Hazardous Building Materials Assessment

Hello Future Stage 2 Renovation
100 Portsmouth Avenue,
Kingston, Ontario

Prepared for:

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

Attention: Beth Sills, M.A. Sc., P.Eng., MBA, LEED AP
Major Capital Project Manager

March 13, 2017

Pinchin File: 202867

MEMBER OF
THE PINCHIN GROUP

Issued to:	**St. Lawrence College**
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Issued on:	**March 13, 2017**
Pinchin File:	**202867**
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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 March 8, 2017.

The objective of the assessment was to identify specified hazardous building materials in preparation for building renovation for the Hello Future Stage 2 Renovation. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

The assessed area was limited to the part of the building as part of the Hello Future Stage 2 Renovation, which consisted of the area of the building shown on the drawings in Appendix I.

SUMMARY OF FINDINGS

Asbestos: Asbestos-containing materials (ACM) were confirmed to be present as follows:

- Friable, texture finish, containing chrysotile asbestos, is present on the drywall ceiling above the stairs on the second floor; and
- Non-friable drywall joint compound, containing chrysotile asbestos, is present on drywall wall and ceiling finishes throughout the ground and second floors of the interior assessed area.

Lead: Lead is present in emergency light batteries.

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

Mercury: Mercury vapour is present in fluorescent lamps and liquid mercury is present in thermostat ampules.

Polychlorinated Biphenyls (PCBs): PCBs may be present in light ballasts.

SUMMARY OF RECOMMENDATIONS

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

1. Remove and properly dispose of asbestos-containing materials prior to renovation work;
2. Remove and properly dispose of PCB ballasts and mercury-containing items prior to disturbance by the planned renovation work; and
3. Follow appropriate safe work procedures when handling or disturbing lead and silica.

Please refer to Section 4.0 of this report for detailed recommendations regarding administrative, renovation activities.

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.

Nick McMaster and Joey Snow, Project Technologists, performed the assessment on March 8, 2017. The surveyor was unaccompanied during the assessment. The building was occupied at the time of the assessment.

The objective of the assessment was to identify specified hazardous building materials in preparation for building 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. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

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 within the area to be renovated as part of the Hello Future Stage 2 renovation. 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); and
- Mould.

The following Ontario 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; and
- Vinyl chloride monomer.

2.0 BACKGROUND INFORMATION

Assessed Area Description Item	Details
Building Use	Institutional
Number of Floors/Levels	2 stories
Total Area of Building (Square Feet)	Approximately 10,000
Year of Construction	Unknown
Structure	Structural steel and concrete
Exterior Cladding	Pre-cast concrete
HVAC	Forced air heating and air conditioning
Roof	Outside of Scope
Flooring	Vinyl floor tiles, carpet and ceramic tiles
Interior Walls	Drywall and concrete block
Ceilings	Drywall, texture finish and acoustic ceiling tiles

3.0 FINDINGS

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 fireproofing or thermal insulation;
- Plaster;
- Asbestos cement products; and

- Vinyl sheet flooring.

3.1.2 Texture Finishes (Acoustic/Decorative)

Texture finish, containing chrysotile asbestos, is present on the drywall ceiling above the stairwell on the second floor (samples 0011A-C). There is approximately 200 square feet of texture finish. Texture finish is friable, is in good condition and is painted.

3.1.3 Thermal Systems Insulation (TSI)

3.1.3.1 Pipe Insulation

Pipes are either uninsulated or insulated with non-asbestos fibreglass.

3.1.3.2 Duct Insulation and Mastic

Grey duct mastic present at the seams and joints of ducts throughout the assessed area does not contain asbestos (samples 0004A-C).

Ducts are either uninsulated or insulated with non-asbestos fibreglass and jacketed with either canvas or foil.

Non-asbestos grey duct mastic.

3.1.3.3 Mechanical Equipment Insulation

Mechanical equipment is either uninsulated or insulated with non-asbestos fibreglass.

3.1.4 Vermiculite

Loose fill vermiculite is not present in the assessed area. One intrusive hole was drilled into the concrete block wall on the second floor at the proposed location of a new stairwell; vermiculite was not found.

3.1.5 Acoustic Ceiling Tiles

Three distinct types of acoustic ceiling tile are present in the assessed area, as follows:

Size, Type, Pattern	Locations	Sample Number or Date Code	Asbestos Type
2'x4', lay-in, small pinholes	Ground Floor, Various Locations	0006A-C	None Detected
2'x2', lay-in, small pinholes, small fissures	Second Floor, Various Locations	05/17/10	None
2'x4', lay-in, small pinholes and non-directional fissures	Second Floor, Various Locations	02/11/11	None

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

Non-asbestos ceiling tiles present throughout the assessed area.

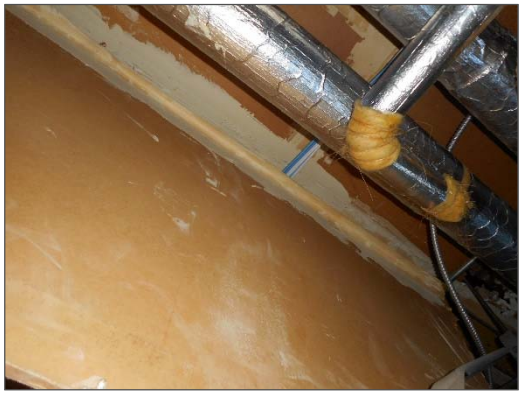
Non-asbestos ceiling tiles present throughout the assessed area.

Non-asbestos ceiling tiles present throughout the assessed area.

3.1.6 Drywall Joint Compound

Drywall (gypsum board) and drywall joint compound, containing chrysotile asbestos, is present as a wall and ceiling finish in the ground and second floors within the interior of the building (samples 0003A-C and 0007A-C). Drywall joint compound is a non-friable material and in good condition.

Drywall (gypsum board) and drywall joint compound present on the underside of the exterior main entrance canopy does not contain asbestos (samples 0002A-C).



Asbestos-containing drywall joint compound present on drywall wall and ceiling finishes throughout the assessed area (Photo taken above suspended ceiling).

Asbestos-containing drywall joint compound present on drywall wall and ceiling finishes throughout the assessed area.

Non-asbestos drywall joint compound present on the underside of the exterior canopy at the main entrance.

3.1.7 Vinyl Floor Tile and Mastic

Vinyl floor tiles are present as follows:

Size, Pattern, Colour	Locations	Sample Number	Asbestos Type (tile)	Asbestos Type (mastic)
12” White with Black Dots	Second Floor Lounge below Carpet Tiles	0008A-C	None detected	None detected
12” Black with Stone Pattern	Second Floor Copy Room	0009A-C	None detected	None detected
12” Grey with Black Dots	Second Floor Lounge and Game Room below Carpet Tiles	0010A-C	None detected	None detected

One intrusive inspection was also conducted under the ceramic floor tiles in the ground floor lobby. Concealed flooring materials were not observed at this location.

Non-asbestos 12” white and grey vinyl floor tiles with black dots.

Non-asbestos 12” black vinyl floor tiles with a stone pattern.

3.1.8 Levelling Compound

White floor levelling compound present under carpet tiles throughout the assessed area does not contain asbestos (samples 0005A-C).

Non-asbestos white floor levelling compound.

3.1.9 Sealants, Caulking, and Putty

Grey caulking at the front entrance exterior windows and doors does not contain asbestos (samples 0001A-C).

Non-asbestos grey exterior caulking.

3.2 Lead

3.2.1 Paints and Surface Coatings

A total of ten paint samples were collected from interior and exterior painted finishes. The following table summarizes the analytical results for paints sampled and their locations.

Sample Number	Colour, Substrate Description	Sample Location	Lead (%)
P1	White, Drywall	Main Entrance Exterior Canopy	<20
P2	Beige, Drywall	Ground Floor East Study Room	35
P3	Green, Drywall	Ground Floor, Fireplace Room	<20
P4	Beige, Drywall	Ground Floor, Fireplace Room	<20
P5	Brown, Drywall	Ground Floor, Fireplace Room	<20
P6	Beige, Drywall	Ground Floor, Student Services	<20
P7	Green, Drywall	Ground Floor, Student Services	<20
P8	Green, Drywall	Second Floor, Game Room	<20
P9	Red, Drywall	Second Floor, Game Room	<20
P10	Grey, Drywall	Second Floor Lounge	<20

All paints contain insignificant concentrations of lead and were found to be in good condition and not flaking, peeling or delaminating.

3.2.2 Lead Products and Applications

Lead-containing batteries are present in emergency lighting present in the building.

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.

- Electrical components, including wiring connectors, grounding conductors, and solder;
- Plumbing solder; and
- Glazing on ceramic tiles.

3.3 Silica

Crystalline silica is a presumed component of the following materials where present in the building:

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

3.4 Mercury

3.4.1 Lamps

Mercury vapour is present in fluorescent lamps throughout the assessed area.

3.4.2 Mercury-Containing Devices

Mercury is present as a liquid in thermostats.

3.5 Polychlorinated Biphenyls

3.5.1 Caulking

Grey caulking is present at exterior windows and doors at the main entrance of the building (sample PCB1) and contains <5.00 ppm PCBs. The material is a non-PCB solid based on the threshold given in SOR/2008-273 (50 ppm).

3.5.2 Lighting Ballasts

The building has not been comprehensively re-lamped with new energy efficient light ballasts and lamps, and as such, a percentage of light ballasts will be pre-1980 and contain PCBs.

3.5.3 Transformers

Transformers were not found during the assessment.

3.6 Mould

Visible mould growth was not found during the assessment.

4.0 RECOMMENDATIONS

4.1 General

1. Prepare plans and performance specifications for hazardous material removal required for the planned work. The specifications should include the scope of work, safe work practices, personal protective equipment, respiratory protection, and disposal of waste materials;
2. Provide this report and the detailed plans and specifications to the contractor prior to bidding or commencing work;
3. Retain a qualified consultant to specify, inspect and verify the successful removal of hazardous materials; and
4. Update the asbestos inventory upon completion of the abatement and removal of asbestos-containing materials.

4.2 Building Renovation Work

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

4.2.1 Asbestos

Remove asbestos-containing materials (ACM) prior to renovation, alteration, maintenance or if ACM may be disturbed by the work.

If the identified ACM will not be removed prior to commencement of the work, disturbance of ACM must follow the appropriate asbestos precautions for the classification of work being performed.

Asbestos-containing materials must be disposed of at a landfill approved to accept asbestos waste.

4.2.1.1 Texture finish

If texture finish is to be disturbed use Type 3 procedures as outlined within Ontario Regulation 278/05. If only minor amounts of texture finish are to be disturbed (less than 1 square metre (10.78 square feet)), Type 2 procedures would be applicable.

4.2.1.2 Drywall and Drywall Joint Compound

If drywall is to be disturbed/removed, remove minor amounts (less than 1 square metre (10.78 square feet)) of drywall with asbestos-containing drywall joint compound using Type 1 procedures as outlined within Ontario Regulation 278/05. Use Type 2 procedures for larger amounts (greater than 1 square metre).

4.2.2 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.

4.2.3 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.

4.2.4 Mercury

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

4.2.5 PCBs

When light fixtures are removed, examine light ballasts for PCB content. If ballasts are not clearly labelled as “non-PCB”, or are suspected to contain PCBs; package and ship ballasts for destruction at a federally permitted facility.

5.0 TERMS AND LIMITATIONS

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

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties.

Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

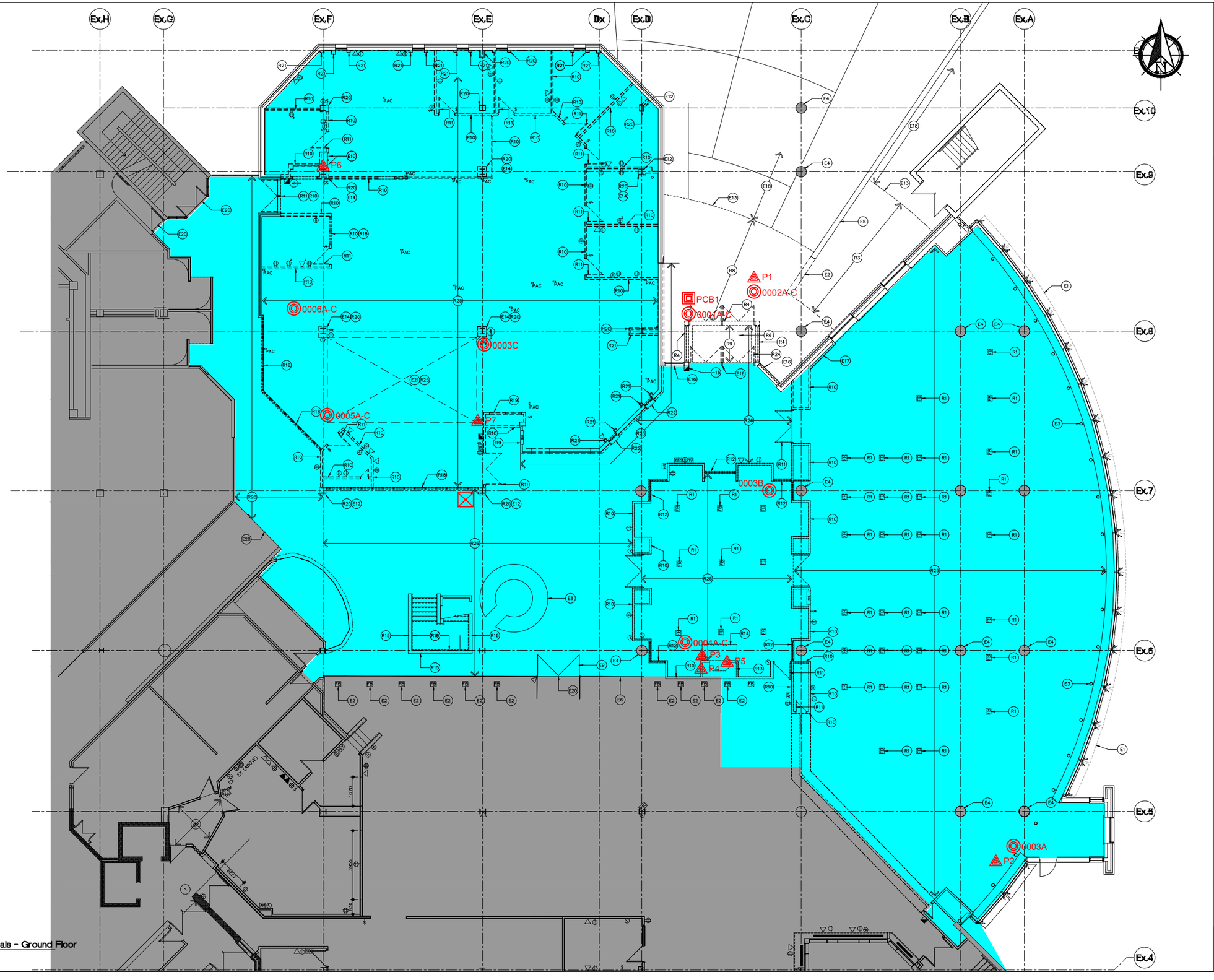
6.0 REFERENCES

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

1. Asbestos on Construction Projects and in Buildings and Repair Operations, Ontario Regulation 278/05;
2. Designated Substances, Ontario Regulation 490/09;
3. Lead on Construction Projects, Ministry of Labour Guidance Document;
4. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 347 as amended;
5. Surface Coating Materials Regulations, SOR/2005-109, Hazardous Products Act;
6. Silica on Construction Projects, Ministry of Labour Guidance Document; and
7. Alert – Mould in Workplace Buildings, Ontario Ministry of Labour.

APPENDIX I

Drawings



emolition/ Removals - Ground Floor
100

PINCHIN

LEGEND:

- OUTSIDE ASSESSMENT SCOPE
- ASBESTOS BULK SAMPLE
- LEAD BULK SAMPLE
- PCB BULK SAMPLE
- INSPECTION CUT

ASBESTOS-CONTAINING MATERIALS:

- DRYWALL JOINT COMPOUND
- TEXTURE FINISH

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 COLLGE

LOCATION:
100 PORTSMOUTH AVENUE
KINGSTON, ONTARIO
HELLO FUTURE STAGE 2 RENOVATIONS

TITLE:
HAZARDOUS BUILDING MATERIALS ASSESSMENT
GROUND FLOOR

DATE:	PROJECT # :
2017/03/13	202867
DRAWN BY: SY	DRAWING:
CHECKED BY: MH	1 OF 2
SCALE: NTS	

PINCHIN

LEGEND:

- OUTSIDE ASSESSMENT SCOPE
- ASBESTOS BULK SAMPLE
- LEAD BULK SAMPLE
- PCB BULK SAMPLE
- INSPECTION CUT

ASBESTOS-CONTAINING MATERIALS:

- DRYWALL JOINT COMPOUND
- TEXTURE FINISH

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.

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BASE PLAN PROVIDED BY CLIENT.

CLIENT:
ST. LAWRENCE COLLGE

LOCATION:
100 PORTSMOUTH AVENUE
KINGSTON, ONTARIO
HELLO FUTURE STAGE 2 RENOVATIONS

TITLE:
HAZARDOUS BUILDING MATERIALS ASSESSMENT
SECOND FLOOR

DATE:	PROJECT # :
2017/03/13	202867
DRAWN BY: SY	DRAWING: 2 OF 2
CHECKED BY: MH	
SCALE: NTS	

APPENDIX II-A

Asbestos Analytical Certificates

Pinchin Ltd. Asbestos Laboratory
Certificate of Analysis

Project Name:	**St. Lawrence College, 100 Portsmouth Avenue, Kingston, Ontario**		
Project No.:	**0202867.000**		
Prepared For:	**J. Snow / S. Young**	**Date Received:**	**March 9, 2017**
Lab Reference No.:	**b166368**	**Date Analyzed:**	**March 9, 2017**
Analyst(s):	**A. Di Giulio / T. Ly**	**# Samples submitted:**	**33**
		# Phases analyzed:	**42**

Method of Analysis:

EPA 600/R-93/116 - Method for the Determination of Asbestos in Bulk Building Materials dated July, 1993

Bulk samples are checked visually and scanned under a stereomicroscope. Slides are prepared and observed under a Polarized Light Microscope (PLM) at magnifications of 40X, 100X or 400X as appropriate. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the percentage of asbestos present. A reported concentration of less than (<) the regulatory threshold (see chart below) indicates the presence of confirmed asbestos in trace quantities, limited to only a few fibres or fibre bundles in an entire sample. This method complies with provincial regulatory requirements where applicable. Multiple phases within a sample are analyzed and reported separately.

Provincial Jurisdiction	Regulatory Threshold	Provincial Jurisdiction	Regulatory Threshold
Ontario, British Columbia, Nova Scotia	0.5%	Manitoba	0.1% friable 1% non-friable
Quebec	0.1%	Saskatchewan	0.5% friable 1% non-friable
Alberta, NWT, Yukon, Nunavut	1%	Newfoundland and Labrador, PEI and New Brunswick	1%

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three months. Samples may be retrieved, upon request, for re-examination at any time during that period.

Pinchin Ltd. is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP Lab Code 101270-0) for the 'EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples,' and the 'EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials'; and meets all requirements of ISO/IEC 17025:2005.

This report relates only to the items tested.

Pinchin Ltd. Asbestos Laboratory
Certificate of Analysis

Project Name: St. Lawrence College, 100 Portsmouth Avenue, Kingston, Ontario
Project No.: 0202867.000
Prepared For: J. Snow / S. Young

Lab Reference No.: b166368
Date Analyzed: March 9, 2017

BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0001A Grey Caulking, Entrance Vestibule at Ground Level, Exterior of Building	Homogeneous, grey, caulking material.	None Detected	Non-Fibrous Material > 75%
0001B Grey Caulking, Entrance Vestibule at Wall, Exterior of Building	Homogeneous, grey, caulking material.	None Detected	Non-Fibrous Material > 75%
0001C Grey Caulking, Entrance Vestibule at Wall, Exterior of Building	Homogeneous, grey, caulking material.	None Detected	Non-Fibrous Material > 75%
0002A Drywall Joint Compound, Main Entrance, Exterior Canopy	Homogeneous, white, drywall joint compound.	None Detected	Non-Fibrous Material > 75%
0002B Drywall Joint Compound, Main Entrance, Exterior Canopy	Homogeneous, white, drywall joint compound.	None Detected	Non-Fibrous Material > 75%
0002C Drywall Joint Compound, Main Entrance, Exterior Canopy	Homogeneous, white, drywall joint compound.	None Detected	Non-Fibrous Material > 75%
0003A Drywall Joint Compound, Ground Floor, Student Services, Upper Ceiling	Homogeneous, beige, drywall joint compound.	Chrysotile 0.5-5%	Non-Fibrous Material > 75%
Comments:	Cellulose is present on the surface of this sample.		

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BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0003B Drywall Joint Compound, Ground Floor, Fireplace Room Wall			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
0003C Drywall Joint Compound, Ground Floor, Student Services Column			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
0004A Grey Duct Mastic, Gound Floor, Fireplace Room, Duct Above Ceiling	Homogeneous, grey, mastic.	None Detected	Non-Fibrous Material > 75%
0004B Grey Duct Mastic, Gound Floor, Fireplace Room, Duct Above Ceiling	Homogeneous, grey, mastic.	None Detected	Non-Fibrous Material > 75%
0004C Grey Duct Mastic, Gound Floor, 2nd Floor Computer Room, Duct Above Ceiling	Homogeneous, grey, mastic.	None Detected	Non-Fibrous Material > 75%
0005A White Floor Levelling Compound, Ground Floor, Student Services, Under Carpet Tiles	2 Phases: a) Homogeneous, off-white, foam-like material. b) Homogeneous, grey, levelling compound.	None Detected None Detected	Non-Fibrous Material > 75% Non-Fibrous Material > 75%
0005B White Floor Levelling Compound, Ground Floor, Student Services, Under Carpet Tiles	2 Phases: a) Homogeneous, off-white, foam-like material. b) Homogeneous, grey, levelling compound.	None Detected None Detected	Non-Fibrous Material > 75% Non-Fibrous Material > 75%

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SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0005C White Floor Levelling Compound, Ground Floor, Student Services, Under Carpet Tiles	Homogeneous, off-white, foam-like material.	None Detected	Non-Fibrous Material > 75%
0006A 2'x4' Lay In Ceiling Tiles with Small Pinholes, Ground Floor Student Services	Homogeneous, off-white, layered, compressed, acoustic ceiling tile.	None Detected	Cellulose 25-50% Man-made Vitreous Fibres 25-50% Perlite 25-50% Other Non-Fibrous 0.5-5%
0006B 2'x4' Lay In Ceiling Tiles with Small Pinholes, Ground Floor Student Services	Homogeneous, off-white, layered, compressed, acoustic ceiling tile.	None Detected	Cellulose 25-50% Man-made Vitreous Fibres 25-50% Perlite 25-50% Other Non-Fibrous 0.5-5%
0006C 2'x4' Lay In Ceiling Tiles with Small Pinholes, Ground Floor Student Services	Homogeneous, off-white, layered, compressed, acoustic ceiling tile.	None Detected	Cellulose 25-50% Man-made Vitreous Fibres 25-50% Perlite 25-50% Other Non-Fibrous 0.5-5%
0007A Drywall Joint Compound, 2nd Floor Room 22050 Wall	2 Phases: a) Homogeneous, off-white, drywall joint compound. b) Homogeneous, white, drywall joint compound.	None Detected None Detected	Non-Fibrous Material > 75% Non-Fibrous Material > 75%
0007B Drywall Joint Compound, 2nd Floor Lounge, Upper Ceiling	Homogeneous, beige, drywall joint compound.	Chrysotile 0.5-5%	Non-Fibrous Material > 75%

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SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0007C Drywall Joint Compound, 2nd Floor Computer Lab, Column			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
0008A 12" White Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge Below Carpet Tiles	4 Phases: a) Homogeneous, white, consolidated, vinyl floor tile.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, black, soft, sticky material on the back of white vinyl floor tile.	None Detected	Tar and other non-fibrous > 75%
	c) Homogeneous, grey, consolidated, vinyl floor tile.	None Detected	Non-Fibrous Material > 75%
	d) Homogeneous, black, soft, sticky material on the back of grey vinyl floor tile.	None Detected	Tar and other non-fibrous > 75%
Comments:	Phase d) is small in size. For more reliable results, a larger sample is required.		
0008B 12" White Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge Below Carpet Tiles	2 Phases: a) Homogeneous, white, consolidated, vinyl floor tile.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, black, soft, sticky material on the back of white vinyl floor tile.	None Detected	Tar and other non-fibrous > 75%

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SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0008C 12" White Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge Below Carpet Tiles	2 Phases: a) Homogeneous, white, consolidated, vinyl floor tile.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, black, soft, sticky material on the back of white vinyl floor tile.	None Detected	Tar and other non-fibrous > 75%
0009A 12" Black Vinyl Floor Tiles with Stone Pattern, 2nd Floor Copy Room	2 Phases: a) Homogeneous, off-white, consolidated, fibrous material on the back of vinyl sheet flooring.	None Detected	Synthetic Fibres > 75% Non-Fibrous Material 0.5-5%
	b) Homogeneous, yellow, soft, sticky material on the back of vinyl sheet flooring.	None Detected	Non-Fibrous Material > 75%
0009B 12" Black Vinyl Floor Tiles with Stone Pattern, 2nd Floor Copy Room	2 Phases: a) Homogeneous, off-white, consolidated, fibrous material on the back of vinyl sheet flooring.	None Detected	Synthetic Fibres > 75% Non-Fibrous Material 0.5-5%
	b) Homogeneous, yellow, soft, sticky material on the back of vinyl sheet flooring.	None Detected	Non-Fibrous Material > 75%

Pinchin Ltd. Asbestos Laboratory
Certificate of Analysis

Project Name: St. Lawrence College, 100 Portsmouth Avenue, Kingston, Ontario
Project No.: 0202867.000
Prepared For: J. Snow / S. Young

Lab Reference No.: b166368
Date Analyzed: March 9, 2017

BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0009C 12" Black Vinyl Floor Tiles with Stone Pattern, 2nd Floor Copy Room	2 Phases: a) Homogeneous, off-white, consolidated, fibrous material on the back of vinyl sheet flooring.	None Detected	Synthetic Fibres > 75% Non-Fibrous Material 0.5-5%
	b) Homogeneous, yellow, soft, sticky material on the back of vinyl sheet flooring.	None Detected	Non-Fibrous Material > 75%
0010A 12" Grey Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge, Below Carpet Tiles	2 Phases: a) Homogeneous, grey, consolidated, vinyl floor tile.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, black, soft, sticky material on the back of vinyl floor tile.	None Detected	Tar and other non-fibrous > 75%
0010B 12" Grey Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge, Below Carpet Tiles	2 Phases: a) Homogeneous, grey, consolidated, vinyl floor tile.	None Detected	Non-Fibrous Material > 75%
	b) Non-homogeneous, black and brown, soft, sticky material and soft cementitious material on the back of vinyl floor tile.	None Detected	Tar and other non-fibrous > 75%
0010C 12" Grey Vinyl Floor Tiles with Black Dots, 2nd Floor Game Room, Below Carpet Tiles	2 Phases: a) Homogeneous, grey, consolidated, vinyl floor tile.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, black, soft, sticky material on the back of vinyl floor tile.	None Detected	Tar and other non-fibrous > 75%

Pinchin Ltd. Asbestos Laboratory
Certificate of Analysis

Project Name: St. Lawrence College, 100 Portsmouth Avenue, Kingston, Ontario
Project No.: 0202867.000
Prepared For: J. Snow / S. Young

Lab Reference No.: b166368
Date Analyzed: March 9, 2017

BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0011A Texture Ceiling Finish, 2nd Floor Above Stairs	Homogeneous, white, finishing or texture coat.	Chrysotile 0.5-5%	Perlite 5-10% Other Non-Fibrous > 75%
0011B Texture Ceiling Finish, 2nd Floor Above Stairs			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
0011C Texture Ceiling Finish, 2nd Floor Above Stairs			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		

Reviewed by: **Reporting Analyst:**

PINCHIN

Analysed by: TR

Reviewed by: KC

Report Sent by: EL

MEMBER OF PG THE PINCHIN GROUP

Pinchin Ltd. - Asbestos Laboratory
Internal Asbestos Bulk Sample Chain of Custody

Client Name:	St. Lawrence College			**Project Address:**	100 Portsmouth Avenue, Kingston, Ontario		
Portfolio/Building No:				**Pinchin File:**	202867		
Submitted by:	Joey Snow			**Email:**	jsnow@pinchin.com		
CC Results to:	Sarah Young			**CC Email:**	syoung@pinchin.com		
Invoice to:				**Invoice Email:**			
Date Submitted:	March	8	2017	**Required by:**	March	9	2017
# of Samples:	33			**Priority:**	Rush Turnaround		
Year of Building Construction (*Mandatory Field*):							
Do NOT Stop on Positive (Sample Numbers):							
Pinchin Group Company (*Mandatory Field*):					Pinchin		

To be Completed by Lab Personnel Only:					
Lab Reference #:	b1663b8		**Time:**	24 hour clock	
Received by:	MAR 0 9 2017 EL		**Date:**	Month	Day	Year
Name(s) of Analyst(s):	AD/TR			03	09	17

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
	0001	A	Grey Caulking, Entrance Vestibule at Ground Level, Exterior of Building ND.
	0001	B	Grey Caulking, Entrance Vestibule at Wall, Exterior of Building ND
	0001	BC	Grey Caulking, Entrance Vestibule at Wall, Exterior of Building ND
	0002	A	Drywall Joint Compound, Main Entrance, Exterior Canopy ND
	0002	B	Drywall Joint Compound, Main Entrance, Exterior Canopy ND
	0002	C	Drywall Joint Compound, Main Entrance, Exterior Canopy ND.
	0003	A	Drywall Joint Compound, Ground Floor, Student Services, Upper Ceiling CHO:551.

7 + 18 + 17 = 42

b1166365 AD.

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
	0003	B	Drywall Joint Compound, Ground Floor, Fireplace Room Wall NA-
	0003	C	Drywall Joint Compound, Ground Floor, Student Services Column NA-
	0004	A	Grey Duct Mastic, Gound Floor, Fireplace Room, Duct Above Ceiling ND.
	0004	B	Grey Duct Mastic, Gound Floor, Fireplace Room, Duct Above Ceiling ND
	0004	C	Grey Duct Mastic, Gound Floor, 2nd Floor Computer Room, Duct Above Ceiling ND.
	0005	A	White Floor Levelling Compound, Ground Floor, Student Services, Under Carpet Tiles ~~ND~~ a) ND b) ND
	0005	B	White Floor Levelling Compound, Ground Floor, Student Services, Under Carpet Tiles a) ND b) ND
	0005	C	White Floor Levelling Compound, Ground Floor, Student Services, Under Carpet Tiles ND
	0006	A	2'x4' Lay In Ceiling Tiles with Small Pinholes, Ground Floor Student Services ND.
	0006	B	2'x4' Lay In Ceiling Tiles with Small Pinholes, Ground Floor Student Services ND.
	0006	C	2'x4' Lay In Ceiling Tiles with Small Pinholes, Ground Floor Student Services ND.
	0007	A	Drywall Joint Compound, 2nd Floor Room 22050 Wall a) ND b) ND
	0007	B	Drywall Joint Compound, 2nd Floor Lounge, Upper Ceiling CH 0.55%.
	0007	C	Drywall Joint Compound, 2nd Floor Computer Lab, Column NA —
	0008	A	12" White Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge Below Carpet Tiles a) ND b) ND c) ND d) ND

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PINCHIN

MEMBER OF PG THE PINCHIN GROUP

b1 6623628 AD

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
	0008	B	12" White Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge Below Carpet Tiles a) ND b) ND
	0008	C	12" White Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge Below Carpet Tiles a) ND b) ND
	0009	A	12" Black Vinyl Floor Tiles with Stone Pattern, 2nd Floor Copy Room a) ND b) ND
	0009	B	12" Black Vinyl Floor Tiles with Stone Pattern, 2nd Floor Copy Room a) ND b) ND
	0009	C	12" Black Vinyl Floor Tiles with Stone Pattern, 2nd Floor Copy Room a) ND b) ND
	0010	A	12" Grey Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge, Below Carpet Tiles a) ND b) ND
	0010	B	12" Grey Vinyl Floor Tiles with Black Dots, 2nd Floor Lounge, Below Carpet Tiles a) ND b) ND
	0010	C	12" Grey Vinyl Floor Tiles with Black Dots, 2nd Floor Game Room, Below Carpet Tiles a) ND b) ND
	0011	A	Texture Ceiling Finish, 2nd Floor Above Stairs CA 0.5-5%
	0011	B	Texture Ceiling Finish, 2nd Floor Above Stairs NA
	0011	C	Texture Ceiling Finish, 2nd Floor Above Stairs NA

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APPENDIX II-B

Lead Analytical Certificates

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Certificate of Analysis

Pinchin Ltd. (Kingston)

1456 Centennial Drive, Suite 2
Kingston, ON K7P 0K4
Attn: Sarah Young

Client PO: 202867
Project: 202867
Custody:

Report Date: 9-Mar-2017
Order Date: 9-Mar-2017

Order #: 1710325

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

Paracel ID	Client ID
1710325-01	P1-White Paint, Drywall, Main Enterance Exterior Canopy
1710325-02	P2-Beige Paint, Drywall, Ground Floor, East Study Room Wall
1710325-03	P3-Green Paint, Drywall, Ground Floor, Fireplace Room Ceiling
1710325-04	P4-Beige Paint, Drywall, Ground Floor, Fireplace Room, Ceiling
1710325-05	P5-Brown Paint, Drywall, Ground Floor, Fireplace Room Wall at Fireplace
1710325-06	P6-Beige Paint, Drywall, Ground, Studen Services, Interior Wall
1710325-07	P7-Green Paint, Drywall, Ground, Student Services, Interior Wall
1710325-08	P8-Green Paint, Drywall, 2nd Floor, Game Room Wall
1710325-09	P9-Red Paint, Drywall, 2nd Floor, Game Wall
1710325-10	P10-Grey Paint, Drywall, 2nd Floor, Lounge Wall

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Pinchin Ltd. (Kingston)
Client PO: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-OES	based on MOE E3470, ICP-OES	9-Mar-17	9-Mar-17

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.
2- LG-CNT(Container(s) - Bottle and COC sample ID don't match -

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: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

Sample Results

Lead

Matrix: Paint
Sample Date: 08-Mar-17

Paracel ID	Client ID	Units	MDL	Result
1710325-01	P1-White Paint, Drywall, Main Enterance Exterior Canopy	ug/g	20	<20
1710325-02	P2-Beige Paint, Drywall, Ground Floor, East Study Room W	ug/g	20	35 [1]
1710325-03	P3-Green Paint, Drywall, Ground Floor, Fireplace Room Ce	ug/g	20	<20 [1]
1710325-04	P4-Beige Paint, Drywall, Ground Floor, Fireplace Room, Ce	ug/g	20	<20
1710325-05	P5-Brown Paint, Drywall, Ground Floor, Fireplace Room Wa	ug/g	20	<20 [1]
1710325-06	P6-Beige Paint, Drywall, Ground, Studen Services, Interior	ug/g	20	<20 [1]
1710325-07	P7-Green Paint, Drywall, Ground, Student Services, Interior	ug/g	20	<20
1710325-08	P8-Green Paint, Drywall, 2nd Floor, Game Room Wall	ug/g	20	<20 [1]
1710325-09	P9-Red Paint, Drywall, 2nd Floor, Game Wall	ug/g	20	<20 [1]
1710325-10	P10-Grey Paint, Drywall, 2nd Floor, Lounge Wall	ug/g	20	<20

Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Matrix Blank									
Lead	**ND**	**20**	**ug/g**						
Matrix Duplicate									
Lead	**778**	**20**	**ug/g**				**200.0**	**30**	
Matrix Spike									
Lead	507		ug/L		203	70-130			

Paracel ID: 1710325

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e: paracel@paracellabs.com

Chain of Custody
(Lab Use Only)

Page __ of __

Client Name: Pinchin Ltd.	Project Reference: 202867	**Turnaround Time:**
Contact Name: Sarah Young	Quote #	☑ 1 Day ☐ 3 Day
Address: 1456 Centennial Drive, Suite 2, Kingston, Ontario, K7P 0KP	PO # 202867	☐ 2 Day ☐ Regular
Telephone: 613 541 1013	Email Address: jsnow@pinchin.com and syoung@pinchin.com	Date Required: March 9 2017

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)

Paracel Order Number: 1710325

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analyses: Lead										
1	P1 - White Paint, Drywall, Main Entrance Exterior Canopy	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	P2 - Beige Paint, Drywall, Ground Floor, East Study Room Wall	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	P3 - Green Paint, Drywall, Ground Floor, Fireplace Room Ceiling	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	P4 - Beige Paint, Drywall, Ground Floor, Fireplace Room, Ceiling	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	P5 - Brown Paint, Drywall, Fireplace Room Wall at Fireplace	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	P6 - Beige Paint, Drywall, Ground, Student Services Interior Wall	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7	P7 - Green Paint, Drywall, Ground, Student Services, Interior Wall	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8	P8 - Green Paint, Drywall, 2nd Floor, Game Room Wall	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9	P9 - Red Paint, Drywall, 2nd, Floor Game Wall	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10	P10 - Grey Paint, Drywall, 2nd Floor Lounge Wall	P		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments: Analyze Paint Scrapings Only, Hold Samples for potential TCLP analysis. All Samples are "LS-" NOT. "P-" LSavage
Report samples with "P" as per Sarah - RS.

Method of Delivery: Purolator

Relinquished By (Sign): Sarah Young	Received by Driver/Depot:	Received at Lab: L. Savage	Verified By: Rachel Sybrant
Relinquished By (Print): Sarah Young	Date/Time:	Date/Time: Mar 9/17 9:05 AM.	Date/Time: Mar 9 17.
Date/Time: March 8 2017 5 pm	Temperature: ____ °C	Temperature: ____ °C	pH Verified ☒ By: N/A 10:11.

APPENDIX II-C

PCB Analytical Certificates

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Certificate of Analysis

Pinchin Ltd. (Kingston)

1456 Centennial Drive, Suite 2
Kingston, ON K7P 0K4
Attn: Sarah Young

Client PO: 202867
Project: 202867
Custody:

Report Date: 9-Mar-2017
Order Date: 9-Mar-2017

Order #: 1710327

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

Paracel ID	Client ID
1710327-01	PCB1 - Grey Exterior Caulking, Front Entrance, Composite

Approved By:

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Pinchin Ltd. (Kingston)
Client PO: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PCBs, total	SW846 8082A - GC-ECD	9-Mar-17	9-Mar-17
Solids, %	Gravimetric, calculation	9-Mar-17	9-Mar-17

Certificate of Analysis
Client: Pinchin Ltd. (Kingston)
Client PO: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

	Client ID:	PCB1 - Grey Exterior Caulking, Front Entrance, Composite	-	-	-
	Sample Date:	08-Mar-17	-	-	-
	Sample ID:	1710327-01	-	-	-
	MDL/Units	other	-	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	100	-	-	-
PCBs					
PCBs, total	0.05 ug/g dry	<5.00 [1]	-	-	-
Decachlorobiphenyl	Surrogate	86.9%	-	-	-

Certificate of Analysis
Client: Pinchin Ltd. (Kingston)
Client PO: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	*0.0940*		*ug/g*		*94.0*	*60-140*			

Certificate of Analysis
Client: Pinchin Ltd. (Kingston)
Client PO: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND				40	
Surrogate: Decachlorobiphenyl	*0.141*		*ug/g dry*		*115*	*60-140*			
Physical Characteristics									
% Solids	84.3	0.1	% by Wt.	83.9			0.5	25	

Certificate of Analysis
Client: Pinchin Ltd. (Kingston)
Client PO: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	0.565	0.05	ug/g	ND	115	60-140			
Surrogate: Decachlorobiphenyl	*0.0918*		*ug/g*		*75.0*	*60-140*			

Certificate of Analysis
Client: Pinchin Ltd. (Kingston)
Client PO: 202867

Report Date: 09-Mar-2017
Order Date: 9-Mar-2017
Project Description: 202867

Qualifier Notes:

Sample Qualifiers :

1 : Elevated detection limits due to the nature of the sample matrix.

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.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

Paracel ID: 1710327

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e: paracel@paracellabs.com

Chain of Custody (Lab Use Only)

Page __ of __

Client Name: Pinchin Ltd.	Project Reference: 202867
Contact Name: Sarah Young	Quote #
Address: 1456 Centennial Drive, Suite 2, Kingston, Ontario, K7P 0KP	PO # 202867
Telephone: 613 541 1013	Email Address: jsnow@pinchin.com and syoung@pinchin.com

Turnaround Time: ☑ 1 Day ☐ 3 Day ☐ 2 Day ☐ Regular

Date Required: March 9 2017

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)

Paracel Order Number: 1710327.

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analyses: PCBs										
1 ✓	PCB1 - Grey Exterior Caulking, Front Entrance, Composite	O		1	march 8	3 pm	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Method of Delivery: Purolator

Relinquished By (Sign): Sarah Young	Received by Driver/Depot:	Received at Lab: L. Savoel	Verified By: Rachel Subject
Relinquished By (Print): Sarah Young	Date/Time:	Date/Time: Mar 9/17 9:00 AM.	Date/Time: Mar 9/17. 10:03
Date/Time: March 8 2017 5 pm	Temperature: ____ °C	Temperature: ____ °C	pH Verified [X] By: N/A

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 Scope Limitations

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.);
- 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); and
- 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 masonry walls (chases, shafts etc.), structural items or exterior building finishes is not conducted.

1.2 Asbestos

Pinchin conducts an inspection 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.

Pinchin collects samples at a rate that is in compliance with Table 1 of O.Reg. 278/05.

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.

Pinchin conducts limited demolition of masonry block walls (core holes) to investigate for loose fill insulation if practical based on existing building use. When advanced, the core holes are temporarily patched with expanding foam.

Flooring mastic/adhesive and leveling compounds are only sampled and analyzed if present on the underside of flooring samples (vinyl floor tile and vinyl sheet flooring).

If present, the following materials are presumed to be asbestos-containing and are best sampled immediately prior to commencing renovation/disturbance:

- Roofing, felts and tar;
- Elevator and lift brakes;
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring;
- Paper products under wood flooring;
- Mechanical packing, ropes and gaskets;
- Fire resistant doors or metal clad finishes; and
- Exterior cladding.

Pinchin submits the bulk samples 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.

In Ontario an ACM is defined as materials containing 0.5% or more asbestos by weight.

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, 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.

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);
- Visibility (whether the material is obscured by other building components); and
- 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

Pinchin collects samples of distinctive paint finishes and surface coatings present in more than a limited application, where removal of the paint is possible. Pinchin collects samples 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 MOE Test Method E3470; inductively coupled optical emission spectrometry.

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

Pinchin identifies building materials suspected of containing crystalline silica (e.g. concrete, cement, tile, brick, masonry, mortar) by knowledge of current and historic applications and 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 visual 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

Pinchin determines the potential for light ballasts to contain PCBs 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. Other than light ballasts and pole mounted transformers, all other liquid uses of PCBs should have been discontinued.

Pinchin samples exterior caulking or sealants for PCBs based on the date of construction or installation. Caulking installed after 1985 is presumed to be free of PCBs and hence not sampled. If sampled, analysis for PCBs is performed using an ASTM test method appropriate to the sample matrix at an accredited laboratory.

1.7 Visible Mould

Pinchin identifies the presence of mould if visibly present in a significant quantity on exposed building surfaces. If any mould growth is concealed within wall cavities it is not addressed in this assessment. Sampling is not performed.