



Hazardous Building Materials Assessment

Cafeteria Renovation
St Lawrence College
100 Portsmouth Avenue,
Kingston, Ontario

Prepared for:

St. Lawrence College
100 Portsmouth Avenue
Kingston, Ontario K7L 5A6

Attention: Steve Murphy

April 26, 2019

Pinchin File: 240088



Issued to: St. Lawrence College
Contact: Steve Murphy
Issued on: April 26, 2019
Pinchin File: 240088
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EXECUTIVE SUMMARY

St. Lawrence College (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at St Lawrence College, located at 100 Portsmouth Avenue, Kingston, Ontario. Pinchin performed the assessment on April 11, 2019.

The objective of the assessment was to identify specified hazardous building materials in preparation for the planned cafeteria renovation.

The assessed area was limited to the parts of the building affected by the planned cafeteria renovations as outlined in the specification entitled, "*St. Lawrence College – Kingston, Cafeteria Renovation, 100 Portsmouth Avenue, Kingston, Ontario*" prepared by J.L. Richards dated April 3, 2019. Project # 28389.

SUMMARY OF FINDINGS

Asbestos: Asbestos-containing materials (ACM) are present as follows:

- Roofing tar and/or paper present as a vapour barrier under the modified bitumen roofing in the assessed area is presumed to contain asbestos.

Lead: Lead is present as follows:

- Batteries of emergency lights.

Silica: Crystalline silica is present in concrete, mortar, masonry, ceramic tiles and grout.

Mercury: Mercury vapour is present in light tubes.

Polychlorinated Biphenyls (PCBs): PCB-containing items were not found in the assessed area.

Mould and Water Damage: Visible mould growth and water damage was not observed in the assessed area.

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SUMMARY OF RECOMMENDATIONS

The following is a summary of significant recommendations; refer to the body of the report for detailed recommendations.

1. Conduct further investigation of the following items: roofing material impacted by planned renovations.
2. Do not disturb suspected hazardous building materials discovered during the planned work, which have not been identified in this report. Notify Pinchin immediately to conduct further testing.
3. Recycle mercury-containing light tubes when removed from service.
4. Follow appropriate safe work procedures when handling or disturbing lead and silica.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.



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1.0 INTRODUCTION AND SCOPE

St. Lawrence College (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at St Lawrence College, located at 100 Portsmouth Avenue, Kingston, Ontario.

Nathan Cartmell, Project Technologist, performed the assessment on April 11, 2019. The surveyor was accompanied by Steve Murphy of St. Lawrence College during the assessment. The assessed area was occupied at the time of the assessment.

The objective of the assessment was to identify specified hazardous building materials in preparation for the planned cafeteria renovation. This assessment is intended to be used for pre-construction purposes only, and may not provide sufficient detail for long term management of hazardous materials as required by Health and Safety regulations.

1.1 Scope of Assessment

The assessment was performed to establish the location and type of specified hazardous building materials incorporated in the structure(s) and its finishes. The assessed area was limited to the parts of the building affected by the planned cafeteria renovations as outlined in the specification entitled, "*St. Lawrence College – Kingston, Cafeteria Renovation, 100 Portsmouth Avenue, Kingston, Ontario*" prepared by J.L. Richards dated April 3, 2019. Project # 28389. The extent of the assessed area was defined by the Client and is shown on the appended drawings.

For the purpose of the assessment and this report, hazardous building materials are defined as follows:

- Asbestos.
- Lead.
- Silica.
- Mercury.
- Polychlorinated Biphenyls (PCBs).
- Mould.

The following Designated Substances are not typically found in building materials in a composition/state that is hazardous and were not included in this assessment:

- Arsenic.
- Acrylonitrile.
- Benzene.
- Coke oven emissions.



- Ethylene oxide.
- Isocyanates.
- Vinyl chloride monomer.

2.0 BACKGROUND INFORMATION

2.1 Building Description

Description Item	Details
Use	Institutional
Number of Floors	The building is four stories plus one level below grade (assessed area limited to ground floor cafeteria)
Total Assessed Area	6,000 square feet
Year of Construction	1970
Structure	Steel and concrete
Exterior Cladding	Concrete
HVAC	Rooftop HVAC units
Roof	Modified bitumen roofing
Flooring	Ceramic tile
Interior Walls	Drywall, brick veneer, concrete and concrete block
Ceilings	Acoustic ceiling tiles, exposed concrete and steel deck

3.0 FINDINGS

The following section summarizes the findings of the assessment and provides a general description of the hazardous materials identified and their locations.

3.1 Asbestos

3.1.1 Suspect Building Materials Not Found

The following types of building materials may historically contain asbestos but were not observed in the assessed area and are not discussed in the report findings:

- Spray-applied insulations (fireproofing, thermal or acoustic).
- Texture finishes (decorative).

- Plaster and Stucco.
- Asbestos cement products (e.g. Transite).
- Vinyl sheet flooring.
- Vinyl floor tiles.

3.1.2 *Pipe Insulation*

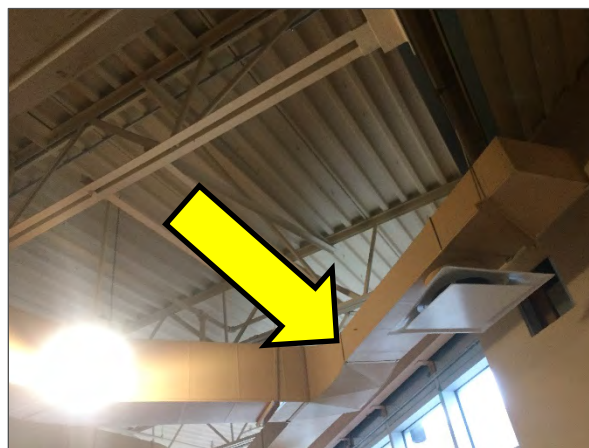
Pipes are either uninsulated or insulated with non-asbestos fibreglass, or other non-asbestos insulation such as mineral fibre or elastomeric foam insulation.



Uninsulated pipes.

3.1.3 *Duct Insulation and Mastic*

Ducts are either uninsulated or insulated with non-asbestos fibreglass (foil-faced).



Uninsulated ducts.

3.1.4 Mechanical Equipment Insulation

Mechanical equipment was not found in the assessed area.

3.1.5 Vermiculite

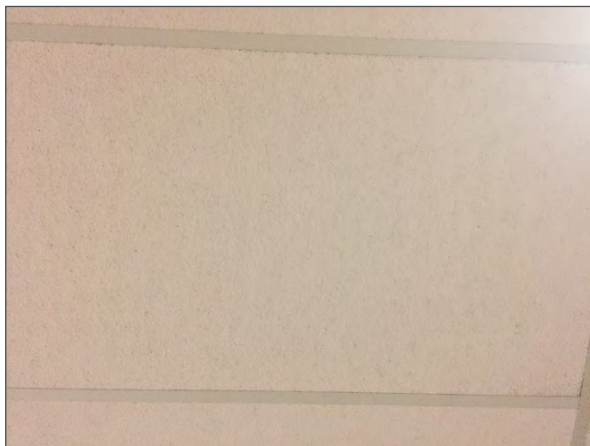
Destructive testing was conducted of masonry block walls. The masonry block walls were penetrated in two locations anticipated to be affected by planned renovations, loose fill vermiculite was not observed within the cavities. The locations of destructive testing have been indicated on the drawings in Appendix I.

3.1.6 Acoustic Ceiling Tiles

Acoustic ceiling tiles are present in the assessed area, as follows:

Size, Type, Pattern	Locations	Date Code	Asbestos Type
2'x4' lay-in, rough textured	North corridor	2014	None
2'x4' lay-in, random pinhole	South corridor	1999	None
2'x4' lay-in, small pinhole	South corridor	2003	None

All ceiling tiles are presumed to be non-asbestos based on the date of manufacture determined from the date stamp applied to the top of the tiles. The tiles were manufactured after asbestos was stopped being used in acoustic ceiling tiles.



Non-asbestos 2'x4' lay-in, rough textured acoustic ceiling tile.



Non-asbestos, 2'x4' lay-in, random pinhole acoustic ceiling tile.



Non-asbestos, 2'x4' lay-in, small pinhole acoustic ceiling tile.

3.1.7 *Drywall Joint Compound*

Drywall joint compound present on wall finishes throughout the assessed area does not contain asbestos (samples A0002A-C).



Non-asbestos drywall joint compound on wall.

3.1.8 *Levelling Compound*

Levelling compound was not observed, however levelling compound is often used in random and isolated areas and without removing all flooring it may not always be detected.

3.1.9 *Caulking*

Due to limitations in scope and methodology caulking was not sampled during this assessment as it is not anticipated to be disturbed as part of this project.

3.1.10 Roofing Products

Modified bitumen roofing is present in the assessed area; however, modified bitumen roofing is a new type of roof system and does not contain asbestos. Original roofing materials (tar/paper), presumed to contain asbestos are suspected to be concealed under the modified bitumen roofing. Roofing materials were not assessed at the request of the client until location of planned roof penetration could be determined to avoid leaks from test cuts. Sampling of roofing materials are to be conducted prior to planned renovations.

3.1.11 Other Building Materials

Thin set under ceramic floor tiles throughout the assessed area does not contain asbestos (samples A0001A-C).

3.1.12 Presumed Asbestos Materials

The methodology identifies a list of materials which may contain asbestos, which were not to be sampled, based on limitations of the scope. The following is a list of materials which may contain asbestos, which were not observed during the assessment, but based on site conditions may be present. If determined to be present during building renovation, these materials are presumed to contain asbestos until otherwise proven by sampling and analysis:

- Roofing tar/paper concealed under the modified bitumen roofing.
- Caulking.
- Floor levelling compound.
- Materials outside the assessed area.

3.2 Lead

3.2.1 Paints and Surface Coatings

The following table summarizes the analytical results for paints sampled and locations:

Sample Number	Colour, Substrate Description	Location	Lead (%)
L1	Grey, concrete wall	Throughout assessed area	<0.0020
L2	Cream, drywall wall	Throughout assessed area	<0.0020
L3	Orange, drywall wall	Throughout assessed area	<0.0020
L4	Grey, drywall wall	Throughout assessed area	<0.0020

Sample Number	Colour, Substrate Description	Location	Lead (%)
L5	White, concrete wall	Throughout assessed area	<0.0020

Analytical results indicate that all of the paints sampled contain low levels of lead (i.e., less than the EACO guideline of 0.1% for lead-containing paints).

3.2.2 *Lead Products and Applications*

Lead-containing batteries are present in emergency lighting.

3.2.3 *Presumed Lead Materials*

Lead may be present in a number of materials which were not assessed and/or sampled. The following materials, where found, should be considered to contain lead:

- Glazing on ceramic tiles.

3.3 **Silica**

Crystalline silica is a presumed component of the following materials:

- Poured or pre-cast concrete.
- Masonry and mortar.
- Ceramic tiles and grout.

3.4 **Mercury**

3.4.1 *Lamps*

Mercury vapour is present in fluorescent lamps.

3.4.2 *Mercury-Containing Devices*

Mercury-containing devices were not found during the assessment.

3.5 **Polychlorinated Biphenyls**

3.5.1 *Caulking*

Due to limitations in scope and methodology caulking was not sampled during this assessment as it is not anticipated to be disturbed as part of this project.

3.5.2 *Lighting Ballasts*

Based on visual observations (evidence of T-5 or T-8 fixtures with magnetic ballasts) the assessed area will not contain PCB ballasts.

3.5.3 *Transformers*

Transformers were not found during the assessment.

3.6 **Mould**

Visible mould growth and water damage was not found during the assessment.

4.0 **RECOMMENDATIONS**

4.1 **General**

1. If suspected hazardous building materials are discovered during the planned work, which are not identified in this report, do not disturb and inform Pinchin immediately to conduct further testing.
2. Investigate any items excluded from the scope of work of this report. Ideally this investigation will be performed as part of the development of the specifications, or at a minimum immediately prior to commencing renovations. Specifically roofing materials that may be impacted by planned renovations.
3. Provide this report to the contractor prior to bidding or commencing work.

4.2 **Renovation Work**

The following recommendations are made regarding renovation involving the hazardous materials identified.

4.2.1 *Lead*

Analytical results indicate that all of the paints from the assessed area contain low levels of lead (i.e., less than the EACO guideline of 0.1% for lead-containing paints). Special precautions are not recommended unless aggressive disturbance (grinding, blasting, torching) is planned.

Lead-containing items should be recycled when taken out of service.

4.2.2 *Silica*

Construction disturbance of silica-containing products may result in excessive exposures to airborne silica, especially if performed indoors and dry. Cutting, grinding, drilling or demolition of materials



containing silica should be completed only with proper respiratory protection and other worker safety precautions that comply with provincial standards or guidelines.

4.2.3 Mercury

Do not break lamps. Recycle and reclaim mercury from fluorescent lamps when taken out of service. Mercury is classified as a hazardous waste and must be disposed of in accordance with local regulations.

5.0 TERMS AND LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

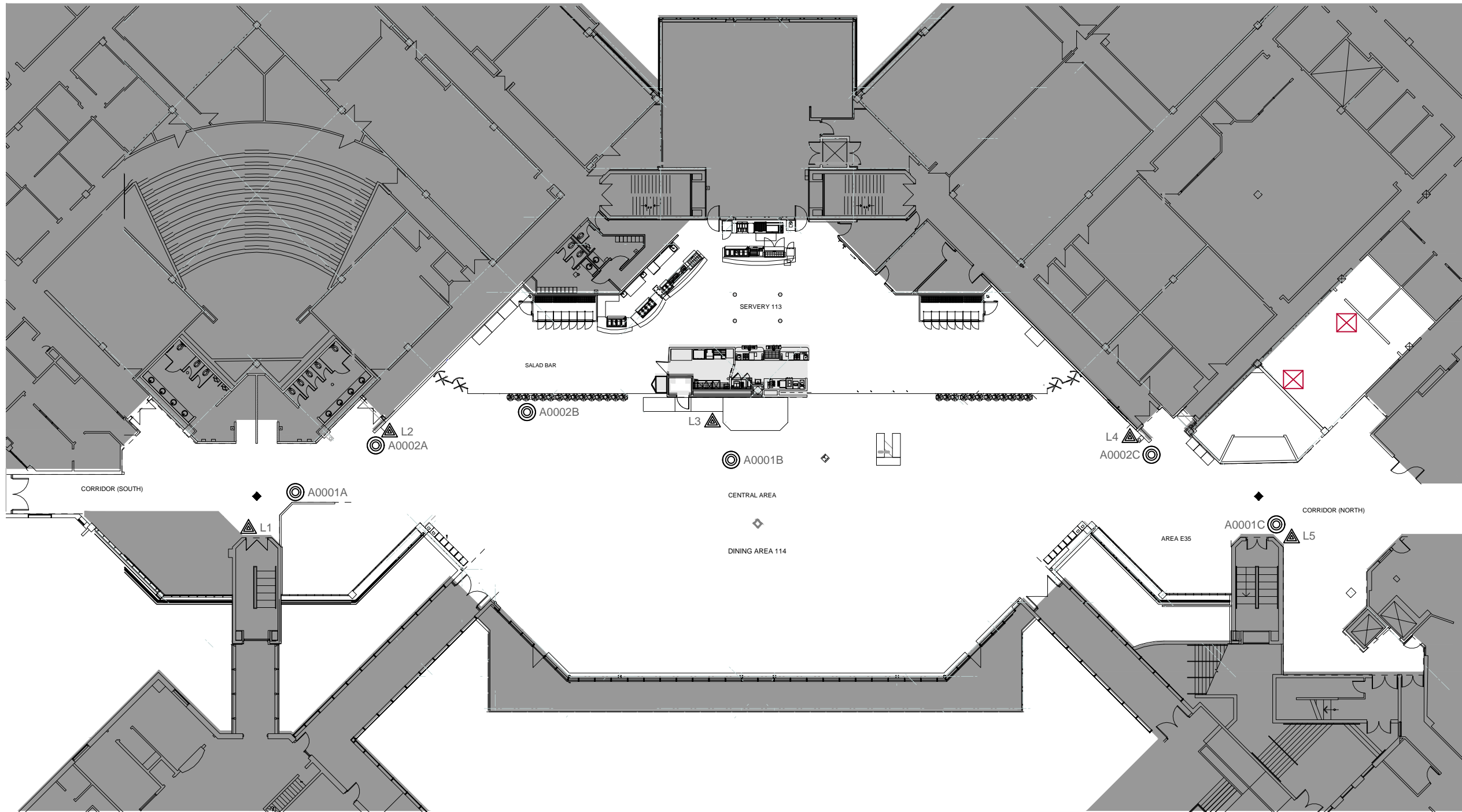
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6.0 REFERENCES





The following legislation and documents were referenced in completing the assessment and this report:

1. Canada Occupational Health and Safety Regulation, SOR/86-304.
2. Asbestos on Construction Projects and in Buildings and Repair Operations, Ontario Regulation 278/05.
3. Designated Substances, Ontario Regulation 490/09.
4. Lead on Construction Projects, Ministry of Labour Guidance Document.
5. The Environmental Abatement Council of Ontario (EACO) Lead Guideline for Construction, Renovation, Maintenance or Repair, October 2014.
6. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 347 as amended.
7. Surface Coating Materials Regulations, SOR/2005-109, Hazardous Products Act.
8. Silica on Construction Projects, Ministry of Labour Guidance Document.
9. Alert – Mould in Workplace Buildings, Ontario Ministry of Labour.

APPENDIX I
Drawing



LEGEND:

-  ASBESTOS BULK SAMPLE
-  LEAD BULK SAMPLE
-  INTRUSIVE INSPECTION
-  OUTSIDE ASSESSED AREA

NOTE:
 PRESUMED ASBESTOS-CONTAINING ROOFING MATERIAL IS PRESENT IN ASSESSED AREA.

NOT ALL KNOWN OR SUSPECTED HAZARDOUS BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED HAZARDOUS BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.

CLIENT:
 ST LAWRENCE COLLEGE

LOCATION:
 KINGSTON CAMPUS
 100 PORTSMOUTH AVENUE
 KINGSTON, ONTARIO

TITLE:
 HAZARDOUS BUILDING MATERIALS ASSESSMENT
 GROUND FLOOR

DATE: 2019/04/24	PROJECT # : 240088
DRAWN BY: NC	DRAWING: 1 OF 1
CHECKED BY: SY	
SCALE: NTS	

APPENDIX II-A
Asbestos Analytical Certificates

Your Project #: 240088
 Site Location: 100 PORTSMOUTH AVENUE, KINGSTON, ON
 Your C.O.C. #: N/A

Attention: Glenn Hendry

Pinchin Ltd
 1456 Centennial Drive
 Suite 2
 Kingston, ON
 CANADA K7P 0K4

Report Date: 2019/04/23
 Report #: R5680855
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B999403
Received: 2019/04/16, 09:30

Sample Matrix: Solid
 # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Asbestos by PLM - 0.5 RDL (1)	6	N/A	N/A	COR3SOP-00002	EPA 600R-93/116

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.
 This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Maxxam Analytics' Asbestos Laboratory is accredited by NVLAP for bulk asbestos analysis by polarized light microscopy, NVLAP Code 600136-0.

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Maxxam Analytics' scope of accreditation includes EPA-600/M4-82-020: "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" and EPA-600/R-93/116: "Method for the Determination of Asbestos in Bulk Building Materials".

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) P.O.B. - Percent of Bulk



Your Project #: 240088
Site Location: 100 PORTSMOUTH AVENUE, KINGSTON, ON
Your C.O.C. #: N/A

Attention: Glenn Hendry

Pinchin Ltd
1456 Centennial Drive
Suite 2
Kingston, ON
CANADA K7P 0K4

Report Date: 2019/04/23
Report #: R5680855
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B999403
Received: 2019/04/16, 09:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

A0001A CERAMIC TILE THINSET, SOUTH PORTION					
Maxxam ID: JLP129		Date Analyzed: 2019/04/22			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey thinset	Not Detected		Non-Fibrous

A0001B CERAMIC TILE THINSET, CENTRAL PORTION					
Maxxam ID: JLP130		Date Analyzed: 2019/04/22			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey thinset	Not Detected		Non-Fibrous

A0001C CERAMIC TILE THINSET, NORTH PORTION					
Maxxam ID: JLP131		Date Analyzed: 2019/04/22			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous grey thinset	Not Detected		Non-Fibrous

A0002A DRYWALL JOINT COMPOUND, WALL, SOUTH PORTION					
Maxxam ID: JLP132		Date Analyzed: 2019/04/22			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous white drywall joint compound	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd

Maxxam Job #: B999403
Report Date: 2019/04/23

Pinchin Ltd
Client Project #: 240088
Site Location: 100 PORTSMOUTH AVENUE, KINGSTON, ON
Sampler Initials: NC

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

A0002B DRYWALL JOINT COMPOUND, BULKHEAD, CENTRAL PORTION					
Maxxam ID: JLP133		Date Analyzed: 2019/04/22			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous white drywall joint compound	Not Detected		Non-Fibrous

A0002C DRYWALL JOINT COMPOUND, WALL, NORTH PORTION					
Maxxam ID: JLP134		Date Analyzed: 2019/04/22			
	<u>P.O.B</u>	<u>Sample Morphology</u>	<u>Asbestos</u>	<u>Other Fibres</u>	<u>Particulate</u>
Layer 1	100	Homogeneous white drywall joint compound	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd

TEST SUMMARY

Maxxam ID: JLP129
Sample ID: A0001A CERAMIC TILE THINSET, SOUTH PORTION
Matrix: Solid
Collected: 2019/04/12
Shipped:
Received: 2019/04/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	6080685	N/A		Tanvee Kapur

Maxxam ID: JLP130
Sample ID: A0001B CERAMIC TILE THINSET, CENTRAL PORTION
Matrix: Solid
Collected: 2019/04/12
Shipped:
Received: 2019/04/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	6080685	N/A		Tanvee Kapur

Maxxam ID: JLP131
Sample ID: A0001C CERAMIC TILE THINSET, NORTH PORTION
Matrix: Solid
Collected: 2019/04/12
Shipped:
Received: 2019/04/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	6080685	N/A		Tanvee Kapur

Maxxam ID: JLP132
Sample ID: A0002A DRYWALL JOINT COMPOUND, WALL, SOUTH PORTION
Matrix: Solid
Collected: 2019/04/12
Shipped:
Received: 2019/04/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	6080685	N/A		Tanvee Kapur

Maxxam ID: JLP133
Sample ID: A0002B DRYWALL JOINT COMPOUND, BULKHEAD, CENTRAL PORTION
Matrix: Solid
Collected: 2019/04/12
Shipped:
Received: 2019/04/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	6080685	N/A		Tanvee Kapur

Maxxam ID: JLP134
Sample ID: A0002C DRYWALL JOINT COMPOUND, WALL, NORTH PORTION
Matrix: Solid
Collected: 2019/04/12
Shipped:
Received: 2019/04/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos by PLM - 0.5 RDL	MIC	6080685	N/A		Tanvee Kapur

GENERAL COMMENTS

Results relate only to the items tested.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Banu Gurgun-Keough, Supervisor

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

APPENDIX II-B
Lead Analytical Certificates

Certificate of Analysis

Pinchin Ltd. (Kingston)

1456 Centennial Drive, Suite 2
Kingston, ON K7P 0K4
Attn: Nathan Cartmell

Client PO: St Lawrence College
Project: 240088
Custody:

Report Date: 17-Apr-2019
Order Date: 12-Apr-2019

Order #: 1915583

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

Parcel ID	Client ID
1915583-01	L1, Grey on concrete wall, south portion
1915583-02	L2, Cream on drywall wall, south portion
1915583-03	L3, Orange on drywall wall, central portion
1915583-04	L4, Grey on drywall wall, north portion
1915583-05	L5, White on concrete wall, north portion

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

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
Client: Pinchin Ltd. (Kingston)
Client PO: St Lawrence College

Report Date: 17-Apr-2019
Order Date: 12-Apr-2019
Project Description: 240088

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-OES	based on MOE E3470, ICP-OES	17-Apr-19	17-Apr-19

Sample and QC Qualifiers Notes

1- Gen-19 :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
 Client: Pinchin Ltd. (Kingston)
 Client PO: St Lawrence College

Report Date: 17-Apr-2019
 Order Date: 12-Apr-2019
 Project Description: 240088

Sample Results

Lead				Matrix: Paint
				Sample Date: 12-Apr-19
Paracel ID	Client ID	Units	MDL	Result
1915583-01	L1, Grey on concrete wall, south portion	% by Wt.	0.0020	<0.0020 [1]
1915583-02	L2, Cream on drywall wall, south portion	% by Wt.	0.0020	<0.0020 [1]
1915583-03	L3, Orange on drywall wall, central portion	% by Wt.	0.0020	<0.0020 [1]
1915583-04	L4, Grey on drywall wall, north portion	% by Wt.	0.0020	<0.0020 [1]
1915583-05	L5, White on concrete wall, north portion	% by Wt.	0.0020	<0.0020 [1]

Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Matrix Blank									
Lead	ND	0.0020	% by Wt.						
Matrix Duplicate									
Lead	ND	0.0020	% by Wt.	ND			0.0	30	
Matrix Spike									
Lead	266		ug/L	ND	106	70-130			



TRUSTED
RESPONS
RELIABLE

Parcel ID: 1915583



Chain of Custody
(Lab Use Only)

vd
JB
com

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Page 1 of 1

Client Name: Pinchin Ltd.	Project Reference: 240088	TAT: <input checked="" type="checkbox"/> Regular <input type="checkbox"/> 3 Day
Contact Name: Nathan Cartmel	Quote #: St Lawrence College	<input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day
Address: 1456 Centennial Drive, Suite 2, Kingston, ON	PO #	Date Required: 19/04/2019
Telephone: 613.541.1013 ext 1614	Email Address: ncartmel@pinchin.com ghendry@pinchin.com	

Criteria: O. Reg. 153 (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: 1915583		Matrix	Air Volume	# of Containers	Sample Taken		LEAD											
Sample ID/Location Name					Date	Time												
1	L1, Grey on concrete wall, south portion	p		1	12/04/2019	PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	L2, Cream on drywall wall, south portion	p		1	12/04/2019	PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	L3, Orange on drywall wall, central portion	p		1	12/04/2019	PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	L4, Grey on drywall wall, north portion	p		1	12/04/2019	PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	L5, White on concrete wall, north portion	p		1	12/04/2019	PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Please report in %
Please CC Glenn Hendry on results: ghendry@pinchin.com

Method of Delivery: *pick-up*

Relinquished By (Sign): <i>Nathan Cartmel</i>	Received by Driver/Depot: <i>Nyssa</i>	Received at Lab: <i>[Signature]</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): Nathan Cartmel	Date/Time: Apr 12/19 3:00	Date/Time: Apr 13/19 11:30	Date/Time: Apr 12/19 3:20
Date/Time: 12/04/2019 2:00PM	Temperature: °C	Temperature: °C	pH Verified by:

APPENDIX III
Methodology

1.0 GENERAL

Pinchin conducts a room-by-room survey (rooms, corridors, service areas, exterior, etc.) to identify the hazardous building materials as defined by the scope of work. All work is conducted in accordance with our own internal Standard Operating Procedures.

Information regarding the location and condition of hazardous building materials encountered and visually estimated quantities are recorded. The locations of any samples collected are recorded on small-scale plans.

As-built drawings and previous reports are referenced where provided.

1.1 Limitations on Scope

The assessment excludes the following:

- Articles belonging to the owner, tenant or occupant (e.g. stored items, furniture, appliances, etc.).
- Underground materials or equipment (e.g. vessels, drums, underground storage tanks, pipes, etc.).
- Building envelope, structural components, inaccessible or concealed materials or other items where sampling may cause consequential damage to the property.
- Energized systems (e.g. internal boiler components, elevators, mechanical or electrical components).
- Controlled products (e.g. stored chemicals, operational or process-related substances).
- Materials not typically associated with construction (e.g. settled dust, spills, residual contamination from prior spills, etc.).

The assessment includes limited demolition of wall and ceiling finishes (drywall or plaster) to view concealed conditions at representative areas as permitted by the current building use. Limited destructive testing of flooring is conducted where possible (under carpets or multiple layers of flooring). Demolition of exterior building finishes, masonry walls (chases, shafts etc.), and structural items is not conducted.

1.2 Asbestos

An inspection is conducted for the presence of friable and non-friable asbestos-containing materials (ACM). A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure.

A separate set of samples is collected of each type of homogenous material suspected to contain asbestos. A homogenous material is defined by the US EPA as material that is uniform in texture and appearance, was installed at one time, and is unlikely to consist of more than one type or formulation of material. The homogeneous materials are determined by visual examination and available information on the phases of construction and prior renovations.

Samples are collected at a rate that is in compliance with the requirements of local regulations and guidelines. The sampling strategy is also based on known ban dates and phase out dates of the use of asbestos; sampling of certain building materials is not conducted after specific construction dates. In addition, to be conservative, several years past these dates are added to account for some uncertainty in the exact start / finish date of construction and associated usage of ACM.

In some cases, manufactured products such as asbestos cement pipe are visually identified without sample confirmation.

Drywall joint compound is sampled at exterior walls, columns or other locations that are unlikely to have been renovated in an attempt to determine the presence of asbestos in the original drywall compound. Delineation of asbestos-containing drywall compound from newer, non-asbestos drywall compound is not conducted.

Flooring mastic or adhesive is sampled and analyzed if present on the underside of flooring samples (vinyl floor tile and vinyl sheet flooring).

Limited demolition of masonry block walls (core holes) is conducted to investigate for loose fill vermiculite insulation. The core holes are temporarily patched with expanding foam or caulking.

The following materials (if present) are not sampled and will be presumed to contain asbestos:

- Roofing felts and tar, including repair mastics.
- Elevator and lift brakes.
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring.
- Moulded plastic components (laboratory bench tops).
- Refractory materials and insulations in boilers, incinerators and stacks.
- Insulation under metal clad boilers and vessels.
- Mechanical packing, ropes and gaskets.
- Caulking and putties.
- Paints and coatings.
- Paper products under wood flooring or metal or slate roofing.

- Soffit and fascia boards at elevated heights.
- Fire resistant doors or metal clad finishes.
- Exterior cladding.
- Stucco, plaster or other cementitious parge coatings.
- Vibration dampers on HVAC equipment.
- Materials outside the assessed area.

The bulk samples are submitted to a NVLAP accredited laboratory for analysis. The analysis is performed in accordance with Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, July 1993.

Analytical results are compared to the following criteria:

Jurisdiction	Friable	Non-Friable
BC	0.5% ¹	0.5%
Alberta	Undefined ²	Undefined ²
Saskatchewan	>0.5% ¹	>1%
Manitoba	0.1% ¹	1%
Ontario	0.5%	0.5%
Yukon, Nunavut, Northwest Territories	1%	1%
Federal	1%	1%

The asbestos analysis is completed using a stop positive approach. Only one result meeting the above regulated criteria is required to determine that a material is asbestos-containing, but all samples must be analyzed to conclusively determine that a material is non-asbestos. The laboratory stops analyzing samples from a homogeneous material once a result equal to or greater than the regulated criteria is detected in any of the samples of that material. All samples of a homogeneous material are analyzed if no asbestos is detected. In some cases, all samples are analyzed in the sample set regardless of result.

Where building materials are described in the report as “non-asbestos” or “does not contain asbestos”, this means that either no asbestos was detected by the analytical method utilized in any of the multiple samples or, if detected, it is below the lower limit of an asbestos-containing material in the applicable regulation.

¹ Or any amount if vermiculite

² There is no criteria established for defining an asbestos-containing material by Alberta OHS Regulations. Historically, the accepted threshold was 1%, however materials that contain any asbestos will now need to be assessed before disturbance to determine the potential for fibre release based on the planned work activity.

Asbestos materials are evaluated in order to make recommendations regarding remedial work. The priority for remedial action is based on several factors:

- Friability (friable or non-friable).
- Condition (good, fair, poor, debris).
- Accessibility (ranking from accessible to all building users to inaccessible).
- Efficiency of the work (for example, if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in good condition).

1.3 Lead

Samples of distinctive paint finishes and surface coatings present in more than a limited application, where removal of the paint is possible is collected. The samples are collected by scraping the painted finish to include base and covering applications. Drawings included show sample locations.

Analysis for lead in paints or surface coatings is performed at an accredited laboratory in accordance with EPA Method No. 3050B/Method No. 7420; flame atomic absorption, or equivalent.

The Ontario Ministry of Labour (MOL) has not established a lower limit for concentrations of lead in paint, below which precautions do not need to be considered during construction projects. Pinchin follows the recommendations of the Environmental Abatement Council of Ontario (EACO) Lead Guideline for Construction, Renovation, Maintenance or Repair. The Guideline suggests that 0.1% (1,000 ppm) lead in paint represents a de minimis concentration of lead in paint for construction hygiene purposes, that is a concentration below which the lead content is not the limiting hazard in any disturbance of leaded paint for non-aggressive disturbance of painted finishes, (hand powered demolition, chipping, scraping, light sanding, etc.). The use of aggressive methods such as power grinding, torching, welding, etc. may result in significant lead exposures even with low concentrations of lead in paints (below 0.1%). Paint and surface coatings are evaluated for condition such as flaking, chipping or spalling.

Other lead building products (e.g. batteries, lead sheeting, flashing) are identified by visual observation only.

1.4 Silica

Building materials known to contain crystalline silica (e.g. concrete, cement, tile, brick, masonry, mortar) is identified by visual inspection only. Pinchin does not perform sampling of these materials for laboratory analysis of crystalline silica content.

1.5 Mercury

Building materials/products/equipment (e.g. thermostats, barometers, pressure gauges, light tubes), suspected to contain mercury are identified by visually inspection only. Dismantling of equipment suspected of containing mercury is not performed. Sampling of these materials for laboratory analysis of mercury content is not performed.

1.6 Polychlorinated Biphenyls

The potential for light ballast and wet transformers to contain PCBs is based on the age of the building, a review of maintenance records and examination of labels or nameplates on equipment, where present and accessible. The information is compared to known ban dates of PCBs and Environment Canada publications.

Dry type transformers are presumed to be free of dielectric fluids and hence non-PCB.

Fluids (mineral oil, hydraulic, Aroclor or Askarel) in transformers or other equipment are not sampled for PCB content.

Non-liquid forms of PCBs (i.e. sealants or caulking) are not sampled for PCB content.

1.7 Visible Mould

The presence of mould is determined by visual inspection of exposed building surfaces. If any mould growth is concealed within building cavities it is not addressed in this assessment.