

## **APPENDIX C – HAZARDOUS BUILDING MATERIALS ASSESSMENT**



REVISION NO. 2  
**Hazardous Building  
Materials  
Assessment**

St. John's Library,  
500 Salter Street,  
Winnipeg, Manitoba

Prepared for:

**City of Winnipeg**  
4th Floor, 185 King Street  
Winnipeg, MB R3B 1J1

Attention: Ryan Mathews

March 15, 2017

Pinchin File: 200012.005

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**Issued on:** March 15, 2017  
**Pinchin File:** 200012.005  
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## EXECUTIVE SUMMARY

City of Winnipeg (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at St. John's Library located at 500 Salter Street, Winnipeg, Manitoba. Pinchin performed the assessment on January 6 and March 10, 2017.

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

The assessed area consisted of the entire building

## SUMMARY OF FINDINGS

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

- ~ 3,000 SF of asbestos-containing 9" x 9" green vinyl floor tiles are present under carpeting within the main floor library; and
- ~ 25 SF of 9" x 9" beige vinyl floor tiles are present under the carpeting within the stairwell.

Lead: Lead was confirmed present in select paints/surface coatings and is present in emergency light batteries.

Silica: Crystalline silica is present in concrete, mortar, brick, masonry, ceramics, granite, slate, stone, asphalt, etc.

Mercury: Mercury vapour is present in fluorescent lamps.

Polychlorinated Biphenyls (PCBs): 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.

Mould: Not present.

## 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 ACM prior to demolition or if disturbed by the planned renovation work;



2. Remove and properly dispose of PCB ballasts and mercury-containing items prior to demolition or if disturbed 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 and 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**

City of Winnipeg (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at St. John's Library located at 500 Salter Street, Winnipeg, Manitoba.

Ken Brydges, C.E.T., LEED GA performed the assessment on March 10, 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 consisted of all parts of the building.

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.



## 2.0 BACKGROUND INFORMATION

Building Description Item	Details
Building Use	Library
Number of Floors/Levels	Single storey with one level below grade
Structure	Structural steel, concrete
Year of Construction	1914
Exterior Cladding	Brick
HVAC	Boiler and hot water heating to radiators
Roof	Pitched roof, asphalt shingles
Flooring	Vinyl tile, vinyl sheet flooring, and carpet
Interior Walls	Drywall and plaster
Ceilings	Plaster and acoustic ceiling tiles

### 2.1 Inaccessible Locations

The attic was not accessible during our assessment (no ladder onsite that could reach the access hatch).

### 2.2 Existing Reports

No existing reports were provided for reference.

## 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 building and are not discussed in the report findings:

- Spray-applied fireproofing or thermal insulation;
- Texture finishes (acoustic/decorative); and
- Asbestos cement products.



### 3.1.2 Thermal Systems Insulation (TSI)

#### 3.1.2.1 Pipe Insulation

Non-asbestos parping cement is present on pipe system fittings of the how water heating system within the basement of the building (Samples 0002A-C).

Straight sections of pipe systems observed throughout the building are either non-insulated or insulated with non-asbestos fibreglass and jacketed with foil face.

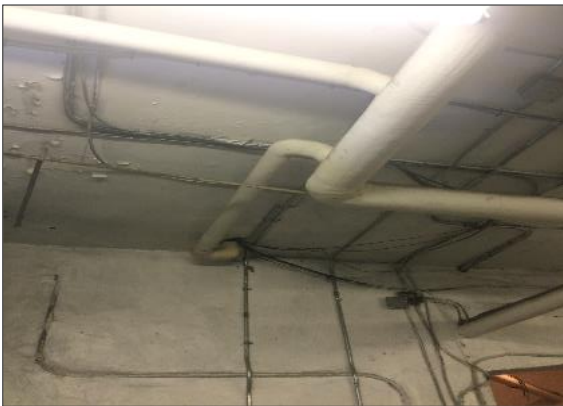


Photo #1: Non-asbestos parping cement present on pipe system fittings throughout the basement.

#### 3.1.2.2 Duct Insulation

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

#### 3.1.2.3 Mechanical Equipment Insulation

Boiler in the boiler room is jacketed with metal. It was common within this era of construction for manufactures to have installed asbestos-containing refractory materials beneath the metal jacketing. The metal jacketing was not removed during this assessment. Destructive testing will be required prior to demolition of boiler.

The boiler breeching in the boiler room is insulated with non-asbestos fibreglass and jacketed with canvas.



Photo #2: Refractory materials suspect to contain asbestos may be present beneath metal jacketing of boiler.



Photo #3: Non-asbestos fiberglass present on boiler breaching.

### 3.1.3 Vermiculite

Loose fill vermiculite was not observed in the assessed areas. However the attic was not accessible and vermiculite may be present as insulation.

### 3.1.4 Acoustic Ceiling Tiles

Non-asbestos acoustic ceiling tiles are present within the basement washrooms and meeting room. The ceiling tiles were determined to be non-asbestos based on the date code stamped on the back of the tile (1998).

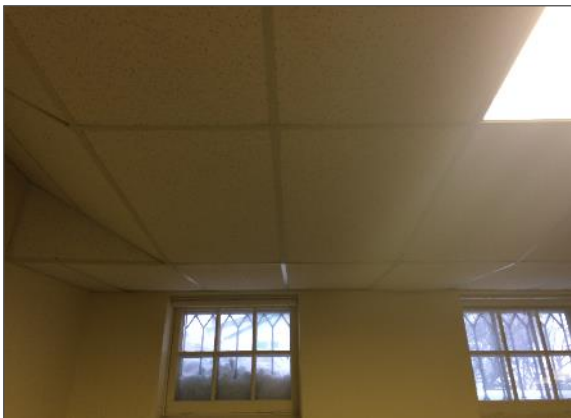


Photo #4: Non-asbestos acoustic ceiling tiles within the basement washrooms and meeting room.

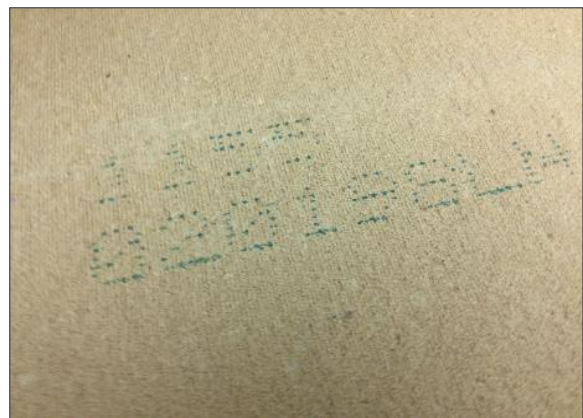


Photo #5: Back of tiles date stamped 02/01/98 year of production.

### 3.1.5 Plaster

Plaster is present on walls and ceilings throughout the building. A total of 10 samples of plaster were collected (Samples 0001A-C, 0003A-C, 0006A and 0008A-C). Asbestos was not detected.

### 3.1.6 Drywall Joint Compound

Drywall (gypsum board) and drywall joint compound is present as a wall finish in the basement meeting room. Based on the results of the testing (Samples 0005A-C), the drywall joint compound does not contain asbestos.

### 3.1.7 Vinyl Sheet Flooring

Asbestos-containing vinyl sheet flooring was not present. Non-asbestos vinyl sheet flooring is present as follows:

Pattern, Colour and Photo Number	Paper Backing (Yes/No)	Locations	Sample Number	Asbestos Type
Pebbled, beige, Photo #6	No	Basement washrooms	NA	Non-asbestos
9" x 9", squares, Brown, Photo #7	Yes	Under carpet within the staff room	0004A-C and 0011	Non-asbestos
Battleship flooring, Photo #8	No	under carpet within basement corridor	0010	Non-asbestos

Asbestos if present within vinyl sheet flooring will be identified in the paper backing layer only. Vinyl sheet flooring which was presumed to be non-asbestos was done so based on the lack of a paper backing layer (underpad).



Photo #6: Non-asbestos vinyl sheet flooring with rubber backing within bathrooms.



Photo #7: Non-asbestos 9" x 9" square pattern, vinyl sheet flooring under carpet within the staff room (Samples 0004A-C & S0011).



Photo #8: Non-asbestos battle ship flooring under carpeting within the basement corridor (Samples 0010).

### 3.1.8 Vinyl Floor Tile and Mastic

Vinyl floor tiles are present as follows:

Size, Pattern, Colour and Photo Number	Locations (Quantity)	Sample Number	Asbestos Type (tile)	Asbestos Type (mastic)
9" x 9" Green. Photo #9	Main floor library area ~ 3,000 SF	0007A-C	Chrysotile	Chrysotile
9" x 9" Beige. Photo #10	Landing of stairs under carpet ~ 25 SF	0009	Chrysotile	Non-asbestos

The vinyl floor tiles and mastic are non-friable and are covered with carpet.



Photo #9: Asbestos-containing green floor tiles under carpet within the main floor library.

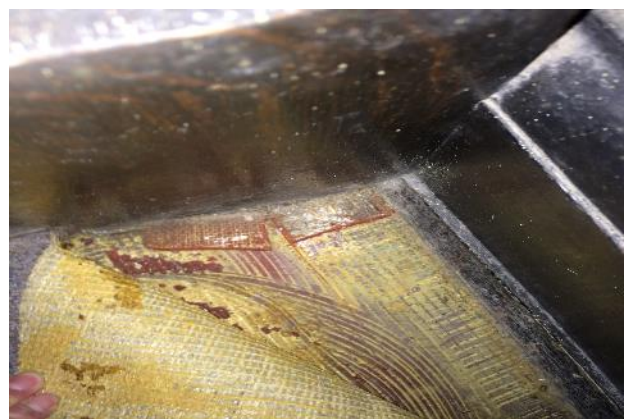


Photo #10: Asbestos-containing vinyl floor tiles present under carpeting within the south stairwell.

### 3.1.9 Roofing Products

As indicated the by onsite staff the asphalt shingles present on the pitched roof were installed after 2010, therefore not suspect to contain asbestos.

### 3.1.10 Presumed Asbestos Materials

A number of materials which might contain asbestos were not sampled during the assessment due to limitations in scope and methodology. Where present, these materials must be presumed to be an asbestos material and are best sampled during project planning and preparation of contract documents for their removal. Materials presumed to contain asbestos include:

- Concrete floor levelling compound;
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring;
- Refractory materials and insulations stacks;
- Insulation under metal clad boilers;
- Vermiculite if present within attic;
- Adhesives and duct mastics; and
- Caulking.

## 3.2 Lead

### 3.2.1 Paints and Surface Coatings

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

Sample Number	Colour, Substrate Description	Locations	Lead (%)
L0001	White paint, plaster	Ceiling finishes throughout library	0.006
L0002	Beige paint, plaster	Wall finishes throughout library	0.31
L0003	Pink paint, plaster	Wall finish within the staff room	7.1
L0004	Beige/yellow, drywall	Wall finish, meeting room	0.007

All paints containing elevated levels of lead were found to be in good condition and not flaking, peeling or delaminating.

Appendix II-B presents the lead testing results.



### 3.2.2 *Lead Products and Applications*

Lead-containing batteries are present in emergency lighting where present throughout 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 as noted below, where found, should be considered to contain lead:

- Electrical components, including wiring connectors, grounding conductors, and solder.

## 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;
- Stone (granite, slate); and
- Plaster.

## 3.4 **Mercury**

### 3.4.1 *Lamps*

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

## 3.5 **Polychlorinated Biphenyls**

### 3.5.1 *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.

### 3.5.2 *Transformers*

Transformers were not found during the assessment.

### 3.5.3 *Presumed PCB Materials*

- Caulking.
- Voltage regulators.

## 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. 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 when the areas are no longer occupied. Specifically the following materials/areas need to be investigated:
  - The attic space.
3. Provide this report and the detailed plans and specifications to the contractor prior to bidding or commencing work.
4. Retain a qualified consultant to specify, inspect and verify the successful removal of hazardous materials.
5. Update the asbestos inventory upon completion of the abatement and removal of ACM.

### 4.2 Building Demolition or Renovation Work

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

#### 4.2.1 Asbestos

Remove all ACM prior to renovation, alteration, maintenance or demolition work 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.

ACM must be disposed of at a landfill approved to accept asbestos waste.

#### 4.2.2 *Lead*

Construction disturbance of lead in paint and coatings (or other materials) may result in over-exposure to lead dust or fumes. The need for work procedures, engineering controls and personal protective equipment will need to be assessed on a project-by-project basis and must comply with provincial standards or guidelines. Performing an exposure assessment during work that disturbs lead in paints and coatings may be able to alleviate the use of some of the precautions specified by these standards or guidelines.

Items painted with paints containing elevated levels of lead may be a hazardous waste. Test lead-painted materials for leachable lead and other metals prior to disposal.

Lead-acid batteries 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.

#### 4.2.6 *Mould*

No mould was observed; if mould is uncovered inside wall cavities during hand demolition, use appropriate precautions and protect workers using methods that comply with provincial guidelines.





## 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. General Regulation – Workplace Safety and Health Act W210;
2. Workplace Health Hazard Regulation (Manitoba Regulation 217/2006 Workplace Safety and Health Regulation), under the Workplace Safety and Health Act;
3. Canadian Environmental Protection Act – SOR/92-507;
4. PCB Regulations, SOR/2008-273, Canadian Environmental Protection Act;
5. Manitoba Regulation MR 474/88, Manitoba PCB Regulation made under The Dangerous Goods Act;
6. Guideline for Asbestos Operation and Maintenance Program – Workplace Safety and Health Branch – Manitoba Labour and Immigration (2007);
7. A Guideline for Working with Lead – Workplace Safety and Health Branch – Manitoba labour and Immigration (2002); and
8. Guidelines for the Investigation, Assessment, & Remediation of Mould In Workplaces, Workplace Safety and Health Division, Manitoba Labour, 2001.

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2017.docx

Template: Master Report for Hazardous Materials Assessment Report (Pre-Construction), Haz, January 16, 2017

**APPENDIX I-A**  
**Asbestos Analytical Certificates**



## Pinchin Ltd. Asbestos Laboratory Certificate of Analysis

**Project Name:** City of Winnipeg, St. John's Library, 500 Salter Street, Winnipeg, MB  
**Project No.:** 0200012.005  
**Prepared For:** K. Brydges  
**Lab Reference No.:** b163739  
**Analyst(s):** J. Raisch-Berkoff / A. Wells / E. DeCurtis  
**Date Received:** January 11, 2017      # Samples submitted: 22  
**Date Analyzed:** January 18, 2017      # Phases analyzed: 30

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**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.

**NOTE:** *This test report may not be reproduced, except in full, without the written approval of the laboratory. The client may not use this report to claim product endorsement by NVLAP or any agency of the U.S. Government. This report is valid only when signed in blue ink by the analyst. Vinyl asbestos floor tiles contain very fine fibres of asbestos and may be missed by some laboratories using the PLM method. Internal verification studies performed by Pinchin indicate that the chance of missing asbestos in floor tiles is no higher than about 2%. The vinyl tile study and laboratory documentation on measurement uncertainty is available upon request. The analysis of dust samples by PLM cannot be used as an indicator of past or present airborne asbestos fibre levels.*



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**Prepared For:** K. Brydges

**Lab Reference No.:** b163739  
**Date Analyzed:** January 18, 2017

### BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0001A Plaster - Wall - Basement Corridor	2 Phases: a) Homogeneous, beige, hard, cementitious, plaster base coat.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, grey, hard, cementitious, plaster top coat.	None Detected	Non-Fibrous Material > 75%
0001B Plaster - Wall - Basement - Storage room	2 Phases: a) Homogeneous, grey, hard, cementitious, plaster base coat.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, off-white, soft, cementitious material.	None Detected	Hair 1-5% Non-Fibrous Material > 75%
0001C Plaster - Wall - Basement - Staff Room	Homogeneous, grey, hard, cementitious, plaster.	None Detected	Non-Fibrous Material > 75%
0002A Parging cement - HWH - Boiler room	Homogeneous, beige, soft, parging cement.	None Detected	Cellulose 25-50% Man-made Vitreous Fibres 10-25% Non-Fibrous Material 25-50%
0002B Parging cement - HWH - Storage Room	Homogeneous, beige, soft, parging cement.	None Detected	Cellulose 25-50% Man-made Vitreous Fibres 10-25% Non-Fibrous Material 25-50%
0002C Parging cement - HWH - Storage Room	Homogeneous, beige, soft, parging cement.	None Detected	Cellulose 25-50% Man-made Vitreous Fibres 10-25% Non-Fibrous Material 25-50%



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### BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0003A Plaster - Ceiling - Corridor	a) Non-homogeneous, beige, hard, cementitious, plaster base coat.	None Detected	Cellulose 0.1-1% Non-Fibrous Material > 75%
	b) Homogeneous, white, hard, cementitious, plaster top coat.	None Detected	Non-Fibrous Material > 75%
0003B Plaster - Ceiling - Stairs	Non-homogeneous, beige, hard, cementitious, plaster material.	None Detected	Cellulose 0.1-1% Hair 0.1-1% Non-Fibrous Material > 75%
0003C Plaster Ceiling - Staff Room	a) Non-homogeneous, beige, hard, cementitious, plaster base coat.	None Detected	Cellulose 0.1-1% Non-Fibrous Material > 75%
	b) Homogeneous, white, hard, cementitious, plaster top coat.	None Detected	Non-Fibrous Material > 75%
0004A Tar Paper - Under carpet - Staff room	Homogeneous, black, consolidated, fibrous material on the back of vinyl sheet flooring.	None Detected	Cellulose 25-50% Hair 5-10% Synthetic Fibres 5-10% Tar and other non-fibrous 25-50%
0004B Tar Paper - Under carpet - Staff room	Homogeneous, black, consolidated, fibrous material on the back of vinyl sheet flooring.	None Detected	Cellulose 25-50% Hair 5-10% Synthetic Fibres 5-10% Tar and other non-fibrous 25-50%



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### BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0004C Tar Paper - Under carpet - Staff room	2 Phases: a) Homogeneous, black, consolidated, fibrous material on the back of vinyl sheet flooring.	None Detected	Cellulose 25-50% Hair 5-10% Synthetic Fibres 5-10% Tar and other non-fibrous 25-50%
	b) Homogeneous, brown, cementitious, adhesive material on the back of vinyl sheet flooring.	None Detected	Non-Fibrous Material > 75%
0005A Drywall joint compound - Wall - Meeting Room	Homogeneous, white, drywall joint compound.	None Detected	Non-Fibrous Material > 75%
0005B Drywall joint compound - Wall - Meeting Room	Homogeneous, white, drywall joint compound.	None Detected	Non-Fibrous Material > 75%
0005C Drywall joint compound - Wall - Meeting Room	Homogeneous, white, drywall joint compound.	None Detected	Non-Fibrous Material > 75%



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### BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0006A Plaster - Ceiling - Entrance	3 Phases: a) Homogeneous, grey, hard, granular, cementitious, plaster base coat.	None Detected	Non-Fibrous Material > 75%
	b) Homogeneous, white, hard, cementitious, plaster top coat.	None Detected	Non-Fibrous Material > 75%
	c) Homogeneous, off-white, drywall joint compound.	None Detected	Non-Fibrous Material > 75%
Comments:	Phase a) is very small in size. For more reliable results, a larger sample is required.		
0007A Vinyl floor tiles - Green - Under Carpet - Library	a) Homogeneous, green, consolidated, vinyl floor tile.	Chrysotile 1-5%	Non-Fibrous Material > 75%
	b) Homogeneous, black, soft, sticky material on the back of vinyl floor tile.	Chrysotile < 0.1%	Tar and other non-fibrous > 75%
0007B Vinyl floor tiles - Green - Under Carpet - Library	a) Homogeneous, green, consolidated, vinyl floor tile.		Not Analyzed
	b) Homogeneous, black, soft, sticky material on the back of vinyl floor tile.	Chrysotile 0.1-1%	Tar and other non-fibrous > 75%
Comments:	Analysis of phase a) was stopped due to a previous positive result.		



**Pinchin Ltd. Asbestos Laboratory**  
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**BULK SAMPLE ANALYSIS**

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0007C Vinyl floor tiles - Green - Under Carpet - Library			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
0008A Plaster - Wall - Library	2 Phases: a) Homogeneous, beige, hard, cementitious, plaster base coat.  b) Homogeneous, white, hard, cementitious, plaster top coat.	None Detected  None Detected	Hair 0.1-1% Non-Fibrous Material > 75%  Non-Fibrous Material > 75%
Comments:	Phase a) is small in size.		
0008B Plaster - Wall - Entrance	Homogeneous, grey, hard, cementitious, plaster coat.	None Detected	Cellulose 0.1-1% Non-Fibrous Material > 75%
Comments:	Another phase is present but there was insufficient material submitted to analyze.		
0008C Plaster - Entrance - Stairs	Homogeneous, grey, hard, cementitious, plaster coat.	None Detected	Non-Fibrous Material > 75%

**Reviewed by:**

**Reporting Analyst:**





## Pinchin Ltd. Asbestos Laboratory Certificate of Analysis

**Project Name:** City of Winnipeg, St. Johns Library, 500 Salter Street, Winnipeg MB  
**Project No.:** 0200012.005  
**Prepared For:** C. Smithson / K. Brydges  
**Lab Reference No.:** b166570  
**Analyst(s):** J. Raisch-Berkoff  
**Date Received:** March 14, 2017      **# Samples submitted:** 3  
**Date Analyzed:** March 14, 2017      **# Phases analyzed:** 6

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**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.

**NOTE:** *This test report may not be reproduced, except in full, without the written approval of the laboratory. The client may not use this report to claim product endorsement by NVLAP or any agency of the U.S. Government. This report is valid only when signed in blue ink by the analyst. Vinyl asbestos floor tiles contain very fine fibres of asbestos and may be missed by some laboratories using the PLM method. Internal verification studies performed by Pinchin indicate that the chance of missing asbestos in floor tiles is no higher than about 2%. The vinyl tile study and laboratory documentation on measurement uncertainty is available upon request. The analysis of dust samples by PLM cannot be used as an indicator of past or present airborne asbestos fibre levels.*



## Pinchin Ltd. Asbestos Laboratory Certificate of Analysis

**Project Name:** City of Winnipeg, St. Johns Library, 500 Salter Street, Winnipeg MB  
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**Lab Reference No.:** b166570  
**Date Analyzed:** March 14, 2017

### BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
0009 9" x 9" beige vinyl floor tile, basement stairwell under carpet	2 Phases: a) Homogeneous, tan, consolidated, vinyl floor tile.	Chrysotile	1-5% 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%
0010 Battleship sheet flooring, basement hallway under carpet	2 Phases: a) Homogeneous, beige, woven, fibrous material on the back of vinyl sheet flooring.	None Detected	Cellulose > 75% Non-Fibrous Material 0.1-1%
	b) Homogeneous, brown, adhesive material on the back of vinyl sheet flooring.	None Detected	Non-Fibrous Material > 75%
Comments:	This sample is large in size. A representative portion was taken and analyzed.		
0011 Vinyl sheet flooring, basement staff room under carpet	2 Phases: a) Homogeneous, black, consolidated, fibrous material on the back of vinyl sheet flooring.	None Detected	Cellulose 50-75% Hair 1-5% Synthetic Fibres 1-5% Tar and other non-fibrous 25-50%
	b) Homogeneous, brown, adhesive material on the back of vinyl sheet flooring.	None Detected	Non-Fibrous Material > 75%

Reviewed by:

Reporting Analyst:

**APPENDIX I-B**  
**Lead Analytical Certificates**



# Analysis for Lead Concentration in Paint Chips

by Flame Atomic Absorption Spectroscopy  
EPA SW-846 3050B/6010C/7420



**Customer:** Pinchin Ltd.  
54 Terracon Place  
Winnipeg, MB R2J 4G7

**Attn:** Ken Brydges

**Lab Order ID:** 1700595  
**Analysis ID:** 1700595\_PBP  
**Date Received:** 1/12/2017  
**Date Reported:** 1/17/2017  
**Date Amended:** 1/19/2017

**Project:** 200012.005 Asbestos & Lead Assessment Cinty of Winnipeg

Sample ID	Description	Mass (g)	Concentration (ppm)	Concentration (% by weight)
Lab Sample ID	Lab Notes			
L-0001	Paint chip - white paint - ceiling - boiler room	0.1013	65	0.006%
1700595PBP_1				
L-0002	Paint chip - beige paint - wall - corridor	0.0910	3100	0.31%
1700595PBP_2				
L-0003	Paint chip - pink - staff room	0.0601	71000	7.1%
1700595PBP_3				
L-0004	Paint chip - wall - meeting room	0.0613	73	0.007%
1700595PBP_4				

Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL. Analytical uncertainty available upon request. The quality control samples run with the samples in this report have passed all EPA required specifications unless otherwise noted. RL: (Report Limit for an undiluted 50ml sample is 4µg Total Pb).

Daniel Olson (4)

Analyst

Laboratory Director

**APPENDIX II**  
**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.);
- 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); 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 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.

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:

- Concrete floor levelling compound;
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring;
- Refractory materials and insulations in boilers and stacks;
- Insulation under metal clad boilers;
- Vermiculite in attic;
- Adhesives and duct mastics;
- Caulking;
- Paper products under wood flooring; and
- Mechanical packing, ropes and gaskets.



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 Manitoba an ACM is defined as materials containing 0.1% or more asbestos by weight for friable materials, 1% or more asbestos by weight for non-friable materials.

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, damaged, debris); 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 EPA Method No. 3050B/Method No. 7420; flame atomic absorption.

For this report, all paints containing lead at a concentration of the detection limit or greater are discussed. Paint and surface coatings are evaluated for condition such as flaking, chipping or chalking.





#### **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.

Mercury spills or damaged mercury-containing equipment are recorded where observed.

#### **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 records spills or leakage of suspect PCB-containing fluids where observed or identified in historical documents.

#### **1.7 Ozone Depleting Substances (ODS)**

Pinchin determines the potential presence of ODS (chlorofluorocarbon, hydrochlorofluorocarbon, hydrofluorocarbon, halon, etc.) in air conditioning units, chillers, commercial coolers and fire suppression systems by visual inspection of manufactures' labels or plates, maintenance records, or log books, etc.

Domestic type equipment such as window mounted and small central air conditioners, refrigerators, and freezers are not evaluated for the presence of ODS.

#### **1.8 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.

Master Template: Methodology Document for Hazardous Building Materials Pre-Construction, HAZ, October 18, 2016