

REPORT

Hazardous Building Materials Assessment Property HIL2 (formerly HU2), Calgary Housing Company

325 - 10 Street NW, Calgary, Alberta

Assessment Completed: July 22, 2021

Submitted to:

Calgary Housing Company (CHC)

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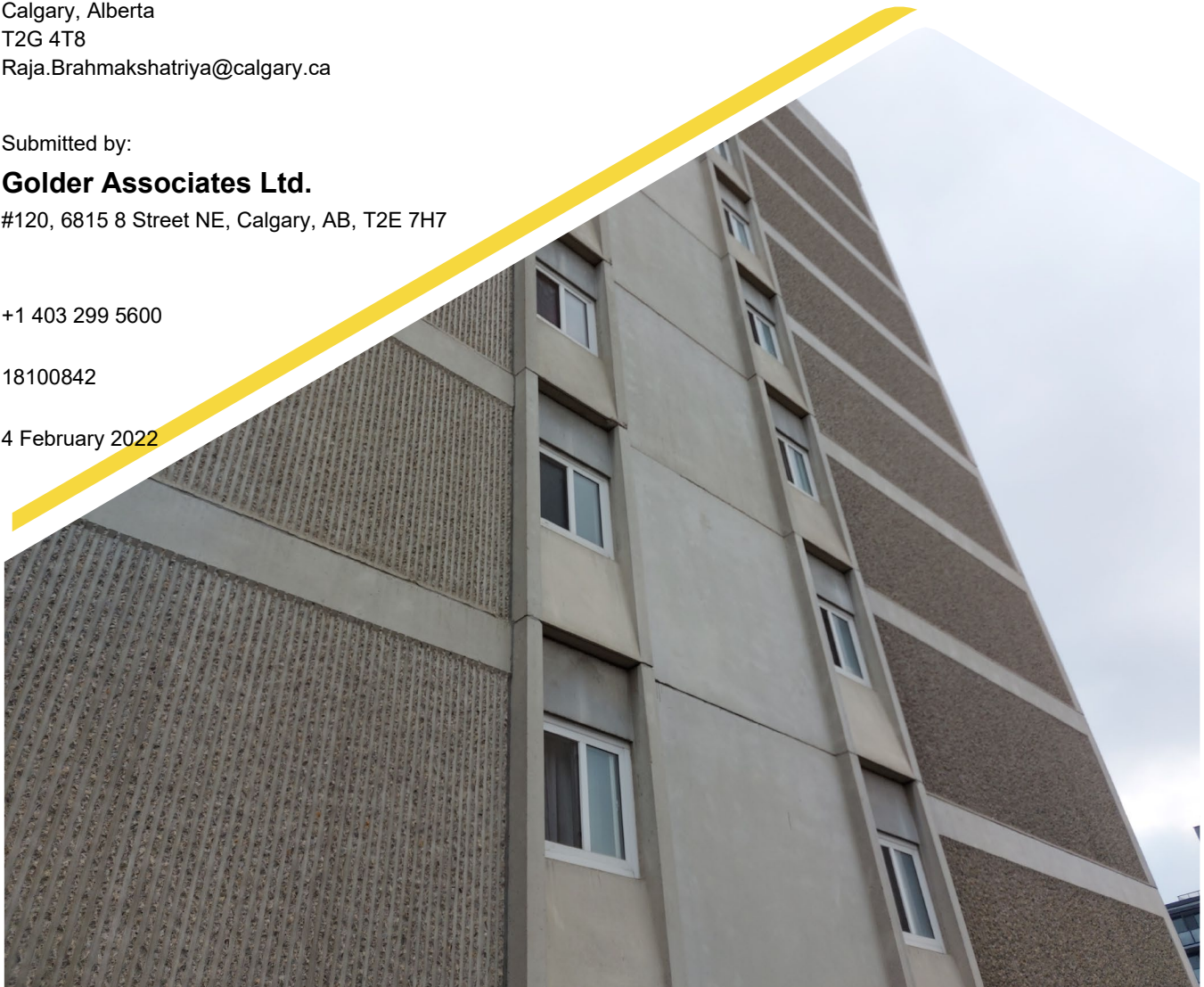
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4 February 2022



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Executive Summary

Golder Associates Ltd. (Golder) was retained by the Calgary Housing Company (CHC) to conduct hazardous building materials assessments of various CHC properties throughout Calgary, Alberta. Golder understands that the current assessments were requested in order to generate a baseline inventory of potential hazardous building materials throughout the various properties.

This report documents the results of the assessment conducted at property HIL2 (formerly known as HU2), located at 325 – 10 Street NW in Calgary, Alberta. The assessment was conducted on July 22, 2021 by Cory Gray, Occupational Hygiene Technologist under the direction of Scott Bishop, Project Manager, Kara Snelling, Project Manager and Fred Louth, Project Director.

SCOPE OF WORK

Golder conducted a baseline assessment to compile an inventory of hazardous building materials including asbestos-containing materials (ACM), lead-containing paint, polychlorinated biphenyls (PCB) in fluorescent light ballasts, mercury in thermostats, mercury-vapour in fluorescent light tubes or bulbs, ozone-depleting substances (ODS) in items or systems such as refrigerators and air conditioning Units, radioactive materials in smoke detectors, suspect fungal-contamination and miscellaneous chemicals.

The assessment included the common areas and six units (the Units) from the apartment complex in order to achieve “representative sampling”. The Units selected for this assessment were selected by a CHC representative to be included as part of the assessment and included the following:

- Unit 905;
- Unit 806;
- Unit 705;
- Unit 404;
- Unit 302; and,
- Unit 208.

The assessment methodology, applicable regulations and guidelines and assessment limitations are provided in Appendices A to C.

CONCLUSIONS AND RECOMMENDATIONS

Asbestos-Containing Materials

Based on the sample results and visual observations, asbestos was identified in the following materials within the HIL2 (formerly HU2), property:

- white wall caulking on the exterior columns;
- vinyl floor tile, 12" x 12" off-white with black splotches;
- drywall joint compound;
- ceiling stipple coat;
- vinyl sheet floor, green and brown mosaic pattern;
- vinyl sheet floor, beige stone pattern;
- vinyl sheet floor, cream and beige mosaic pattern; and
- brown acoustic sink insulation.

The identified asbestos-containing materials were observed to be in good condition at the time of the assessment. The asbestos-containing materials should be maintained in good condition to minimize potential exposure to the building occupants. Periodic inspections of the identified asbestos-containing materials should be completed to monitor for any changes in building conditions.

Bulk sampling was conducted in six of the units in the HIL2 property in an effort to complete a representative assessment. Due to the potential for renovations or different construction eras within the Units, consideration should be given to completing area specific sampling prior to renovations to potentially delineate between older and newer materials. Prior to conducting renovation or maintenance activities in the Units that were not assessed, assessment for ACMs should be completed.

Prior to renovation or demolition activities, ACM that may be impacted must be removed. The work should be completed by workers certified by Alberta OHS. Throughout the abatement activities, appropriate air monitoring and inspections should be conducted by qualified personnel to document that the ACM are removed and disposed of appropriately. It is recommended that a proper scope of work and asbestos removal specifications be written to scope the complete and proper removal of the identified ACM.

If during renovation or demolition activities suspect ACM not previously assessed is encountered, work should be stopped immediately, and sampling of the material should be conducted to confirm the presence of asbestos.

Lead-Containing Materials

Based on the sample results and visual observations, lead was identified in the following paints:

- forest green paint on wood trim in the rear parkade, exterior;
- reddish brown paint on wood garage door in the rear parkade, exterior;
- beige paint on drywall in the Garbage Room on the 9th Floor; and,
- light grey paint on metal Garbage Room door on the 9th Floor.

Lead-containing surfaces with any amounts of lead that will be impacted through renovation or demolition activities in a manner likely to cause some level of airborne lead-containing dust or fumes, (i.e., manual demolition, welding, torch cutting, grinding, sanding, or sandblasting) should be controlled through the development and implementation of an Exposure Control Plan. The exposure control plan should include safe work procedures to address the lead exposure hazard during demolition activities. The safe work procedures should include procedures to minimize dust during demolition, procedures for proper containment, collection, clean-up and disposal of debris to prevent contamination in other areas, the use of proper cleaning tools, selection and use of proper personal protective equipment, and other applicable procedures.

The lead-containing paint was observed to be in good condition, at the time of the assessment. If the condition of the paints degrades, they should be abated following methods and requirements outlined in the Alberta OHS *Lead at the Work Site* bulletin. The lead-containing paint waste generated from the abatement activities should be analyzed for lead leachability by toxicity characteristic leaching procedure (TCLP) prior to disposal to ensure transportation and disposal of lead-containing waste materials is conducted in accordance with the requirements of AEP and the Federal *Transportation of Dangerous Goods Act* and Regulations, current to the date of the work. The AEP Waste Control Regulation prescribes the disposal pathways for lead-containing waste. Non-metal building materials (bricks, wood, concrete, cinderblock etc.) coated with lead-containing paint should not be recycled for re-use.

Lead-acid batteries were observed in the emergency lighting system throughout the building during the assessment. Additionally, lead packing in bell and spigot joints were observed in the Boiler Room. Prior to or during renovation or demolition activities, the lead-acid batteries and bell and spigot joints with lead packing must be collected for recycling. Lead-acid batteries cannot be landfilled in Alberta and therefore must be recycled upon decommissioning at a licensed recycling facility.

Other Hazardous Building Materials

Item	Hazardous Material	Comments
Fluorescent light ballasts	PCBs	Observed within the Boiler/Generator Room, Rooftop Elevator Motor Room, and the Main Floor Common Areas
Thermostats	Mercury-filled capsules	Observed within Unit 905 and in Common Areas
Fluorescent light tubes	Mercury-vapour	Observed within the Common Areas
Smoke detectors	Radioactive materials	Observed within the Units and Common Areas
Miscellaneous chemicals	Miscellaneous chemicals	Observed within the Units

Fluorescent light fixture ballasts which are to be disposed of should be sorted on-site by qualified personnel based on date of manufacture and inspected to evaluate for PCB-containing ballast. Safe work procedures should be followed when handling suspected PCB-containing ballasts. Any fixtures with ashing should be treated as PCB-containing as well. PCB-containing fixtures must be identified, barrelled appropriately and stockpiled on-site. Following removal of all fixtures, the barrelled PCB-containing light ballasts must be appropriately labelled, manifested and transported to an approved destruction and disposal facility in accordance with regulations specified by Environment Canada.

Thermostats containing mercury-filled capsules and fluorescent light tubes with mercury-vapour were observed during the assessment. Mercury in thermostat capsules and mercury-vapour in fluorescent light tubes pose no risk to workers or occupants provided the capsules and tubes remain intact and undisturbed. It is recommended

that at the time of removal, the capsules and tubes be kept separate from all other waste to prevent damage. These materials should be recycled or disposed of in accordance with regulations specified by AEP.

Refrigerators and air conditioners in the Units were determined to contain R-134a refrigerant, which is not considered to be an ozone-depleting substance. However, prior to disposal, the refrigerant should be drained by qualified personnel.

Smoke detectors suspected of containing radioactive materials were observed during the assessment. Radioactive materials within the smoke detectors pose no risk to workers or occupants provided the materials remain intact and undisturbed. It is recommended that at the time of renovation or demolition, all smoke detectors should be kept separate from all other waste to prevent damage. These materials may be recycled by qualified personnel or may be disposed of in accordance with regulations specified by Alberta Environment and Parks.

Suspect fungal contamination was not observed during the assessment.

Miscellaneous household cleaning chemicals were observed in the Units during the assessment. Prior to renovation or demolition activities, these miscellaneous chemicals should be removed from the area for appropriate packaging and disposal.

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1.0 INTRODUCTION

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2.0 SCOPE OF WORK

Golder conducted a baseline assessment to compile an inventory of hazardous building materials including asbestos-containing materials (ACM), lead-containing paint, polychlorinated biphenyls (PCB) in fluorescent light ballasts, mercury in thermostats, mercury-vapour in fluorescent light tubes or bulbs, ozone-depleting substances (ODS) in items or systems such as refrigerators and air conditioning Units, radioactive materials in smoke detectors, suspect fungal-contamination and miscellaneous chemicals.

The assessment included the common areas and six units (the Units) from the apartment complex in order to achieve “representative sampling”. The Units selected for this assessment were selected by a CHC representative to be included as part of the assessment and included the following:

- Unit 905;
- Unit 806;
- Unit 705;
- Unit 404;
- Unit 302; and
- Unit 208.

The assessment methodology, applicable regulations and guidelines and assessment limitations are provided in Appendices A to C.

3.0 SITE DESCRIPTION

Table 1: Building Material Overview

Item	Details	Comments
Building Construction	Circa 1971	N/A
Building Use	Apartment Complex	Sixty-Four Units
Number of Floors/Levels	Eight floors	Includes common spaces on Main Floor and a Level One Parkade
Square Footage	Approximately 54,400 ft ²	N/A
Structure	Concrete and cinderblock	N/A
Exterior Cladding	Concrete and decorative brick facade	N/A

Table 1: Building Material Overview

Item	Details	Comments
HVAC	Heating is provided by forced-air furnaces in the basement Mechanical Room and by exterior wall mounted baseboard style heaters in each unit.	Ducts were observed to be uninsulated or insulated with fiberglass (not suspected to contain asbestos).
Roof	Torched-down flat roof	Silicone based caulking observed on the roof (not suspected to contain asbestos).
Flooring	Carpeting, vinyl sheet flooring, vinyl floor tile, laminate, and concrete finishes throughout.	N/A
Interior Walls	Drywall and concrete.	N/A
Exterior Walls	Concrete and decorative brick façade.	N/A
Ceiling	Ceiling tiles and stipple coat over concrete .	Stipple coat ceilings throughout, some present beneath ceiling tiles.
Lighting	HID lights with LED bulbs observed on exterior. Incandescent light bulbs observed throughout the Units, and a combination of fluorescent light tubes and incandescent light bulbs present observed in the common areas and Mechanical Rooms.	Fluorescent light tubes contain mercury-vapour.

4.0 RESULTS AND DISCUSSION

The laboratory reports are provided in Appendix D. Room number identifiers are provided on the floor plans provided in Appendix E. Additional information regarding the materials sampled, photographs and other identified hazardous building materials are provided in a spreadsheet in Appendix F. An estimated abatement budget to remove the identified hazardous building materials from the building (using extrapolated quantities) is provided in Appendix G.

4.1 Asbestos-Containing Materials

Forty-six bulk samples of suspect ACM were collected by Golder during the assessment and sent to the laboratory for analysis. The laboratory analyzed a total of fifty-two layers. Asbestos was identified in thirty-one of the sample layers analyzed. The analytical results are provided in Table 2: Asbestos Analysis Results.

Table 2: Asbestos Analysis Results

Sample Number	Sample Description	Sample Location	Asbestos Detected No/Yes: Type ^(a)
HIL2-A-01a	White Window Caulking	Exterior, Front of Building	None Detected
HIL2-A-01b	White Window Caulking	Exterior, Front of Building	None Detected
HIL2-A-01c	White Window Caulking	Exterior, Front of Building	None Detected
HIL2-A-02a	White Wall Caulking	Exterior, Rear Concrete Column	3% Chrysotile
HIL2-A-02b	White Wall Caulking	Exterior, Rear Concrete Column	3% Chrysotile
HIL2-A-02c	White Wall Caulking	Exterior, Rear Concrete Column	3% Chrysotile
HIL2-A-03a	Concrete Texture Coat	Rooftop Elevator Room	None Detected
HIL2-A-04a	Vinyl Floor Tile - 12" x 12" Off-White with Black Splotches (Layer 1)	9th Floor, South Stairwell	4% Chrysotile

Table 2: Asbestos Analysis Results

Sample Number	Sample Description	Sample Location	Asbestos Detected No/Yes: Type ^(a)
HIL2-A-04a	Vinyl Floor Tile - 12" x 12" Off-White with Black Splotches, Mastic (Layer 2)	9th Floor, South Stairwell	None Detected
HIL2-A-04b	Vinyl Floor Tile - 12" x 12" Off-White with Black Splotches (Layer 1)	8th Floor, North Stairwell	4% Chrysotile
HIL2-A-04b	Vinyl Floor Tile - 12" x 12" Off-White with Black Splotches, Mastic (Layer 2)	8th Floor, North Stairwell	None Detected
HIL2-A-04c	Vinyl Floor Tile - 12" x 12" Off-White with Black Splotches	7th Floor, South Stairwell	4% Chrysotile
HIL2-A-05a	Drywall Joint Compound	9th Floor, South Stairwell	2% Chrysotile
HIL2-A-05b	Drywall Joint Compound	9th Floor, Garbage Room	None Detected
HIL2-A-05c	Drywall Joint Compound	Unit 806, Bedroom Closet	2% Chrysotile
HIL2-A-05d	Drywall Joint Compound	Unit 705, North Bedroom Closet	2% Chrysotile
HIL2-A-05e	Drywall Joint Compound	Unit 404, Hall Closet	2% Chrysotile
HIL2-A-05f	Drywall Joint Compound	2nd Floor, Corridor	2% Chrysotile
HIL2-A-05g	Drywall Joint Compound	Main Floor, Maintenance Room	2% Chrysotile
HIL2-A-06a	Ceiling Stipple Coat	Unit 905, Kitchen	None Detected
HIL2-A-06b	Ceiling Stipple Coat	9th Floor, Garbage Room	10% Chrysotile
HIL2-A-06c ^(b)	Ceiling Stipple Coat	Unit 806, Bedroom	10% Chrysotile
HIL2-A-06d	Ceiling Stipple Coat	8th Floor, Corridor	10% Chrysotile
HIL2-A-06e	Ceiling Stipple Coat	Unit 705, North Bedroom	10% Chrysotile
HIL2-A-06f	Ceiling Stipple Coat	Unit 404, Hallway	10% Chrysotile
HIL2-A-06g	Ceiling Stipple Coat	2nd Floor, Garbage Room	10% Chrysotile
HIL2-A-07a	Vinyl Sheet Floor - Green and Brown Mosaic Pattern	Unit 905, Kitchen	20% Chrysotile
HIL2-A-07b	Vinyl Sheet Floor - Green and Brown Mosaic Pattern	Unit 905, Kitchen	20% Chrysotile
HIL2-A-07c	Vinyl Sheet Floor - Green and Brown Mosaic Pattern, Paper Backing	Unit 905, Kitchen	40% Chrysotile
HIL2-A-07d	Vinyl Sheet Floor - Green and Brown Mosaic Pattern	Unit 404, Hall Closet	20% Chrysotile
HIL2-A-07e	Vinyl Sheet Floor - Green and Brown Mosaic Pattern	Unit 404, Hall Closet	20% Chrysotile
HIL2-A-08a	Vinyl Sheet Floor - Beige Stone Pattern (Layer 1)	Unit 905, Washroom	20% Chrysotile
HIL2-A-08a	Vinyl Sheet Floor - Beige Stone Pattern, Mastic (Layer 2)	Unit 905, Washroom	None Detected
HIL2-A-08b	Vinyl Sheet Floor - Beige Stone Pattern (Layer 1)	Unit 905, Washroom	20% Chrysotile
HIL2-A-08b	Vinyl Sheet Floor - Beige Stone Pattern, Mastic (Layer 2)	Unit 905, Washroom	None Detected
HIL2-A-08c	Vinyl Sheet Floor - Beige Stone Pattern	Unit 905, Washroom	20% Chrysotile
HIL2-A-09a ^(c)	Vinyl Floor Tile - 12" x 12" Beige with Brown Streaks	7th Floor, Garbage Room	None Detected

Table 2: Asbestos Analysis Results

Sample Number	Sample Description	Sample Location	Asbestos Detected No/Yes: Type ^(a)
HIL2-A-09b	Vinyl Floor Tile - 12" x 12" Beige with Brown Streaks	7th Floor, Garbage Room	None Detected
HIL2-A-09c	Vinyl Floor Tile - 12" x 12" Beige with Brown Streaks	4th Floor, Garbage Room	None Detected
HIL2-A-10a	Vinyl Sheet Floor - Cream and Beige Mosaic Pattern (Layer 1)	Unit 404, Washroom	20% Chrysotile
HIL2-A-10a	Vinyl Sheet Floor - Cream and Beige Mosaic Pattern, Mastic (Layer 2)	Unit 404, Washroom	None Detected
HIL2-A-10b	Vinyl Sheet Floor - Cream and Beige Mosaic Pattern	Unit 404, Washroom	20% Chrysotile
HIL2-A-10c	Vinyl Sheet Floor - Cream and Beige Mosaic Pattern	Unit 404, Washroom	20% Chrysotile
HIL2-A-11a	Brown Acoustic Sink Insulation	Unit 404, Kitchen	3% Chrysotile
HIL2-A-12a	White Cornerbead Caulking	4th Floor, South Corner	None Detected
HIL2-A-13a	Vinyl Sheet Floor - Beige Marble Pattern	Main Floor, Lobby	None Detected
HIL2-A-13b	Vinyl Sheet Floor - Beige Marble Pattern	Main Floor, Corridor	None Detected
HIL2-A-13c	Vinyl Sheet Floor - Beige Marble Pattern	Main Floor, Corridor Steps	None Detected
HIL2-A-14a	Wall Texture Coat	Main Floor, Corridor, South Wall	None Detected
HIL2-A-14b	Wall Texture Coat	Main Floor, Corridor, South Wall	None Detected
HIL2-A-14c	Wall Texture Coat (Layer 1)	Main Floor, Corridor, South Wall	None Detected
HIL2-A-14c	Drywall Joint Compound (Layer 2)	Main Floor, Corridor, South Wall	2% Chrysotile

a) Samples were analyzed using Bulk Asbestos Analysis by EPA 600/R-93/116.

b) Inseparable layers combined prior to analysis.

c) Inseparable mastic included in analysis.

Silicone based caulking was observed around HVAC penetrations on the roof and exterior, and silicone based grey caulking was observed on exterior columns. These are not suspected to contain asbestos. Black window glazing was observed on exterior windows with a date sticker of 2021 and is not suspected to contain asbestos.

Piping and ducting in the Boiler/Generator Room were observed to be uninsulated and/ or insulated with fiberglass insulation, which is not suspected to contain asbestos. No duct mastic or fire stop was observed in the Boiler/Generator Room.

Ceiling tiles observed throughout the main floor were found to have a date stamp from 2012 or later and are not suspected to contain asbestos.

Newer tile patterned sheet flooring without paper backing was observed in Units 806 and 208, and is not suspected to contain asbestos. Additional flooring materials suspected to contain asbestos were not observed beneath the sheet flooring in these units. New floors were observed in Units 705 and 302, and are not suspected to contain asbestos. These new floorings include grey laminate flooring throughout each Unit.

Due to the non-intrusive nature of the assessment, Golder did not assess below new laminate flooring to assess for the presence of hazardous building materials (e.g., older vinyl sheet flooring or floor tile). There is potential for additional asbestos-containing materials to be present below new flooring.

4.2 Lead-Containing Materials

Nine bulk samples of paint suspected to be lead-containing were collected and submitted for analysis. Four of the samples were determined to have lead concentrations above the Surface Coatings Materials Regulations, SOR/2010-224, criteria of **90 mg/kg** and are considered to be lead-containing. Lead-containing analytical results are provided in Table 3: Paint Analysis Results.

Table 3: Paint Analysis Results

Sample Number	Sample Location	Sample Colour and Substrate	Lead Concentration (mg/kg)	Lead-Containing Paint ^(a) (Yes/No)	Condition of Material
HIL2-L-01	NE Column, Exterior	Dark Brown Paint on Concrete	30	No	Good
HIL2-L-02	Rear Parkade Overhang, Exterior	White Paint on Wood Overhang	8	No	Good
HIL2-L-03	Rear Parkade Trim, Exterior	Forest Green Paint on Wood Trim	141	Yes	Good
HIL2-L-04	Rear Parkade Garage Door, Exterior	Reddish Brown Paint on Wood Garage Door	753	Yes	Good
HIL2-L-05	SW Column, Exterior	White Paint on Concrete Columns	29	No	Good
HIL2-L-06	9th Floor, South Stairwell, Steps	Grey Paint on Concrete Steps	9	No	Good
HIL2-L-07	9th Floor, Garbage Room	Beige Paint on Drywall	120	Yes	Good
HIL2-L-08	9th Floor, Garbage Room Door	Light Grey Paint on Metal	717	Yes	Good
HIL2-L-09	Parkade Handrailing, Exterior	Black Paint on Metal	25	No	Good

a) Based on Surface Coatings Materials Regulations, SOR/2010-224 classification of 90 mg/kg.

Beige paint (sample HIL2-L-07) on drywall was observed to be a consistent colour used throughout most Units and common areas.

Batteries within the emergency lighting system were observed within the hallways and stairwells throughout the building during the assessment.

Bell and spigot joints suspected of contain lead packing were observed in the Boiler Room during the assessment. It is suspected that these bell and spigot joints are also present in wall cavities throughout the building.

4.3 Polychlorinated Biphenyls

The lighting systems throughout the Units were observed to be incandescent light fixtures, which are not suspected to house PCB-containing ballasts.

Twelve fluorescent light fixtures (with T-12 style light tubes) suspected to house PCB-containing ballasts were observed in the Boiler/Generator Room, Rooftop Elevator Motor Room and the Main Floor Common Areas at the time of the assessment. As the lights were in operation, Golder was not able to safely inspect the light fixtures to

assess the ballast code information. Additionally, fluorescent light fixtures using the newer style T-8 fluorescent light tubes were also observed in these areas. Fluorescent light fixtures using the newer T-8 style light tubes are not suspected of housing PCB-containing light ballasts.

4.4 Other Hazardous Building Materials

Thermostats containing mercury-filled capsules were observed in Unit 905 and on the Main Floor.

Lighting systems throughout the Units was observed to be incandescent light fixtures, and the incandescent light bulbs are not suspected to contain mercury-vapour.

Approximately 134 fluorescent light tubes suspected to contain mercury-vapour were observed in the Boiler/Generator Room, on the Main Floor, and in the Rooftop Elevator Motor Room during the assessment.

Refrigerators and air conditioners in the Units were observed to have labels indicating the presence of R-134a refrigerant, which is not considered to be an ozone-depleting substance.

Smoke detectors suspected of containing radioactive materials were observed in the stairwells and in the Units during the assessment.

Suspect fungal-contamination was not observed in the Units during the assessment.

Miscellaneous household cleaning chemicals were observed in the Units during the assessment.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Asbestos-Containing Materials

Based on the sample results and visual observations, asbestos was identified in the following materials within the HIL2 (formerly HU2), property:

- white wall caulking on the exterior columns;
- vinyl floor tile, 12" x 12" off-white with black splotches;
- drywall joint compound;
- ceiling stipple coat;
- vinyl sheet floor, green and brown mosaic pattern;
- vinyl sheet floor, beige stone pattern;
- vinyl sheet floor, cream and beige mosaic pattern; and
- brown acoustic sink insulation.

The identified asbestos-containing materials were observed to be in good condition at the time of the assessment. The asbestos-containing materials should be maintained in good condition to minimize potential exposure to the building occupants. Periodic inspections of the identified asbestos-containing materials should be completed to monitor for any changes in building conditions.

Bulk sampling was conducted in six of the units in the HIL2 property in an effort to complete a representative assessment. Due to the potential for renovations or different construction eras within the Units, consideration

should be given to completing area specific sampling prior to renovations to potentially delineate between older and newer materials. Prior to conducting renovation or maintenance activities in the Units that were not assessed, assessment for ACMs should be completed.

Prior to renovation or demolition activities, ACM that may be impacted must be removed. The work should be completed by workers certified by Alberta OHS. Throughout the abatement activities, appropriate air monitoring and inspections should be conducted by qualified personnel to document that the ACM are removed and disposed of appropriately. It is recommended that a proper scope of work and asbestos removal specifications be written to scope the complete and proper removal of the identified ACM.

If during renovation or demolition activities suspect ACM not previously assessed is encountered, work should be stopped immediately, and sampling of the material should be conducted to confirm the presence of asbestos.

5.2 Lead-Containing Materials

Based on the sample results and visual observations, lead was identified in the following paints:

- forest green paint on wood trim in the rear parkade, exterior;
- reddish brown paint on wood garage door in the rear parkade, exterior;
- beige paint on drywall in the Garbage Room on the 9th Floor; and
- light grey paint on metal Garbage Room door on the 9th Floor.

Lead-containing surfaces with any amounts of lead that will be impacted through renovation or demolition activities in a manner likely to cause some level of airborne lead-containing dust or fumes, (i.e., manual demolition, welding, torch cutting, grinding, sanding, or sandblasting) should be controlled through the development and implementation of an Exposure Control Plan. The exposure control plan should include safe work procedures to address the lead exposure hazard during demolition activities. The safe work procedures should include procedures to minimize dust during demolition, procedures for proper containment, collection, clean-up and disposal of debris to prevent contamination in other areas, the use of proper cleaning tools, selection and use of proper personal protective equipment, and other applicable procedures.

The lead-containing paint was observed to be in good condition, at the time of the assessment. If the condition of the paints degrades, they should be abated following methods and requirements outlined in the Alberta OHS *Lead at the Work Site* bulletin. The lead-containing paint waste generated from the abatement activities should be analyzed for lead leachability by toxicity characteristic leaching procedure (TCLP) prior to disposal to ensure transportation and disposal of lead-containing waste materials is conducted in accordance with the requirements of AEP and the Federal *Transportation of Dangerous Goods Act* and Regulations, current to the date of the work. The AEP Waste Control Regulation prescribes the disposal pathways for lead-containing waste. Non-metal building materials (bricks, wood, concrete, cinderblock etc.) coated with lead-containing paint should not be recycled for re-use.

Bell and spigot joints suspected to contain lead packing were observed in the mechanical rooms. Prior to or during demolition activities, the material must be collected for recycling. Joints with lead-packing cannot be landfilled in Alberta and therefore must be recycled upon decommissioning at an approved facility.

Lead-acid batteries were observed in the emergency lighting system throughout the building during the assessment. Additionally, lead packing in bell and spigot joints were observed in the Boiler Room. Prior to or

during renovation or demolition activities, the lead-acid batteries and bell and spigot joints with lead packing must be collected for recycling. Lead-acid batteries cannot be landfilled in Alberta and therefore must be recycled upon decommissioning at a licensed recycling facility.

5.3 Polychlorinated Biphenyls

Fluorescent light fixtures (with T-12 style light tubes) suspected to house PCB-containing ballasts were observed in the Boiler/Generator Room and the Main Floor Common Areas at the time of the assessment. As the lights were in operation, Golder was not able to safely inspect the light fixtures to assess the ballast code information.

Fluorescent light fixture ballasts which are to be disposed of should be sorted on-site by qualified personnel based on date of manufacture and inspected to evaluate for PCB-containing ballast. Safe work procedures should be followed when handling suspected PCB-containing ballasts. Any fixtures with ashing should be treated as PCB-containing as well. PCB-containing fixtures must be identified, barrelled appropriately, and stockpiled on-site. Following removal of all fixtures, the barrelled PCB-containing light ballasts must be appropriately labelled, manifested and transported to an approved destruction and disposal facility in accordance with regulations specified by Environment Canada.

5.4 Other Hazardous Building Materials

Thermostats containing mercury-filled capsules and fluorescent light tubes with mercury-vapour were observed during the assessment. Mercury in thermostat capsules and mercury-vapour in fluorescent light tubes pose no risk to workers or occupants provided the capsules and tubes remain intact and undisturbed. It is recommended that at the time of removal, the capsules and tubes be kept separate from all other waste to prevent damage. These materials should be recycled or disposed of in accordance with regulations specified by AEP.

Refrigerators and air conditioners in the Units were determined to contain R-134a refrigerant, which is not considered to be an ozone-depleting substance. However, prior to disposal, the refrigerant should be drained by qualified personnel.

Smoke detectors suspected of containing radioactive materials were observed during the assessment. Radioactive materials within the smoke detectors pose no risk to workers or occupants provided the materials remain intact and undisturbed. It is recommended that at the time of renovation or demolition, all smoke detectors should be kept separate from all other waste to prevent damage. These materials may be recycled by qualified personnel or may be disposed of in accordance with regulations specified by Alberta Environment and Parks.

Suspect fungal contamination was not observed during the assessment.

Miscellaneous household cleaning chemicals were observed in the Units during the assessment. Prior to renovation or demolition activities, these miscellaneous chemicals should be removed from the area for appropriate packaging and disposal.

6.0 CLOSURE

We trust the information presented in this report meets your requirements. If you have any questions or require additional information, please contact the undersigned at (403) 299-5600. Thank you for the opportunity to be of service. We look forward to working with you again in the future.

Signature Page

Golder Associates Ltd.



Kara Snelling, BA
OHS Project Manager



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APPENDIX A

Methodologies

Site work was generally completed in accordance with standards outlined by Alberta OHS. The assessment included an area-by-area assessment for suspect hazardous building materials.

Asbestos-Containing Materials

An assessment for the potential ACM in the building included the evaluation of the building systems. The systems reviewed included, but not limited to:

- Mechanical: Building mechanical systems such as the heating, ventilating and air conditioning (HVAC) systems were inspected for the presence of ACM.
- Structural: The method of construction was determined, including interior room areas, mezzanines and roofing support systems. Fireproofing, fire-stop and other materials installed as a part of the structure were reviewed.
- Architectural: The presence of ACM was assessed in building materials and finishes such as floor and ceiling tiles, texture coats, asbestos sheet materials, wall joint compound, condensation control applications, spray-applied acoustical materials, and spray-applied insulation on areas of the structure.

The quantity of samples collected was in general accordance with the guidelines in the *Alberta Asbestos Abatement Manual* (August 2019), and was adjusted based on the amount of suspect homogenous materials observed onsite. A homogenous material is defined as a material that is uniform in color and texture and includes the materials throughout its full extent, even if its occurrence is not contiguous or physically connected. Where analysis of a sample confirmed that a bulk material sample was asbestos-containing, then the entire homogenous material from which the sample was collected was considered an asbestos-containing material.

The *Alberta Asbestos Abatement Manual* (August 2019), recommends a specific number of samples to be collected from suspect ACM depending on the amount present on-site. As part of this project, certain building materials were observed to be installed in limited quantities throughout renovation work area, making the collection of multiple samples from these materials impractical.

Detailed notes were taken with each sample including type of material and sample location. All sample locations have a unique reference number, and a digital photograph was taken of each sampling location. Materials suspected of containing asbestos were sampled and submitted for analysis to EMSL Canada Inc., a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory. The asbestos samples were analyzed for asbestos type and percentage content using polarized light microscopy and dispersion staining techniques in accordance with EPA methodologies (EPA 600/R-93/116).

Gaskets were not assessed as sampling would cause damage that may compromise the integrity of the systems. Golder did not sample materials where the sampling would have affected the operation of equipment (e.g., wiring). Golder did not sample the interior of operational equipment.

The sampling was performed in a manner to limit “routine” survey damage and disturbance to existing materials. Some repairs may be necessary, particularly related to the sampling of materials such as, but not limited to, drywall, ceiling tiles, floor tiles, and exterior finishes. Our procedures included sampling in unobtrusive locations as possible (e.g., closets, corner of ceiling tiles). It is assumed that repairs are the responsibility of the client.

Lead Containing Materials

Visual identification and sampling of suspected lead-containing paint was completed as part of the assessment. Accessible painted surfaces were tested for the presence of lead-containing paint. Testing for lead content was conducted by collecting a bulk sample of the paint finish and placing the material into a sealable bag. The samples were sent to Paracel Laboratories Ltd. and analyzed for lead content using Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES). For the purpose of this report, paints analyzed with lead content greater than the Surface Coatings Materials Regulations, SOR/2010-224, criteria of 90 mg/kg are considered to be lead-containing.

Polychlorinated Biphenyls

Fluorescent light fixtures were inspected to determine if they have the older style T-12 light tubes. If the T-12 light tubes were observed, those ballasts were assumed to be PCB-containing. The high-efficiency light fixtures with the newer T-10, T-8 and T-5 style light tubes were assumed to have non-PCB containing ballasts. Transformer fluids were not assessed as part of this project.

Other Hazardous Building Materials

The building was visually assessed for the presence of mercury in thermostats, mercury in fluorescent light tubes, ODS in items or systems such as refrigerators and air conditioning units, radioactive materials in smoke detectors, suspect fungal-contamination, and miscellaneous chemicals.

APPENDIX B

Regulations and Guidelines

Alberta Health and Safety Regulations

The regulations, codes and guidelines relevant to hazardous building materials include the Alberta Occupational Health and Safety Code (AR 191/2021), the Alberta Occupational Health & Safety (OHS), *Alberta Asbestos Abatement Manual* (August 2019) and the Alberta Environmental Protection and Enhancement Act and Waste Control Regulation.

Part 4 and Schedule 1, Table 2 in the Alberta *OHS Code* (AR 191/2021) defines occupational exposure limits (OELs) for a variety of airborne contaminants. The OEL for a particular contaminant represents conditions to which it is believed that nearly all workers may be exposed, day after day, without suffering from adverse health effects. An eight-hour OEL refers to the average concentration of a substance over an 8-hour period.

Sections 28 through 38 in Part 4 of the Alberta *OHS Code* (AR 191/2021), outline the requirements related to asbestos in facilities. Sections 31 to 35 specifically outline the limitations on the use of asbestos in buildings. The requirements of Sections 31 through 35 are summarized below:

- if asbestos fibres may be released in a building, all necessary steps to correct this unsafe condition must be taken;
- asbestos products that have the potential for releasing fibres may not be installed;
- all materials containing Crocidolite are banned from use;
- spray-applied asbestos products are banned from use;
- asbestos products, in general, must not be in a form or location where they could release airborne fibres and allow them to enter a ventilation system;
- buildings to be demolished are to have all materials with the potential of releasing asbestos fibres removed; and
- all materials with the potential of releasing asbestos fibres that may be impacted by a renovation must be either encapsulated, enclosed or removed.

Alberta OHS does not define lead-containing paint (LCP), nor does it specify any safe levels of lead in paint. The Alberta OHS Code, Part 4 – Chemical Hazards, Biological Hazards and Harmful Substances, stipulates the requirements for worker exposure to harmful substances. A code of practice (Section 26) is required if lead is present in a quantity of 10 kilograms or greater at a concentration at 0.1% by weight or more. These sections of the regulation apply to any workplace where a worker is or may be exposed to potentially hazardous levels of inorganic lead. The code also states that workers may not be exposed to levels of airborne lead above the OEL. Exposure monitoring, personal protective equipment, training, housekeeping and other requirements are also specified in the regulations.

For the purposes of compliance with the Alberta regulations, if there is a detectable level of lead in paint the OHS Code applies. In general, the OHS Code requires conducting an initial exposure assessment (air sampling) to determine if employees are exposed to lead. It applies to all workplace and construction activities that entail alteration, repair, demolition, renovation, removal, or salvage of structures or materials that contain lead.

Alberta Asbestos Abatement Manual

The *Alberta Asbestos Abatement Manual* (August 2019) is a guide published by Alberta OHS that is used for determining compliance with the OHS Code in the Province of Alberta. It covers basic information on asbestos, its health hazards, requirements for worker protection, safe work practices and the basic principles to follow for the safe abatement of ACMs. The *Alberta Asbestos Abatement Manual* defines an asbestos-containing material (ACM) as a product or material that contains asbestos in any quantity or percentage of asbestos. For the purposes of this report, if detectable levels of asbestos are identified through laboratory testing, the sampled material is considered an asbestos-containing material.

Alberta *Environmental Protection and Enhancement Act*

The Alberta *Environmental Protection and Enhancement Act* (AEPEA) is a law which was passed to protect and enhance the environment. As such, the *Act* and the regulations under the *Act* are enforceable by law. The *Act* places the onus on the owner; employer and employee to ensure no adverse effects are experienced in the environment.

The key waste regulation under the EPEA relating to hazardous building materials is the Waste Control Regulation (WCR), and Alberta's hazardous waste and hazardous recyclables management programs. The WCR provides guidance for the proper handling, storage, transportation, treatment, recycling and disposal of hazardous wastes in the province. The regulation also outlines the materials and criteria to be used to characterize waste as hazardous.

Although asbestos is not considered to be a hazardous waste, Alberta Environment and Parks (AEP) has published guidelines for the disposal of asbestos waste. Within the guidelines, criteria have been established for the handling, transportation and disposal of asbestos waste. Also within the guidelines, the types of landfills that can accept asbestos waste are outlined.

The Waste Control Regulation (Alberta Regulation 129/1996 with amendments up to and including Alberta Regulation 259/2021) refers to the Alberta User Guide for Waste Managers, which outlines the materials and criteria to be used to characterize waste as hazardous. Lead and PCBs have established criteria which define whether or not these materials are hazardous waste.

In accordance with Section 12.1 of the Waste Control Regulation, PCB-containing equipment is defined as any equipment, machinery or similar manufactured items, including a capacitor, and an electrical transformer, that contains a PCB liquid or solid. This definition includes fluorescent light ballasts which contain PCBs in the capacitor. Following removal of all fixtures, the barrelled PCB-containing light ballasts must be appropriately labelled, manifested and transported to an approved destruction and disposal facility in accordance with regulations specified by AEP.

Elemental mercury used in switches and mercury vapour used in fluorescent lamps can be recycled as outlined under Part 1 – Hazardous Waste and Part 2 - Hazardous Recyclables of the Waste Control Regulation. Within Part 1, the conditions, requirements and operating conditions for recycling facilities are outlined.

Other Guidelines

Alberta OHS published a Bulletin in November of 2013¹ that refers to the *Canada Consumer Product Safety Act, Surface Coating Materials Regulations* (SOR/2016-193) for the total allowable amount of lead in paint. The regulation stipulates that the total amount of lead may not exceed 90 mg/kg (ppm or about 0.009%) in surface coatings. For the purposes of this assessment, lead-containing is defined as a bulk sample of paint that has been found to exceed 90 mg/kg as analyzed by a laboratory.

Lead-containing paint is a potential concern both as a source of direct exposure (inhalation or ingestion of dust or paint chips), and as a contributor to lead in interior dust and exterior soil. A risk assessment of potential occupational exposure to lead must consider not only the presence of lead (any amount) but also the activity or impact of activity on the paints containing lead.

The guideline addresses this issue by establishing three tiers of trigger tasks where employees conducting these activities are assumed to potentially exceed the exposure limits and must be protected accordingly. There are also requirements under the Environmental Protection and Enhancement Act to prevent the release of lead into the environment.

The PCB Regulation, SOR/2008-273 was published to improve the protection of Canada's environment and the health of Canadians by minimizing the risks posed by the use, storage and release of polychlorinated biphenyls (PCBs) and also outlines the handling, storage and disposal of PCBs and PCB-containing equipment. The Regulation defines PCB-contaminated material as any material containing more than 50 parts per million (ppm) or 50 milligrams per kilogram (mg/kg) of PCBs. PCB content of ballasts can be evaluated through referencing the Environment Canada Report EPS 2/CC/2 (revised) August 1991, *Identification of Lamp Ballasts Containing PCBs*.

In 1994, the federal government filed the Ozone-Depleting Substances Regulations to amend controls on production and consumption of chlorofluorocarbons (CFC), halons, tetrachloride and methyl-chloroform. The Federal Halocarbon Regulations, 2003 (SOR/2003-289), was filed to ensure uniformity with respect to the release, recovery and recycling of ODS and their halocarbon alternatives in refrigeration and air conditioning. The Canadian Environmental Protection Act (1999), Ozone-Depleting Substances Regulations, (SOR/2016-137), controls the import, manufacture, use, sale, and export of ODS. The regulation also requires that permits be obtained to import or export used, recovered, recycled, and reclaimed ODS.

Radioactive material found in smoke detectors is regulated under the Nuclear Safety and Control Act (amended July 2013). Americium can be found in smoke detectors and is used to detect the presence of smoke or heat. The Nuclear Substances and Radiation Devices Regulation (SOR 2000-207) defines the disposal requirements of smoke detectors that contain a nuclear substance.

In July 2009, Alberta Occupational Health and Safety (OHS) published a document, *Best Practices – Mould at the Work Site*, to address mould at work sites. This document describes principles to determine the appropriate procedures to address fungi or fungal-contaminated materials. The document also presents basic information on mould, health hazards, requirements for worker protection, safe work procedures, management of mould, inspection criteria and applicable legislation.

The introduction of the *Best Practices* document corresponds to changes in the Alberta OHS Code. The OHS Code now has specific requirements regarding mould in the work place. Based on guidelines produced by Health

¹ Lead in the Workplace, CH071 – Chemical Hazards.

Canada, the Canadian Construction Association and other government industry organizations, the OHS Code, along with the Alberta *OHS Act and Regulations*, now states that the presence of mould in the indoor environment is an unacceptable condition and requires implementation of appropriate controls. Once mould is suspected in the work place, an assessment should be completed to determine the cause of mould growth, followed by correcting the cause (e.g., water infiltration) of the mould growth and finally removing mould-contaminated materials following established principles and procedures.

APPENDIX C

Assessment Limitations

This report has been prepared for the use of the Calgary Housing Company. Golder Associates Ltd. has no obligation, contractually or otherwise, to any third persons using or relying upon this report for any reason and therefore takes no responsibility for damage suffered by any third party as a result of actions taken or decisions made on the basis of information or conclusions of this report.

This report is based on data and information collected in association with the site inspections conducted by Golder Associates Ltd. as described herein and is based solely on site conditions encountered at the time of the site visit on July 22, 2021. Conditions may vary beyond the locations tested, and may vary over time.

Limited quantities of certain suspect ACMs were observed throughout the building. As such, Golder only collected one or two samples of each of these materials.

As the building was occupied at the time of the assessment, only approximately 10% of units were accessed. Out of the 10%, some tenants were present during the assessment; therefore, sampling was limited to the units where the tenants were not present. There are no assurances made regarding building materials in the other units or areas of the building that were not accessed.

No assurance is made regarding changes in conditions or practices subsequent to the time of the inspections. It was beyond the scope of this assessment to conduct a risk assessment with respect to any discovered microbial contamination and the potential health risks that may be associated with fungal exposure for building occupants.

Because of the limitations stated above, the findings, observations and conclusions expressed by Golder Associates Ltd. in this report are not, and should not be, considered an opinion concerning compliance of any past or present owner or operator of the site with any federal, provincial or local laws or regulations.

Golder Associates Ltd. will not be responsible for any real or perceived decrease in a property value, its saleability or ability to gain financing through the reporting of information in this report.

Golder Associates Ltd.'s observations and/or any readings obtained will represent observed and/or measured conditions only at the date and time observed and/or measured.

Golder Associates Ltd.'s assessment reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws, regulations, or industry standards, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of federal, provincial, or local governmental agencies. Any use of the assessment report constitutes acceptance of the limits of Golder Associates Ltd.'s liability.

APPENDIX D

Laboratory Reports



EMSL Canada Inc.

2333 18th Avenue NE, Unit 48 Calgary, AB T2E 8T6

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<http://www.EMSL.com> / CalgaryLab@EMSL.com

EMSL Canada Order: 652106382

Customer ID: 55EHPL50

Customer PO:

Project ID:

Attention: Scott Bishop

Golder Associates, Ltd.

Suite 120, 8610 - 36 Street NE

Calgary, AB T3J 2E1

Phone: (403) 267-3180

Fax: (403) 299-5606

Received Date: 07/27/2021 10:40 AM

Analysis Date: 08/03/2021 - 08/04/2021

Collected Date: 07/23/2021

Project: 18-100842.9068

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
HIL2-A-01A 652106382-0001	EXTERIOR, FRONT OF BUILDING / WHITE WINDOW CAULKING	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-01B 652106382-0002	EXTERIOR, FRONT OF BUILDING / WHITE WINDOW CAULKING	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-01C 652106382-0003	EXTERIOR, FRONT OF BUILDING / WHITE WINDOW CAULKING	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-02A 652106382-0004	EXTERIOR, REAR CONCRETE COLUMN / WHITE WALL CAULKING	White Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
HIL2-A-02B 652106382-0005	EXTERIOR, REAR CONCRETE COLUMN / WHITE WALL CAULKING	White Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
HIL2-A-02C 652106382-0006	EXTERIOR, REAR CONCRETE COLUMN / WHITE WALL CAULKING	White Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
HIL2-A-03A 652106382-0007	ROOFTOP ELEVATOR ROOM / CONCRETE TEXTURE COAT	Gray Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
HIL2-A-04A - Vinyl Floor Tile 652106382-0008	9TH FLOOR, SOUTH STAIRWELL / VINYL FLOOR TILE - 12" X 12" OFF-WHITE WITH BLACK SPLOTCHES	Black/Beige Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
HIL2-A-04A - Mastic 652106382-0008A	9TH FLOOR, SOUTH STAIRWELL / VINYL FLOOR TILE - 12" X 12" OFF-WHITE WITH BLACK SPLOTCHES	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-04B - Vinyl Floor Tile 652106382-0009	8TH FLOOR, NORTH STAIRWELL / VINYL FLOOR TILE - 12" X 12" OFF-WHITE WITH BLACK SPLOTCHES	Black/Beige Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile

Initial report from: 08/04/2021 12:18:11



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EMSL Canada Order: 652106382

Customer ID: 55EHPL50

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
HIL2-A-04B - Mastic 652106382-0009A	8TH FLOOR, NORTH STAIRWELL / VINYL FLOOR TILE - 12" X 12" OFF-WHITE WITH BLACK SPLOTCHES	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-04C 652106382-0010	7TH FLOOR, SOUTH STAIRWELL / VINYL FLOOR TILE - 12" X 12" OFF-WHITE WITH BLACK SPLOTCHES	Black/Beige Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
HIL2-A-05A 652106382-0011	9TH FLOOR, SOUTH STAIRWELL / DRYWALL JOINT COMPOUND	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HIL2-A-05B 652106382-0012	9TH FLOOR, GARBAGE ROOM / DRYWALL JOINT COMPOUND	White Non-Fibrous Homogeneous		20% Perlite 80% Non-fibrous (Other)	None Detected
HIL2-A-05C 652106382-0013	UNIT 806, BEDROOM CLOSET / DRYWALL JOINT COMPOUND	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HIL2-A-05D 652106382-0014	UNIT 705, NORTH BEDROOM CLOSET / DRYWALL JOINT COMPOUND	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HIL2-A-05E 652106382-0015	UNIT 404, HALL CLOSET / DRYWALL JOINT COMPOUND	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HIL2-A-05F 652106382-0016	2ND FLOOR, CORRIDOR / DRYWALL JOINT COMPOUND	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HIL2-A-05G 652106382-0017	MAIN FLOOR, MAINTENANCE ROOM / DRYWALL JOINT COMPOUND	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
HIL2-A-06A 652106382-0018	UNIT 905, KITCHEN / CEILING STIPPLE COAT	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-06B 652106382-0019	9TH FLOOR, GARBAGE ROOM / CEILING STIPPLE COAT	White Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
HIL2-A-06C - Stipple 1 / 2 652106382-0020 <i>Inseparable layers combined prior to analysis.</i>	UNIT 806, BEDROOM / CEILING STIPPLE COAT	White/Beige Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
HIL2-A-06D 652106382-0021	8TH FLOOR, CORRIDOR / CEILING STIPPLE COAT	White Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
HIL2-A-06E - Stipple 1 / 2 652106382-0022	UNIT 705, NORTH BEDROOM / CEILING STIPPLE COAT	White/Beige Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile

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EMSL Canada Order: 652106382

Customer ID: 55EHPL50

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
Inseparable layers combined prior to analysis.					
HIL2-A-06F 652106382-0023	UNIT 404, HALLWAY / CEILING STIPPLE COAT	White Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
HIL2-A-06G 652106382-0024	2ND FLOOR, GARBAGE ROOM / CEILING STIPPLE COAT	White Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
HIL2-A-07A 652106382-0025	UNIT 905, KITCHEN / VINYL SHEET FLOOR - GREEN AND BROWN MOSAIC PATTERN	Brown/Green Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-07B 652106382-0026	UNIT 905, KITCHEN / VINYL SHEET FLOOR - GREEN AND BROWN MOSAIC PATTERN	Brown/Green Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-07C - Paper Backing 652106382-0027	UNIT 905, KITCHEN / VINYL SHEET FLOOR - GREEN AND BROWN MOSAIC PATTERN	Brown Fibrous Homogeneous	10% Cellulose	50% Non-fibrous (Other)	40% Chrysotile
HIL2-A-07D 652106382-0028	UNIT 404, HALL CLOSET / VINYL SHEET FLOOR - GREEN AND BROWN MOSAIC PATTERN	Brown/Green Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-07E 652106382-0029	UNIT 404, HALL CLOSET / VINYL SHEET FLOOR - GREEN AND BROWN MOSAIC PATTERN	Brown/Green Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-8A - Vinyl Sheet Flooring 652106382-0030	UNIT 905, WASHROOM / VINYL SHEET FLOOR - BEIGE STONE PATTERN	Beige Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-8A - Mastic 652106382-0030A	UNIT 905, WASHROOM / VINYL SHEET FLOOR - BEIGE STONE PATTERN	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-8B - Vinyl Sheet Flooring 652106382-0031	UNIT 905, WASHROOM / VINYL SHEET FLOOR - BEIGE STONE PATTERN	Beige Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-8B - Mastic 652106382-0031A	UNIT 905, WASHROOM / VINYL SHEET FLOOR - BEIGE STONE PATTERN	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-8C 652106382-0032	UNIT 905, WASHROOM / VINYL SHEET FLOOR - BEIGE STONE PATTERN	Beige Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile

Initial report from: 08/04/2021 12:18:11



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EMSL Canada Order: 652106382

Customer ID: 55EHPL50

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HIL2-A-9A 652106382-0033	7TH FLOOR, GARBAGE ROOM / VINYL FLOOR TILE - 12" X 12" BEIGE WTH BROWN STREAKS	Brown/Yellow/Beige Fibrous Homogeneous	20% Cellulose 5% Synthetic	75% Non-fibrous (Other)	None Detected
<i>Inseparable mastic included in analysis.</i>					
HIL2-A-9B 652106382-0034	7TH FLOOR, GARBAGE ROOM / VINYL FLOOR TILE - 12" X 12" BEIGE WTH BROWN STREAKS	Brown/Beige Fibrous Homogeneous	20% Cellulose 5% Synthetic	75% Non-fibrous (Other)	None Detected
HIL2-A-9C 652106382-0035	4TH FLOOR, GARBAGE ROOM / VINYL FLOOR TILE - 12" X 12" BEIGE WTH BROWN STREAKS	Brown/Beige Fibrous Homogeneous	20% Cellulose 5% Synthetic	75% Non-fibrous (Other)	None Detected
HIL2-A-10A - Vinyl Sheet Flooring 652106382-0036	UNIT 404, WASHROOM / VINYL SHEET FLOOR - CREAM AND BEIGE MOSAIC PATTERN	Beige Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-10A - Mastic 652106382-0036A	UNIT 404, WASHROOM / VINYL SHEET FLOOR - CREAM AND BEIGE MOSAIC PATTERN	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-10B 652106382-0037	UNIT 404, WASHROOM / VINYL SHEET FLOOR - CREAM AND BEIGE MOSAIC PATTERN	Beige Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-10C 652106382-0038	UNIT 404, WASHROOM / VINYL SHEET FLOOR - CREAM AND BEIGE MOSAIC PATTERN	Beige Fibrous Homogeneous	5% Cellulose	75% Non-fibrous (Other)	20% Chrysotile
HIL2-A-11A 652106382-0039	UNIT 404, KITCHEN / BROWN ACOUSTIC SINK INSULATION	Brown/Gold Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
HIL2-A-12A 652106382-0040	4TH FLOOR, SOUTH CORNER / WHITE CORNERBEAD CAULKING	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-13A 652106382-0041	MAIN FLOOR, LOBBY / VINYL SHEET FLOOR - BEIGE MARBLE PATTERN	Beige Fibrous Homogeneous	20% Cellulose 2% Glass	78% Non-fibrous (Other)	None Detected
HIL2-A-13B 652106382-0042	MAIN FLOOR, CORRIDOR / VINYL SHEET FLOOR - BEIGE MARBLE PATTERN	Beige Fibrous Homogeneous	20% Cellulose 2% Glass	78% Non-fibrous (Other)	None Detected

Initial report from: 08/04/2021 12:18:11



EMSL Canada Inc.

2333 18th Avenue NE, Unit 48 Calgary, AB T2E 8T6

Tel/Fax: (403) 879-1149 / (403) 879-1152

<http://www.EMSL.com> / CalgaryLab@EMSL.com

EMSL Canada Order: 652106382

Customer ID: 55EHPL50

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HIL2-A-13C 652106382-0043	MAIN FLOOR, CORRIDOR STEPS / VINYL SHEET FLOOR - BEIGE MARBLE PATTERN	Beige Fibrous Homogeneous	20% Cellulose 2% Glass	78% Non-fibrous (Other)	None Detected
HIL2-A-14A 652106382-0044	MAIN FLOOR, CORRIDOR, SOUTH WALL / WALL TEXTURE COAT	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-14B 652106382-0045	MAIN FLOOR, CORRIDOR, SOUTH WALL / WALL TEXTURE COAT	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-14C - Texture Coat 652106382-0046	MAIN FLOOR, CORRIDOR, SOUTH WALL / WALL TEXTURE COAT	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HIL2-A-14C - Drywall Joint Compound 652106382-0046A	MAIN FLOOR, CORRIDOR, SOUTH WALL / WALL TEXTURE COAT	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile

Analyst(s)

Alexandra Carlson (10)

Leanne Roy (42)

Jefferson Salvador, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. 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. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Canada Inc. Calgary, AB NVLAP Lab Code 500100-0

Initial report from: 08/04/2021 12:18:11

Certificate of Analysis

Golder Associates Ltd. (Calgary)

#120, 6815 8 St NE
Calgary, AB T2E 7H7
Attn: Scott Bishop

Client PO:
Project: 18-100842.9068
Custody:

Report Date: 30-Jul-2021
Order Date: 27-Jul-2021

Order #: 2131220

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

Paracel ID	Client ID
2131220-01	HIL2-L-01
2131220-02	HIL2-L-02
2131220-03	HIL2-L-03
2131220-04	HIL2-L-04
2131220-05	HIL2-L-05
2131220-06	HIL2-L-06
2131220-07	HIL2-L-07
2131220-08	HIL2-L-08
2131220-09	HIL2-L-09

Approved By:



Alex Enfield, MSc
Lab Manager

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

Certificate of Analysis

Report Date: 30-Jul-2021

Client: Golder Associates Ltd. (Calgary)

Order Date: 27-Jul-2021

Client PO:

Project Description: 18-100842.9068

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	29-Jul-21	30-Jul-21

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

Certificate of Analysis

Report Date: 30-Jul-2021

Client: Golder Associates Ltd. (Calgary)

Order Date: 27-Jul-2021

Client PO:

Project Description: 18-100842.9068

Sample Results

Lead				Matrix: Paint
				Sample Date: 23-Jul-21
Paracel ID	Client ID	Units	MDL	Result
2131220-01	HIL2-L-01	ug/g	5	30
2131220-02	HIL2-L-02	ug/g	5	8
2131220-03	HIL2-L-03	ug/g	5	141
2131220-04	HIL2-L-04	ug/g	5	753
2131220-05	HIL2-L-05	ug/g	5	29
2131220-06	HIL2-L-06	ug/g	5	9
2131220-07	HIL2-L-07	ug/g	5	120
2131220-08	HIL2-L-08	ug/g	5	717
2131220-09	HIL2-L-09	ug/g	5	25

Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Matrix Blank									
Lead	ND	5	ug/g						
Matrix Duplicate									
Lead	121	5	ug/g	124			2.72	50	
Matrix Spike									
Lead	1260	5	ug/g	124	90.5	70-130			



Office
319 St. Laurent Blvd.
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100-749-1947
paracel@paracellabs.com

Chain of Custody (Lab Use Only)

Page 1 of 2

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www.paracellabs.com

Client Name: Golder Associates Ltd.	Project Reference: 18-100842.9068	TAT: ☒ Regular ☐ 3 Day ☐ 2 Day ☐ 1 Day Date Required: _____
Contact Name: Scott Bishop/ Cory Gray	Quote #	
Address: 120, 8610 - 36 Street NE Calgary, AB	PO #	
Telephone: (403) 299-5600	Email Address: Scott_Bishop@golder.com AND Cory_Gray@golder.com	

Criteria: ☐ O. Reg. 153 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

Parcel Order Number:		Matrix	Air Volume	# of Containers	Sample Taken		Lead												
Sample ID/Location Name					Date	Time													
1	Please see attached Sample List	P		9	July 23, 2021		☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Method of Delivery:

Relinquished By (Sign): <i>[Signature]</i>	Received by Driver/Depot: A. LANI20	Received at Lab: Am	Verified By: A. LANI20
Relinquished By (Print): Cory Gray	Date/Time: JUL 27/21 10:27	Date/Time: 28/7/21 9:35	Date/Time: JUL 27/21 10:59
Date/Time: July 26, 2021 / 14:15	Temperature: _____ °C	Temperature: _____ °C	pH Verified [] By: _____

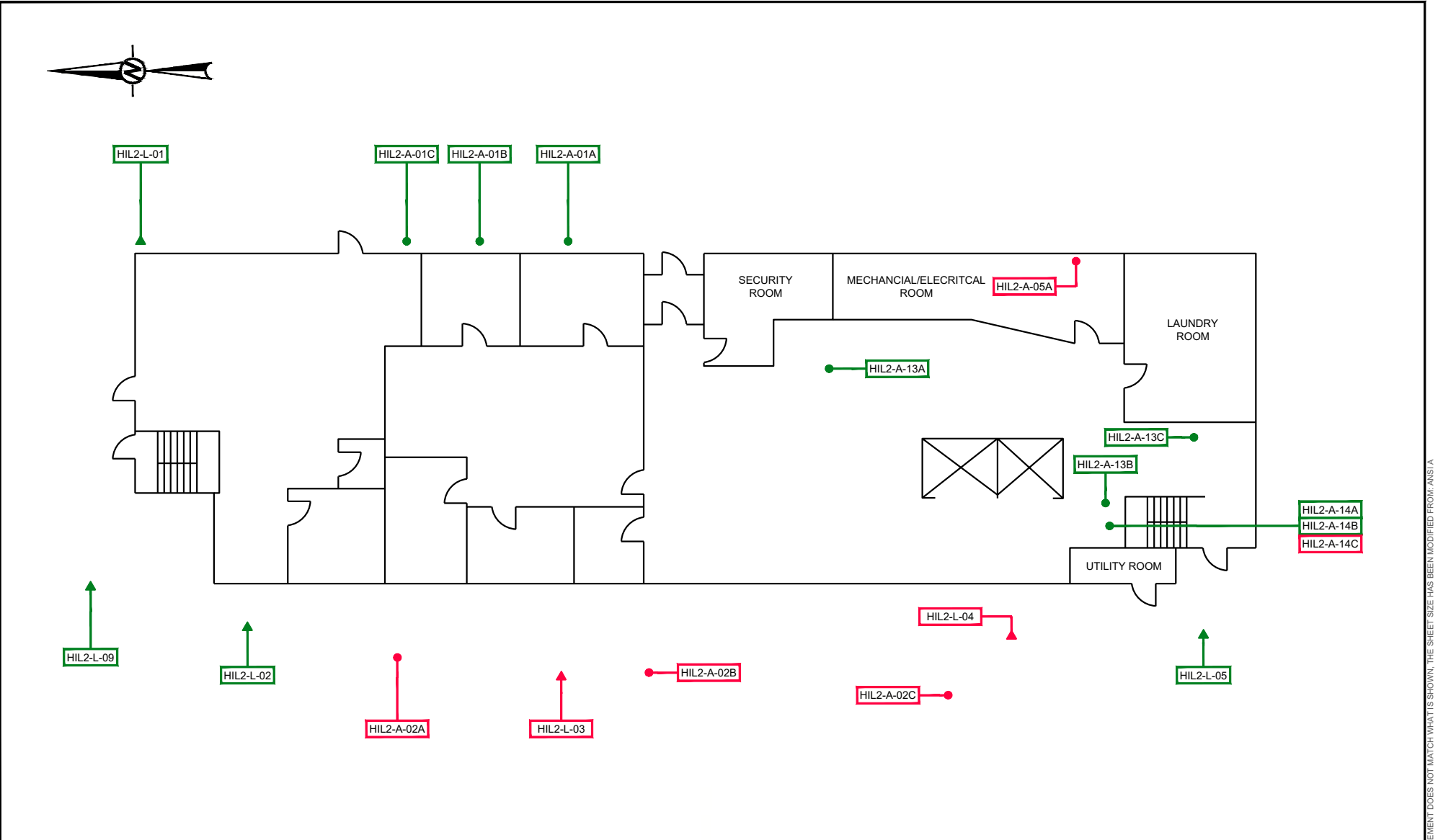
Sample Number	Sample Description	Sample Substrate	Sample Location
HIL2-L-01	Dark Brown	Concrete	NE Column, Exterior
HIL2-L-02	White	Wood	Rear Parkade Overhang, Exterior
HIL2-L-03	Forest Green	Wood	Rear Parkade Trim, Exterior
HIL2-L-04	Reddish Brown	Wood	Rear Parkade Garage Door, Exterior
HIL2-L-05	White	Concrete	SW Column, Exterior
HIL2-L-06	Grey	Concrete	9th Floor, South Stairwell, Steps
HIL2-L-07	Beige	Drywall	9th Floor, Garbage Room
HIL2-L-08	Light Beige	Metal	9th Floor, Garbage Room Door
HIL2-L-09	Black	Metal	Parkade Handrailing, Exterior

2131220



APPENDIX E

Floor Plans with Sample Locations



LEGEND	
	A - # POSITIVE ASBESTOS SAMPLE LOCATION
	A - # NEGATIVE ASBESTOS SAMPLE LOCATION
	L - # POSITIVE LEAD-PAINT SAMPLE LOCATION
	L - # NEGATIVE LEAD-PAINT SAMPLE LOCATION

NOTES
1. PDF OBTAINED FROM THE CLIENT.

CLIENT
CALGARY HOUSING COMPANY

CONSULTANT



GOLDER
MEMBER OF WSP

YYYY-MM-DD 2022-01-28

PREPARED SL

DESIGN CG

REVIEW FL

APPROVED KS

PROJECT
HAZARDOUS MATERIALS INVENTORY
HIL2, 325 10 STREET NW
CALGARY, ALBERTA

TITLE
MAIN FLOOR PLAN

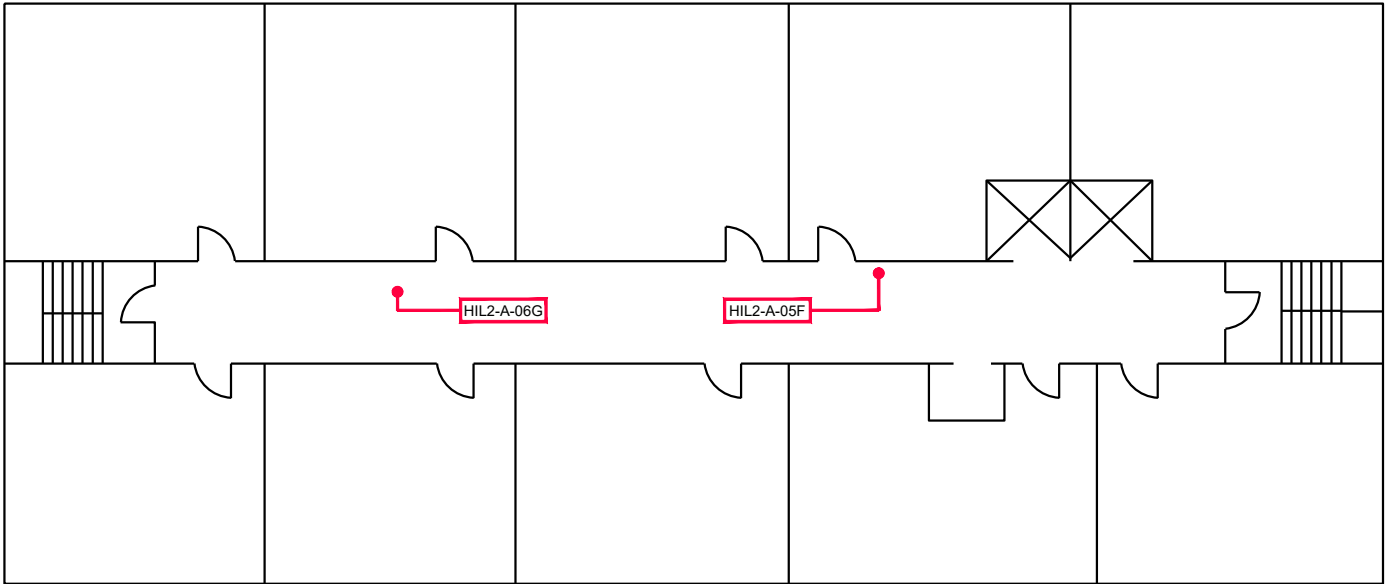
PROJECT No.
18100842

CONTROL
9068-HM-0001

Rev.
0

FIGURE
1

SCHEMATIC ONLY, NOT TO SCALE



LEGEND

- POSITIVE ASBESTOS SAMPLE LOCATION
- NEGATIVE ASBESTOS SAMPLE LOCATION
- POSITIVE LEAD-PAINT SAMPLE LOCATION
- NEGATIVE LEAD-PAINT SAMPLE LOCATION

NOTES

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YYYY-MM-DD 2022-01-28

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DESIGN CG

REVIEW FL

APPROVED KS

PROJECT
HAZARDOUS MATERIALS INVENTORY
HIL2, 325 10 STREET NW
CALGARY, ALBERTA

TITLE

2ND FLOOR PLAN

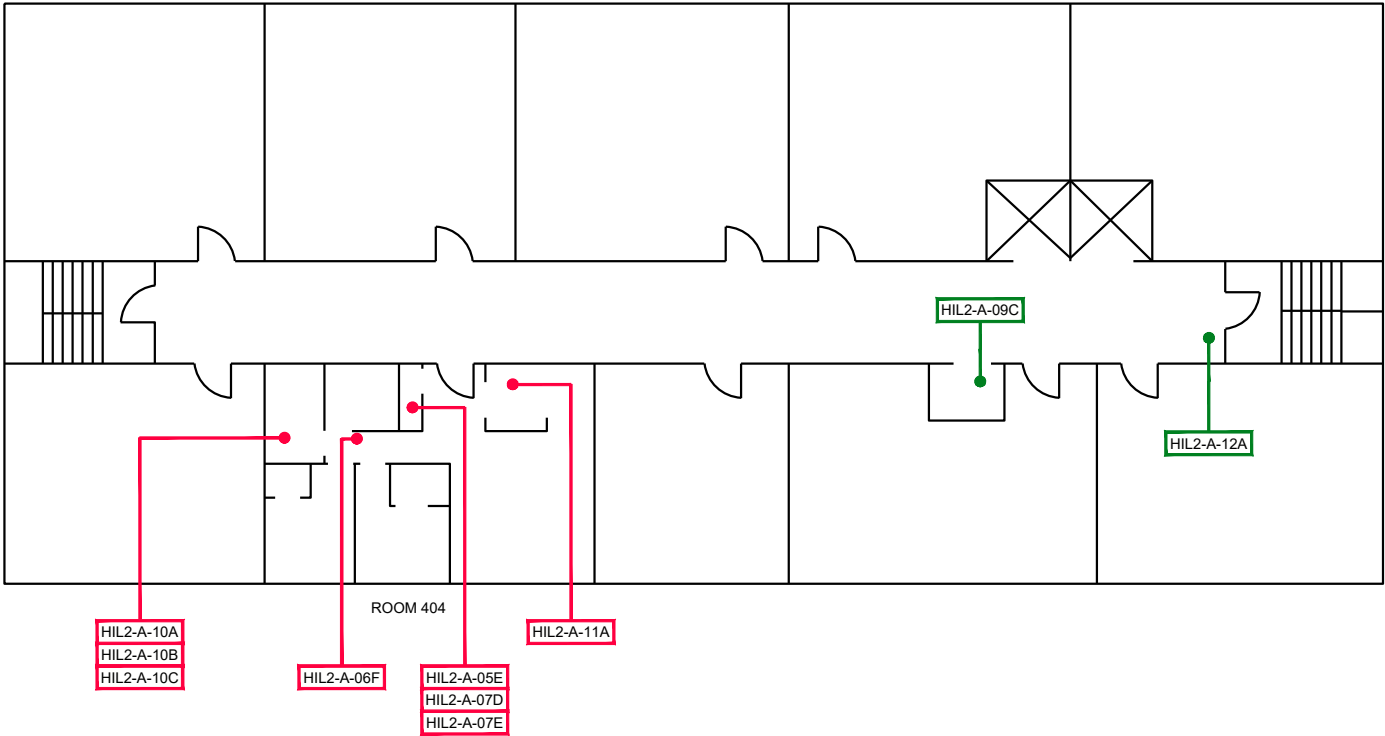
PROJECT No.
18100842

CONTROL
9068-HM-0002

Rev.
0

FIGURE
2

SCHEMATIC ONLY, NOT TO SCALE



LEGEND	
	A - # POSITIVE ASBESTOS SAMPLE LOCATION
	A - # NEGATIVE ASBESTOS SAMPLE LOCATION
	L - # POSITIVE LEAD-PAINT SAMPLE LOCATION
	L - # NEGATIVE LEAD-PAINT SAMPLE LOCATION

NOTES
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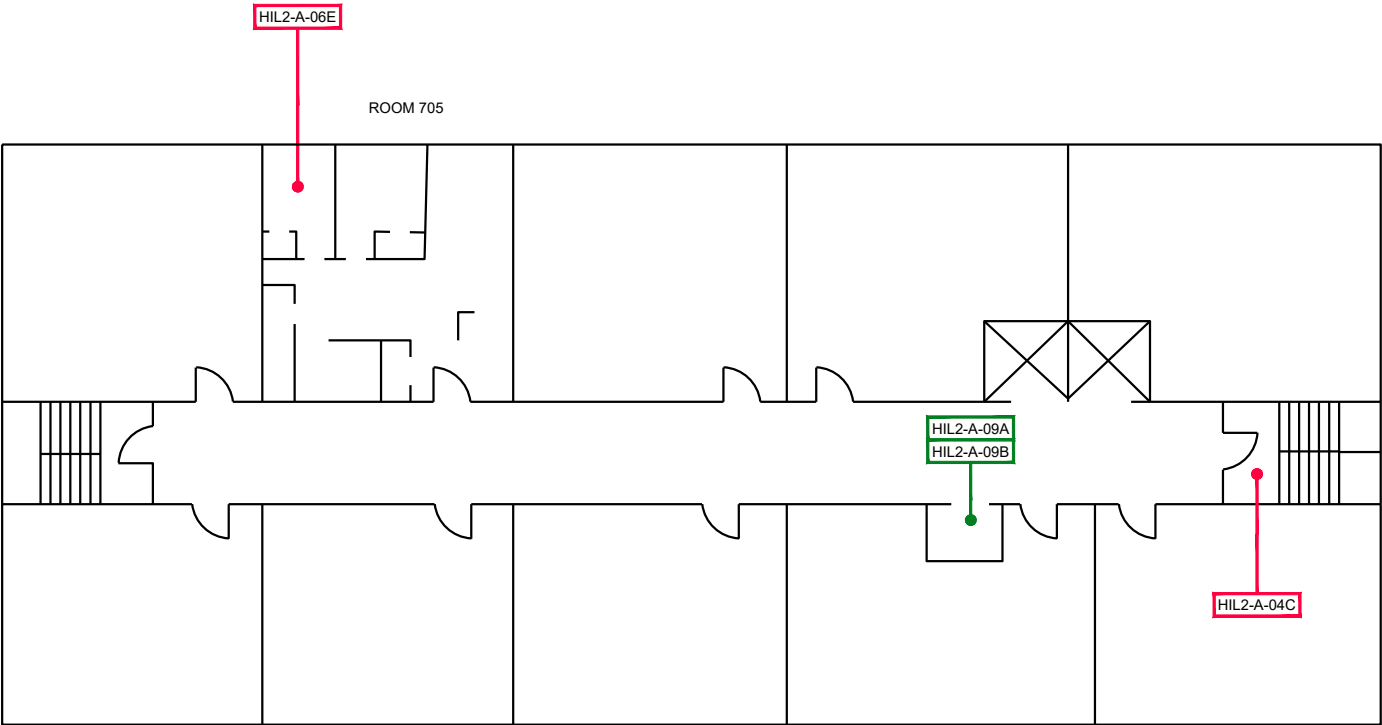
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DESIGN	CG
REVIEW	FL
APPROVED	KS

PROJECT
HAZARDOUS MATERIALS INVENTORY
HIL2, 325 10 STREET NW
CALGARY, ALBERTA
TITLE
4TH FLOOR PLAN

PROJECT No. 18100842	CONTROL 9068-HM-0003	Rev. 0	FIGURE 3
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SCHEMATIC ONLY, NOT TO SCALE



LEGEND	
	POSITIVE ASBESTOS SAMPLE LOCATION
	NEGATIVE ASBESTOS SAMPLE LOCATION
	POSITIVE LEAD-PAINT SAMPLE LOCATION
	NEGATIVE LEAD-PAINT SAMPLE LOCATION

NOTES
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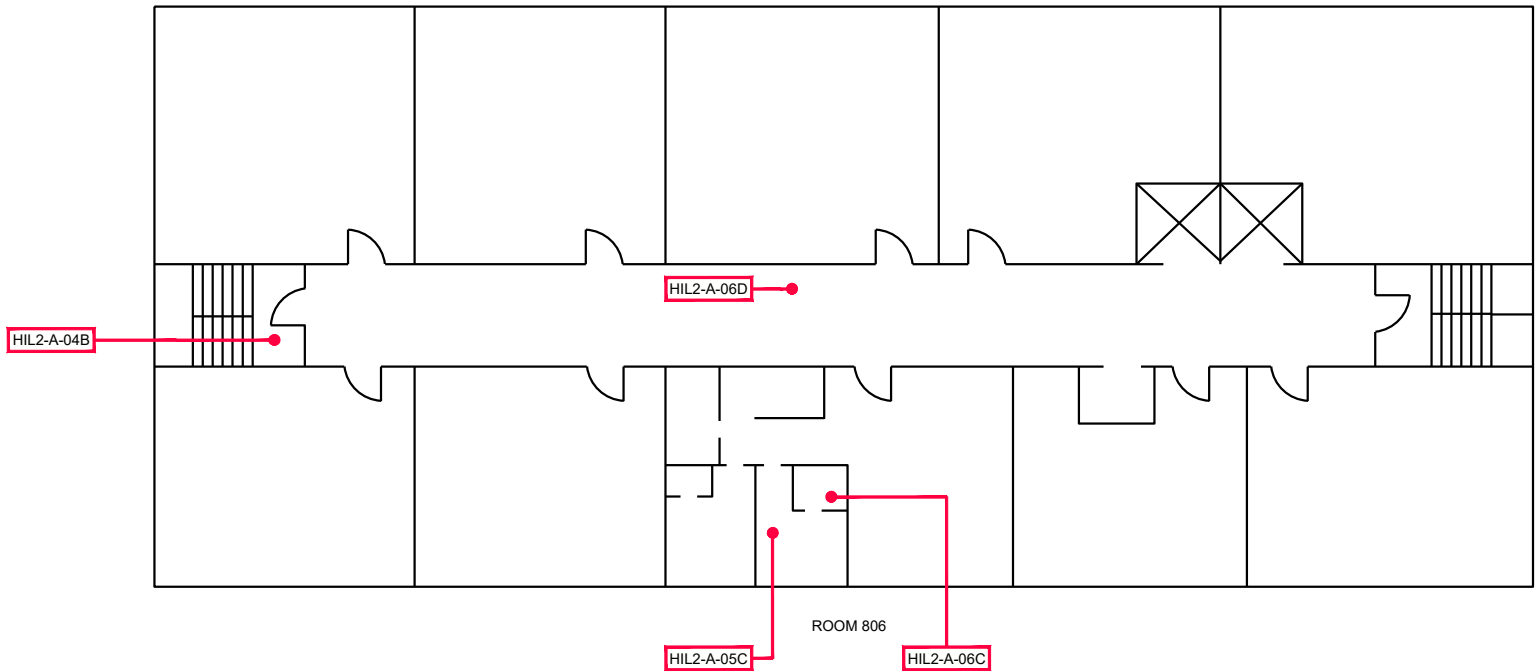
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PREPARED	SL
DESIGN	CG
REVIEW	FL
APPROVED	KS

PROJECT
HAZARDOUS MATERIALS INVENTORY
HIL2, 325 10 STREET NW
CALGARY, ALBERTA
TITLE
7TH FLOOR PLAN

PROJECT No. 18100842	CONTROL 9068-HM-0004	Rev. 0	FIGURE 4
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SCHEMATIC ONLY, NOT TO SCALE



LEGEND	
	A - # POSITIVE ASBESTOS SAMPLE LOCATION
	A - # NEGATIVE ASBESTOS SAMPLE LOCATION
	L - # POSITIVE LEAD-PAINT SAMPLE LOCATION
	L - # NEGATIVE LEAD-PAINT SAMPLE LOCATION

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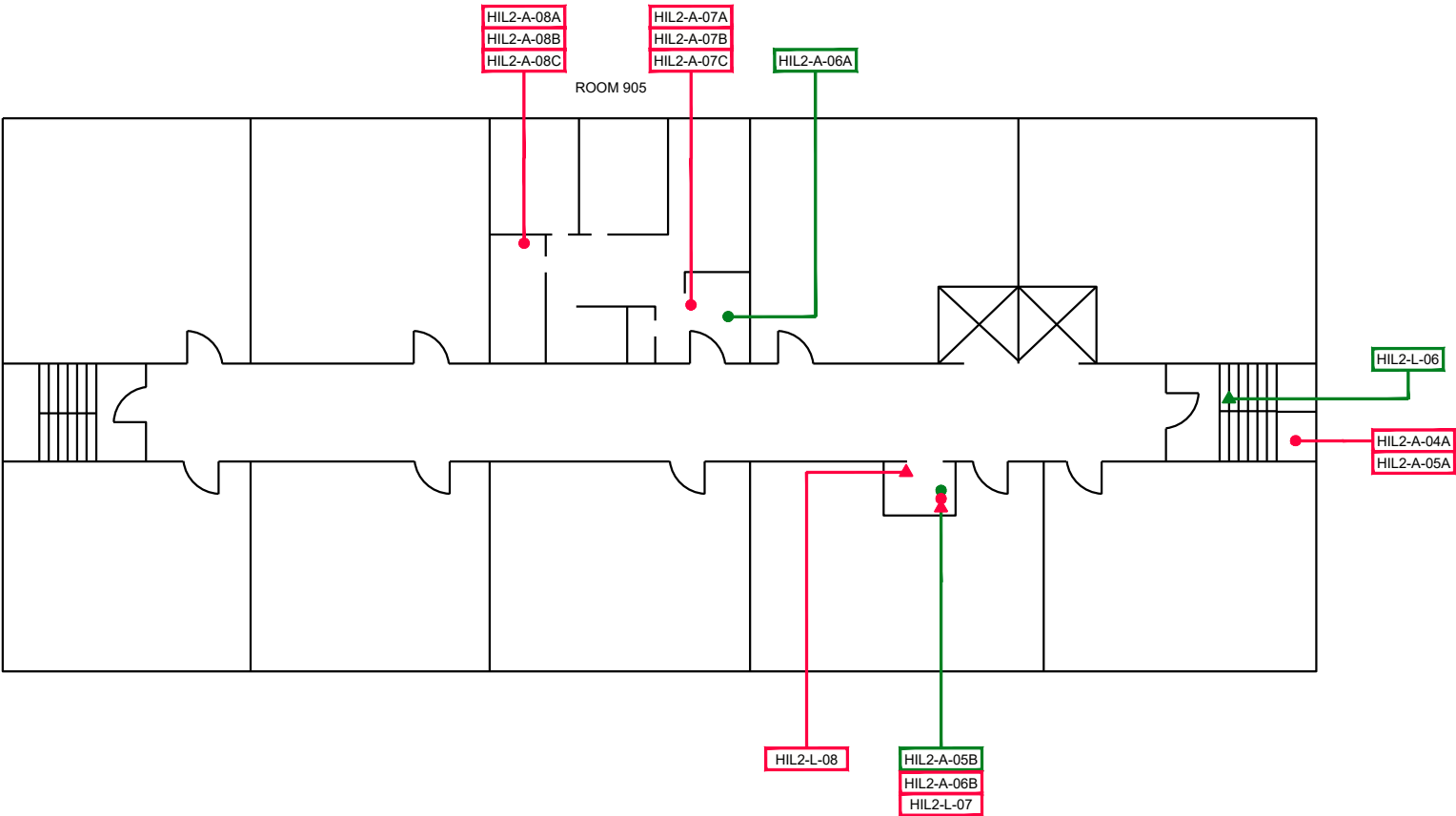
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PROJECT
HAZARDOUS MATERIALS INVENTORY
HIL2, 325 10 STREET NW
CALGARY, ALBERTA
TITLE
8TH FLOOR PLAN

PROJECT No.	CONTROL	Rev.	FIGURE
18100842	9068-HM-0005	0	5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

25 mm



LEGEND

- A - # POSITIVE ASBESTOS SAMPLE LOCATION
- A - # NEGATIVE ASBESTOS SAMPLE LOCATION
- ▲ L - # POSITIVE LEAD-PAINT SAMPLE LOCATION
- ▲ L - # NEGATIVE LEAD-PAINT SAMPLE LOCATION

NOTES

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CONSULTANT



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PREPARED SL

DESIGN CG

REVIEW FL

APPROVED KS

PROJECT
HAZARDOUS MATERIALS INVENTORY
HIL2, 325 10 STREET NW
CALGARY, ALBERTA

TITLE
9TH FLOOR PLAN

PROJECT No.
18100842

CONTROL
9068-HM-0006

Rev.
0

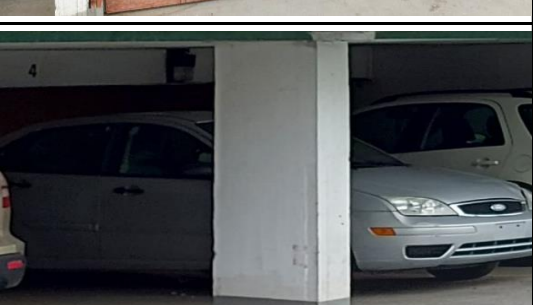
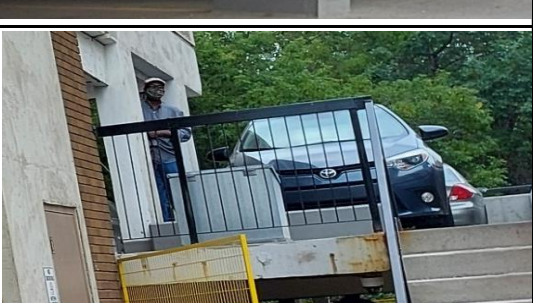
FIGURE
6

SCHEMATIC ONLY, NOT TO SCALE

APPENDIX F

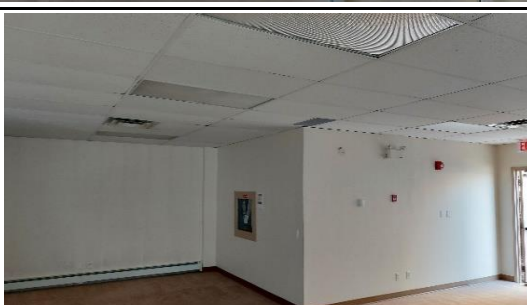
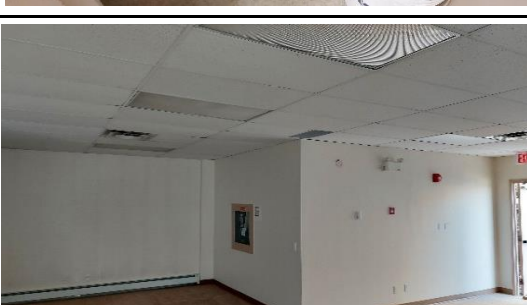
Hazardous Building Materials Spreadsheet

325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Asbestos	White Window Caulking	HIL2-A-01	A to C	260 Linear Feet	Low	Good	Moderate	None Detected	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Asbestos	White Wall Caulking	HIL2-A-02	A to C	150 Linear Feet	Low	Good	Moderate	3% Chrysotile	Low-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Lead-Paint	Dark Brown Paint on Concrete	HIL2-L-01	HIL2-L-01	2,100 Square Feet	N/A	Good	N/A	N/A	N/A	30 (Not considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Lead-Paint	White Paint on Wood Overhang	HIL2-L-02	HIL2-L-02	1,400 Square Feet	N/A	Good	N/A	N/A	N/A	8 (Not considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Lead-Paint	Forest Green Paint on Wood Trim	HIL2-L-03	HIL2-L-03	1,200 Square Feet	N/A	Good	N/A	N/A	N/A	141 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Lead-Paint	Reddish Brown Paint on Wood Garage Door	HIL2-L-04	HIL2-L-04	110 Square Feet	N/A	Good	N/A	N/A	N/A	753 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Lead-Paint	White Paint on Concrete Columns	HIL2-L-05	HIL2-L-05	700 Square Feet	N/A	Good	N/A	N/A	N/A	29 (Not considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Exterior	Lead-Paint	Black Paint on Metal	HIL2-L-09	HIL2-L-09	120 Square Feet	N/A	Good	N/A	N/A	N/A	25 (Not considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Boiler/Generator Room	Lead Batteries	Emergency Lights	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	

Note: Information in this spreadsheet should be read and interpreted in conjunction with the hazardous building materials assessment report.

325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Boiler/Generator Room	Lead Packing	Lead Packing in Bell and Spigot Joints	N/A	N/A	12 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Boiler/Generator Room	Mercury	Fluorescent Light Tubes Containing Mercury-Vapour	N/A	N/A	11 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Boiler/Generator Room	Polychlorinated Biphenyls (PCBs)	PCBs in Fluorescent Light Ballasts	N/A	N/A	6 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Boiler/Generator Room	Radioactive Materials	Smoke Detectors	N/A	N/A	2 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Former Daycare)	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	Reference	3,200 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Former Daycare)	Asbestos	Vinyl Sheet Floor, Beige Marble Pattern	HIL2-A-13	Reference	120 square Feet	Low	Good	High	None Detected	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Former Daycare)	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	3,200 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Former Daycare)	Lead-Paint	Light Grey Paint on Metal	HIL2-L-08	Reference	320 Square Feet	N/A	Good	N/A	N/A	N/A	717 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Former Daycare)	Mercury	Fluorescent Light Tubes Containing Mercury-Vapour	N/A	N/A	88 Each	N/A	N/A	N/A	N/A	N/A	N/A	

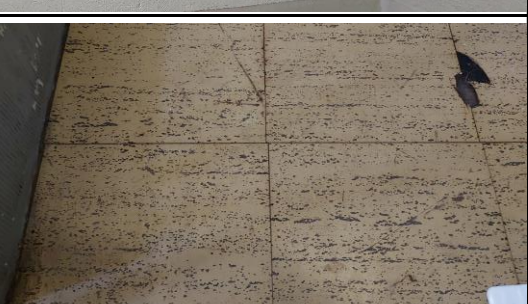
Note: Information in this spreadsheet should be read and interpreted in conjunction with the hazardous building materials assessment report.

325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Former Daycare)	Lead Batteries	Emergency Lights	N/A	N/A	2 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	G	2,300 Square Feet	Low	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Asbestos	Ceiling Stipple	HIL2-A-06	Reference	710 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Asbestos	Vinyl Sheet Floor, Beige Marble Pattern	HIL2-A-13	A to C	700 Square Feet	Low	Good	High	None Detected	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Asbestos	Wall Texture Coat	HIL2-A-14	A to C	80 Square Feet	High	Good	High	None Detected	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	2,300 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Lead-Paint	Light Grey Paint on Metal	HIL2-L-08	Reference	10 Doors and Frames	N/A	Good	N/A	N/A	N/A	717 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Lead Batteries	Emergency Lights	N/A	N/A	3 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Mercury	Fluorescent Light Tubes Containing Mercury-Vapour	N/A	N/A	32 Each	N/A	N/A	N/A	N/A	N/A	N/A	

Note: Information in this spreadsheet should be read and interpreted in conjunction with the hazardous building materials assessment report.

325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Mercury	Mercury Capsules in Thermostats	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Polychlorinated Biphenyls (PCBs)	PCBs in Fluorescent Light Ballasts	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Main Floor)	Radioactive Materials	Smoke Detectors	N/A	N/A	4 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Asbestos	Concrete Texture Coat	HIL2-A-03	Reference	6,400 Square Feet	High	Good	Low	None Detected	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Asbestos	Vinyl Floor Tile, 12" x 12" Off-White with Black Splotches	HIL2-A-04	A to C	640 Square Feet	Low	Good	High	4% Chrysotile	Low-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	A, B, and F	15,100 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Asbestos	Ceiling Stipple	HIL2-A-06	B, D, and G	3,360 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Asbestos	Vinyl Floor Tile, 12" x 12" Beige with Brown Streaks	HIL2-A-09	A to C	20 Square Feet	Low	Good	High	None Detected	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Asbestos	White Cornerbead Caulking	HIL2-A-12	A	20 Linear Feet	Low	Good	Moderate	None Detected	N/A	N/A	

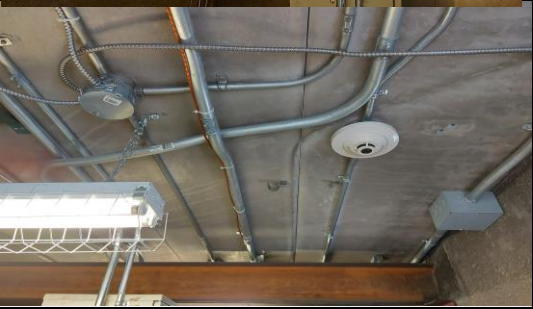
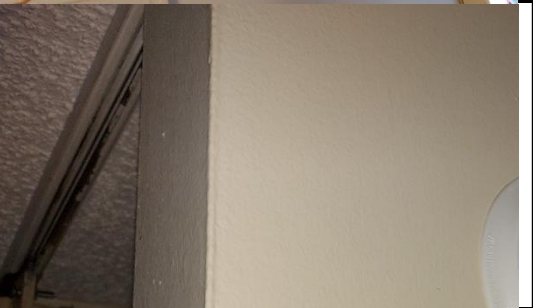
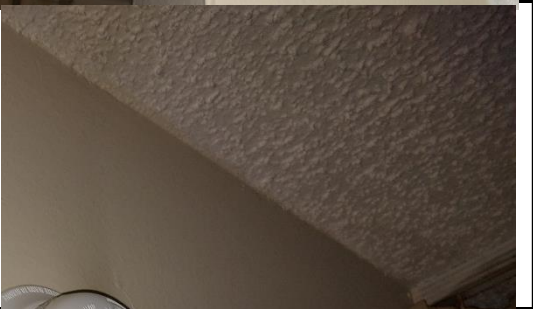
Note: Information in this spreadsheet should be read and interpreted in conjunction with the hazardous building materials assessment report.

325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Lead-Paint	Grey Paint on Concrete Steps	HIL2-L-06	HIL2-L-06	1,600 Square Feet	N/A	Good	N/A	N/A	N/A	9 (Not considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	HIL2-L-07	15,100 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors, Stairwells, Garbage Room)	Lead-Paint	Light Grey Paint on Metal	HIL2-L-08	HIL2-L-08	88 Doors and Frames	N/A	Good	N/A	N/A	N/A	717 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Lead Batteries	Emergency Lights	N/A	N/A	32 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Common Areas (Corridors and Stairwells)	Radioactive Materials	Smoke Detectors	N/A	N/A	24 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Rooftop Elevator Room	Asbestos	Concrete Texture Coat	HIL2-A-03	A	450 Square Feet	High	Good	Low	None Detected	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Rooftop Elevator Room	Lead Batteries	Emergency Lights	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Rooftop Elevator Room	Polychlorinated Biphenyls (PCBs)	Fluorescent Light Fixtures with PCB-containing Ballasts	N/A	N/A	2 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Rooftop Elevator Room	Mercury	Fluorescent Light Tubes Containing Mercury-Vapour	N/A	N/A	6 Each	N/A	N/A	N/A	N/A	N/A	N/A	

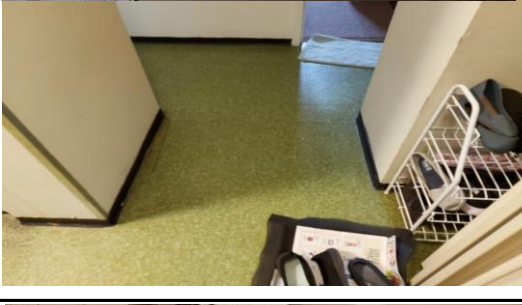
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325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Rooftop Elevator Room	Radioactive Materials	Smoke Detectors	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 208	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	Reference	1,600 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 208	Asbestos	Ceiling Stipple	HIL2-A-06	Reference	500 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 208	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	1,600 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 208	Radioactive Materials	Smoke Detectors	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 302	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	Reference	1,600 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 302	Asbestos	Ceiling Stipple	HIL2-A-06	Reference	500 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 302	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	1,600 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 302	Radioactive Materials	Smoke Detectors	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	

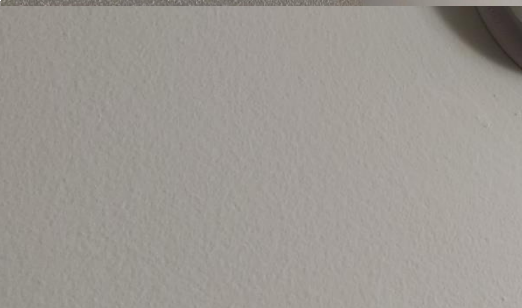
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325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Unit 404	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	E	1,600 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 404	Asbestos	Ceiling Stipple	HIL2-A-06	F	500 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 404	Asbestos	Vinyl Sheet Floor - Green and Brown Mosaic Pattern, Paper Backing	HIL2-A-07	D to E	320 Square Feet	Low	Good	High	40% Chrysotile	High-Risk (>100 ft²) Moderate-Risk (<100 ft²)	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 404	Asbestos	Vinyl Sheet Floor, Cream and Beige Mosaic Pattern	HIL2-A-10	A to C	80 Square Feet	Low	Good	High	20% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 404	Asbestos	Brown Acoustic Sink Insulation	HIL2-A-11	A	1 Sink	Low	Good	Moderate	3% Chrysotile	Low-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 404	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	1,600 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 404	Radioactive Materials	Smoke Detectors	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 705	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	D	1,600 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 705	Asbestos	Ceiling Stipple	HIL2-A-06	E	500 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	

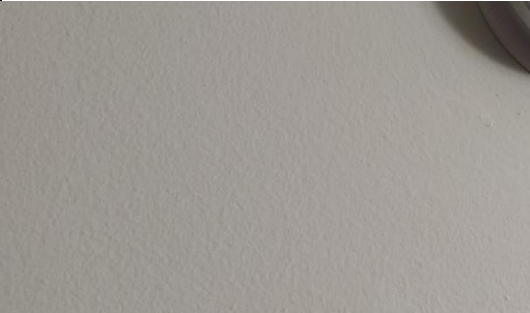
Note: Information in this spreadsheet should be read and interpreted in conjunction with the hazardous building materials assessment report.

325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Unit 705	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	1,600 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 705	Radioactive Materials	Smoke Detectors	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 806	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	C	1,600 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 806	Asbestos	Ceiling Stipple	HIL2-A-06	C	500 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 806	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	1,600 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 806	Radioactive Materials	Smoke Detectors	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 905	Asbestos	Drywall Joint Compound on Walls	HIL2-A-05	Reference	1,600 Square Feet	Moderate	Good	High	2% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 905	Asbestos	Ceiling Stipple	HIL2-A-06	A	500 Square Feet	High	Good	High	10% Chrysotile	High-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 905	Asbestos	Vinyl Sheet Floor, Green and Brown Mosaic Pattern	HIL2-A-07	A to C	320 Square Feet	Low	Good	High	20% Chrysotile	High-Risk (>100 ft ²) Moderate-Risk (<100 ft ²)	N/A	

Note: Information in this spreadsheet should be read and interpreted in conjunction with the hazardous building materials assessment report.

325 - 10 Street NW (HIL2, formerly HU2)
Hazardous Building Materials Inventory Spreadsheet

Building / Component Name (#)	Location	Material Category	Material & Description	Homogeneous Sample Group (HSG) / Sample #	Sample I.D.	Quantity ⁽¹⁾	Friable	Condition	Accessibility	% Asbestos and Type	Asbestos Abatement Category	Lead Concentration (mg/kg)	Representative Photograph
325 - 10 Street NW (HIL2, formerly HU2)	Unit 905	Asbestos	Vinyl Sheet Floor, Beige Stone Pattern	HIL2-A-08	A to C	80 Square Feet	Low	Good	High	20% Chrysotile	Moderate-Risk	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 905	Lead-Paint	Beige Paint on Drywall	HIL2-L-07	Reference	1,600 Square Feet	N/A	Good	N/A	N/A	N/A	120 (Considered to be lead-containing)	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 905	Mercury	Mercury Capsules in Thermostats	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	
325 - 10 Street NW (HIL2, formerly HU2)	Unit 905	Radioactive Materials	Smoke Detectors	N/A	N/A	1 Each	N/A	N/A	N/A	N/A	N/A	N/A	

Note: Information in this spreadsheet should be read and interpreted in conjunction with the hazardous building materials assessment report.

APPENDIX G

Estimated Abatement Budget

February 2022

Project No. 18100842

Raja Brahmakshatriya

Calgary Housing Company
Suite 900, 615 Macleod Trail SE
Calgary, Alberta
T2G 4T8
Raja.Brahmakshatriya@calgary.ca

**RE: HAZARDOUS BUILDING MATERIALS ABATEMENT BUDGET ESTIMATES,
PROPERTY HIL2, FORMERLY HU2, 325 - 10 STREET NW, CALGARY, ALBERTA**

Dear Mr. Brahmakshatriya:

As part of the hazardous building materials assessment conducted at 325 – 10 Street NW in Calgary, Alberta, Golder Associates Ltd. (Golder) has prepared a hazardous building materials abatement budget estimate.

This budget estimate includes for the safe removal and appropriate disposal of the identified hazardous building materials from the Site. The estimates are based on the following:

- Golder's hazardous building materials assessments conducted on July 22, 2021;
- extrapolations for the remaining units in property group HIL2, formerly HU2, not assessed;
- the current regulatory requirements for abatement and appropriate disposal;
- our estimates of prices for work in today's marketplace;
- the hazardous materials being abated on a pre-renovation or pre-demolition competitive bid basis;
- an allowance for installation of replacement materials/re-insulation is not included;
- Golder's assistance in the development of the specifications, tendering of the abatement work, and providing site inspection and air monitoring during the abatement process; and
- the identified hazardous building materials being abated on an individual basis.

If abatement work is grouped together in larger phased projects, or if the regulatory requirements for hazardous building materials handling change, significant variances in the actual cost to budget should be expected. As Golder's hazardous materials assessment was non-destructive in nature, a contingency has been included for potential concealed hazardous materials.

The total estimated budget for the removal of hazardous building materials is \$2,585,897.48, excluding taxes. A breakdown for each hazardous building material has been attached. This budget should be read in conjunction with Golder's hazardous building materials assessment report, including the assumptions associated with the hazardous building materials, which provide greater clarity and context on material quantities and locations.

We trust this information meets your needs. If you have any questions or require any further information, please feel free to contact the undersigned.

Golder Associates Ltd.



Kara Snelling, BA
OHS Project Manager



Fred Louth, BAIE, PMP
Associate, Senior OHS Project Manager



Dave Ayriss, BSc, CIH, CRSP, C-NRPP
Associate, Senior Occupational Hygienist

KS/FL/DA/

Attachments: Attachment 1 - Estimated Hazmat Abatement Budget

ATTACHMENT 1

Estimated Hazmat Abatement Budget

**Estimated Hazmat Abatement Budget
325 - 10 Street NW (HIL2, formerly HU2)**

18100842

Hazardous Building Materials	Approximate Quantity	Unit of Measure	Unit Rate	Estimated Budget
Asbestos-Containing Materials ⁽¹⁾				
Caulking	150	Linear Feet	\$10.00	\$1,500.00
Drywall Joint Compound	123,000	Square Feet	\$7.50	\$922,500.00
Ceiling Stipple (on Concrete)	37,000	Square Feet	\$25.00	\$925,000.00
Vinyl Sheet Flooring	11,200	Square Feet	\$8.00	\$89,600.00
Vinyl Floor Tile	640	Square Feet	\$6.50	\$4,160.00
Brown Sink Insulation	7	Sink	\$500.00	\$3,500.00
Sub-Total				\$1,946,260.00
Other Hazardous Building Materials ⁽²⁾				
Lead Batteries in Emergency Lights	40	Each	\$50.00	\$2,000.00
Lead Packing in Bell and Spigot Drain Pipe Joints	12	Each	\$250.00	\$3,000.00
Mercury Capsules in Thermostats	8	Each	\$100.00	\$800.00
Fluorescent Light Tubes with Mercury-Vapour	140	Each	\$5.00	\$700.00
PCB-Containing Light Ballasts	10	Each	\$100.00	\$1,000.00
Smoke Detectors with Radioactive Components	31	Each	\$50.00	\$1,550.00
Sub-Total				\$9,050.00
Contingency (15% of Subtotal) ⁽³⁾				\$293,296.50
Hazardous Materials Consulting ⁽⁴⁾				\$337,290.98
Total (excluding taxes)				\$2,585,897.48

Notes/Assumptions:

An estimate to remove the lead-containing paint has not been prepared as it was observed to be in good condition at the time of the assessment and does not require abatement in it's current condition.

⁽¹⁾ The class estimate for all listed asbestos-containing materials is designated as Class 4, due to the non-destructive nature of the assessment, potential variability in contractor pricing and due to Golder assessing only 10% of the units.

⁽²⁾ The class estimate for all listed remaining hazardous building materials is designated as Class 3, due to the non-destructive nature of the assessment, the limited number of units entered during the assessment and potential variability in contractor pricing. Quantity estimates were prepared based on extapolations based on site observations and available site information.

⁽³⁾ The 15% contingency has been carried for inaccessible hazardous building materials that may be encountered during abatement or demolition activities.

⁽⁴⁾ Hazardous Building Materials Consulting includes preparation of abatement scopes of work and tender specifications, assisting with tendering, daily air monitoring and site assessments during abatement activities, and final reporting.



golder.com