

Hazardous Building Materials Assessment

Muskoka TS (HON2143972)
552 Highway 141, Huntsville, Ontario

Prepared for:

Hydro One c/o BGIS

400-300 Sparks Street
Ottawa, Ontario, K1R 7S3

Attention: Cristina Jimenez
Project Manager

July 12, 2019

Pinchin File: 241337.019

© 2019 Pinchin Ltd.

Issued to:	**Hydro One c/o BGIS**
Contact:	**Cristina Jimenez** **Project Manager**
Issued on:	**July 12, 2019**
Pinchin File:	**241337.019**
Issuing Office:	**Kanata, ON**
Pinchin Contact:	**Sarah Young, C.Tech.** **Operations Manager**



Author: Glenn Hendry, B.Sc.(Env).
Project Manager
613.541.1013 ext. 1608
ghendry@pinchin.com



Reviewer: Sarah Young, C.Tech.
Operations Manager
613.541.1013 ext. 1609
syoung@pinchin.com

© 2019 Pinchin Ltd.

EXECUTIVE SUMMARY

Hydro One c/o BGIS (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at Muskoka TS located at 552 Highway 141, Huntsville, Ontario. Pinchin performed the assessment on June 17, 2019.

The objective of the assessment was to identify specified hazardous building materials in preparation for the planned Exterior Wall Refurbishment Project. 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 'Control Building_509 [HYD01047] as identified by the Client on site. Interior finishes and the roof were excluded from the scope.

SUMMARY OF FINDINGS

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

- Non-friable Transite ceiling panels, Transite wall panels, Transite pipes and vinyl floor tiles, presumed to contain asbestos based on visual observation, are present throughout the interior of the building, in good condition; however, are not anticipated to be disturbed as part of this project.
- Non-friable grey and white caulking, containing chrysotile asbestos, is present at exterior windows and doors, in good condition.

Lead: Lead is present as follows:

- Red paint containing elevated levels of lead is present on exterior metal doors and is flaking and peeling.
- Batteries of emergency lights and back-up batteries.

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

Mercury: Mercury vapour is present in light tubes.

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

Mould and Water Damage: Visible mould growth and water damage was not observed.

© 2019 Pinchin Ltd.

SUMMARY OF RECOMMENDATIONS

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

1. Prepare specifications for the hazardous material removal required for the planned work.
2. Do not disturb suspected hazardous building materials discovered during the planned work, which have not been identified in this report. Notify Pinchin immediately to conduct further testing.
3. Remove and dispose of asbestos-containing materials if disturbed by the planned renovation work.
4. Remove and properly dispose of PCB ballasts when fixtures are decommissioned.
5. Recycle mercury-containing light tubes when removed from service.
6. Follow appropriate safe work procedures when handling or disturbing silica and lead.
7. Remediate the materials as described in Section 4.3.

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.

© 2019 Pinchin Ltd.

TABLE OF CONTENTS

1.0 INTRODUCTION AND SCOPE 1
1.1 Scope of Assessment 1
2.0 BACKGROUND INFORMATION 2
2.1 Building Description 2
3.0 FINDINGS 2
3.1 Asbestos 2
3.2 Lead 7
3.3 Silica 8
3.4 Mercury 8
3.5 Polychlorinated Biphenyls 9
3.6 Mould 9
4.0 RECOMMENDATIONS 9
4.1 General 9
4.2 Abatement Budget Estimation 10
4.3 Remedial Work 11
4.4 Building Renovation Work 11
5.0 TERMS AND LIMITATIONS 12
6.0 REFERENCES 12

APPENDICES

APPENDIX I Drawing
APPENDIX II-A Asbestos Analytical Certificates
APPENDIX II-B Lead Analytical Certificates
APPENDIX II-C PCB Analytical Certificates
APPENDIX III Methodology

© 2019 Pinchin Ltd.

1.0 INTRODUCTION AND SCOPE

Hydro One c/o BGIS (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at Muskoka TS located at 552 Highway 141, Huntsville, Ontario.

Raymond Lee, Project Manager, performed the assessment on June 17, 2019. The surveyor was accompanied by a BGIS representative during the assessment. The assessed area was vacant at the time of the assessment.

The objective of the assessment was to identify specified hazardous building materials in preparation for the planned Exterior Wall Refurbishment Project. 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 ‘Control Building_509 [HYD01047] as identified by the Client on site. Interior finishes and the roof were excluded from the scope.

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

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

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

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

© 2019 Pinchin Ltd.

- Isocyanates.
- Vinyl chloride monomer.

2.0 BACKGROUND INFORMATION

2.1 Building Description

Description Item	Details
Use	Control Building
Number of Floors	One storey
Total Area	3,000 square feet
Year of Construction	The building was constructed in approximately the 1970s.
Structure	Structural steel and concrete block.
Exterior Cladding	Brick
HVAC	Electric in-wall and Roof-top HVAC units
Roof	Not assessed (outside of scope)
Flooring	Exposed concrete and vinyl tile (outside of scope)
Interior Walls	Concrete block (outside of scope)
Ceilings	Transite panels and plastic ceiling tiles (outside of scope)

3.0 FINDINGS

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

3.1 Asbestos

3.1.1 Suspect Building Materials Not Found

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

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

© 2019 Pinchin Ltd.

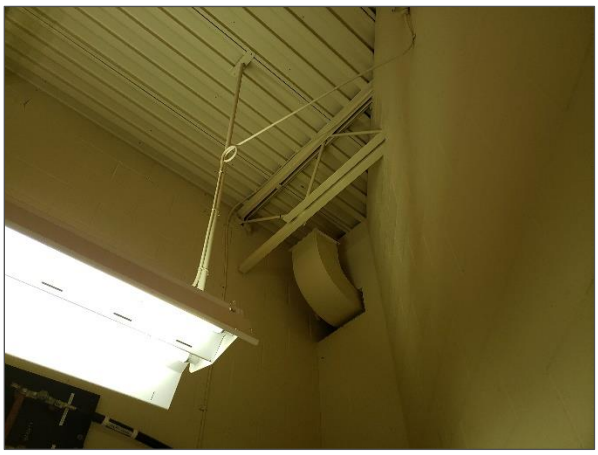
- Drywall joint compound.
- Vinyl sheet flooring.

3.1.2 Pipe Insulation

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

3.1.3 Duct Insulation and Mastic

Ducts within the building were uninsulated.



Insulated duct within the building.

3.1.4 Mechanical Equipment Insulation

Mechanical equipment (, e.g. hot water tanks) is insulated with non-asbestos fibreglass.



Fiberglass insulated hot water tank.

© 2019 Pinchin Ltd.

3.1.5 Vermiculite

Destructive testing was conducted of masonry block walls. The masonry block walls were penetrated in 4 locations, loose fill vermiculite was not observed within the cavities. The locations of destructive testing have been indicated on the drawing in Appendix I.

3.1.6 Acoustic Ceiling Tiles

Lay-in 2’ x 4’ plastic ceiling tiles with a grid pattern are present throughout the building. Plastic ceiling tiles do not contain asbestos.



Non-asbestos lay-in vinyl tiles.

3.1.7 Asbestos Cement Products (Transite)

Transite board, presumed to contain asbestos based on visual observation, is present above the suspended ceiling system throughout the interior of the building. Transite is a non-friable material, approximately 2,800 square feet of transite ceiling panels are present and in good condition.

Transite pipe, presumed to contain asbestos based on visual observation, is present as sanitary drains / rain water leaders within the interior of the building. Transite is non-friable material, approximately 10 linear feet of transite pipe is present and in good condition.

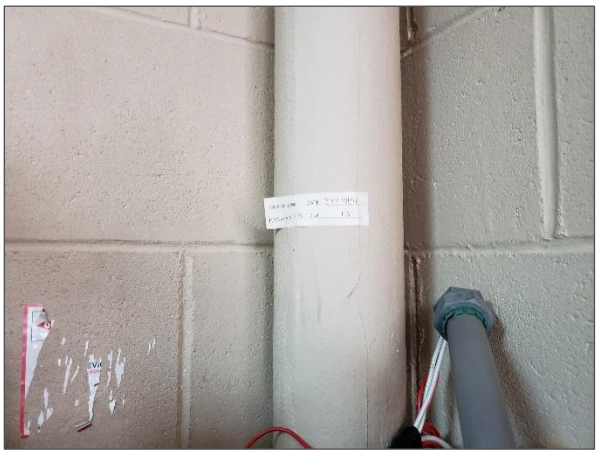
Transite wall board, presumed to contain asbestos based on visual observation, is present stored in a storage room within the interior of the building. Transite is non-friable material, approximately 20 square feet of transite wall panel is present and in good condition.

Transite pipes and boards are not anticipated to be disturbed as part of this project.

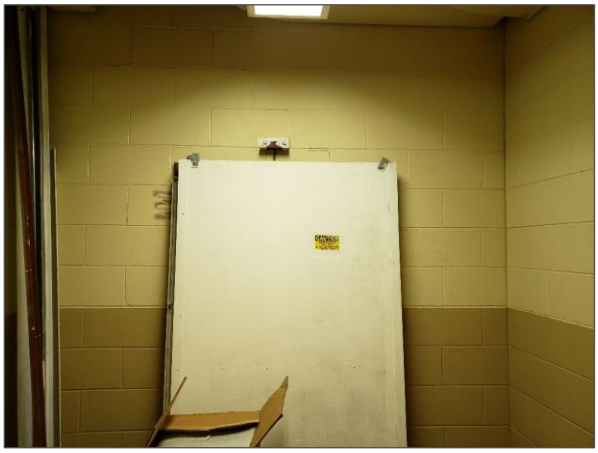
© 2019 Pinchin Ltd.



Non-friable asbestos-containing Transite ceiling tiles.



Non-friable asbestos-containing Transite pipe.



Non-friable asbestos-containing Transite wall panel.

3.1.8 Vinyl Floor Tiles and Mastic

Various visually distinct vinyl floor tiles are present throughout the interior of the building. Vinyl floor tiles are not anticipated to be disturbed as part of this project; therefore, sampling was not performed.

© 2019 Pinchin Ltd.

3.1.9 Caulking

The following table presents a summary of caulking present:

Material and Colour	Location	Quantity	Sample Number	Asbestos Type
Grey caulking	Exterior expansion joints	-	S1902A-C	None Detected
White and grey caulking	**Exterior window and door frames**	**440 linear feet**	**S1903A-C and S1904A-C**	**Chrysotile**

Caulking is a non-friable material and in good condition.



Non-friable asbestos-containing white caulking at exterior windows.



Non-friable asbestos-containing grey caulking at exterior doors.

3.1.10 Other Building Materials

Grey mortar, present on the exterior of the building, does not contain asbestos (Samples S1901A-C).

3.1.11 Presumed Asbestos Materials

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

© 2019 Pinchin Ltd.

proven by sampling and analysis:

- Roofing felts and tar, mastics.
- Floor levelling compound.
- Vinyl floor tiles and mastic.
- Electrical components.
- Materials concealed or outside the assessed area.

3.2 Lead

3.2.1 Paints and Surface Coatings

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

Sample Number	Colour, Substrate Description	Location	Lead (%)
L01	**Red, metal doors**	**Exterior**	**3.9**

Results above 0.1% are considered elevated (i.e., greater than the EACO guideline of 0.1% for lead-containing paints).

Paints with elevated levels of lead was flaking/peeling in the following areas on the following items:

- Red paint on exterior metal doors (10 SF).

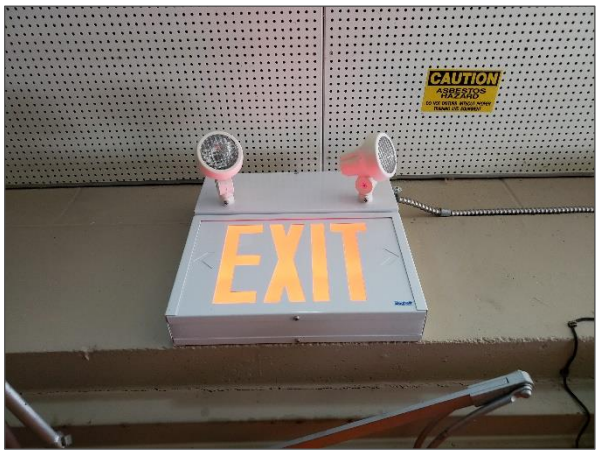


Flaking/peeling lead-containing red paint at an exterior door.

3.2.2 Lead Products and Applications

Lead-containing batteries are present in emergency lighting and back-up batteries.

© 2019 Pinchin Ltd.



Emergency light containing lead acid batteries.



Back-up lead acid batteries.

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.
- Solder on pipe connections.

3.3 Silica

Crystalline silica is a presumed component of the following materials:

- Poured or pre-cast concrete.
- Masonry and mortar.

3.4 Mercury

3.4.1 Lamps

Mercury vapour is present in fluorescent lamps.

3.4.2 Mercury-Containing Devices

Thermostats inspected did not contain liquid mercury ampules.

© 2019 Pinchin Ltd.

3.5 Polychlorinated Biphenyls

3.5.1 Caulking

The following table presents a summary of caulking present:

Material and Colour	Location	Quantity	Sample Number	PCB concentration (ppm)
Caulking, grey	Exterior expansion joints	-	PCB01	<0.5
Caulking, white	Exterior windows	-	PCB02	<0.5
Caulking, white	Exterior doors	-	PCB03	<0.5

These materials are non-PCB solids based on the threshold (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 may be manufactured prior to 1980 and may contain PCBs.

3.5.3 Transformers

All transformers in the building are dry type transformers and do not contain PCB-containing dielectric fluids.

3.6 Mould

Visible mould growth and water damage 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. If suspected hazardous building materials are discovered during the planned work, which are not identified in this report, do not disturb and inform Pinchin immediately to conduct further testing.
3. Provide this report to the contractor prior to bidding or commencing work.

© 2019 Pinchin Ltd.

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 asbestos-containing materials.

4.2 Abatement Budget Estimation

The following Class D cost estimate (+/-25%) has been prepared to aid in budgeting for removal of all known hazardous building materials identified in this report.

Costs may also vary depending on seasonal work patterns, availability of contractors, or local market conditions:

Hazardous Material	Approximate Quantity	Removal Procedure	Cost Estimate
Asbestos-containing caulking on exterior windows and doors	440 linear feet	Type 1 asbestos abatement procedures	$5,280.00
Asbestos-containing transite ceiling panels	2,800 square feet	Type 1 asbestos abatement procedures	$14,000.00
Asbestos-containing transite pipe	10 linear feet	Type 1 asbestos abatement procedures	$800.00
Asbestos-containing transite wall panel	20 square feet	Type 1 asbestos abatement procedures	$100.00
Red paint containing elevated concentrations of lead on exterior door	10 square feet	Class 2A lead abatement procedures	$80.00*
Mercury-containing light tubes	<500 each	Do not break lamps. Recycle and reclaim mercury from light tubes when taken out of service. Mercury is classified as a hazardous waste and must be disposed of in accordance with local regulations	$750.00
PCB light ballasts	<50kg	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	$350.00
TOTAL ESTIMATE (Class D +/-25%)			**$28,860.00**

*Disposal costs for potential lead leachate toxic paint is not included.

© 2019 Pinchin Ltd.

4.3 Remedial Work

The following remedial work is recommended regardless of the planned construction work due to the condition and location of the material:

Material, Quantity & Condition	Location	Recommended Procedure
Red paint, containing elevated concentrations of lead, 10 square feet flaking and peeling	Exterior doors	Remove flaking and peeling paint in accordance with EACO Class 2A lead abatement procedures

4.4 Building Renovation Work

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

4.4.1 Asbestos

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

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

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

4.4.2 Lead

For paints identified as having elevated levels of lead (i.e., greater than the EACO guideline of 0.1% for lead-containing paints), construction disturbance may result in over-exposure to lead dust or fumes. The need for work procedures, engineering controls and personal protective equipment should be assessed on a site specific basis to comply with provincial standards or guidelines. Performing an exposure assessment during work that disturbs lead in paints and coatings may be able to reduce the use of some of these precautions.

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

Well adhered paints containing elevated levels of lead on metal substrates do not require leachable lead analysis as the materials can be recycled with the paint intact.

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

© 2019 Pinchin Ltd.

4.4.3 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.

4.4.4 Mercury

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

4.4.5 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. The Environmental Abatement Council of Ontario (EACO) Lead Guideline for Construction, Renovation, Maintenance or Repair, October 2014.
5. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 347 as amended.

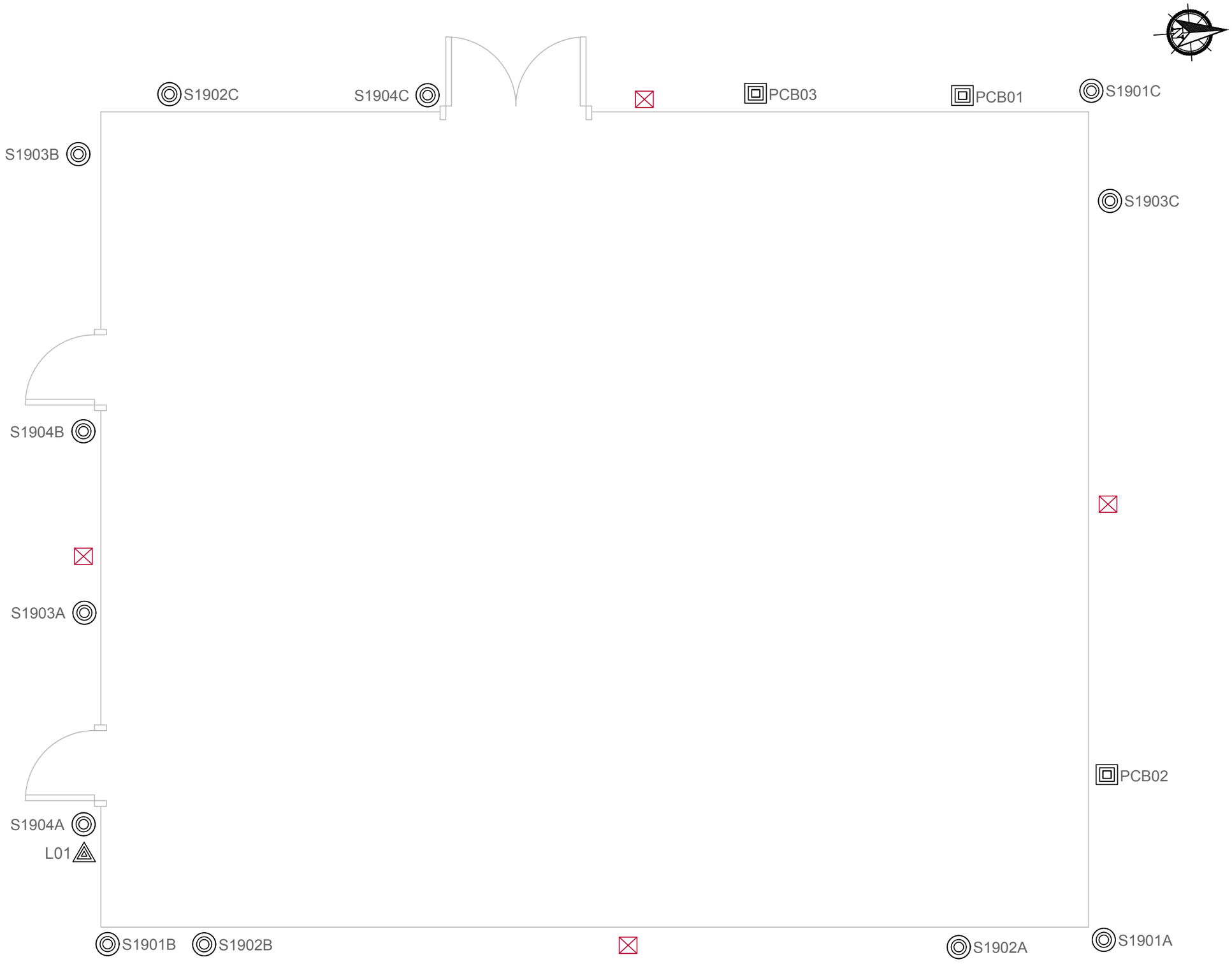
© 2019 Pinchin Ltd.

6. Surface Coating Materials Regulations, SOR/2005-109, Hazardous Products Act.
7. Silica on Construction Projects, Ministry of Labour Guidance Document.
8. Alert – Mould in Workplace Buildings, Ontario Ministry of Labour.
9. PCB Regulations, SOR/2008-273, Canadian Environmental Protection Act.

© 2019 Pinchin Ltd.

APPENDIX I

Drawing



PINCHIN

LEGEND:

- ASBESTOS BULK SAMPLE
- LEAD BULK SAMPLE
- PCB BULK SAMPLE
- INTRUSIVE INSPECTION

FOR CLARITY, THE FOLLOWING ASBESTOS CONTAINING MATERIALS, ARE PRESENT IN THE ASSESSED AREA, BUT HAVE NOT BEEN HATCHED ON THE DRAWING:

- WHITE AND GREY CAULKING PRESENT AT ALL EXTERIOR WINDOWS AND DOORS
- TRANSITE CEILING PANELS AND PIPES

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.

CLIENT:
BGIS

LOCATION:
552 HIGHWAY 141, HUNTSVILLE , ON
MUSKOKA TS
CONTROL BUILDING_509 (HYD01047)

TITLE:
HAZARDOUS BUILDING MATERIALS ASSESSMENT
GROUND FLOOR

DATE:	PROJECT # :
2019/07/09	241337.019
DRAWN BY: GH	DRAWING: 1 OF 1
CHECKED BY: SY	
SCALE: NTS	

© PINCHIN DRAWING TEMPLATE MARCH 2018

APPENDIX II-A

Asbestos Analytical Certificates

Pinchin Ltd. Asbestos Laboratory
Certificate of Analysis

Project Name:	**BGIS, Muskoka Transfomer Station - Control Building 552 HWY #141, Huntsville, On**		
Project No.:	**0241337.019**		
Prepared For:	**R. Lee / S. Young**	**Date Received:**	**June 19, 2019**
Lab Reference No.:	**b212359**	**Date Analyzed:**	**June 26, 2019**
Analyst(s):	**T. Tran**	**# Samples submitted:**	**12**
		# Phases analyzed:	**9**

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%	Alberta	Undefined
Quebec	0.1%	Saskatchewan	0.5% friable 1% non-friable
PEI, NWT, Yukon, Nunavut, Newfoundland and Labrador, and New Brunswick	1%	Manitoba	0.1% friable 1% non-friable

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.

The Pinchin Ltd. Mississauga asbestos laboratory 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: BGIS, Muskoka Transfomer Station - Control Building
552 HWY #141, Huntsville, On
Project No.: 0241337.019
Prepared For: R. Lee / S. Young

Lab Reference No.: b212359
Date Analyzed: June 26, 2019

BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE) ASBESTOS		OTHER	
S1901A Mortar / Northeast corner of control building	Homogeneous, grey, hard, cementitious material.	None Detected		Non-Fibrous Material	> 75%
S1901B Mortar / Southeast corner of control building	Non-homogeneous, grey and light grey, hard, cementitious material.	None Detected		Non-Fibrous Material	> 75%
Comments:	Another phase is present but was not analyzed.				
S1901C Mortar / Norhtwest corner of control building	Non-homogeneous, grey and light grey, hard, cementitious material.	None Detected		Non-Fibrous Material	> 75%
S1902A Grey expansion joint / East elevation of control building	Homogeneous, grey, soft, rubbery material.	None Detected		Non-Fibrous Material	> 75%
S1902B Grey expansion joint / East elevation of control building	Homogeneous, grey, soft, rubbery material.	None Detected		Non-Fibrous Material	> 75%
S1902C Grey expansion joint / West elevation of control building	Homogeneous, grey, soft, rubbery material.	None Detected		Non-Fibrous Material	> 75%
S1903A White window caulking / South elevation of control building	2 Phases: a) Homogeneous, off-white, caulking material.	Chrysotile	0.5-5%	Non-Fibrous Material	> 75%
	b) Homogeneous, grey, caulking material.	Chrysotile	0.5-5%	Non-Fibrous Material	> 75%

Pinchin Ltd. Asbestos Laboratory
Certificate of Analysis

Project Name: BGIS, Muskoka Transfomer Station - Control Building
552 HWY #141, Huntsville, On
Project No.: 0241337.019
Prepared For: R. Lee / S. Young

Lab Reference No.: b212359
Date Analyzed: June 26, 2019

BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE) ASBESTOS	% COMPOSITION (VISUAL ESTIMATE) OTHER
S1903B White window caulking / South elevation of control building			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
S1903C White window caulking / North elevation of control building			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
S1904A White exterior door caulking / South elevation of control building	Homogeneous, white, caulking material.	Chrysotile 0.5-5%	Non-Fibrous Material > 75%
S1904B White exterior door caulking / South elevation of control building			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		
S1904C White exterior door caulking / West elevation of control building			Not Analyzed
Comments:	Analysis was stopped due to a previous positive result.		

Reviewed by:

Digitally signed by Julieth Oran
Date: 2019.06.26 17:30:20 -04'00'

Reporting Analyst:

Digitally signed by Julieth Oran
Date: 2019.06.26 17:30:08 -04'00'

PINCHIN

MEMBER OF PG THE PINCHIN GROUP

Analyzed by:

Reviewed by:

Report Sent by:

Special Instructions:

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

Client Name:	BGIS			**Project Address:**	552 HWY #141, Huntsville, On		
Portfolio/Building No:	Muskoka Transfomer Station - Control Building			**Pinchin File:**	241337.019		
Submitted by:	Raymond Lee			**Email:**	rlee@pinchin.com		
CC Results to:	Sarah Young			**CC Email:**	syoung@pinchin.com		
Invoice to:	Sarah Young			**Invoice Email:**	syoung@pinchin.com		
Date Submitted:	June	18	2018	**Required by:**	June	25	2018
# of Samples:	12			**Priority:**	5 Day Turnaround		
Year of Building Construction (*Mandatory Field*):				1968			
Do NOT Stop on Positive (Sample Numbers):							
Pinchin Group Company (*Mandatory Field*):				Pinchin			

To be Completed by Lab Personnel Only:					
Lab Reference #:	621235	**Time:**	24 hour clock		
Received by:	JUN 19 2019 JD	**Date:**	Month	Day	Year
Name(s) of Analyst(s):	thian		June	26	2019

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)	
S	1901	A	Mortar / Northeast corner of control building	ND
S	1901	B	Mortar / Southeast corner of control building	ND (maybe brick on surface)
S	1901	C	Mortar / Norhtwest corner of control building	ND
S	1902	A	Grey expansion joint / East elevation of control building	ND
S	1902	B	Grey expansion joint / East elevation of control building	ND
S	1902	C	Grey expansion joint / West elevation of control building	ND

6

PINCHIN

MEMBER OF PG THE PINCHIN GROUP

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
S	1903	A	White window caulking / South elevation of control building A) CH0.5-5 B) CH0.5-5
S	1903	B	~~White window caulking / South elevation of control building~~ NA
S	1903	C	White window caulking / North elevation of control building NA
S	1904	A	White exterior door caulking / South elevation of control building CH0.5-5
S	1904	B	White exterior door caulking / South elevation of control building NA
S	1904	C	White exterior door caulking / West elevation of control building NA

3

APPENDIX II-B

Lead Analytical Certificates

Analysis for Lead Concentration in Paint Chips

by Flame Atomic Absorption Spectroscopy
EPA SW-846 3050B/6010C/7000B

Customer: Pinchin Ltd.
2470 Milltower Court
Mississauga, ON L5N 7W5

Attn: Raymond Lee
Sarah Young

Lab Order ID: 71916360
Analysis ID: 71916360_PBP
Date Received: 6/20/2019
Date Reported: 6/21/2019

Project: BGIS - Muskoka TS - Control Building 241337.019

Sample ID	Description	Mass	Concentration	Concentration
Lab Sample ID	*Lab Notes*	*(g)*	*(ppm)*	*(% by weight)*
L01	Red paint on metal door / Control Building	0.0518	39000	**3.9%**
71916360PBP_1				

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 SAI. 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).

Sara Shaut (1)

Analyst

Laboratory Director

7191623 60

Client:	Pinchin Ltd.	***Instructions:**	*Version 1-15-2012*
Contact:	Raymond Lee / Sarah Young	*Use Column "B" for your contact info*	
Address:	2470 Milltower court		**Invoice to:**
Phone:	905-363-0678	*To See an Example Click the*	Sarah Young
Fax:	905-363-0681	*bottom Example Tab.*	syoung@pinchin.com
Email:	rlee@pinchin.com syoung@pinchin.com	***Enter samples between "<<" and ">>"***	
Project:	BGIS - Muskoka TS - Control Buildin	***Begin Samples with a "<< "above the first sample***	***Scientific Analytical Institute***
		and end with a ">>" below the last sample.	
Client Notes:	241337.019	*Only Enter your data on the first sheet "Sheet1"*	
P.O. #.	241337.019	*Note: Data 1 and Data 2 are optional*	***4604 Dundas Dr.***
Date Submitted:	6/18/2019 0:00	*fields that do not show up on the official*	***Greensboro, NC 27407***
		report, however they will be included	***Phone: 336.292.3888***
Analysis:	FLAME AA	*in the electronic data returned to you*	***Fax: 336.292.3313***
TurnAroundTime:	24 hrs	*to facilitate your reintegration of the report data.*	***Email: lab@sailab.com***

Sample Number	Data 1 (Lab use only)	Sample Description	Data 2 (Lab use only)
<<			
L01	[Enter data of your choosing here]	Red paint on metal door / Control Building	[Enter data of your choosing here]
>>			

Accepted ☑

Rejected ☐

12:30p

APPENDIX II-C

PCB Analytical Certificates

AEVITAS INC. (AYR)
ANALYTICAL CHEMISTRY DEPARTMENT
75 WANLESS COURT, AYR, ONTARIO, N0B 1E0, CANADA
WWW.AEVITAS.CA

Certificate of Analysis

Raymond Lee - Project Manager

Pinchin Ltd. (Mississauga)
2470 Milltower Court, Mississauga, ON L5N 7W5

Printed: Jun 26, 2019

Report Description: ***3 solid samples were submitted for the following chemical analysis***

Project Name:	BGIS - Muskoka TS Control Building	**Date Sampled:**	Jun 17, 2019
Project No.:	241337.019	**Date Tested:**	Jun 26, 2019
Site Location:	552 HWY #141, Huntsville, On	**Sampled by:**	Raymond Lee

Report Number: 19-1095

No.	Analyte	Result	Units	MDL	Comments	Technique / Test Method
1	*Sample ID.:* ***PCB01: Grey caulking on expansion joints / control building***					
	PCBs in Solid	**<0.5**	mg/kg	0.5		LAB-M06 (EPA 3550C/8082A modified)
2	*Sample ID.:* ***PCB02: White window caulking / control building***					
	PCBs in Solid	**<0.5**	mg/kg	0.5		LAB-M06 (EPA 3550C/8082A modified)
3	*Sample ID.:* ***PCB03: White exterior door caulking / control building***					
	PCBs in Solid	**<0.5**	mg/kg	0.5		LAB-M06 (EPA 3550C/8082A modified)

Results relate only to the samples tested above, as received.

Approved By:

Son C.H. Le, *B. Eng. (Chem.)*
Lab Manager
Phone: (519) 740-1333 Ext.: 230
Fax: (519) 740-2320
Email: SonLe@aevitas.ca

The Analytical Chemistry Laboratory of Aevitas Inc. (Ayr) is accredited for specific tests in accordance with the recognised International Standard ISO/IEC 17025:2005 by the Canadian Association for Laboratory Accreditation (CALA) Inc. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009). The laboratory quality management system of Aevitas Inc. (Ayr) meets the principles of ISO 9001:2008.

All Analytical data is subject to uncertainty which, may vary with sample matrices, sample preparation techniques and instrumental parameters. As a general guideline, uncertainty may be expressed as approximately +/- 50% of the reported value at or near the Method Detection Limit (MDL) and +/-10% or less, of the reported result that is greater than 10 times the MDL. Method Detection Limits are defined as approximately 3 times the standard deviation value (at 99% confidence level), which is obtained from replicate analysis of a low-level standard as per the Ontario MOE - MISA Protocol for the Sampling and Analysis of Industrial / Municipal Wastewater (1999). MDL determination is based on undiluted samples with relatively low matrix interferences. Where dilutions are required, the reported MDL value will be scaled proportionally.

All testing procedures follow strict guidelines and quality assurance / quality control (QA/QC) protocols. QA/QC data is available for review at any time upon client's request.

APPENDIX III
Methodology

GENERAL

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

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

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

1.1 Limitations on Scope

The assessment excludes the following:

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

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

1.2 Asbestos

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

© 2019 Pinchin Ltd.

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

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

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

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

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

- Roofing felts and tar, including repair mastics.
- Concrete floor levelling compound, including ceramic tile thin set.
- Elevator and lift brakes.
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring.
- Moulded plastic components (laboratory bench tops).
- Refractory materials and insulations in boilers, incinerators and stacks.
- Insulation under metal clad boilers and vessels.
- Mechanical packing, ropes and gaskets.
- Adhesives and duct mastics.
- Paints and coatings.
- Paper products under wood flooring or metal or slate roofing.
- Soffit and fascia boards at elevated heights.
- Fire resistant doors or metal clad finishes.
- Vibration dampers on HVAC equipment.
- Materials concealed or outside the assessed area.

© 2019 Pinchin Ltd.

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

Analytical results are compared to the following criteria:

Jurisdiction	Friable	Non-Friable
Ontario	0.5%	0.5%

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

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

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

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

1.3 Lead

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

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

The Ontario Ministry of Labour (MOL) has not established a lower limit for concentrations of lead in paint, below which precautions do not need to be considered during construction projects. Pinchin follows the

© 2019 Pinchin Ltd.

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

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

1.4 Silica

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

1.5 Mercury

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

1.6 Polychlorinated Biphenyls

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

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

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

Caulking or sealants are sampled for PCBs based on the date of construction or installation. Caulking installed after 1985 (1980 ban date plus a reasonable non-compliance period based on our experience) 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. Sample results are compared to the criteria of 50 ppm for solids as stated in the PCB Regulation, SOR/2008-273.

© 2019 Pinchin Ltd.

1.7 Visible Mould

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

Template: Methodology for Hazardous Building Materials Assessment, HAZ, May 8, 2019

© 2019 Pinchin Ltd.