HAZARDOUS MATERIALS SURVEY AND 2022 REASSESSMENT
190 LAURIER AVENUE, OTTAWA, ONTARIO

Project No.: 0Z2-021737-HZ

Prepared for:

University of Ottawa

Prepared by:

McIntosh Perry Limited (MPL)

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Date:

April 24, 2023

McINTOSH PERRY

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EXECUTIVE SUMMARY

McIntosh Perry Limited **(MPL)** was retained by the University of Ottawa, to complete to complete a hazardous materials survey for the Development Office building located at 190 Laurier Avenue, Ottawa, Ontario. The surveys were conducted on October 9th, 2019, April 7th 2020, and May 6th 2021. An attempt was made to complete the 2022 reassessment. However, the building was under construction at the time of the Site visit.

The purpose of the survey was to determine the presence of building materials containing Designated Substances and other hazardous materials, as defined under the Ontario Occupational Health and Safety Act. Designated Substances are eleven chemical agents prescribed under Ontario Regulation 490/09. In addition, a visual assessment was conducted for the presence of polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons and mould.

Based on the assessment conducted by MPL, the following ACMs were identified or suspected to be present in the building:

Table A: Summary of Asbestos-Containing Materials Identified

Material Description	Friable?	Location	Type of Asbestos
Texture Coat	Yes	Specific Areas Only	Tremolite
Plaster	Yes	Specific Areas Only	Chrysotile
Fire doors	-	Throughout Building	Suspected

Note: Please refer to the complete report for specific details and recommendations.

All repairs or removal of asbestos-containing materials must be conducted according to Ontario Regulation 278/05, Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations - made under the Occupational Health and Safety Act. Asbestos containing waste must also be handled and disposed of according to Ontario Regulation 347/90 as amended – made under the Environmental Protection Act. Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain asbestos until proven otherwise by analytical testing;

Sub-trades working with or in close proximity to asbestos-containing material should be informed of its presence;

Given that asbestos containing materials (ACMs) have been identified and will likely remain in place, an Asbestos Management Plan (AMP) is therefore required and an inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities.

Based on the assessment conducted by MPL, the following Designated Substances and Hazardous Materials were identified or suspected to be present in the building:

Table B: Summary of Designated Substances & Hazardous Materials Identified

Material Description	Location
Lead Acid Batteries	Throughout Building
Low Level Lead Paint	Building Exterior
Mercury Vapour	Throughout Building
Silca	Throughout Building
Ozone Depleted Substances	Specific Areas Only

Note: Please refer to the complete report for specific details and recommendations.

Designated Substances area regulated under Ontario Regulation 490/09 — Designated Substances, made under the Ontario Health and Safety Act, which applies to controlling designated substances in the workplace.

In addition to Ontario Regulation 490/09, the following guidelines must also be adhered to when conducting work activities that that involve disturbance of the above-mentioned materials:

- Guideline: Lead on Construction Projects, issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour
- Guideline: Silica on Construction Projects issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour.
- Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines.

Prior to any renovations or demolition activities within building, designated substances and hazardous materials must be decommissioned by a licensed contractor such that they are contained and not released to the environment during decommissioning as per O. Reg. 347/09- made under the Environmental Protection Act.

Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain designated substances or hazardous materials until proven otherwise by analytical testing.

This report should be made available to contractors tendering on any renovation or demolition work. In turn, all contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

This executive summary is not to be used alone. This report should be reviewed in its entirety.

April 24, 2023

University of Ottawa
141 Louis-Pasteur Private
Ottawa, Ontario
K1N 1E3

via email: martine.bergeron@uottawa.ca

Attention: Martine Bergeron, Facilities Health and Safety Officer

Re: 190 Laurier Avenue, Ottawa, Ontario
Hazardous Materials Survey
McIntosh Perry Limited Reference No. 0Z2-021737-HZ

1.0 INTRODUCTION

In accordance with your instructions, McIntosh Perry Limited (MPL) carried out a Hazardous Materials Survey at the Development Office building located at 190 Laurier Avenue, Ottawa, Ontario. The site is situated on the southeast corner of the intersection of King Edward Avenue and Laurier Avenue. The surveys of the building were conducted on October 9th, 2019, April 7th, 2020 and May 6th, 2021. An attempt was made to complete the 2022 reassessment. However, the building was under construction at the time of the Site visit.

The purpose of the survey was to determine the presence of building materials containing Designated Substances and other hazardous materials, as defined under the Ontario Occupational Health and Safety Act. Designated Substances are eleven chemical agents prescribed under Ontario Regulation 490/09. In addition, a visual assessment was conducted for the presence of polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons and mould.

MPL completed the following,

- Visual review of the building to identify materials which could contain Designated Substances and hazardous materials;
- Bulk sampling and analysis of building materials suspected of containing asbestos (if required);
- Bulk sampling and analysis of representative paints and finishes suspected of containing lead (if required);
- Review of previously completed Hazardous Materials Survey(s) and historical building record(s); and,
- Recommendations for appropriate action where required.

2.0 PROPERTY DESCRIPTION

The subject building is a three-storey development office was constructed in 1920. The subject building was observed to be constructed with a foundation block, brick facade with a shingled roof . The interior walls were gypsum wallboard and plaster. Within the subject building, ceilings were observed to be either suspended ceiling tiles, with select areas containing textured finishes. The floors were generally wood laminate with the exception of select units containing vinyl floor tiles and ceramic tile.

3.0 FINDINGS & RECOMMENDATIONS

Designated Substances

3.1 Asbestos

Findings

A total of twenty-nine (29) bulk samples were collected during the survey on October 9th, 2019 and sent to an independent accredited laboratory for analysis. A total of thirty-five (35) bulk samples were collected during the survey on April 7th, 2020 and forty-seven (47) bulk samples were collected during the survey on May 6th, 2021 both of which were sent to an accredited laboratory for analysis. A summary of potential asbestos-containing samples collected along with the sample location, type and friability are presented in Table 1.

Laboratory certificates of analysis for asbestos are included in Appendix C.

Table 1:

Asbestos Laboratory Results

Sample ID	Location	Material	Type and Content	Friability
BS 1.1	2nd Floor, Janitor's Closet	VFT (12"x12"-Tan w/ White Streaks)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 1.2	2nd Floor, Janitor's Closet	VFT (12"x12"-Tan w/ White Streaks)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 1.3	2nd Floor, Janitor's Closet	VFT (12"x12"-Tan w/ White Streaks)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 2.1	Room 107	Floor Levelling Compound (Grey)	None Detected	N/A
BS 2.2	Room 107	Floor Levelling Compound (Brown)	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
BS 2.3	Room 107	Floor Levelling Compound (Grey)	None Detected	N/A
BS 3.1	100, Hallway	Ceiling Mastic (Brown)	None Detected	N/A
BS 3.2	100, Hallway	Ceiling Mastic (Brown)	None Detected	N/A
BS 3.3	100, Hallway	Ceiling Mastic (Brown)	None Detected	N/A
BS 4.1	Room 207	SCT (2'x4'-Pinhole with Small Fissures)	None Detected	N/A
BS 4.2	Room 203	SCT (2'x4'-Pinhole with Small Fissures)	None Detected	N/A
BS 4.3	Room 203	SCT (2'x4'-Pinhole with Small Fissures)	None Detected	N/A
BS 5.1	Basement	Drywall Joint Compound (White)	None Detected	N/A
BS 5.2	Basement	Drywall Joint Compound (White)	None Detected	N/A
BS 5.3	Basement	Drywall Joint Compound (White)	None Detected	N/A
BS 6.1	**Basement**	**Wall Texture Coat (Grey)**	**1% Tremolite**	**Friable**
BS 6.2	**Basement**	**Wall Texture Coat (Grey)**	**Stop Positive**	**Friable**
BS 6.3	**Basement**	**Wall Texture Coat (Grey)**	**Stop Positive**	**Friable**
BS 7.1	Basement	Wall Block Mortar (Grey)	None Detected	N/A
BS 7.2	Basement	Wall Block Mortar (Grey)	None Detected	N/A
BS 7.3	Basement	Wall Block Mortar (Grey)	None Detected	N/A
BS 8.1	Basement. B2 Area	Wall Plaster (Grey)	None Detected	N/A
BS 8.2	Basement, B2 Area	Wall Plaster (Grey)	None Detected	N/A
BS 8.3	Basement, B2 Area	Wall Plaster (Grey)	None Detected	N/A
BS 9.1	Room 102	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.2	Room 103	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.3	Room 202	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.4	Room 206	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.5	Room BSMT	Ceiling Plaster (Grey)	None Detected	N/A
Samples taken on April 7th, 2020 follow,				
BD1.1	2nd Floor, Janitor's Closet	VFT (12"x12"-Tan w/ White Streaks)	None Detected	N/A
		Mastic (Black)		
BS 1.2	2nd Floor, Janitor's Closet	VFT (12"x12"-Tan w/ White Streaks)	None Detected	N/A
		Mastic (Black)		
BS 1.3		VFT (12"x12"-Tan w/ White Streaks)	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
	2nd Floor, Janitor's Closet	Mastic (Black)		
BS 2.1	Room 107	Floor Levelling Compound (Grey)	None Detected	N/A
BS 2.2	Room 107	Floor Levelling Compound (Brown)	None Detected	N/A
BS 2.3	Room 107	Floor Levelling Compound (Grey)	None Detected	N/A
BS 3.1	100, Hallway	Ceiling Mastic (Brown)	None Detected	N/A
BS 3.2	100, Hallway	Ceiling Mastic (Brown)	None Detected	N/A
BS 3.3	100, Hallway	Ceiling Mastic (Brown)	None Detected	N/A
BS 4.1	Room 207	SCT (2'x4'-Pinhole with Small Fissures)	None Detected	N/A
BS 4.2	Room 203	SCT (2'x4'-Pinhole with Small Fissures)	None Detected	N/A
BS 4.3	Room 203	SCT (2'x4'-Pinhole with Small Fissures)	None Detected	N/A
BS 5.1	Basement	Drywall Joint Compound (White)	None Detected	N/A
BS 5.2	Basement	Drywall Joint Compound (White)	None Detected	N/A
BS 5.3	Basement	Drywall Joint Compound (White)	None Detected	N/A
BS 6.1	**Basement**	**Wall Texture Coat (Grey)**	**1% Tremolite**	**Friable**
BS 6.2	**Basement**	**Wall Texture Coat (Grey)**	**Stop Positive**	**Friable**
BS 6.3	**Basement**	**Wall Texture Coat (Grey)**	**Stop Positive**	**Friable**
BS 7.1	Basement	Wall Block Mortar (Grey)	None Detected	N/A
BS 7.2	Basement	Wall Block Mortar (Grey)	None Detected	N/A
BS 7.3	Basement	Wall Block Mortar (Grey)	None Detected	N/A
BS 8.1	Basement. B2 Area	Wall Plaster (Grey)	None Detected	N/A
BS 8.2	Basement, B2 Area	Wall Plaster (Grey)	None Detected	N/A
BS 8.3	Basement, B2 Area	Wall Plaster (Grey)	None Detected	N/A
BS 9.1	Room 102	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.2	Room 103	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.3	Room 202	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.4	Room 206	Ceiling Plaster (Grey)	None Detected	N/A
BS 9.5	Room BSMT	Ceiling Plaster (Grey)	None Detected	N/A
PS1.1	BSMT	Brick Mortar	None Detected	N/A
PS1.2	BSMT	Brick Mortar	None Detected	N/A
PS1.3	BSMT	Brick Mortar	None Detected	N/A
PS1.4	BSMT	Brick Mortar	None Detected	N/A
PS1.5	BSMT	Brick Mortar	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
PS1.6	BSMT	Brick Mortar	None Detected	N/A
PS1.7	BSMT	Brick Mortar	None Detected	N/A
PS2.1	BSMT	Drywall Joint Compound (White)	None Detected	N/A
PS2.2	BSMT	Drywall Joint Compound (White)	None Detected	N/A
PS2.3	BSMT	Drywall Joint Compound (White)	None Detected	N/A
PS2.4	BSMT	Drywall Joint Compound (White)	None Detected	N/A
PS2.5	BSMT	Drywall Joint Compound (White)	None Detected	N/A
PS2.6	BSMT	Drywall Joint Compound (White)	None Detected	N/A
PS2.7	BSMT	Drywall Joint Compound (White)	None Detected	N/A
PS3.1	BSMT	Plaster	None Detected	N/A
PS3.2	BSMT	Plaster	None Detected	N/A
PS3.3	BSMT	Plaster	None Detected	N/A
PS3.4	BSMT	Plaster	None Detected	N/A
PS3.5	BSMT	Plaster	None Detected	N/A
PS3.6	BSMT	Plaster	None Detected	N/A
PS3.7	BSMT	Plaster	None Detected	N/A
PS4.1	BSMT	Stone Mortar	None Detected	N/A
PS4.2	BSMT	Stone Mortar	None Detected	N/A
PS4.3	BSMT	Stone Mortar	None Detected	N/A
PS4.4	BSMT	Stone Mortar	None Detected	N/A
PS4.5	BSMT	Stone Mortar	None Detected	N/A
PS4.6	BSMT	Stone Mortar	None Detected	N/A
PS4.7	BSMT	Stone Mortar	None Detected	N/A
PS5.1	**BSMT**	**Ceiling Textured Plaster**	**1% Tremolite**	**Friable**
PS5.2	**BSMT**	**Ceiling Textured Plaster**	**Stop Positive**	**Friable**
PS5.3	**BSMT**	**Ceiling Textured Plaster**	**Stop Positive**	**Friable**
PS5.4	**BSMT**	**Ceiling Textured Plaster**	**Stop Positive**	**Friable**
PS5.5	**BSMT**	**Ceiling Textured Plaster**	**Stop Positive**	**Friable**
PS5.6	**BSMT**	**Ceiling Textured Plaster**	**Stop Positive**	**Friable**
PS5.7	**BSMT**	**Ceiling Textured Plaster**	**Stop Positive**	**Friable**
Samples Taken on May 6th, 2021 follow,				
BSE 1.1	Exterior Siding	Brick Mortar	None Detected	N/A
BSE 1.2	Exterior Siding	Brick Mortar	None Detected	N/A
BSE 1.3	Exterior Siding	Brick Mortar	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
BSE 1.4	Exterior Siding	Brick Mortar	None Detected	N/A
BSE 1.5	Exterior Siding	Brick Mortar	None Detected	N/A
BSE 1.6	Exterior Siding	Brick Mortar	None Detected	N/A
BSE 1.7	Exterior Siding	Brick Mortar	None Detected	N/A
BSE 2.1	Exterior Siding	Stone Mortar	None Detected	N/A
BSE 2.2	Exterior Siding	Stone Mortar	None Detected	N/A
BSE 2.3	Exterior Siding	Stone Mortar	None Detected	N/A
BSE 2.4	Exterior Siding	Stone Mortar	None Detected	N/A
BSE 2.5	Exterior Siding	Stone Mortar	None Detected	N/A
BSE 2.6	Exterior Siding	Stone Mortar	None Detected	N/A
BSE 2.7	Exterior Siding	Stone Mortar	None Detected	N/A
BSE 3.1	Cellar Exterior Wall	Cementous Coating, Orange	None Detected	N/A
BSE 3.2	Cellar Exterior Wall	Cementous Coating, Orange	None Detected	N/A
BSE 3.3	Exterior Siding	Cementous Coating, Orange	None Detected	N/A
BSE 4.1	Cellar Wall	Caulking, Brown	None Detected	N/A
BSE 4.2	Cellar Wall	Caulking, Brown	None Detected	N/A
BSE 4.3	Cellar Wall	Caulking, Brown	None Detected	N/A
BSE 5.1	Exterior Window 1st floor	Caulking, White	None Detected	N/A
BSE 5.2	Exterior Window 1st floor	Caulking, White	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
BSE 5.3	Exterior Window 1st floor	Caulking, White	None Detected	N/A
BSE 6.1	Front Balcony/ porch	Caulking, Black	None Detected	N/A
BSE 6.2	Front Balcony/ porch	Caulking, Black	None Detected	N/A
BSE 6.3	Front Balcony/ porch	Caulking, Black	None Detected	N/A
BSE 7.1	Front Balcony/ porch	Caulking Patch, White/beige	None Detected	N/A
BSE 7.2	Front Balcony/ porch	Caulking Patch, White/beige	None Detected	N/A
BSE 7.3	Front Balcony/ Porch	Caulking Patch, White/beige	None Detected	N/A
BSE 8.1	Front Balcony/ Porch floor	Caulking, White/grey	None Detected	N/A
BSE 8.2	Front Balcony/ Porch floor	Caulking, White/grey	None Detected	N/A
BSE 8.3	Front Balcony/ Porch floor	Caulking, White/grey	None Detected	N/A
BSE 9.1	Cellar	Caulking, Black/blue	None Detected	N/A
BSE 9.2	Cellar	Caulking, Black/blue	None Detected	N/A
BSE 9.3	Cellar	Caulking, Black/blue	None Detected	N/A
BSE 10.1	Front Balcony/ Porch floor	Roofing Shingles	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
BSE 10.2	Front Balcony/ Porch floor	Roofing Shingles	None Detected	N/A
BSE 10.3	Front Balcony/ Porch floor	Roofing Shingles	None Detected	N/A
BSE 11.1	Exterior window basement	Caulking, Grey	None Detected	N/A
BSE 11.2	Exterior window basement	Caulking, Grey	None Detected	N/A
BSE 11.3	Exterior window basement	Caulking, Grey	None Detected	N/A
BSE 12.1	2nd Floor roof	Roofing Shingles	None Detected	N/A
BSE 12.2	2nd Floor roof	Roofing Shingles	None Detected	N/A
BSE 12.3	2nd Floor roof	Roofing Shingles	None Detected	N/A
BSE 13.1	1st Floor roof	Roofing Shingles	None Detected	N/A
BSE 13.2	1st Floor roof	Roofing Shingles	None Detected	N/A
BSE 13.3	1st Floor roof	Roofing Shingles	None Detected	N/A

N/A – Not Applicable
VFT – Vinyl Floor Tiles
SCT-Suspended Ceiling Tile
Stop Positive – Material considered being asbestos-containing as per O. Reg. 278/05.

Please refer to Appendix E – Asbestos-Containing Materials Checklist for material conditions, quantities (where applicable), and recommended actions.

The following building materials (if present) were investigated for asbestos content,

3.1.1 Fireproofing

No fireproofing was observed in the subject building.

3.1.2 Mechanical Pipe Insulation

3.1.2.1 Mechanical Pipe Straight Insulation

No mechanical pipe straight insulation was observed in the subject building.

3.1.2.2 Mechanical Piping Elbows/Fittings Insulation

No mechanical pipe elbows/fittings insulation was observed in the subject building.

3.1.2.3 Mechanical Piping Hangers Insulation

No mechanical pipe hanger insulation was observed in the subject building.

3.1.2.4 HVAC Duct Insulation

No HVAC duct insulation was not observed in the subject building.

3.1.2.5 Other Mechanical Insulation

No other mechanical insulation was observed in the subject building.

3.1.3 Flexible Duct Connector

No flexible duct connectors were observed in the subject building.

3.1.4 Heat Shield or Heat Shield Insulation

No heat shield insulation was observed in the subject building.

3.1.5 Texture Finishes

Texture finishes were observed on the walls and applied to steel mesh on the ceiling in the basement level boiler room of the subject building. The laboratory analytical results from the samples collected indicate that this material **contains 1% Tremolite asbestos**.

3.1.6 Plaster

Ceiling plaster (on steel mesh) previously identified to **contain 3% Chrysotile asbestos** was observed above the suspended ceiling tiles in Rooms 301, 301 (A,B) and 302. This material is considered friable and was observed to be in good condition.

Ceiling plaster (Grey) on wood lath was observed and sampled from Room 102, 103, 206 and the basement of the subject building. The laboratory analytical results of ceiling/wall plaster samples collected indicate that this material does not contain asbestos.

3.1.7 Drywall Joint Compound

Drywall joint compound was observed and sampled from the basement level of the subject building. The laboratory analytical results of drywall joint compound samples collected indicate that this material does not contain asbestos.

3.1.8 Ceiling Tiles

Suspended ceiling tiles (2'x4'-Pinholes with Small Fissures) were observed and sampled from Room 203 and 207. The laboratory analytical results collected indicate that this material does not contain asbestos.

Suspended ceiling Tiles (2'x4'-Pinholes with Large Fissures) were observed in Room 102, 103, 105, 106, and 205. The date stamp on the back of ceiling tile indicates it was manufactured in 2018, and therefore would not contain asbestos.

3.1.9 Vinyl Floor Tiles

Vinyl floor tiles (12"x12"-Tan with Black Streaks) were observed in the janitor's closet in Room 211. The laboratory analytical results of the samples collected from indicate that this material and its associate mastic (Black) do not contain asbestos.

3.1.10 Levelling Compound

Levelling compound (Grey) was sampled from Room 107. The laboratory analytical results indicate that this material does not contain asbestos.

3.1.11 Block Mortar

Foundation block mortar was sampled from the interior walls of the basement level of the subject building. The laboratory analytical results indicate that this material does not contain asbestos.

3.1.12 Brick Mortar

Brick mortar was sampled from the exterior of the building. Laboratory analytical results indicate that this material does not contain asbestos.

3.1.13 Stone Mortar

Stone mortar was sampled from the exterior of the building. Laboratory analytical results indicate that this material does not contain asbestos.

3.1.14 Transite (Asbestos Cement)

No transite materials were observed in the subject building.

3.1.15 Mastic

Ceiling mastic (Brown) was sampled from the 1st Floor Hallway of the subject building. The laboratory analytical results from the samples collected indicate this material does not contain asbestos.

3.1.16 Caulking

Caulking (Brown) was sampled from the cellar. Laboratory analytical results indicate that this material does not contain asbestos.

Caulking (Black/blue) was sampled from the cellar. Laboratory analytical results indicate that this material does not contain asbestos.

Caulking (Black) was sampled from the 1st floor balcony/porch. Laboratory analytical results indicate that this material does not contain asbestos.

Caulking (White/beige patch) was sampled from the 1st floor balcony/porch. Laboratory analytical results indicate that this material does not contain asbestos.

Caulking (White/grey) was sampled from the 1st floor balcony/porch floor. Laboratory analytical results indicate that this material does not contain asbestos.

Caulking (White) was sampled from the 1st floor exterior windows. Laboratory analytical results indicate that this material does not contain asbestos.

Caulking (Grey) was sampled from the basement exterior windows. Laboratory analytical results indicate that this material does not contain asbestos.

3.1.17 Cementous Coating

Cementitious coating finishes were observed on the cellar and exterior wall. The laboratory analytical results of cementitious coating samples collected from the cellar and exterior wall indicate that this material does not contain asbestos.

3.1.18 Fire Doors

Fire doors were observed at various locations throughout the subject building. To avoid possible damage, no bulk samples of the internal door insulation materials were collected. Prior to removal and/or replacement, fire doors should be examined and tested for asbestos content. Fire doors should be considered to contain asbestos until bulk samples and analysis proves otherwise. All fire doors were observed to be in good condition.

3.1.19 Roofing Material

Roofing material was sampled from various locations throughout the subject building.

Roofing material was sampled from the front balcony/porch floor. The laboratory analytical results of shingles and roofing samples collected from the front balcony/porch flooring indicate that this material does not contain asbestos.

Roofing material was sampled from the 1st storey roof. The laboratory analytical results of shingles and roofing samples collected from the 2nd storey roof indicate that this material does not contain asbestos.

Roofing material was sampled from the 2nd storey roof. The laboratory analytical results of shingles and roofing samples collected from the 1st storey roof indicate that this material does not contain asbestos.

Recommendations

- Asbestos-containing materials identified to be in poor condition must be repaired/removed immediately, following Type 1/2/3 asbestos abatement work procedures as detailed in O. Reg. 278/05 and disposed of as asbestos waste under O. Reg. 347;

- Asbestos-containing materials that have been identified to be in fair condition should be either repaired (where possible) and/or closely monitored for signs of further deterioration. Depending on type of material and location, these materials should be scheduled for removal if there is potential risk of exposure to worker and/or occupants;

- Materials identified to contain asbestos that are in good condition and do not pose a risk to workers or occupants can be managed in place. Prior to renovation/demolition activities that may disturb the ACMs, these materials must be removed following appropriate Type 1/2/3 asbestos abatement work procedures as detailed in O. Reg. 278/05 and disposed of as asbestos waste under O. Reg. 347;

- Please refer to Appendix E – Asbestos-Containing Materials Checklist for material conditions, quantities (where applicable), and recommended actions;

- Prior to renovation/demolition of materials which are assumed to be asbestos-containing (suspect materials which were not sampled, i.e., roofing materials and fire doors), these materials must either be tested for asbestos content or removed following appropriate asbestos abatement work procedures (Type 1/2/3) as detailed in O. Reg. 278/05 and disposed of as asbestos waste under O. Reg. 347;

- All repairs or removal of asbestos-containing materials must be conducted according to Ontario Regulation 278/05, Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations - made under the Occupational Health and Safety Act. Asbestos containing waste must also be handled and disposed of according to Ontario Regulation 347/90 as amended – made under the Environmental Protection Act. Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain asbestos until proven otherwise by analytical testing;

- Sub-trades working with or in close proximity to asbestos-containing material should be informed of its presence; and

- Given that asbestos containing materials (ACMs) have been identified and will likely remain in place, an Asbestos Management Plan (AMP) is therefore required and an inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities.

3.2 Lead

Findings

3.2.1 Paint Finishes

A total of five (5) paint samples were collected on April 7th, 2020 and four (4) paint samples were collected on May 6th, 2021 and analyzed for lead content. Results of bulk sampling testing are summarized in Table 2 and the laboratory certificate of analysis can be found in Appendix C.

Table 2 below also contains lead concentrations for previously sampled lead paint finishes and their sample locations within the subject building.

Table 2:

Previously Sampled Lead Paint Finishes

Sample I.D.	Location	Material	Colour	Lead Concentration Weight by Conc. (%)
Previously sampled lead paint finishes,				
236-GF-LBP-102606-01	Ground Floor	Door	Pink	34.00
236-GF-LBP-102606-02	Ground Floor	Wall/Door Frame	White	<0.05
236-2-LBP-102606-03	Second Floor	Wall	Pink	<0.05
236-3-LBP-102606-04	Third Floor	Door	Green	<0.003
Samples taken on April 7th, 2020 follow,				
Pb-01	Basement Door	Paint	Green	10.8
Pb-02	Foundation, Exterior	Paint	White	0.0108
Pb-03	Basement Door	Paint	Dark Blue	3.42
Samples taken on May 6th, 2021 follow,				
Pb-01	Exterior Window	Trim and Frame Paint	White	<0.0082

Sample I.D.	Location	Material	Colour	Lead Concentration Weight by Conc. (%)
Pb-02	1st floor balcony/porch	Stair, Railing and Door Paint	White	<0.021
Pb-03	Cellar	Wall Paint	Orange	<0.0080
Pb-04	Exterior Fire escape stairs	Stair and Railing Paint	Black	0.060

The paint finishes highlighted in blue in the above table were determined to contain low concentrations of lead which are less than or equal to 0.1%. These paint finishes were observed to be in poor condition.

The paint finishes highlighted in pink in the above table are considered lead-containing paints or surface coatings with concentrations greater than 0.1%. These paint finishes were observed to be removed and replaced with new paint in 2018.

All remaining paints tested were below the laboratory limit of detection for lead. However, all other paints throughout the subject building that are not mentioned in this report must be considered to be lead-containing unless sampling and analysis proves otherwise.

Laboratory certificate of analysis for the paint sample is also included in Appendix C.

3.2.2 Battery Packs

MPL identified lead-containing acid battery packs throughout the subject building. These battery packs were observed on walls and above exits on the basement level Room B1, Room 109A, and Room 301.

Lead may also be present in the following materials in the building:

- Solder used on copper domestic water lines;
- Solder used in bell fittings for cast iron pipes;
- Solder used in electrical equipment;
- Ceramic tile glaze; and
- Concrete and mortar products, etc.

Recommendations

Paints identified to contain lead that are in poor condition must be immediately repaired and/or stabilized following a minimum Type 1/2 lead abatement procedures as per OMOL “Lead on Construction Project” dated April 2011.

Paints identified to contain lead that are in fair condition should be either repaired (where possible) and/or closely monitored for signs of further deterioration.

Paints identified to contain lead that are in good condition and do not pose a risk to workers or occupants can be managed in place.

Detailed worker protection protocols are outlined in the OMOL Guideline "Lead on Construction Projects" dated April 2011. Generally, the removal of the lead-based paint with the use of a chemical gel or paste, or a power tool equipped with a HEPA filter is considered a Type 1 operation. The removal of lead-based paint by scraping or sanding using non-powered hand tools is considered a Type 2 operation. The removal of lead-based paint using abrasive blasting, or power tools without a HEPA filter, is considered a Type 3 operation, and requires the most stringent worker protection protocols (similar to asbestos); Furthermore, high temperature cutting or welding would also require Type 3 Operations under the Guideline for Lead on Construction Projects. If this type of work is required, it may be prudent to chemically remove the lead paint in selected locations prior to performing any high temperature cutting or welding.

All lead materials that are removed must follow the Ministry of Labour and Environmental Abatement Council of Ontario Lead Guidelines.

Please refer to Appendix F – Hazardous Materials Checklist for material conditions, quantities (where applicable), and recommended actions.

Precautions should be taken as required during major renovations and demolition projects to ensure that workers' exposure levels to airborne lead does not exceed 0.05 mg/m3. This can be achieved by:

- providing workers with proper training;
- providing the workers with respiratory protection;
- wetting the surface of the materials to prevent dust emissions; and,
- providing workers with hygiene facilities to properly wash prior to exiting the work area.

Sub-trades working with or in close proximity to lead based paint should be informed of its presence.

All waste material must be handled and disposed of according to the Revised Regulation of Ontario 347/90 as amended – made under the Environmental Protection Act. Lead waste generated may also be subject to Leachate Criteria (Schedule 4) of this regulation.

3.3 Mercury

Findings

3.3.1 Thermostat Switches

MPL did not observe thermostats containing liquid mercury within the subject building.

3.3.2 Fluorescent Light Tubes

MPL identified fluorescent light fixtures throughout the surveyed area containing 2 to 4 fluorescent light tubes per fixture. Mercury is likely to be present in vapor form in the fluorescent light tubes.

3.3.3 Pressure Gauges and Float Switches

MPL did not observed pressure gauges or float switch containing liquid within the subject building.

Recommendations

Since no pressure gauges and float switches were observed or suspected to be present during the site survey, no further action is required.

Precautions must be taken to prevent mercury liquid/vapours from becoming airborne during building demolition. Exposure to mercury is regulated under Ontario Regulation 490/09, Designated Substances - made under the Occupational Health and Safety Act." Prior to renovations to the building, all mercury containing fluorescent light tubes, thermostats, and equipment must be removed and stored in a safe, secure location and/or properly disposed of in accordance with R.R.O. 1990, Regulation 347 General – Waste Management, made under the Environmental Protection Act.

3.4 Silica

Findings

Silica is expected to be present in building materials such as concrete, brick, mortar and ceramic tiles located throughout the structures. Free crystalline silica (α-Quartz) may be a component in ceiling tiles and gypsum board. Silica (including free crystalline silica) may also be a component of concrete and brick surfaces noted in the building.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, quantities (where applicable), and recommended actions.

Precautions should be taken as required during major renovations and demolition projects on concrete (i.e. coring through concrete slabs, demolition of masonry, etc.) to ensure that workers' exposure levels to airborne silica does not exceed 0.05 mg/m^3.

This can be achieved by:

- providing workers with proper training;
- providing the workers with respiratory protection;
- wetting the surface of the materials to prevent dust emissions; and,
- providing workers with facilities to properly wash prior to exiting the work area.

Demolition work that is likely to impact silica-containing materials should be carried out in accordance with the requirement detailed in the Ontario Ministry of Labour document entitled "Guideline: Silica on Construction Projects", dated April 2011.

Other Hazardous Materials

3.5 Polychlorinated Biphenyls (PCBs)

Findings

3.5.1 Light Ballasts

The subject building is illuminated by LED and fluorescent lights. MPL assessed representative ballasts in the building, and these ballasts were identified as non-PCBs content. These light ballasts were observed to be manufactured by Phillips.

3.5.2 Transformers

MPL did not observe any PCBs containing electrical transformers within the subject building.

Recommendations

Since no equipment containing PCBs were observed or suspected to be present during the site survey, no further action is required.

3.6 Ozone Depleting Substances (ODSs) and Other Halocarbon

Findings

A visual assessment for equipment potentially containing ODSs and other halocarbons was conducted. MPL observed equipment such as refrigerators, water coolers, freezers, and air conditioning units which contain or are suspected of containing ODSs or other halocarbons.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, quantities (where applicable), and recommended actions.

Under the management of a licensed contractor, equipment containing R-22 and R-134a does not represent a significant threat to human health or the environment however, a licensed contractor must decommission equipment such that CFCs are contained and not released to the environment during servicing or operation.

3.7 Radioactive Materials

Findings

A visual assessment of the subject building was conducted to determine if any electrical components containing radioactive materials were present. MPL did not observe any electrical components containing radioactive materials.

Recommendations

Since no radioactive materials were observed or suspected to be present during the site survey, no further action is required.

3.8 Underground and Above Ground Storage Tanks (USTs and ASTs)

Findings

A visual survey of the subject building was conducted to determine if any USTs and ASTs were present. No USTs and ASTs were present within the surveyed area.

Recommendations

Since no underground and/or above ground storage tanks (USTs and ASTs) were observed or suspected to be present during the site survey, no further action is required.

3.9 Mould

Findings

3.9.1 Mould

A visual survey of the subject building was conducted to determine if any mould was present. MPL did not observed any areas with obvious signs of visible mould growth.

3.9.2 Water Damage

A visual survey of the subject building was conducted to determine if any water damaged was present. MPL identified select areas throughout the subject building, where materials were affected by water damage.

Recommendations

- Please refer to Appendix F – Hazardous Materials Checklist for material conditions, quantities (where applicable) and recommended actions.
- Water stained/damaged ceiling plaster observed throughout the subject building should be replaced as part of regular maintenance and the underlying cause of the water leakage should be identified and repaired.

This report should be made available to contractors tendering on any renovation or demolition work. In turn, all contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

4.0 GENERAL CONSIDERATIONS AND LIMITATIONS

The information presented in this report is based on information provided by others, direct visual observation made by personnel with **McIntosh Perry Limited (MPL)**, and the results of laboratory testing as identified herein.

It should be noted that there might be hazardous materials in locations not visible during our investigation. In the event such material is encountered during demolition operations in the building, this material should be tested and dealt with accordingly.

The findings detailed in this report are based upon the information available at the time of preparation of the report. No investigative method eliminates the possibility of obtaining imprecise or incomplete information. Professional judgement was exercised in gathering and analyzing the information obtained and in the formulation of our conclusions and recommendations.

MPL does not certify or warrant the environmental status of the property nor the building on the property.

Please note that the passage of time affects the information provided in the report. Environmental conditions of a site can change. Opinions relating to the site conditions are based upon information that existed at the time that the conclusions were formulated.

The client expressly agrees that it has entered into this agreement with MPL, both on its own behalf and as agent on behalf of its employees and principals.

The client expressly agrees that MPL's employees and principals shall have no personal liability to the client in respect of a claim, whether in contract, tort and/or any other cause of action in law. Accordingly, the client expressly agrees that it will bring no proceedings and take no action in any court of law against any of MPL's employees or principals in their personal capacity.

We trust that we have detailed our findings clearly and that we have satisfactorily addressed the scope of work you require at this time. In the event you wish us to review our findings with you, or require our services further in this regard, please do not hesitate to contact our office.

Yours truly,

MCINTOSH PERRY LIMITED

Lauren Hamilton, B.Eng
Technician
Hazardous Materials/ Environmental Health & Safety

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APPENDIX A

Regulatory Requirements

REGULATORY REQUIREMENTS

In Ontario, there is a total of eleven Designated Substances. These substances have been regulated under Ontario Regulation 490/09 — *Designated Substances*, made under the Ontario Health and Safety Act, which applies to controlling designated substances in the workplace.

In addition to the Ontario Regulation 490/09 noted above, the following were observed for this survey:

Guideline: Lead on Construction Projects, issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour

Guideline: Silica on Construction Projects issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour.

The Occupational Health and Safety Act (OHSA), R.S.O. 1990, c.0.1, s.30 (1) specifies that: "Before beginning a project, the owner shall determine whether any Designated Substances are present at the project site and shall prepare a list of all Designated Substances that are present at the site.

Section 30 of The Act requires that the list of Designated Substances be provided to prospective contractors and subcontractors who may do work on a site and come into contact at the site with Designated Substances.

The Ministry of Labour has designated the following substances:

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

Ontario Regulation 278/05 (O. Reg. 278/05), the Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act (OHSA), requires owners of a building to identify Asbestos-containing Materials (ACMs) prior to potential disturbance of the materials.

In addition, an owner of a building is required to have an Asbestos Management Plan (AMP) if ACMs (friable or non-friable) are present in the building and are to remain in place. An inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities. Removal of all asbestos containing materials is required prior to building demolition.

In addition to the Designated Substances, the building was also surveyed for the presence of other hazardous materials such as polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons, and mould.

We understand that this survey has been conducted to comply with the regulatory requirements of Ontario Regulation 278/05.

APPENDIX B

Survey Methodology & Background Information

SURVEY METHODOLOGY

For the purpose of this survey, not all Designated Substances or suspect hazardous material were sampled. Selective sampling was carried out only for substances that were suspected to be present or those deemed to have a likely source of origin in the survey areas.

Materials that were homogeneous in nature and/or similar in appearance to other materials tested were considered to be of similar composition. The likelihood of ACMs being present in inaccessible areas such as above gypsum board ceilings or behind gypsum wallboards was determined by assessing the presence of asbestos-containing systems in adjacent areas. Equipment such as boilers, motors, blowers, electrical panels, fire doors etc., were not de-energized or disassembled to examine internal components or materials. These items should be considered to contain hazardous materials until proven otherwise.

During the survey, representative samples of suspect building materials were collected and sent to AIHA accredited independent laboratory for analysis. Laboratory Certificate of Analysis are attached in Appendix A.

Other potential hazardous materials were identified by visual observation and/or by reviewing Material Safety Data Sheets (MSDS) and/or safety labels where available.

Investigated Areas

The survey included all accessible areas and ceiling space within as required under our scope of work. No destructive investigations were performed as part of this survey. Photographs of the areas investigated can be found in Appendix D.

The assessment was directed on the interior structure and finishes of the building. It did not consider current or past owner or occupant articles within the building (i.e. contents, furniture, etc.) and does not report on possible contaminants in the soil under and surrounding the building, or contents of vessels, drums, etc. that may be concealed.

Sampling and Assessment Methodologies

Sampling was conducted as part of this assessment. Results for asbestos and lead samples can be found in the Findings & Recommendation Section 3.0.

A historical review of previous designated substance survey reports and abatement reports was examined as part of this survey. Due to concerns regarding certain historical analytical results, mainly in 2008 and prior years, confirmatory re-sampling was conducted for selected materials previously identified not to contain asbestos. However, building materials previously identified to be asbestos-containing were not re-sampled. The reports are listed as follows,

- Designated Substance Survey by Conestoga Rovers & Associates (dated December 2007, reference# 45870(6));
- Asbestos Sampling Report Rooms 301, 301(A, B)-Ceiling Plaster by EHS Partnerships (dated January 28, 2015, reference # 04-0033-15-005);
- Asbestos Abatement Project Summary -Third Floor by EHS Partnerships (dated February 3, 2015, reference # 04-0033-15-005);

- Project Specific Asbestos Sampling -3rd Floor, 190 Laurier Avenue East by EHS Partnerships (dated October 28, 205, reference# 04-0033-15-38);
- Asbestos Abatement Project Summary 3rd Floor, 190 Laurier Avenue East (dated December 11, 2015, reference # 04-0033-15-040):
- Indoor Air Quality Assessment by CM3 Environmental (dated April 1, 2019, reference #TLW-2431);
- Lead Abatement Work 190 Laurier Avenue by CM3 Environmental (dated June 7, 208, reference # TLW 1868); and
- Asbestos Sampling 190 Laurier-Window and Door Caulking by CM# Environmental (dated June 12, 2018, reference # TLW1868).

Asbestos

Background Information on Asbestos

Asbestos is a generic name that has been given to a group of naturally occurring fibrous minerals. In the past, asbestos was commonly used as a component in building materials such as insulation, fireproofing and acoustic or decorative panels. Although there are many types of asbestos, the three main forms of commercial importance in Ontario are chrysotile, amosite and crocidolite.

An Asbestos-Containing Material (ACM) is defined by O. Reg. 278/05 as a material that contains 0.5% or more asbestos by dry weight. ACMs are placed into two general classes, “friable” and “non-friable” ACMs. Friable ACMs are those materials that when dry can be crumbled, pulverized and reduced to powder by hand pressure. Typical friable ACMs include acoustical or decorative texture coats, fireproofing and thermal insulation. Non-friable ACMs are much more durable as they are held together by a binder such as cement, vinyl or asphalt. Typical non-friable ACMs include floor tiles, fire blankets, roofing materials and cementitious products such as wallboards, pipes or siding.

It has been recognized that hazardous situations may exist in buildings where asbestos-containing materials are found. This is especially true where asbestos fibres may become airborne as a result of material ageing, physical damage, and water damage or air movement.

In contrast, there is little reason for concern if the asbestos is in good condition, has not been damaged and is not in a location where it is likely to be disturbed.

Asbestos Survey Methodology

The asbestos survey included the identification of potential friable and non-friable asbestos-containing materials within the surveyed areas of the subject building.

The likelihood of ACMs being present in inaccessible areas such as above gypsum wallboard ceilings and walls was determined by assessing the presence of asbestos-containing materials in adjacent areas.

Fiberglass insulation was not submitted for analysis as it can be identified visually as non-asbestos material.

Building materials suspected of containing asbestos were identified and representative sampling and laboratory testing of these materials was conducted. The number of bulk material samples collected from a

homogeneous area was in accordance with Table 1. O. Reg. 278/05 s. 3 (3) below. Building materials suspected of containing asbestos were collected using wetting techniques and hand sampling tools.

Table 1 - O. Reg. 278/05 s. 3(3): Minimum Asbestos Bulk Material Sample Requirements

Item	Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected
1.	Surfacing material, including without limitation, material that is applied to surfaces by spraying, by troweling or otherwise, such as acoustical plaster on ceilings and fireproofing materials on structural members	Less than 90 square metres	3
		90 or more square metres, but less than 450 square metres	5
		450 or more square metres	7
2.	Thermal insulation, except as described in item 3	any size	3
3.	Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
4.	Other material	Any size	3

Preliminary identification of the samples was made using polarized light microscopy (PLM), with confirmation of presence and type of asbestos made by dispersion staining optical microscopy. This analytical procedure follows the U.S. Environmental Protection Agency Test Method EPA/600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials, June 1993.

All bulk samples were analysed for asbestos content by Paracel Laboratories Ltd., an independent laboratory. Paracel is a fully accredited facility for asbestos analysis and is accredited under National Voluntary Laboratory Accreditation (NVLAP Lab Codes 200812-0 and 200863-0). Paracel is accredited for asbestos bulk analysis in PLM in Ottawa and Mississauga, respectively. For the Scope of Accreditation under the (CALA) Membership Number 1262, Paracel is accredited for asbestos in air samples by PCM.

Vinyl floors tiles were analyzed using the phase light microscopy (PLM) method of analysis. However, given the composition of vinyl floor products, the PLM analysis method may be prone to yielding false negative analytical results. Therefore, prior to removal or replacement, vinyl floor products previously identified to be negative, should undergo additional analysis by Transmission Electron Microscopy (TEM) to confirm asbestos content, if any.

Materials identified to contain asbestos were assessed on the relative possibility of fibre release into the air due to a combination of their condition and accessibility.

Evaluation of ACMs Based on Condition

In evaluating an ACM's condition, the following criteria was applied:

- **Good** – Material shows no signs of damage and/or is encapsulated. Asbestos-containing material could remain in place until eventual building demolition or major renovation.
- **Fair** – Material shows signs of minor damage (<5% damage) or otherwise near the end of useful life. This includes minor shrinking, cracking, delamination and/ or other damage. Material should be monitored closely and scheduled to be repaired, encapsulated or removed.

- **Poor** – Damage is greater than 5% to any ACM material and is highly recommended to be removed, repaired or encapsulated.

Note: The above evaluation criteria was also applied to other hazardous materials where applicable. Please refer to the Asbestos and Hazardous Materials Checklist in Appendix E & F for further details.

Lead

Background Information on Lead

Lead was a common additive in exterior and hard-wearing paint applications. Lead was used to prolong shelf life of paint and to increase its flexibility and durability to wear and weather. Acute exposure to lead by inhalation or ingestion may cause headaches, fatigue, nausea, abdominal cramps and joint pain. Chronic exposures can cause reduced haemoglobin production and reduced lifespan. It has also been known to impact the body's central and peripheral nervous systems and brain function and has been linked to learning disabilities in children.

Currently in Ontario, there is no regulatory limit that determines what concentration of lead constitutes a "lead containing material". On October 21, 2010, Health Canada, under the *Hazardous Products Act*, stated that the lead content in surface-coating materials, furniture, toys and other articles for children, should not exceed 90 mg/kg (0.009%, 90 ppm). However, this is intended for the importation or sale of products within Canada. Therefore, this is not to be misconstrued as a limit established to define a lead-containing material or a limit with respect to lead on construction projects.

The Environmental Abatement Council of Ontario (EACO) has also developed the "*Lead Guideline for Construction, Renovation, Maintenance or Repair*" dated October 2014, which discusses the classification, handling, disturbance and removal of lead-containing materials. For the purpose of this guideline, paints or surface coatings containing less than or equal to 0.1% lead by weight (1000 mg/kg or 1000 ppm) are considered low-level lead paints or surface coatings. If these materials (and their respective surfaces) are disturbed in a non-aggressive manner and performed using adequate dust control procedures, then worker protection from the inhalation of lead is not required.

Furthermore, paints or surface coatings containing greater than 0.1% lead by weight are considered lead-containing paints or surface coatings. If these materials (and their respective surfaces) are disturbed, appropriate lead abatement procedures must always be followed.

Exposure to lead-containing materials is regulated under Ontario Regulation 490/09, *Designated Substances* - made under the Occupational Health and Safety Act. Care must be taken to prevent lead-containing particles from becoming airborne during the disturbance of lead-containing surfaces (i.e., during renovation or demolition projects). All lead abatement work must follow procedures outlined in the Guideline Lead on Construction Projects, issued in September 2004 (amended in April 2011) by the Occupational Health and Safety branch of the Ministry of Labour (Type 1-3). Similarly, the lead abatement work procedures outlined in the EACO Lead Guideline for Construction, Renovation, Maintenance or Repair (October 2014) may also be implemented (Class 1-3).

Lead is known to have been used in solder on copper plumbing fixtures, in lead conduit pipes, in lead-calcium battery plates, ammunition, and in nuclear and X-ray shielding devices. However, these materials were not sampled during this investigation, but were noted where applicable.

To verify lead content in paints, representative bulk samples of paint and finishes suspected of containing lead were collected. Bulk samples were scraped down to the building base structure, with all possible layer's present, placed in sealed plastic bags and labeled; and then submitted to an independent laboratory for analysis. Samples were treated with a dilute nitric acid sample digestion prior to filtration. Analysis utilized for lead detection in filtered samples was inductively coupled plasma optical emission spectrometry (ICP-OES).

Mercury

Background Information on Mercury

Mercury is known to cause poisoning in humans through the inhalation of vapours, ingestion of contaminated materials or skin absorption through direct contact with the liquid.

Precautions must be taken to prevent mercury vapours from becoming airborne during renovations or demolition of the building. Exposure to airborne mercury is regulated under the Revised O. Reg. 490/09 as amended – Regulation respecting Mercury – made under the Occupational Health and Safety Act; and under O. Reg. 558, which amended O. Reg. 347/90 (General - Waste Management), mercury is classified as a Schedule 2(b) Hazardous Waste Chemical. Its hazardous waste number is U151.

Mercury is found in products such as thermostats, temperature and pressure gauges, fluorescent lamps and batteries. Mercury in products can be released to the environment through breakage, or disposal at the end of a product's useful life. Improper disposal of these mercury products poses a health and environmental risk to everyone. In addition, the disposal of mercury-containing products can create wastes that are often classified as hazardous. Wastes that leach mercury in concentrations exceeding Ontario Regulation 347/90 (General - Waste Management) limits are also considered hazardous.

The mercury in thermostats switch contains approximately 3-4 grams of mercury in a glass ampoule, typically attached to a metal coil. Mercury-containing switches have been used in thermostats for over 40 years.

Mercury is an essential component in fluorescent lamps and HID lamps. The mercury is in a vapour form and in the phosphor coating on the lamp tube. Estimates of the mercury content contained in compact, 4 foot, and 8-foot lamps are 10 mg, 23 mg, and 46 mg respectively.

Most fluorescent lamps qualify as hazardous waste when removed from service and are therefore prohibited from disposal in the solid waste stream. Fluorescent lamps would be classified as 146T on your facility Generator Registration Report under O. Reg. 347/90 - General Waste Management, as amended by O. Reg. 558/00. Under this regulation, if the leachate results exceed 0.1 milligrams of mercury per litre for a given waste, then the facility must treat the waste as hazardous waste. Most fluorescent and HID lamps will exceed the leachate toxicity limit; therefore, these wastes must be registered and treated as hazardous waste or sent for recycling.

Silica

Background Information on Silica

Silica is expected to be present in building materials such as concrete, brick, mortar and ceramic tiles located throughout the structures. Free crystalline silica (□-Quartz) may be a component in ceiling tiles and gypsum

board. Silica (including free crystalline silica) may also be a component of concrete and brick surfaces noted in the building.

Exposure to airborne silica is regulated under Ontario Regulation 490/09, *Designated Substances* - made under the Occupational Health and Safety Act.

Polychlorinated Biphenyls (PCBs)

Background Information on PCBs

Polychlorinated Biphenyls (PCBs) were commonly used as dielectric insulating fluid in electrical equipment such as transformers and capacitors, and in the fluorescent and HID lamp ballasts. The production of PCBs in the North America started in 1929 and was banned at the beginning of 1979. After 1981, no manufacturers produced fluorescent and HID lamps with PCB-containing ballasts.

PCBs are not a designated substance under the Occupational Health and Safety Act.

PCB Regulations (SOR/2008-273)

The *PCB Regulations* (the Regulations) set specific deadlines for ending the use of PCBs in concentrations at or above 50 mg/kg, eliminating all PCBs and equipment containing PCBs currently in storage and limiting the period of time PCBs can be stored before being destroyed. The Regulations also establish sound practices for the better management of the remaining PCBs in use (i.e. those with content of less than 50 mg/kg), until their eventual elimination, to prevent contamination of dielectric fluids and dispersion of PCBs in small quantities into other liquids.

Ozone Depleting Substances (ODSs) and Other Halocarbons

Background Information on ODSs

Within Ontario, the general use of ozone depleting substances (ODSs) and other halocarbons is controlled through Regulation 463/10 of the Environmental Protection Act. Production of ODSs in the form of hydro chlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs) ceased in Canada in 1993 as a result of their ozone-depleting characteristics. Importation of CFCs into Canada ceased in 1997 and total ban was placed on their use since 2010. The use of these materials is still permitted in existing equipment, but equipment must be serviced by a licensed contractor such that CFCs are contained and not released to the environment during servicing or operation.

Radioactive Materials

There are two types of smoke detectors commonly found in building (residential, institutional, commercial, industrial, etc). Photoelectric-type smoke detectors detect smoke using an optical sensor, whereas ionization-type smoke detectors use an ionization chamber containing radioactive material. The ionization type is cheaper and is particularly common in older buildings. A typical modern detector contains about 1.0 microcurie of the radioactive element americium, a decrease from 3 microcurie in 1978. The use of sealed radioactive material sources in fire detection systems is still permitted and regulated by the Canadian Nuclear Safety Commission (CNSC) and the Canadian Nuclear Safety Act. The radioactive sources in smoke alarms are sealed and contained within a metal case inside the smoke detector and must not be damaged or tampered with.

Mould & Water Damage

Mould growth inside buildings is due to excess moisture caused by leakages, condensation or capillary movement of water into the building. Toxic moulds such as *Stachybotrys chartarum* and some species of *Aspergillus* spp. are greenish-black, wet and slimy moulds that grow on soaking wet cellulose-based materials. They are often found near water leaks or where drying is very slow and can form after flooding if insufficient cleanup and drying occurred. They will generally not occur if materials are kept dry.

MPL conducted a general visual assessment for any obvious signs of visible mould and/or water damage. Based on our visual observations, the following guidelines were used in providing our recommendations for remedial action where required:

- Institute of Inspection Cleaning and Restoration Certification (IICRC) S520 Standard and Reference for Professional Mould Remediation,
- The Canadian Construction Association (CCA) Mould Guidelines for the Canadian construction industry (CCA document 82-2004)
- Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines.

Other Designated Substances

Select Designated Substances (acrylonitrile, arsenic, coke oven emissions, ethylene oxide, isocyanates, benzene, or vinyl chloride) are not expected to be present in the building in matrix or sufficient quantities to cause an exceedance of Ministry of Labour exposure guidelines. As such, no sampling was conducted for these materials.

Vinyl Chloride

Vinyl chloride (monomer) is likely to be present in stable form within poly vinyl-chloride (PVC) piping and conduits and as a component of interior finishes. Such building materials are not considered to be hazardous in their current matrix/composition.

Acrylonitrile

Acrylonitrile or ACN (also known as vinyl cyanide) is an explosive, flammable liquid used in the manufacture of acrylic fibres, rubber-like materials and pesticide fumigants. Acrylonitrile was not noted and would not be expected to be present in the project specific area/surveyed area/subject building.

Arsenic

Arsenic is used in metallurgy for hardening copper, lead and alloys, in pigment production, in the manufacture of certain types of glass, in insecticides, fungicides and rodenticides, as a by-product in the smelting of copper ores, and as a dopant material in semiconductor manufacturing. Arsenic or arsenic compounds were not noted and are not expected to be present in the project specific area/surveyed area/subject building.

Benzene

Benzene or benzol is a colourless liquid. It is used as an intermediate in the production of styrene, phenol, cyclohexane, and other organic chemicals, and in the manufacture of detergents, pesticides, solvents, and paint

removers. It is also found in gasoline. Benzene may be present in stable form in roofing materials, paints and adhesives located throughout the subject building. Such building materials are not considered to be hazardous in their current matrix/composition.

Coke Oven Emissions

Coke oven emission is benzene soluble fraction of total particulate matter of the substances emitted into the atmosphere from metallurgical coke ovens.

Ethylene Oxides

Ethylene oxide is a colourless gas liquefying below 12°C. It is used generally as a fumigant and sterilizing agent for medical equipment. It is used generally as a fumigant and sterilizing agent for medical equipment.

Isocyanates

Isocyanates compounds may be present in stable form in paint finishes, varnishes, and polyurethane plastics, synthetic rubbers, foams and adhesives. Such building materials are not considered to be hazardous in their current matrix/composition.

In order to reduce the potential for exposure to workers or occupants, any suspect hazardous building material(s) that are not detailed within this survey due to inaccessibility and/or are discovered during renovation/demolition activities, must be properly assessed and/or tested prior to their disturbance.

APPENDIX C

Laboratory Analytical Reports

PARACEL LABORATORIES LTD.
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15 - 6800 Kitimat Rd
Mississauga, ON, L5N 5M1
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

McIntosh Perry Limited (Concord)

6240 Hwy 7, Suite 200
Woodbridge, ON L4H 0R2
Attn: Diana Banakh

Client PO:
Project: Z1920014HZ (190 Laurier)
Custody:

Report Date: 19-Nov-2019
Order Date: 15-Nov-2019

Order #: 1946567

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

Paracel ID	Client ID
1946567-01.1	BS1.1 VFT Tar With White Streaks- Janitor Closet
1946567-01.2	BS1.1 VFT Tar With White Streaks- Janitor Closet
1946567-02.1	BS1.2 VFT Tar With White Streaks- Janitor Closet
1946567-02.2	BS1.2 VFT Tar With White Streaks- Janitor Closet
1946567-03.1	BS1.3 VFT Tar With White Streaks- Janitor Closet
1946567-03.2	BS1.3 VFT Tar With White Streaks- Janitor Closet
1946567-04	BS2.1 Floor Levelling Compound - RM107
1946567-05	BS2.2 Floor Levelling Compound - RM107
1946567-06	BS2.3 Floor Levelling Compound - RM107
1946567-07	BS3.1 Ceiling Mastik - 100 Hallway
1946567-08	BS3.2 Ceiling Mastik - 100 Hallway
1946567-09	BS3.3 Ceiling Mastik - 100 Hallway
1946567-10	BS4.1 SCT 2' x 4' Pinhole With Small Fissures - RM207, 203, 203
1946567-11	BS4.2 SCT 2' x 4' Pinhole With Small Fissures - RM207, 203, 203
1946567-12	BS4.3 SCT 2' x 4' Pinhole With Small Fissures - RM207, 203, 203
1946567-13	BS5.1 Drywall Joint Compound - BSMT
1946567-14	BS5.2 Drywall Joint Compound - BSMT
1946567-15	BS5.3 Drywall Joint Compound - BSMT
1946567-16	BS6.1 Texture Coat Wall - Boiler BSMT
1946567-17	BS6.2 Texture Coat Wall - Boiler BSMT
1946567-18	BS6.3 Texture Coat Wall - Boiler BSMT
1946567-19	BS7.1 Wall Block Mortar - BSMT
1946567-20	BS7.2 Wall Block Mortar - BSMT
1946567-21	BS7.3 Wall Block Mortar - BSMT
1946567-22	BS8.1 Wall Plaster On Lathe B2
1946567-23	BS8.2 Wall Plaster On Lathe B2

Approved By:

Emma Diaz
Senior Analyst

1946567-24	BS8.3 Wall Plaster On Lathe B2
1946567-25	BS9.1 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&
1946567-26	BS9.2 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&
1946567-27.1	BS9.3 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&
1946567-27.2	BS9.3 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&
1946567-28	BS9.4 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&
1946567-29	BS9.5 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&

Certificate of Analysis

Client: McIntosh Perry Limited (Concord)

Client PO:

Report Date: 19-Nov-2019

Order Date: 15-Nov-2019

Project Description: Z1920014HZ (190 Laurier)

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1946567-01.1	09-Oct-19	Tan	Vinyl Floor Tile	No	**Client ID: BS1.1 VFT Tar With White Streaks- Janitor Closet**	
					Non-Fibers	100
1946567-01.2	09-Oct-19	Black	Mastic	No	**Client ID: BS1.1 VFT Tar With White Streaks- Janitor Closet**	
					Non-Fibers	100
1946567-02.1	09-Oct-19	Tan	Vinyl Floor Tile	No	**Client ID: BS1.2 VFT Tar With White Streaks- Janitor Closet**	
					Non-Fibers	100
1946567-02.2	09-Oct-19	Black	Mastic	No	**Client ID: BS1.2 VFT Tar With White Streaks- Janitor Closet**	
					Non-Fibers	100
1946567-03.1	09-Oct-19	Tan	Vinyl Floor Tile	No	**Client ID: BS1.3 VFT Tar With White Streaks- Janitor Closet**	
					Non-Fibers	100
1946567-03.2	09-Oct-19	Black	Mastic	No	**Client ID: BS1.3 VFT Tar With White Streaks- Janitor Closet**	
					Non-Fibers	100
1946567-04	09-Oct-19	Grey	Leveling Compound	No	**Client ID: BS2.1 Floor Levelling Compound - RM107**	
					Non-Fibers	100
1946567-05	09-Oct-19	Brown	Leveling Compound	No	**Client ID: BS2.2 Floor Levelling Compound - RM107**	[Z-01a]
					Non-Fibers	80
					Other fibers	20
1946567-06	09-Oct-19	Grey	Leveling Compound	No	**Client ID: BS2.3 Floor Levelling Compound - RM107**	
					Non-Fibers	100
1946567-07	09-Oct-19	Brown	Mastic	No	**Client ID: BS3.1 Ceiling Mastik - 100 Hallway**	
					Non-Fibers	80
					Other fibers	20
1946567-08	09-Oct-19	Grey	Mastic	No	**Client ID: BS3.2 Ceiling Mastik - 100 Hallway**	[Z-01]
					Non-Fibers	100

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1946567-09	09-Oct-19	Brown	Mastic	No	**Client ID: BS3.3 Ceiling Mastik - 100 Hallway**	
					Non-Fibers	80
					Other fibers	20
1946567-10	09-Oct-19	Beige	Ceiling Tile	No	**Client ID: BS4.1 SCT 2' x 4' Pinhole With Small Fissures - RM207, 203, 203**	
					Cellulose	40
					MMVF	30
					Non-Fibers	30
1946567-11	09-Oct-19	Beige	Ceiling Tile	No	**Client ID: BS4.2 SCT 2' x 4' Pinhole With Small Fissures - RM207, 203, 203**	
					Cellulose	40
					MMVF	30
					Non-Fibers	30
1946567-12	09-Oct-19	Beige	Ceiling Tile	No	**Client ID: BS4.3 SCT 2' x 4' Pinhole With Small Fissures - RM207, 203, 203**	
					Cellulose	40
					MMVF	30
					Non-Fibers	30
1946567-13	09-Oct-19	White	Drywall Joint Compound	No	**Client ID: BS5.1 Drywall Joint Compound - BSMT**	
					Non-Fibers	100
1946567-14	09-Oct-19	White	Drywall Joint Compound	No	**Client ID: BS5.2 Drywall Joint Compound - BSMT**	
					Non-Fibers	100
1946567-15	09-Oct-19	White	Drywall Joint Compound	No	**Client ID: BS5.3 Drywall Joint Compound - BSMT**	
					Non-Fibers	100
1946567-16	09-Oct-19	Grey	Texture Coat	**Yes**	**Client ID: BS6.1 Texture Coat Wall - Boiler BSMT** [AS-PT, Z-01b]	
					Tremolite	0.5
					Non-Fibers	99.5
1946567-17	09-Oct-19				**Client ID: BS6.2 Texture Coat Wall - Boiler BSMT**	
					not analyzed	

Certificate of Analysis

Client: McIntosh Perry Limited (Concord)

Client PO:

Report Date: 19-Nov-2019

Order Date: 15-Nov-2019

Project Description: Z1920014HZ (190 Laurier)

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1946567-18	09-Oct-19				**Client ID: BS6.3 Texture Coat Wall - Boiler BSMT**	
					not analyzed	
1946567-19	09-Oct-19	Grey	Mortar	No	**Client ID: BS7.1 Wall Block Mortar - BSMT**	
					Non-Fibers	100
1946567-20	09-Oct-19	Grey	Mortar	No	**Client ID: BS7.2 Wall Block Mortar - BSMT**	
					Non-Fibers	100
1946567-21	09-Oct-19	Grey	Mortar	No	**Client ID: BS7.3 Wall Block Mortar - BSMT**	
					Non-Fibers	100
1946567-22	09-Oct-19	Grey	Plaster	No	**Client ID: BS8.1 Wall Plaster On Lathe B2**	
					Non-Fibers	100
1946567-23	09-Oct-19	Grey	Plaster	No	**Client ID: BS8.2 Wall Plaster On Lathe B2**	
					Non-Fibers	100
1946567-24	09-Oct-19	Grey	Plaster	No	**Client ID: BS8.3 Wall Plaster On Lathe B2**	
					Non-Fibers	100
1946567-25	09-Oct-19	Grey	Plaster	No	**Client ID: BS9.1 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&**	
					Non-Fibers	100
1946567-26	09-Oct-19	Grey	Plaster	No	**Client ID: BS9.2 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&**	
					Non-Fibers	100
1946567-27.1	09-Oct-19	Grey	Plaster	No	**Client ID: BS9.3 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&**	
					Non-Fibers	100
1946567-27.2	09-Oct-19	White	Plaster	No	**Client ID: BS9.3 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&**	
					Non-Fibers	100
1946567-28	09-Oct-19	Grey	Plaster	No	**Client ID: BS9.4 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&**	
					Non-Fibers	100

PARACEL LABORATORIES LTD.

Order #: 1946567

Certificate of Analysis
Client: McIntosh Perry Limited (Concord)
Client PO:

Report Date: 19-Nov-2019
Order Date: 15-Nov-2019
Project Description: Z1920014HZ (190 Laurier)

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1946567-29	09-Oct-19	Grey	Plaster	No	**Client ID: BS9.5 Ceiling Plaster On Lathe - RM102, 103, 202, 206, B&**	
					Non-Fibers	100

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

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

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	1 - Mississauga	200863-0	18-Nov-19

* Reference to the NVLAP term does not permit the user of this report to claim product certification , approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Mississauga Lab: 15 - 6800 Kitimat Rd Mississauga, Ontario, L5N 5M1

Qualifier Notes

Sample Qualifiers :

AS-PT: Asbestos quantitation by PLM Point Count method.

Z-01: Sample appears to be leveling compound

Z-01a: Sample appears to be mastic

Z-01b: Sample contains vermiculite.

Work Order Revisions | Comments

None

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Certificate of Analysis

McIntosh Perry Consulting Eng. (Carp)

115 Walgreen Rd.
Carp, ON K0A 1L0
Attn: John Tufts

Client PO: 190 Laurier
Project: 0Z2-021737
Custody:

Report Date: 14-Apr-2020
Order Date: 7-Apr-2020

Order #: 2015120

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

Paracel ID	Client ID
2015120-01	PS 1.1
2015120-02	PS 1.2
2015120-03	PS 1.3
2015120-04	PS 1.4
2015120-05	PS 1.5
2015120-06	PS 1.6
2015120-07	PS 1.7
2015120-08	PS 2.1
2015120-09	PS 2.2
2015120-10.1	PS 2.3
2015120-10.2	PS 2.3
2015120-11	PS 2.4
2015120-12	PS 2.5
2015120-13	PS 2.6
2015120-14	PS 2.7
2015120-15	PS 3.1
2015120-16	PS 3.2
2015120-17	PS 3.3
2015120-18	PS 3.4
2015120-19	PS 3.5
2015120-20	PS 3.6
2015120-21	PS 3.7
2015120-22	PS 4.1
2015120-23	PS 4.2
2015120-24	PS 4.3
2015120-25	PS 4.4

Approved By:

Emma Diaz

Senior Analyst

2015120-26	PS 4.5
2015120-27	PS 4.6
2015120-28	PS 4.7
2015120-29	PS 5.1
2015120-30	PS 5.2
2015120-31	PS 5.3
2015120-32	PS 5.4
2015120-33	PS 5.5
2015120-34	PS 5.6
2015120-35	PS 5.7

Certificate of Analysis

Client: McIntosh Perry Consulting Eng. (Carp)

Client PO: 190 Laurier

Report Date: 14-Apr-2020

Order Date: 7-Apr-2020

Project Description: 0Z2-021737

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2015120-01	06-Apr-20	Grey	Mortar	No	**Client ID: PS 1.1**	
					Non-Fibers	100
2015120-02	06-Apr-20	Grey	Mortar	No	**Client ID: PS 1.2**	
					Non-Fibers	100
2015120-03	06-Apr-20	Grey	Mortar	No	**Client ID: PS 1.3**	
					Non-Fibers	100
2015120-04	06-Apr-20	Grey	Mortar	No	**Client ID: PS 1.4**	
					Non-Fibers	100
2015120-05	06-Apr-20	Grey	Mortar	No	**Client ID: PS 1.5**	
					Non-Fibers	100
2015120-06	06-Apr-20	Grey	Mortar	No	**Client ID: PS 1.6**	
					Non-Fibers	100
2015120-07	06-Apr-20	Grey	Mortar	No	**Client ID: PS 1.7**	
					Non-Fibers	100
2015120-08	06-Apr-20	Grey	Drywall Joint Compound	No	**Client ID: PS 2.1**	
					Non-Fibers	100
2015120-09	06-Apr-20	Grey	Drywall Joint Compound	No	**Client ID: PS 2.2**	
					Non-Fibers	100
2015120-10.1	06-Apr-20	Grey	Drywall Joint Compound	No	**Client ID: PS 2.3**	
					Non-Fibers	100
2015120-10.2	06-Apr-20	White	Drywall Joint Compound	No	**Client ID: PS 2.3**	
					Non-Fibers	100
2015120-11	06-Apr-20	Grey	Drywall Joint Compound	No	**Client ID: PS 2.4**	
					Non-Fibers	100

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2015120-12	06-Apr-20	Off-white	Drywall Joint Compound	No	**Client ID: PS 2.5**	
					Non-Fibers	100
2015120-13	06-Apr-20	Grey	Drywall Joint Compound	No	**Client ID: PS 2.6**	
					Non-Fibers	100
2015120-14	06-Apr-20	Grey	Drywall Joint Compound	No	**Client ID: PS 2.7**	
					Non-Fibers	100
2015120-15	06-Apr-20	Grey	Plaster	No	**Client ID: PS 3.1**	
					Cellulose	1
					Non-Fibers	98
					Other fibers	1
2015120-16	06-Apr-20	Grey	Plaster	No	**Client ID: PS 3.2**	
					Non-Fibers	99
					Other fibers	1
2015120-17	06-Apr-20	Grey	Plaster	No	**Client ID: PS 3.3**	
					Cellulose	1
					Non-Fibers	98
					Other fibers	1
2015120-18	06-Apr-20	Grey	Plaster	No	**Client ID: PS 3.4**	
					Cellulose	1
					Non-Fibers	98
					Other fibers	1
2015120-19	06-Apr-20	Grey	Plaster	No	**Client ID: PS 3.5**	
					Cellulose	1
					Non-Fibers	98
					Other fibers	1

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2015120-20	06-Apr-20	Grey	Plaster	No	**Client ID: PS 3.6**	
					Cellulose	1
					Non-Fibers	98
					Other fibers	1
2015120-21	06-Apr-20	Grey	Plaster	No	**Client ID: PS 3.7**	
					Cellulose	1
					Non-Fibers	98
					Other fibers	1
2015120-22	06-Apr-20	Grey	Mortar	No	**Client ID: PS 4.1**	
					Non-Fibers	99
					Other fibers	1
2015120-23	06-Apr-20	Grey	Mortar	No	**Client ID: PS 4.2**	
					Non-Fibers	99
					Other fibers	1
2015120-24	06-Apr-20	Grey	Mortar	No	**Client ID: PS 4.3**	
					Non-Fibers	99
					Other fibers	1
2015120-25	06-Apr-20	Grey	Mortar	No	**Client ID: PS 4.4**	
					Non-Fibers	99
					Other fibers	1
2015120-26	06-Apr-20	Grey	Mortar	No	**Client ID: PS 4.5**	
					Non-Fibers	99
					Other fibers	1
2015120-27	06-Apr-20	Grey	Mortar	No	**Client ID: PS 4.6**	
					Non-Fibers	99
					Other fibers	1

Certificate of Analysis

Client: McIntosh Perry Consulting Eng. (Carp)

Client PO: 190 Laurier

Report Date: 14-Apr-2020

Order Date: 7-Apr-2020

Project Description: 0Z2-021737

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2015120-28	06-Apr-20	Grey	Mortar	No	**Client ID: PS 4.7**	
					Non-Fibers	99
					Other fibers	1
2015120-29	06-Apr-20	Grey	Textured Plaster	**Yes**	**Client ID: PS 5.1**	
					Tremolite	1
					Non-Fibers	99
2015120-30	06-Apr-20				**Client ID: PS 5.2**	
					not analyzed	
2015120-31	06-Apr-20				**Client ID: PS 5.3**	
					not analyzed	
2015120-32	06-Apr-20				**Client ID: PS 5.4**	
					not analyzed	
2015120-33	06-Apr-20				**Client ID: PS 5.5**	
					not analyzed	
2015120-34	06-Apr-20				**Client ID: PS 5.6**	
					not analyzed	
2015120-35	06-Apr-20				**Client ID: PS 5.7**	
					not analyzed	

** Analytes in bold indicate asbestos mineral content.

PARACEL LABORATORIES LTD.

Order #: 2015120

Certificate of Analysis

Report Date: 14-Apr-2020

Client: McIntosh Perry Consulting Eng. (Carp)

Order Date: 7-Apr-2020

Client PO: 190 Laurier

Project Description: 0Z2-021737

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	Lab Accreditation *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	2 - Ottawa West	NVLAP 200812-0	9-Apr-20

* Reference to the NVLAP term does not permit the user of this report to claim product certification , approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

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

Work Order Revisions | Comments

None

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Certificate of Analysis

McIntosh Perry Consulting Eng. (Carp)

115 Walgreen Rd.
Carp, ON K0A 1L0
Attn: John Tufts

Client PO: 190 Laurier
Project: 0Z2021737
Custody:

Report Date: 14-Apr-2020
Order Date: 7-Apr-2020

Order #: 2015135

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

Paracel ID	Client ID
2015135-01	Pb-01 Green Door
2015135-02	Pb-02 White Ext
2015135-03	Pb-03 D.Blue Door

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: McIntosh Perry Consulting Eng. (Carp)
Client PO: 190 Laurier

Report Date: 14-Apr-2020
Order Date: 7-Apr-2020
Project Description: 0Z2021737

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-OES	based on MOE E3470, ICP-OES	13-Apr-20	13-Apr-20

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-CNT0Container(s) - Labeled improperly/insufficient information - Missing Sample Date

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.

Sample Results

Lead

Matrix: Paint
Sample Date: 06-Apr-20

Paracel ID	Client ID	Units	MDL	Result
2015135-01	Pb-01 Green Door	% by Wt.	0.0020	10.8 [1]
2015135-02	Pb-02 White Ext	% by Wt.	0.0020	0.0108
2015135-03	Pb-03 D.Blue Door	% by Wt.	0.0020	3.42

Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Matrix Blank									
Lead	**ND**	**0.0020**	**% by Wt.**						
Matrix Duplicate									
Lead	**5.31**	**0.200**	**% by Wt.**	**5.43**			**2.35**	**30**	
Matrix Spike									
Lead	247	20.00	% by Wt.	ND	98.8	70-130			

EMSL Canada Inc.

22 Antares Drive Suite 102 Ottawa, ON K2E 7Z6
Phone/Fax: (343) 882-6076 / (343) 882-6077
http://www.EMSL.com / ottawalab@EMSL.com

EMSL Canada Order 672100817
Customer ID: 55CTCS25B
Customer PO:
Project ID:

Attn: Lauren Hamilton
McIntosh Perry Consulting Engineers Ltd
115 Walgreen Rd RR 3
Carp, ON K0A 1L0

Proj: UofO - 190 Laurier Ave

Phone: (613) 836-2184
Fax:
Collected: 5/ 6/2021
Received: 5/07/2021
Analyzed: 5/11/2021

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: BS 1.1 ***Lab Sample ID:*** **672100817-0001**
Sample Description: Brick Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 1.2 ***Lab Sample ID:*** **672100817-0002**
Sample Description: Brick Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 1.3 ***Lab Sample ID:*** **672100817-0003**
Sample Description: Brick Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 1.4 ***Lab Sample ID:*** **672100817-0004**
Sample Description: Brick Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 1.5 ***Lab Sample ID:*** **672100817-0005**
Sample Description: Brick Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 1.6 ***Lab Sample ID:*** **672100817-0006**
Sample Description: Brick Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 1.7 ***Lab Sample ID:*** **672100817-0007**
Sample Description: Brick Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

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Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: BS 2.1 ***Lab Sample ID:*** **672100817-0008**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 2.2-Mortar ***Lab Sample ID:*** **672100817-0009**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 2.2-Mortar ***Lab Sample ID:*** **672100817-0009A**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	0.0%	100.0%	None Detected	

Client Sample ID: BS 2.3-Mortar ***Lab Sample ID:*** **672100817-0010**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 2.3-Mortar ***Lab Sample ID:*** **672100817-0010A**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: BS 2.4 ***Lab Sample ID:*** **672100817-0011**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 2.5 ***Lab Sample ID:*** **672100817-0012**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 2.6 ***Lab Sample ID:*** **672100817-0013**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

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Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: BS 2.7 ***Lab Sample ID:*** **672100817-0014**
Sample Description: Stone Mortar, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 3.1 ***Lab Sample ID:*** **672100817-0015**
Sample Description: Cellar coating, orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Orange	0.0%	100.0%	None Detected	

Client Sample ID: BS 3.2 ***Lab Sample ID:*** **672100817-0016**
Sample Description: Cellar coating, orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Orange	0.0%	100.0%	None Detected	

Client Sample ID: BS 3.3 ***Lab Sample ID:*** **672100817-0017**
Sample Description: Cellar coating, orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Orange	0.0%	100.0%	None Detected	

Client Sample ID: BS 4.1 ***Lab Sample ID:*** **672100817-0018**
Sample Description: Cellar wall caulking, brown

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: BS 4.2 ***Lab Sample ID:*** **672100817-0019**
Sample Description: Cellar wall caulking, brown

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: BS 4.3 ***Lab Sample ID:*** **672100817-0020**
Sample Description: Cellar wall caulking, brown

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: BS 5.1 ***Lab Sample ID:*** **672100817-0021**
Sample Description: Window caulking, white

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	White	0.0%	100.0%	None Detected	

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Client Sample ID: BS 5.2 ***Lab Sample ID:*** **672100817-0022**
Sample Description: Window caulking, white

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: BS 5.3 ***Lab Sample ID:*** **672100817-0023**
Sample Description: Window caulking, white

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: BS 6.1 ***Lab Sample ID:*** **672100817-0024**
Sample Description: Balcony/porch Caulking, Black

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	White	0.0%	100.0%	None Detected	No black layer present.

Client Sample ID: BS 6.2 ***Lab Sample ID:*** **672100817-0025**
Sample Description: Balcony/porch Caulking, Black

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	White	0.0%	100.0%	None Detected	No black layer present.

Client Sample ID: BS 6.3 ***Lab Sample ID:*** **672100817-0026**
Sample Description: Balcony/porch Caulking, Black

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	White	0.0%	100.0%	None Detected	No black layer present.

Client Sample ID: BS 7.1 ***Lab Sample ID:*** **672100817-0027**
Sample Description: Balcony/porch Caulking Patch, White/beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	0.0%	100.0%	None Detected	

Client Sample ID: BS 7.2 ***Lab Sample ID:*** **672100817-0028**
Sample Description: Balcony/porch Caulking Patch, White/beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	0.0%	100.0%	None Detected	

Client Sample ID: BS 7.3 ***Lab Sample ID:*** **672100817-0029**
Sample Description: Balcony/porch Caulking Patch, White/beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	0.0%	100.0%	None Detected	

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Client Sample ID: BS 8.1 ***Lab Sample ID:*** **672100817-0030**
Sample Description: Balcony floor caulking, white/grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	No white layer present.

Client Sample ID: BS 8.2 ***Lab Sample ID:*** **672100817-0031**
Sample Description: Balcony floor caulking, white/grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	No white layer present.

Client Sample ID: BS 8.3 ***Lab Sample ID:*** **672100817-0032**
Sample Description: Balcony floor caulking, white/grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	No white layer present.

Client Sample ID: BS 9.1 ***Lab Sample ID:*** **672100817-0033**
Sample Description: Cellar caulking, black/blue

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	7.0%	93.0%	None Detected	

Client Sample ID: BS 9.2 ***Lab Sample ID:*** **672100817-0034**
Sample Description: Cellar caulking, black/blue

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	8.0%	92.0%	None Detected	

Client Sample ID: BS 9.3 ***Lab Sample ID:*** **672100817-0035**
Sample Description: Cellar caulking, black/blue

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	4.0%	96.0%	None Detected	

Client Sample ID: BS 10.1-Shingles ***Lab Sample ID:*** **672100817-0036**
Sample Description: Roofing Shingles, porch flooring

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	29.0%	71.0%	None Detected	

Client Sample ID: BS 10.1-Shingles ***Lab Sample ID:*** **672100817-0036A**
Sample Description: Roofing Shingles, porch flooring

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	32.0%	68.0%	None Detected	

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Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: BS 10.2-Shingles ***Lab Sample ID:*** **672100817-0037**
Sample Description: Roofing Shingles, porch flooring

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	26.0%	74.0%	None Detected	

Client Sample ID: BS 10.2-Shingles ***Lab Sample ID:*** **672100817-0037A**
Sample Description: Roofing Shingles, porch flooring

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Brown	29.0%	71.0%	None Detected	

Client Sample ID: BS 10.2-Roofing ***Lab Sample ID:*** **672100817-0037B**
Sample Description: Roofing Shingles, porch flooring

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: BS 10.3 ***Lab Sample ID:*** **672100817-0038**
Sample Description: Roofing Shingles, porch flooring

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	29.0%	71.0%	None Detected	

Client Sample ID: BS 11.1 ***Lab Sample ID:*** **672100817-0039**
Sample Description: Lower window caulking, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 11.2 ***Lab Sample ID:*** **672100817-0040**
Sample Description: Lower window caulking, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 11.3 ***Lab Sample ID:*** **672100817-0041**
Sample Description: Lower window caulking, grey

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BS 12.1-Shingles ***Lab Sample ID:*** **672100817-0042**
Sample Description: Roofing shingles, 2nd floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	27.0%	73.0%	None Detected	

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Client Sample ID: BS 12.1-Roofing ***Lab Sample ID:*** **672100817-0042A**
Sample Description: Roofing shingles, 2nd floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: BS 12.2-Shingles ***Lab Sample ID:*** **672100817-0043**
Sample Description: Roofing shingles, 2nd floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	28.0%	72.0%	None Detected	

Client Sample ID: BS 12.2-Roofing ***Lab Sample ID:*** **672100817-0043A**
Sample Description: Roofing shingles, 2nd floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: BS 12.3 ***Lab Sample ID:*** **672100817-0044**
Sample Description: Roofing shingles, 2nd floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	31.0%	69.0%	None Detected	

Client Sample ID: BS 13.1 ***Lab Sample ID:*** **672100817-0045**
Sample Description: Roofing shingles, 1st floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	29.0%	71.0%	None Detected	

Client Sample ID: BS 13.2 ***Lab Sample ID:*** **672100817-0046**
Sample Description: Roofing shingles, 1st floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	26.0%	74.0%	None Detected	

Client Sample ID: BS 13.3 ***Lab Sample ID:*** **672100817-0047**
Sample Description: Roofing shingles, 1st floor roof

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/11/2021	Various	29.0%	71.0%	None Detected	

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Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Analyst(s):

Sarah Kuper PLM (13)
Sue Ferrario PLM (41)

Reviewed and approved by:

Simon Parent, Laboratory Manager
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government

Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO NVLAP Lab Code 200742-0

Initial report from: 05/12/202109:17:53

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CustomerID:	55CTCS25B
CustomerPO:	BT18-73051
ProjectID:	

Attn: **Lauren Hamilton**
McIntosh Perry Consulting Engineers Ltd
115 Walgreen Rd RR 3
Carp, ON K0A 1L0

Phone: (613) 836-2184
Fax:
Received: 5/10/2021 10:37 AM
Collected: 5/6/2021

Project: **U of O - 190 Laurier Ave**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	Collected	Analyzed	Weight	RDL	Lead Concentration
PB-01 *552107435-0001*	5/6/2021 Site: White, Window	5/10/2021	0.2434 g	0.0082 % wt	<0.0082 % wt
PB-02 *552107435-0002*	5/6/2021 Site: White, Porch Insufficient sample to reach reporting limit.	5/10/2021	0.0972 g	0.021 % wt	<0.021 % wt
PB-03 *552107435-0003*	5/6/2021 Site: Orange, Cellar	5/10/2021	0.2501 g	0.0080 % wt	<0.0080 % wt
PB-04 *552107435-0004*	5/6/2021 Site: Black, Fire escape stairs	5/10/2021	0.2490 g	0.0080 % wt	0.060 % wt

Rowena Fanto, Lead Supervisor
or other approved signatory

Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.
Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC - ELLAP #196142

Initial report from 05/12/2021 08:30:12

APPENDIX D

Site Photographs

Photo 1: View of asbestos-containing plaster applied on to steel mesh observed to be in poor condition on the ceiling of the basement level boiler room.

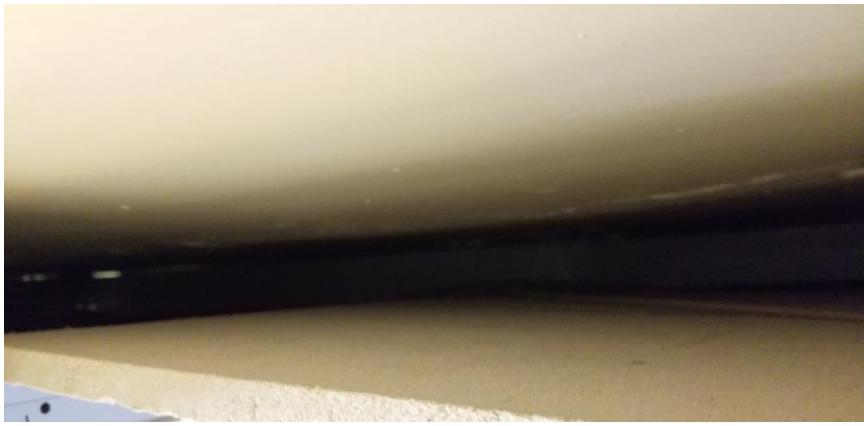


Photo 2: View of asbestos-containing ceiling plaster observed to be in good condition above the suspended ceiling tiles in Room 301.

Photo 3: View of non-asbestos containing plaster on wood lathe observed above the suspended ceiling tiles in Room 204.

Photo 4: View of non-asbestos containing foundation block mortar observed in the basement level of the subject building.

Photo 5: View of non-asbestos containing suspended ceiling tiles (2'x4'-Pinholes with small fissures) observed throughout the subject building.

Photo 6: View of lead acid battery pack observed to be in good condition in Room 301.

Photo 7: View of ODS-containing air condition unit observed to be in good condition in Room 204.

Photo 8: View of water-stained ceiling plaster observed to be in poor condition above the suspended ceiling tiles in Room 202.

Photo 9: View of asbestos-containing textured plaster observed on the basement ceiling.

Photo 10: View of asbestos-containing textured plaster observed on the basement ceiling.

Photo 11: View of low-level lead paint (white) observed to be in poor condition on the exterior of the building.

Photo 12: View of low-level lead paint (white) observed to be in poor condition on the exterior balcony/porch.

Photo 13: View of low-level lead paint (black) observed to be in poor condition on the exterior fire escapes

APPENDIX E

Asbestos-Containing Materials Checklists

Floor/Level	Location	Type of ACM	Asbestos Confirmed/ Suspected	Friable/Non-Friable	Damaged/ Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action	Comments
0	Boiler Room	Wall and Ceiling Texture Coat	Confirmed	Friable	Poor Condition	Moderate	Moderate	10	SF	Remove Following Type 2 Abatement Procedures	
0	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	N/A	N/A	Manage in Place	
0	Throughout Level	Wall Texture Coat	Confirmed	Friable	Good Condition	Easy	Low	N/A	N/A	Manage in Place	
0	Throughout Level	Ceiling Plaster	Confirmed	Friable	Good Condition	Easy	Low	N/A	N/A	Manage in Place	
1	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	N/A	N/A	Manage in Place	
2	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	N/A	N/A	Manage in Place	
3	Room 301	Ceiling Plaster (Gray)	Confirmed	Friable	Good Condition	Difficult	Low	250	SF	Manage in Place	
3	Room 301A	Ceiling Plaster (Gray)	Confirmed	Friable	Good Condition	Difficult	Low	170	SF	Manage in Place	
3	Room 301B	Ceiling Plaster (Gray)	Confirmed	Friable	Good Condition	Difficult	Low	230	SF	Manage in Place	
3	Room 302	Ceiling Plaster (Gray)	Confirmed	Friable	Good Condition	Difficult	Low	65	SF	Manage in Place	
3	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	N/A	N/A	Manage in Place	

APPENDIX F

Hazardous Containing Materials Checklists

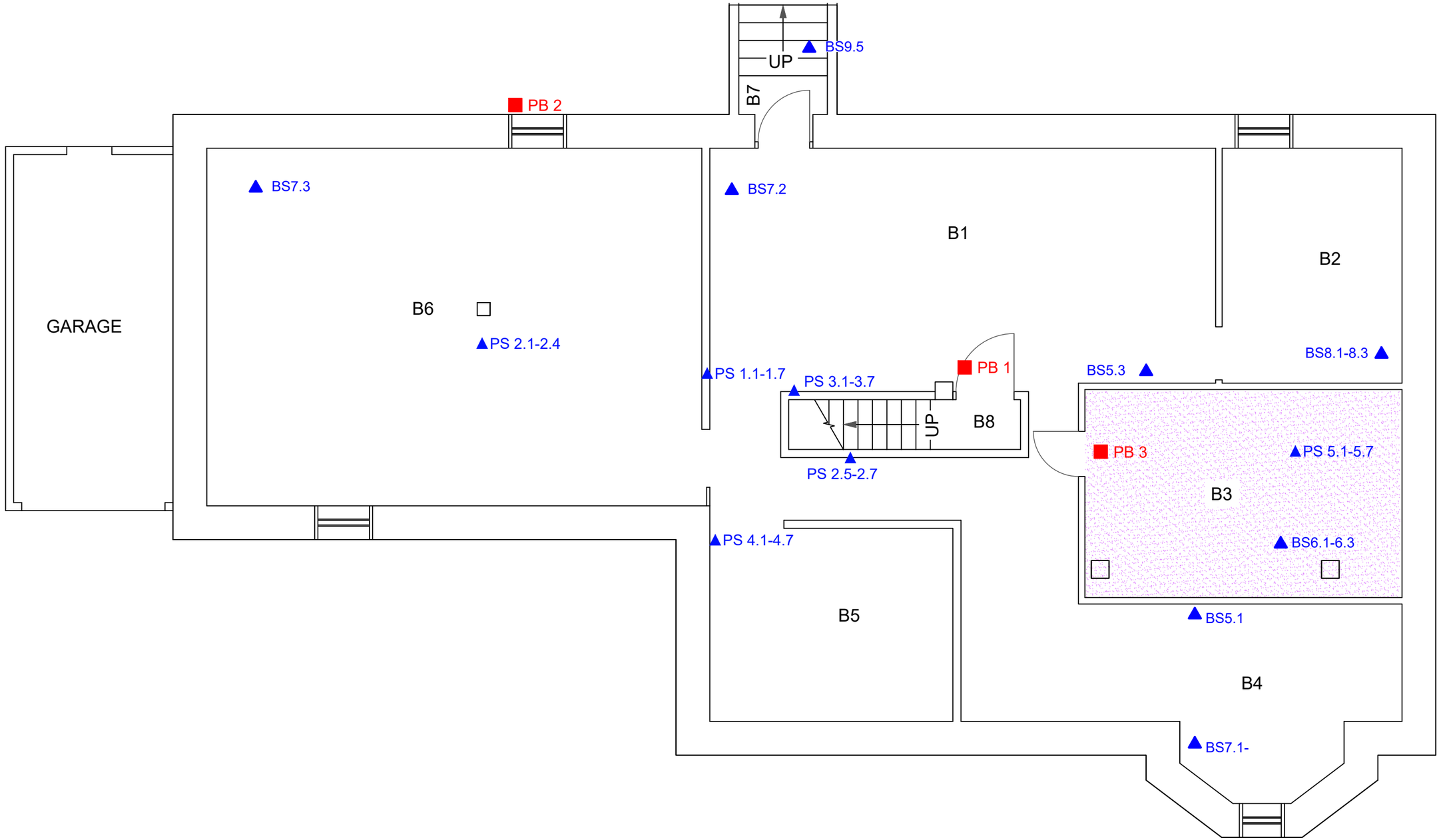
Floor/Level	Location	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
0	Room B1	Lead	Battery Pack	N/A	Good Condition	LumaCell	1	C	Confirmed	Manage in Place	
0	Basement Door	Lead	Door, Trim and Frame Paint	Green	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Basement Door	Lead	Door, Trim and Frame Paint	Dark Blue	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	Throughout	N/A	Confirmed	Manage in Place	
0	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Exterior Window	Lead	Door, Trim and Frame Paint	White	Poor Condition	N/A	-	-	Confirmed	Manage in Place	
1	Porch/Balcony	Lead	Stair, Railing and Door Paint	White	Poor Condition	N/A	-	-	Confirmed	Manage in Place	
1	Cellar	Lead	Wall Paint	Orange	Poor Condition	N/A	-	-	Confirmed	Manage in Place	
1	Fire escapes	Lead	Stair Paint	Black	Poor Condition	N/A	-	-	Confirmed	Manage in Place	
1	Room 109A	Lead	Battery Pack	N/A	Good Condition	LumaCell	1	C	Confirmed	Manage in Place	
1	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	Various	-	-	Confirmed	Manage In Place	
1	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
1	Room 102	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Friedrich	1	C	Confirmed	Manage in Place	R410A
1	Room 103	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Friedrich	1	C	Confirmed	Manage in Place	R410A
1	Room 105	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Friedrich	1	c	Confirmed	Manage in Place	R410A
1	Room 106	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Friedrich	1	C	Confirmed	Manage in Place	R410A
1	Room 107	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A

Floor/Level	Location	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
2	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
2	Room 202	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
2	Room 202	Mould/ Water Damage	Ceiling Plaster	N/A	Poor Condition	N/A	30	SF	Confirmed	Should be replaced as part of regular maintenance.	
2	Room 203	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
2	Room 204	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Comfort One	1	C	Confirmed	Manage in Place	R410A
2	Room 205	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
2	Room 206	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
2	Room 209	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
3	Room 301	Lead	Battery Pack	N/A	Good Condition	LumaCell	1	C	Confirmed	Manage in Place	
3	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	Throughout	N/A	Confirmed	Manage in Place	
3	Room 301	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
3	Room 301A	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
3	Room 301B	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
3	Room 302	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Mistubishi Electric	1	C	Confirmed	Manage in Place	R410A
3	Room 303	Ozone Depleting Substances (ODS)	Air Conditioning Unit	N/A	Good Condition	Friedrich	1	C	Confirmed	Manage in Place	R410A

Floor/Level	Location	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
3	Room 303	Ozone Depleting Substances (ODS)	Refrigerator/Freezer/ Mini-Fridge/Water Cooler	N/A	Good Condition	Moffat	1	C	Confirmed	Manage in Place	R134A

APPENDIX G

Site Sampling & Location Plans



McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- Asbestos Bulk Sample
- Lead Paint Sample

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: PROJECT SPECIFIC DESIGNATED SUBSTANCE SURVEY 190 LAURIER, OTTWA, ONTARIO

TITLE: LEVEL 0 SAMPLE LOCATIONS

SCALE: 1:100

DATE: JUNE 9, 2020

DRAWN: D.B

CHECKED: M.M.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: 0Z2021737HZ

REV.:

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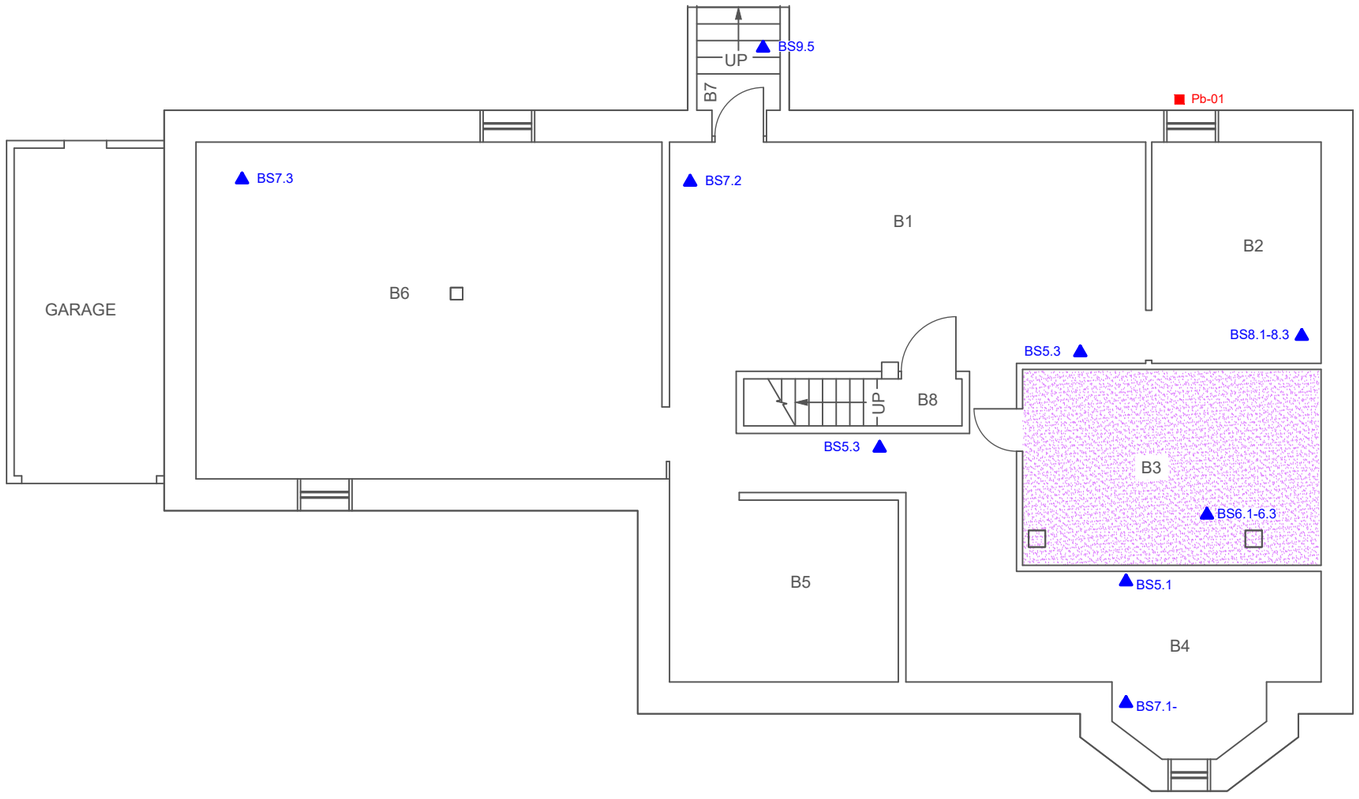


McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- Asbestos Bulk Sample
- Lead Paint Sample
- Asbestos Containing Texture Finish

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: DESIGNATED SUBSTANCE SURVEY
190 LAURIER, OTTAWA, ONTARIO

TITLE: LEVEL 0
SITE PLAN & SAMPLE LOCATIONS

SCALE: 1:100

DATE: DECEMBER 10, 2019

DRAWN: M.A.

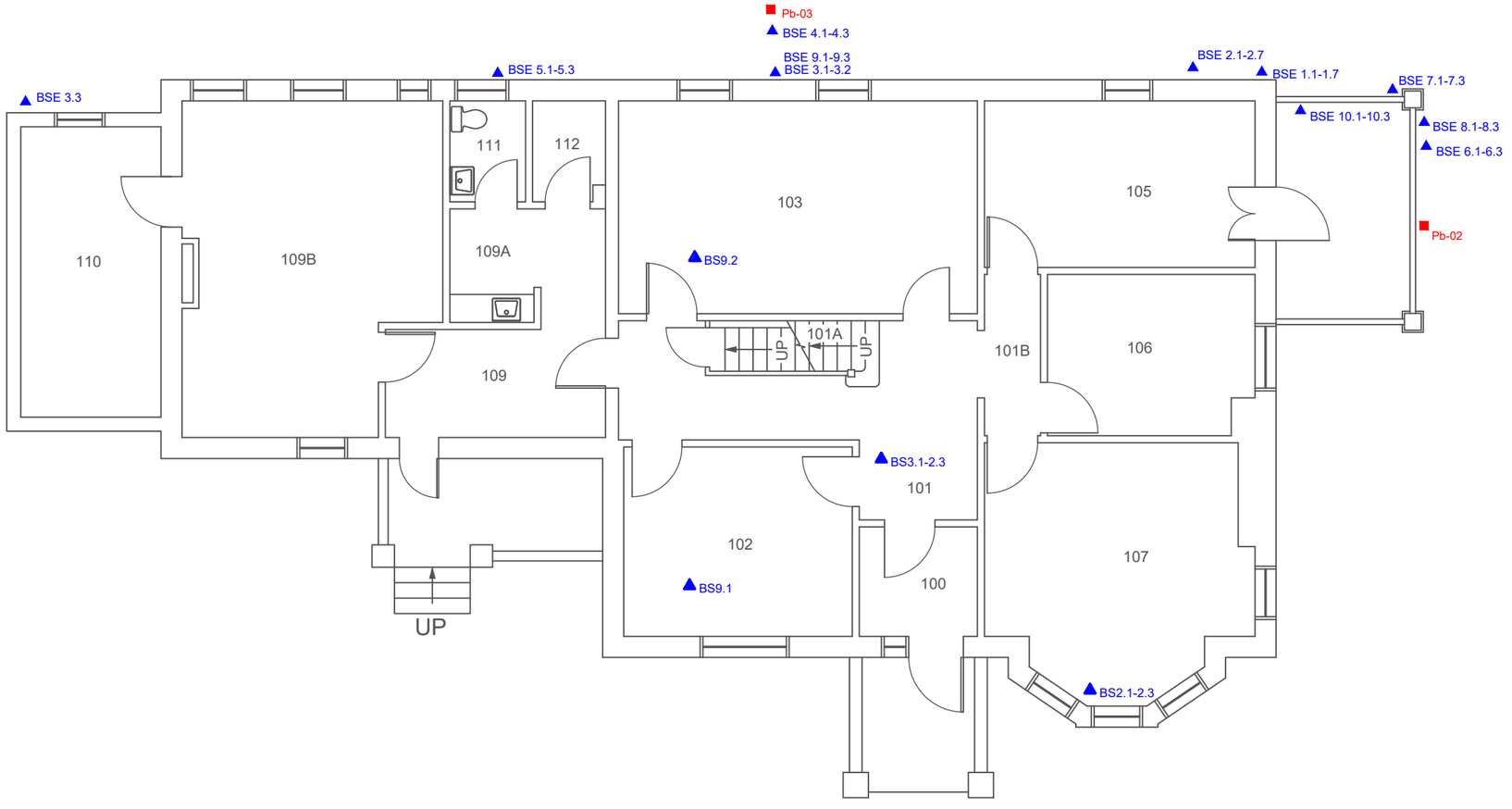
CHECKED: M.M.

Revision May 13, 2021

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A-0

REV.:



McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- Asbestos Bulk Sample
- Lead Paint Sample

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: DESIGNATED SUBSTANCE SURVEY
190 LAURIER, OTTAWA, ONTARIO

TITLE: LEVEL 1
SITE PLAN & SAMPLE LOCATIONS

SCALE: 1:150

DATE: DECEMBER 10, 2019

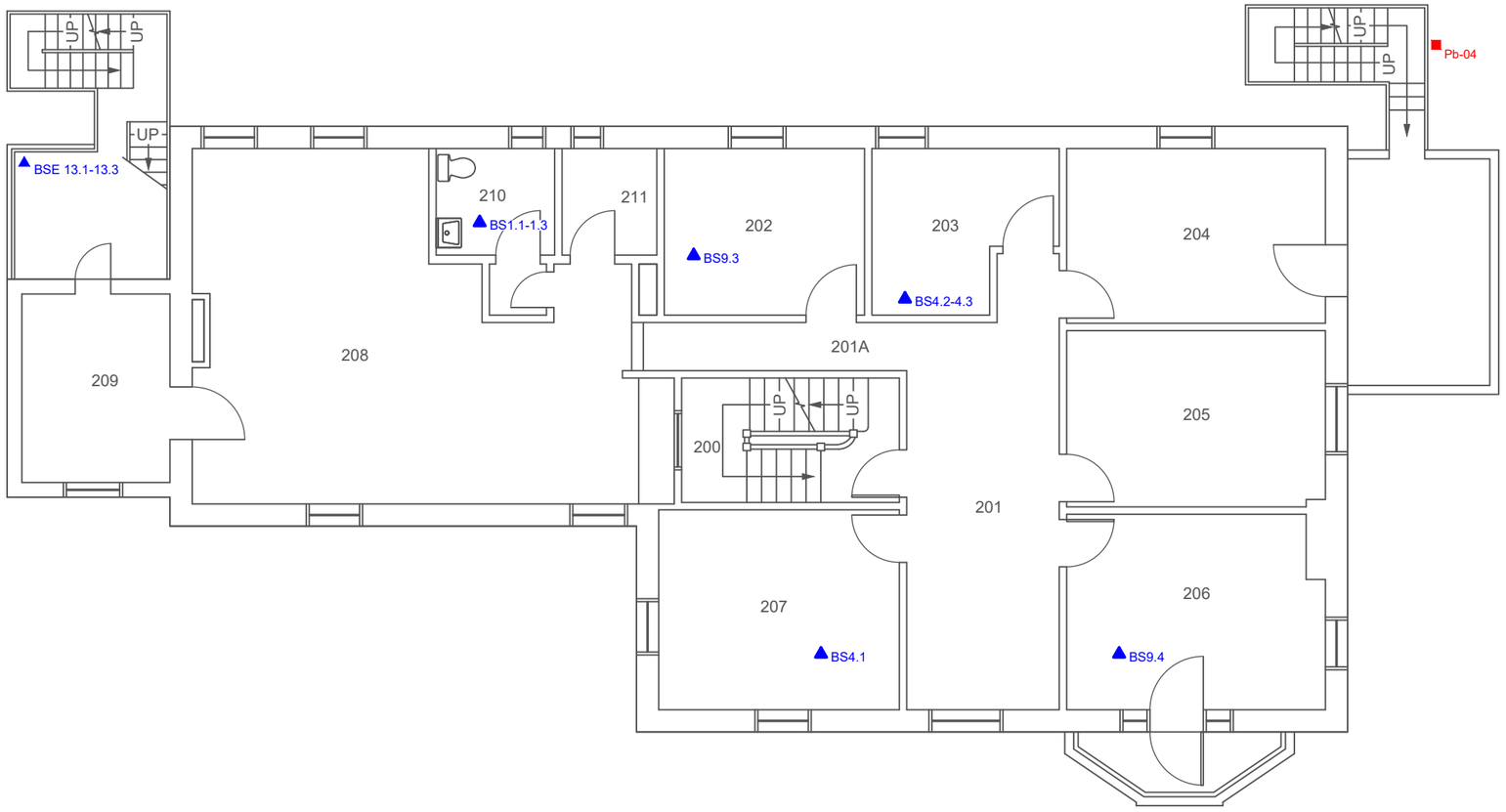
DRAWN: M.A.

CHECKED: M.M.

DRAWING NUMBER: A-1

REV. NO.	DESCRIPTION	DATE	BY	APPD.
	Revision May 13, 2021			

REV.:



McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- ▲ Asbestos Bulk Sample
- ■ Lead Paint Sample

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: DESIGNATED SUBSTANCE SURVEY
190 LAURIER, OTTAWA, ONTARIO

TITLE: LEVEL 2
SITE PLAN & SAMPLE LOCATIONS

SCALE: 1:150

DATE: DECEMBER 10, 2019

DRAWN: M.A.

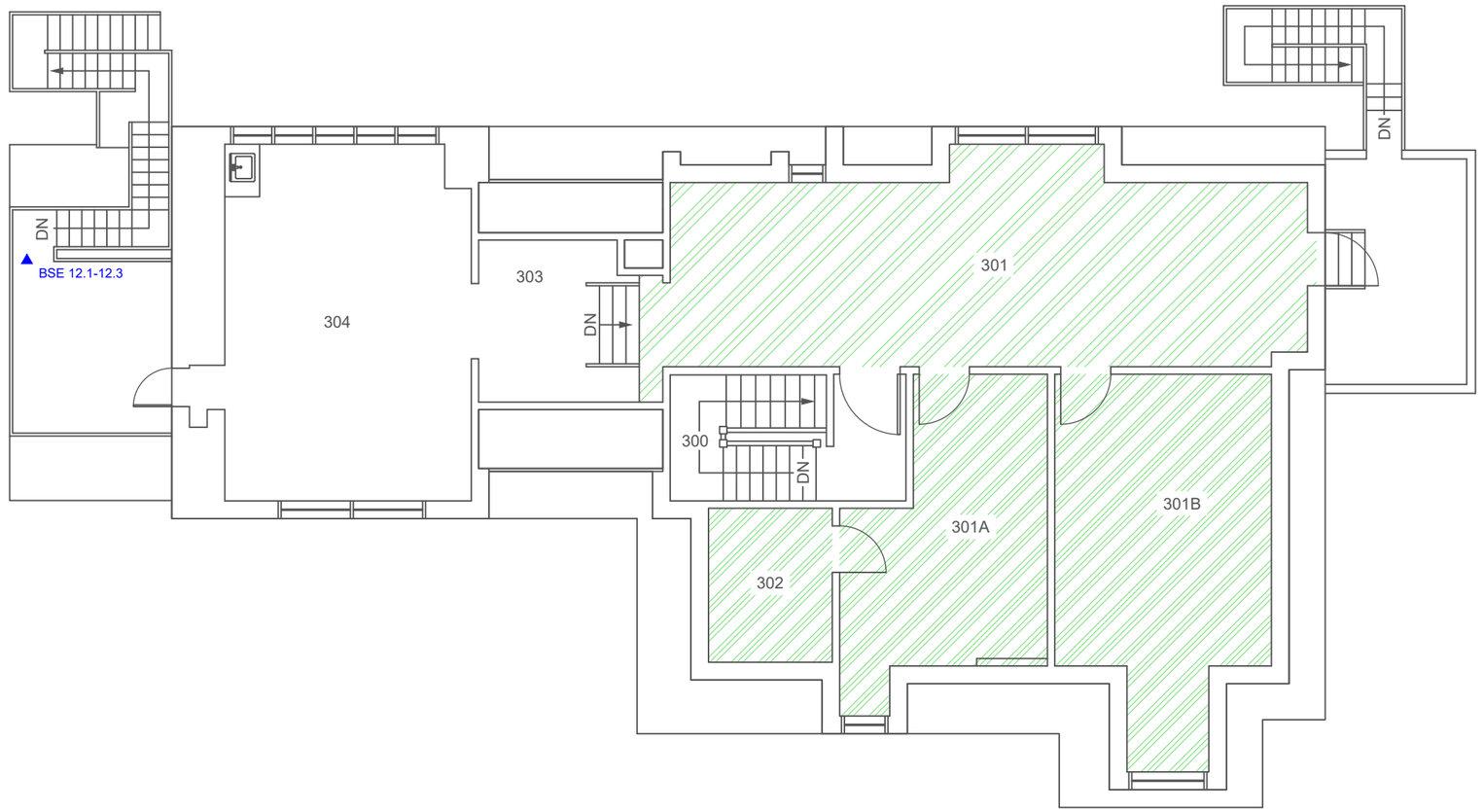
CHECKED: M.M.

Revision May 13, 2021

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A-2

REV.:



McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:
- Asbestos Bulk Sample
- Lead Paint Sample
- Asbestos Containing Plaster

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: DESIGNATED SUBSTANCE SURVEY
190 LAURIER, OTTAWA, ONTARIO

TITLE: LEVEL 3
SITE PLAN & SAMPLE LOCATIONS

SCALE: 1:150
DATE: DECEMBER 10, 2019
DRAWN: M.A.
CHECKED: M.M.

Revision May 13, 2021

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A-3
REV.: