:** Representative photograph of the project area in the Mechanical Room of the Central Heating Plant. **White paint** on the wall [Sample ID: CHP-LP-02; 1,200 ppm lead] confirmed to contain higher levels of lead, and the grey paint on the floor [Sample ID: CHP-LP-01; 74 ppm lead] contains low levels of lead. Thermometer suspected to contain **mercury**. Pipe insulation in the project area confirmed to be non asbestos containing.

# **APPENDIX D**

**BACKGROUND DOCUMENTATION:**

**METHODOLOGY & GENERAL RECOMMENDATIONS**

## **Background Documentation: Methodology & General Recommendations**

### **1.0 Background Documentation**

#### **1.1 Methodology**

Analytical results reflect the sampled materials at the specific sample locations. Visually similar materials were referenced to specific analysed samples (where applicable).

Materials suspected to contain designated substances, were visually identified based on the surveyor's knowledge as well as historical application of building components. Where permitted, visual identification of materials suspected to contain asbestos was supported by the collection and analysis of representative samples. Asbestos sampling was performed by GEC in order to meet the current minimum sampling requirements of Ontario Regulation 278/05 - Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations (O. Reg. 278/05), as amended.

In Ontario, a material is defined as an ACM if the material has a minimum asbestos content of 0.5% by dry weight. ACMs are divided into two categories: friable and non-friable materials. A friable ACM is a material that can be crumbled, powdered, pulverized or reduced to dust by hand or moderate pressure. Friable materials can readily release fibres when disturbed. Common applications of friable ACMs are sprayed or trowelled surfacing materials (e.g. sprayed fireproofing and textured coatings) as well as mechanical and thermal insulations. Non-friable materials will generally release fibres only when cut, broken or have deteriorated to the point where the binding agents of the material begin to fail. Common non-friable ACMs include drywall joint compound, plaster, textile products (gaskets etc.) and asbestos cement (transite). It must be noted that some materials, although non-friable intact, become friable upon manipulation (i.e. plaster, drywall joint compound, ceiling tiles etc.).

Paracel is a fully accredited laboratory and is certified (#200812-0) under National Voluntary Laboratory Accreditation Program (NVLAP) to perform asbestos analysis of bulk samples. Paracel has received its Certificate of Laboratory Proficiency from the Canadian Association of Environmental Analytical Laboratories (CAEAL) and has achieved accreditation from the Standard Council of Canada.

Analysis of paint chip samples is performed using MOE E3470 (which utilizes EPA Method 6020) which describes the multi-elemental determination of analyses by ICP-OES in environmental samples. The method measures ions produced by a radio-frequency inductively coupled plasma. Analyte species originating in a liquid are nebulized and the resulting aerosol is transported by argon gas into the plasma torch. The ions produced by high temperatures are entrained in the plasma gas and introduced, by means of an interface, into a mass spectrometer. The ions produced in the plasma are sorted according to their mass-to-charge ratios and quantified with a channel electron multiplier. Interferences must be assessed and valid corrections applied, or the data flagged to indicate problems. Interference correction must include compensation for background ions contributed by the plasma gas, reagents, and constituents of the

sample matrix. Prior to analysis, samples which require total values must be acid digested using appropriate sample preparation methods.

Inductively coupled plasma-optical emission spectrometry (ICP/OES) is applicable to the determination of sub-ug/L concentrations of a large number of elements in water samples and in waste extracts or digests. When dissolved constituents are required, samples must be filtered and acid-preserved prior to analysis. No digestion is required prior to analysis for dissolved elements in water samples. Acid digestion prior to filtration and analysis is required for groundwater, aqueous samples, industrial wastes, soils, sludges, sediments, and other solid wastes for which total (acid-leachable) elements are required.

## **2.0 General Recommendations**

### **2.1 Asbestos**

The following recommendations are made respecting Ontario Regulation 278/05:

- Disturbance / removal of identified ACMs must be performed in accordance with the procedures outlined in Ontario Regulations 278/05.
- Suspect materials identified during renovation and/or demolition activities not discussed in this report herein should be treated as ACMs unless proven otherwise through material specific sampling and analysis in accordance with the requirements of Ontario Regulation 278/05 and the PSPC Asbestos Management Standard.
- Client should update their existing ACM inventory upon completion of the project.
- That the roles and responsibility of “the owner” as stipulated in Section 8 of Ontario Regulation 278/05 be recognized and adhered to including, but not limited to, notification to occupiers and workers as well as training.
- Ontario Regulation 490/09, as amended to O. Reg. 148/12 - Designated Substance - made under the Occupational Health and Safety Act states that airborne levels of asbestos fibres should not exceed 0.1 f/cc.

### **2.2 Lead**

The Lead Regulation on Construction Projects (enforced by the Ministry of Labour) does not require removal of lead-containing materials unless work on these materials is likely to produce lead fumes or dust; for example, during welding, torch cutting, grinding, sanding or sandblasting.

In the event that such work is conducted at this facility, every employer shall take all necessary measures and procedures by means of engineering controls, work and hygiene practices to ensure that the time-weighted average exposure of a worker to airborne lead, except tetraethyl lead, shall not exceed 0.05

milligrams lead per cubic metre of air, and in the case of exposure to tetraethyl lead 0.10 milligrams lead per cubic metre of air, Ontario regulation 490/09.

The Occupational Health and Safety Branch of the Ontario Ministry of Labour have published *Guideline: Lead on Construction Projects*. This document classifies all lead disturbances as Type 1, Type 2a, Type 2b or Type 3 work, and assigns alternate levels of respiratory protection and work procedures for each type of task being performed.

If piping is removed during renovation activities, copper and/or drainage piping can be cut a small distance (e.g., 5cm) from the joints to avoid disturbance of the solder and joint caulking suspected to contain lead.

The work procedures outlined in the MOL document entitled *Guideline: Lead on Construction Projects* must be followed when disturbing the above noted lead-containing materials.

The OEL for airborne lead is prescribed by Ontario Regulation 490/09 *Designated Substances*, as amended. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne lead levels that exceed this Occupational Exposure Limit.

The disposal of construction waste containing lead is governed by O. Reg. 347- General – Waste Management, as amended. The transport of the waste to the disposal site is controlled by the federal Transportation of Dangerous Goods Act (TDGA), 1992.

### **2.3 Mercury**

Mercury or mercury vapour within fluorescent light tubes and other equipment poses no risk to occupants, provided the mercury containers remain intact.

It is unlikely that the presence of mercury in equipment will lead to unintended ingestion, inhalation or absorption of mercury, provided equipment remains in good working condition.

If broken mercury-containing equipment can be repaired to good working condition, ensure that all repair work is conducted in a fume hood to ensure that equipment maintenance staffs' mercury exposure does not exceed the maximum allowable TWAEV of 0.01 mg/m<sup>3</sup> of air as outlined in O. Reg. 490/09. If broken mercury-containing equipment can not be repaired to good working condition, the equipment should be disposed of in a timely fashion.

In federal facilities The *Code of Practice: Environmentally Sound Management of End-of-Life Lamps Containing Mercury* should be followed when removing and/or disposing mercury containing light tubes. This document provides guidance on environmentally sound management of spent lamps, ensuring that they are collected separately from the general waste stream, and stored, handled, transported and processed in a manner that prevents releases of the mercury to the environment. Furthermore, the disposal of construction waste containing mercury under O. Reg. 347/90.

## 2.4 Silica

Silica dust can be generated by drilling, coring, blasting, grinding, crushing and sandblasting silica-containing materials.

Work on silica-containing materials can be performed by any construction personnel. GEC recommends that all personnel involved with, or working in the area of, destructive activities on block, concrete, and other silica-containing building materials take the following precautions:

- Segregate the work area from the rest of the building to reduce the risk of exposing building occupants to silica dust. Workers leaving the work area should pass through a designated clean room where excess dust can be brushed off clothes and facilities are available to wash dust off skin.
- The work surface should be wetted regularly to limit dust released during striking and abrasion.
- Everyone in the work area should be provided with a half-face respirator equipped with HEPA filters.
- Ensure that all necessary measures and procedures by means of engineering control, work and hygiene practices are implemented to ensure that the TWAEV of a worker to silica is reduced to the lowest practical level and, in any event, shall not exceed 0.05 mg/m<sup>3</sup> of air for cristobalite and tridymite, and 0.10 mg/ m<sup>3</sup> of air for quartz and tripoli.

## 2.5 Mould

As there are no current Federal or provincial regulations regarding mould remediation, GEC recommends that the remediation work be carried out in accordance with the procedures outlined in the CCA 82 *"Mould Guidelines for the Canadian Construction Industry"*.

The following is a summary of the mould remediation guidelines:

- Identify and eliminate the source of moisture as mould has been shown to grow on materials that are wet for 48-72 hours.
- The use of Personal Protective Equipment (PPE) that is appropriate for the level of mould growth (N-95 Mask, goggles, rubber gloves etc.).

- Proper containment, during remediation, to minimize the distribution of mould and particulates to surrounding areas.
- During structural remediation, heating, ventilation, and air conditioning (HVAC) systems may need to be deactivated or sealed off to prevent contamination of mould spores.
- Removal of mould from the structure is based on the porosity of the material.
  - Porous materials with mould growth, such as ceiling tiles, wallpaper, drywall, and carpets should be removed and discarded.
  - Non-porous materials with mould growth, such as concrete block, steel trim, and studwork can be cleaned by a combination of scraping, scrubbing and HEPA vacuuming.
- Disposal of contaminated material carried out in sealed 6mL polyethylene bags to prevent spore dispersal.
- Once the affected areas have been dried and removed of mould-contaminated material, dust and visible traces of debris from the remediation process can be removed by damp wiping and HEPA vacuuming.
- Clearance procedures can include visual inspection, olfactory evaluation, moisture measurements, and airborne mould sampling to ensure that the levels of indoor and outdoor mould spores are comparable.