



August 23, 2017

CITY OF SASKATOON

Asbestos-Containing Building Materials Assessment Report - Marr Residence



REPORT

Submitted to:

The City of Saskatoon
1101 Avenue P North
Saskatoon, SK S7L 7K6

Report Number: 1667963

Distribution:

One Copy: City of Saskatoon
One Copy: Golder Associates Ltd.





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1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by the City of Saskatoon (the Client) to conduct an asbestos-containing building materials assessment of the Marr Residence (the Site) located at 326 – 11th Street East in Saskatoon, Saskatchewan. This assessment report details our findings, conclusions and recommendations for the Site. A walkthrough of the Site was conducted on June 8, 2017 and the assessment was conducted on June 14, 2017 by Kody Henderson, OHS Project Manager. Asbestos-containing building materials were identified within the Marr Residence during the assessment. Further information is provided in Section 3.0.

2.0 SCOPE OF WORK

In accordance with Tender 16-0844, Golder's scope of work included conducting an asbestos-containing building materials assessment of the Site to evaluate the quantities, locations, and conditions of asbestos-containing building materials.

Following the field work, Golder prepared this assessment report that includes laboratory analysis results, findings of the assessment, conclusions, and recommendations.

2.1 Asbestos-Containing Materials

The assessment involved a non-destructive inspection of the Site to assess the type and extent of suspect ACMs in the facility. The systems that were reviewed as part of the inspections included, but were not limited to:

- *Structural* - systems including: insulation between solid webbed joists, fireproofing, building envelope, and interior/exterior caulking around windows and doors;
- *Mechanical* - systems insulation including: hot water and steam system, condensate system, chilled water system, glycol system, domestic hot and cold water, emergency generator exhaust, boiler units, heat exchangers, and asbestos cement piping; and
- *Architectural* - systems including: texture coats, sheet flooring, vinyl floor tile, acoustical spray-applied materials, condensation control applications, ceiling tile, wall board, drywall joint compound, and asbestos sheet products.

Systematic sampling of suspect ACMs was conducted as part of the assessment. Samples were submitted under chain of custody to International Asbestos Testing Laboratory Inc. (IATL) and analyzed for asbestos type and percentage content using Polarized Light Microscopy (PLM) in accordance with EPA methodologies (EPA 600/R-93/116).

Further information related to the assessment and sample collection methods can be found in the Golder document *Golder Asbestos Assessment General Survey Plan and Protocol* provided to the Client.



3.0 RESULTS AND DISCUSSION

The Marr Residence was constructed in 1885 with renovations completed around 1980. The Marr Residence consists of general rooms throughout the main and second floor and an open storage area in the basement. During the assessment, the entire building was treated as one functional space.

- The Laboratory Certificate of Analysis report for the bulk asbestos samples is included in Appendix A.
- Photographs collected during the assessment are provided in Appendix B.
- A room by room spreadsheet outlining the locations, quantities, friability, and condition of identified asbestos-containing materials as well as additional information is provided in Appendix C.
- Floor plans outlining the sample locations and locations of identified asbestos-containing materials is provided in Appendix D.
- Please refer to Sections 4.0 and 6.0 of this report for a summary of the limitations encountered.

3.1 Asbestos-Containing Materials

A total of twenty-one (21) samples of building materials were collected and tested for asbestos content during the assessment of the Marr Residence. Three (3) of the samples were found to contain asbestos.

3.1.1 List of Identified Asbestos-Containing Materials

A list of the identified asbestos-containing materials is provided below.

- Chimney Paper Wrap;
- Duct Paper Wrap; and
- Incandescent Light Fixture Paper.

Further information on the identified asbestos-containing materials listed is provided below.

Chimney Paper Wrap

One (1) sample of chimney paper wrap was collected during the assessment. The sample collected was found to contain 80% Chrysotile asbestos. Asbestos-containing chimney paper wrap (see Photograph 1 in Appendix B) was observed in the following locations:

- Room B100/B101/B102 (approximately 5 ft²).

Based on information provided by the Client, the visible asbestos-containing chimney paper wrap was removed from within the above location. Additional asbestos-containing chimney paper wrap may be located within concealed locations along the chimney.

Duct Paper Wrap

One (1) sample of duct paper wrap was collected during the assessment. The sample collected was found to contain 80% Chrysotile asbestos. Asbestos-containing duct paper wrap (see Photograph 2 in Appendix B) was observed in the following locations:

- Room B100/B101/B102 (approximately 5 ft²).



Additional asbestos-containing duct paper wrap may be located within concealed locations along the duct work throughout the Site.

Heating registers with suspected asbestos-containing duct paper wrap were observed in the following locations:

- Room 101 (approximately 1 heat register);
- Room 102 (approximately 1 heat register);
- Room 103 (approximately 1 heat register);
- Room 104 (approximately 1 heat register);
- Room 105 (approximately 1 heat register);
- Room 202 (approximately 1 heat register);
- Room 203 (approximately 1 heat register); and
- Room 204 (approximately 1 heat register).

Incandescent Light Fixture Paper

One (1) sample of incandescent light fixture paper was collected during the assessment. The sample collected was found to contain 80% Chrysotile asbestos. Asbestos-containing incandescent light fixture paper (see Photograph 3 in Appendix B) was observed in the following locations:

- Room 104 (approximately 1 light).

3.1.2 Non Asbestos-Containing Materials

The following materials were sampled during this assessment and were found to not contain asbestos or were observed to be a non-suspect materials:

- Drywall joint compound;
- Heat register panel;
- Brick mortar;
- Plaster;
- Cast iron joint packing;
- Concrete scratch coat; and
- The piping and drain lines throughout the site were observed to be constructed of PVC.

4.0 EXCLUDED AREAS AND MATERIALS

The following is a list of the areas and/or materials excluded during the assessment.

- Building materials accessible by a ten foot ladder were assessed by Golder during the assessment. Materials located at heights that were inaccessible from a ten foot ladder were not assessed. If materials at heights are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.



- The roof and associated components were not assessed by Golder during the assessment as per Tender 16-0844. If the roof and associated components are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the visual assessment and the laboratory analytical results, the following project specific conclusions and recommendations are provided.

5.1 Asbestos-Containing Materials

Asbestos was positively identified within the chimney paper wrap, duct paper wrap, and incandescent light fixture paper on Site. Asbestos was not identified in the remaining samples collected and analyzed.

If the building is scheduled for renovations that will impact the identified asbestos-containing materials, it must be removed. If additional suspect asbestos-containing building materials are encountered during renovation activities, additional sampling should be undertaken to evaluate asbestos content.

Removal work should be completed by workers that are adequately trained in the hazards and proper methods of working with asbestos. Throughout the abatement activities, appropriate air monitoring and inspections should be conducted by a competent person to document that contamination is contained and that ACM are disposed of appropriately. Ensure asbestos waste is disposed of in accordance with the requirements of the Government of Saskatchewan.

All quantities listed in the report are approximate and are based on the conditions at the time of the assessment. Prior to abatement work it is recommended that a competent person conduct a review of the site to quantify and obtain all measurements of all building materials detailed in this report for cost estimating purposes.

In anticipation of potential abatement, Golder's recommendations for the asbestos-containing materials identified during the assessment are outlined below.

Chimney Paper Wrap

If scheduled for impact, asbestos-containing chimney paper wrap should be abated following low or moderate-risk (based on square footage impacted) abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Based on information provided by the Client, the visible chimney paper wrap was removed from Rooms B100/B101/B102.

Duct Paper Wrap

If scheduled for impact, asbestos-containing duct paper wrap should be abated following low or moderate-risk (based on square footage impacted) abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the duct paper wrap was observed in good condition, and with a priority rating of 4 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact however removal should be conducted in a reasonable timeframe.

Incandescent Light Fixture Paper

If scheduled for impact, asbestos-containing incandescent light fixture paper should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the duct paper wrap was observed in good condition, and with a priority rating of 4 (please see the room by



room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact however removal should be conducted in a reasonable timeframe.

6.0 SURVEY LIMITATIONS

This report is based on data and information collected by Golder during the assessment conducted on June 14, 2017 and is based solely on site conditions encountered at the time of the assessment. Any use of this document or the findings, conclusions or recommendations provided in this report by any person other than the City of Saskatoon is at the sole risk of such user.

The conclusions and recommendations contained in this survey report are based upon professional opinions with regard to the subject matter. These opinions are in accordance with currently accepted environmental assessment standards and practices applicable to these locations and are subject to the following inherent limitations:

The data and findings presented in this report are valid as of the dates of the investigations. The passage of time, manifestation of latent conditions or occurrence of future events may warrant further exploration at the properties, analysis of the data, and re-evaluation of the findings, observations, and conclusions expressed in this report. No assurance is made regarding changes in conditions or practices subsequent to the time of the investigation. It was beyond the scope of this assessment to conduct a risk assessment and the potential health risks that may be associated with asbestos exposure for building occupants.

The data reported and the findings, observations and conclusions expressed in this report are limited by the Scope of Work. The Scope of Work was defined by Tender 16-0844 and the initial site walkthrough with the Client, the time and budgetary constraints imposed by the Client, and availability of access to the property.

Because of the limitations stated above, the findings, observations and conclusions expressed by Golder in this report are not, and must 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.

No warranty or guarantee, whether expressed or implied, is made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of investigation.

Golder'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 and regulations, 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 survey report constitutes acceptance of the limits of Golder's liability.

Golder's liability extends only to its client and not to other parties who may obtain this survey report. Issues raised by the report must be reviewed by appropriate legal counsel.

7.0 CLOSURE

We trust the information presented in this report meets your requirements. If you have any questions please contact Kody Henderson at (780) 483-3499 or email at kody_henderson@golder.com. Thank you for the opportunity to be of service. We look forward to working with you again in the future.



Report Signature Page

GOLDER ASSOCIATES LTD.

Prepared by:

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OHS Project Manager

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Associate, OHS Project Director

KH/AG/ba

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APPENDIX A

Laboratory Certificate of Analysis Report

CERTIFICATE OF ANALYSIS

Client: Golder Associates Ltd
16820 107 Ave
Edmonton AB T5P 4C3

Report Date: 6/29/2017
Report No.: 539487 - PLM
Project: City of Saskatoon - Marr Residence
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6271488
Client No.: A-001
Percent Asbestos:
None Detected

Analyst Observation: Off-White Joint Compound
Client Description: Drywall Joint Compound
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6271489
Client No.: A-002
Percent Asbestos:
None Detected

Analyst Observation: Off-White Joint Compound
Client Description: Drywall Joint Compound
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6271490
Client No.: A-003
Percent Asbestos:
None Detected

Analyst Observation: Off-White Joint Compound
Client Description: Drywall Joint Compound
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6271491
Client No.: A-004
Percent Asbestos:
80 Chrysotile

Analyst Observation: Tan Insulation
Client Description: Chimney Paper Wrap
Percent Non-Asbestos Fibrous Material:
5 Cellulose

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
15

Lab No.: 6271492
Client No.: A-005
Percent Asbestos:
80 Chrysotile

Analyst Observation: Tan Insulation
Client Description: Duct Tape/Wrap
Percent Non-Asbestos Fibrous Material:
5 Cellulose

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
15

Lab No.: 6271493
Client No.: A-006
Percent Asbestos:
None Detected

Analyst Observation: Tan Paper
Client Description: Heat Register Panel
Percent Non-Asbestos Fibrous Material:
100 Cellulose

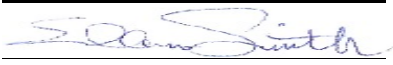
Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
None Detected

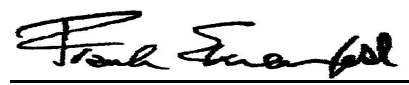
Lab No.: 6271493(L2)
Client No.: A-006
Percent Asbestos:
None Detected

Analyst Observation: Tan Wrap
Client Description: Heat Register Panel
Percent Non-Asbestos Fibrous Material:
100 Cellulose

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
None Detected

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/21/2017
Date Analyzed: 06/29/2017
Signature: 
Analyst: Ellen Smith

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Golder Associates Ltd
16820 107 Ave
Edmonton AB T5P 4C3

Report Date: 6/29/2017
Report No.: 539487 - PLM
Project: City of Saskatoon - Marr Residence
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6271494	Analyst Observation: Tan Mortar	Location: Room 106
Client No.: A-007	Client Description: Brick Mortar	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6271495	Analyst Observation: Lt Tan Plaster	Location: Room 103
Client No.: A-008	Client Description: Plaster	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 1 Hair	<u>Percent Non-Fibrous Material:</u> 99

Lab No.: 6271495(L2)	Analyst Observation: White Plaster	Location: Room 103
Client No.: A-008	Client Description: Plaster	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

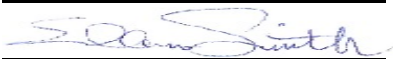
Lab No.: 6271495(L3)	Analyst Observation: White Compound Material	Location: Room 103
Client No.: A-008	Client Description: Plaster	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

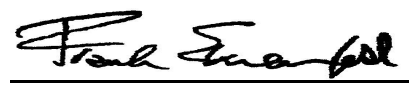
Lab No.: 6271496	Analyst Observation: Off-White Plaster	Location: Room 104
Client No.: A-009	Client Description: Plaster	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6271497	Analyst Observation: White Plaster	Location: Room 102
Client No.: A-010	Client Description: Plaster	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6271497(L2)	Analyst Observation: Lt Green/Off-White Compound Material	Location: Room 102
Client No.: A-010	Client Description: Plaster	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/21/2017
Date Analyzed: 06/29/2017
Signature: 
Analyst: Ellen Smith

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Golder Associates Ltd
16820 107 Ave
Edmonton AB T5P 4C3

Report Date: 6/29/2017
Report No.: 539487 - PLM
Project: City of Saskatoon - Marr Residence
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6271498
Client No.: A-011
Percent Asbestos:
None Detected

Analyst Observation: Lt Tan Plaster
Client Description: Plaster
Percent Non-Asbestos Fibrous Material:
1 Hair

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
99

Lab No.: 6271498(L2)
Client No.: A-011
Percent Asbestos:
None Detected

Analyst Observation: White Plaster
Client Description: Plaster
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rooms B100/B101/B102
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6271499
Client No.: A-012
Percent Asbestos:
None Detected

Analyst Observation: Tan Plaster
Client Description: Plaster
Percent Non-Asbestos Fibrous Material:
1 Hair
1 Cellulose

Location: Room 202
Facility:
Percent Non-Fibrous Material:
98

Lab No.: 6271499(L2)
Client No.: A-012
Percent Asbestos:
None Detected

Analyst Observation: White Plaster
Client Description: Plaster
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 202
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6271500
Client No.: A-013
Percent Asbestos:
None Detected

Analyst Observation: Lt Grey Plaster
Client Description: Plaster
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 203
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6271500(L2)
Client No.: A-013
Percent Asbestos:
None Detected

Analyst Observation: White Plaster
Client Description: Plaster
Percent Non-Asbestos Fibrous Material:
None Detected


Location: Room 203
Facility:
Percent Non-Fibrous Material:
100

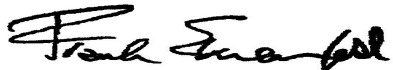
Lab No.: 6271501
Client No.: A-014
Percent Asbestos:
None Detected

Analyst Observation: Lt Grey Plaster
Client Description: Plaster
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 204
Facility:
Percent Non-Fibrous Material:
100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/21/2017
Date Analyzed: 06/29/2017
Signature: 
Analyst: Ellen Smith

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Golder Associates Ltd
16820 107 Ave
Edmonton AB T5P 4C3

Report Date: 6/29/2017
Report No.: 539487 - PLM
Project: City of Saskatoon - Marr Residence
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6271501(L2)	Analyst Observation: White Plaster	Location: Room 204
Client No.: A-014	Client Description: Plaster	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6271502	Analyst Observation: Lt Tan Mortar	Location: Room 106
Client No.: A-015	Client Description: Brick Mortar	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6271503	Analyst Observation: Tan Mortar	Location: Room 106
Client No.: A-016	Client Description: Brick Mortar	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100


Lab No.: 6271504	Analyst Observation: Lt Tan/Silver Insulation	Location: Room 104
Client No.: A-017	Client Description: Incandescent Light Fixture Paper	Facility:
<u>Percent Asbestos:</u> <i>80 Chrysotile</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 3 Cellulose	<u>Percent Non-Fibrous Material:</u> 17

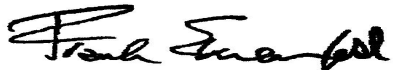
Lab No.: 6271505	Analyst Observation: Tan Non-Fibrous	Location: Room 204
Client No.: A-018	Client Description: Cast Iron Joint Packing	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6271506	Analyst Observation: Grey Cementitious	Location: Exterior
Client No.: A-019	Client Description: Concrete Scratch Coat	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6271507	Analyst Observation: Tan Cementitious	Location: Exterior
Client No.: A-020	Client Description: Concrete Scratch Coat	Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/21/2017
Date Analyzed: 06/29/2017
Signature: 
Analyst: Ellen Smith

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

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16820 107 Ave
Edmonton AB T5P 4C3

Report Date: 6/29/2017
Report No.: 539487 - PLM
Project: City of Saskatoon - Marr Residence
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6271508
Client No.: A-021

Analyst Observation: Tan Cementitious
Client Description: Concrete Scratch Coat

Location: Exterior
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/21/2017

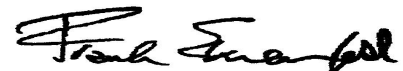
Date Analyzed: 06/29/2017

Signature:



Analyst: Ellen Smith

Approved By:



Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Golder Associates Ltd
16820 107 Ave
Edmonton AB T5P 4C3

Report Date: 6/29/2017
Report No.: 539487 - PLM
Project: City of Saskatoon - Marr Residence
Project No.: 1667963

Client: GOL572

Appendix to Analytical Report

Customer Contact:

Analysis: US EPA 600, R93-116

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com

iATL Office Manager: cdavis@iatl.com

iATL Account Representative: Pete Lesniak

Sample Login Notes: See Batch Sheet Attached

Sample Matrix: Bulk Building Materials

Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

Certifications:

- NIST-NVLAP No. 101165-0
- NY-DOH No. 11021
- AIHA-LAP, LLC No. 100188

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB)

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)
Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)>

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

CERTIFICATE OF ANALYSIS

Client: Golder Associates Ltd
16820 107 Ave
Edmonton AB T5P 4C3

Report Date: 6/29/2017
Report No.: 539487 - PLM
Project: City of Saskatoon - Marr Residence
Project No.: 1667963

Client: GOL572

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at customerservice@iatl.com.

- 1) Note: No mastic provided for analysis.
- 2) Note: Insufficient mastic provided for analysis.
- 3) Note: Insufficient material provided for analysis.
- 4) Note: Insufficient sample provided for QC reanalysis.
- 5) Note: Different material than indicated on Sample Log / Description.
- 6) Note: Sample not submitted.
- 7) Note: Attached to asbestos containing material.
- 8) Note: Received wet.
- 9) Note: Possible surface contamination.
- 10) Note: Not building material. 1% threshold may not apply.
- 11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
- 12) Note: Asbestos detected but not quantifiable.
- 13) Note: Multiple identical samples submitted, only one analyzed.
- 14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
- 15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.

Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites). Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) www.atsdr.cdc.gov, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA www.epa.gov/asbestos. The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional.

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

- 1) **Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116
Requirements/Comments: Minimum of 0.1 g of sample. ~0.25% LOQ for most samples.
- 2) **Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.
- 3) **Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Floats" only.
- 4) **Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.
- 5) **Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Suspension" only.

LOQ, Limit of Quantitation estimates for mass and volume analyses.

*With advance notice and confirmation by the laboratory.

**Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).



APPENDIX B

Site Photographs



APPENDIX B
Site Photographs



Photograph 1: Asbestos-Containing Chimney Paper Wrap.



Photograph 2: Asbestos-Containing Duct Paper Wrap.



APPENDIX B
Site Photographs



Photograph 3: Asbestos-Containing Incandescent Light Fixture Paper.

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APPENDIX C

Room by Room Spreadsheet

Marr Residence
ACM Inventory

Included/Excluded	Floor	Room #	Area Description	Elements	Subelements	Material Description	Accessibility	Suspect?	Sampled?	Asbestos Containing Material?	Condition	Field Notes	Sample Type	Sample ID	Sample Date	Asbestos Type	ACM Product	% of asbestos	Friable	Sprayed-on	Maintenance	Inspection	Priority	Potential for Disturbance	Recommended Action	Quantity	Photograph ID	Labeling Type
Included	All	All	Throughout	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect doors.																
Included	B	B100/B101/B102	Basement	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-001, A-002, A-003	14-Jun-17													
Included	B	B100/B101/B102	Basement	Floor	Floor	Plaster	High	No	No	No	Good		Bulk	A-011	14-Jun-17													
Included	B	B100/B101/B102	Basement	Ceiling	Ceiling	Concrete	High	No	No	No	Good																	
Included	B	B100/B101/B102	Basement	Mechanical	Chimney	Chimney Paper Wrap	High	Yes	Yes	Yes	Good	Visible chimney paper wrap removed in 2017.	Bulk	A-004	14-Jun-17	Chrysotile	Paper Wrap	80% Chrysotile	Yes	No	No	N/A	N/A	N/A	Visible chimney paper wrap removed in 2017.	N/A	Photograph 1	Door Jamb
Included	B	B100/B101/B102	Basement	Mechanical	Duct Work	Duct Paper Wrap	High	Yes	Yes	Yes	Good		Bulk	A-005	14-Jun-17	Chrysotile	Paper Wrap	80% Chrysotile	Yes	No	No	Manually	4	Moderate	Manage in place and schedule removal.	5 ft ²	Photograph 2	Door Jamb
Included	B	B100/B101/B102	Basement	Mechanical	Heating	Heat Register Panel	High	No	Yes	No	Good		Bulk	A-006	14-Jun-17													
Included	B	B100/B101/B102	Basement	Electrical	Electrical Panels and Components	Electrical Panels and Components	High	Yes	No	Potential	Good	Not sampled due to safety concerns.													Inspect and sample if scheduled for removal.			
Included	M	100	Front Porch	Walls	Walls	Wood	High	No	No	No	Good																	
Included	M	100	Front Porch	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	100	Front Porch	Ceiling	Ceiling	Wood	High	No	No	No	Good																	
Included	M	101	Vestibule	Walls	Walls	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	101	Vestibule	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	101	Vestibule	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	101	Vestibule	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.			
Included	M	102	Living Room	Walls	Walls	Plaster	High	No	Yes	No	Good		Bulk	A-010	14-Jun-17													
Included	M	102	Living Room	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	102	Living Room	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	102	Living Room	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.			
Included	M	103	Dining Room	Walls	Walls	Plaster	High	No	Yes	No	Good		Bulk	A-008	14-Jun-17													
Included	M	103	Dining Room	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	103	Dining Room	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	103	Dining Room	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.			
Included	M	104	Kitchen	Walls	Walls	Plaster	High	No	Yes	No	Good		Bulk	A-009	14-Jun-17													
Included	M	104	Kitchen	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	104	Kitchen	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	B	104	Kitchen	Lighting	Lighting	Incandescent Light Fixture Paper	High	Yes	Yes	Yes	Good		Bulk	A-017	14-Jun-17	Chrysotile	Light Fixture Paper	80% Chrysotile	Yes	No	No	Manually	4	Moderate	Manage in place and schedule removal.	1 Light	Photograph 3	Door Jamb
Included	M	104	Kitchen	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.			
Included	M	105	Bathroom	Walls	Walls	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	105	Bathroom	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	105	Bathroom	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	105	Bathroom	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.			
Included	M	106	Back Porch	Walls	Walls	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	106	Back Porch	Walls	Walls	Brick Mortar	High	No	Yes	No	Good		Bulk	A-016	14-Jun-17													
Included	M	106	Back Porch	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	106	Back Porch	Ceiling	Ceiling	Wood	High	No	No	No	Good																	
Included	M	200	Hallway	Walls	Walls	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	200	Hallway	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	200	Hallway	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	201	Storage Room	Walls	Walls	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	201	Storage Room	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	201	Storage Room	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														
Included	M	202	North Bedroom	Walls	Walls	Plaster	High	No	Yes	No	Good		Bulk	A-012	14-Jun-17													
Included	M	202	North Bedroom	Floor	Floor	Wood	High	No	No	No	Good																	
Included	M	202	North Bedroom	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014														

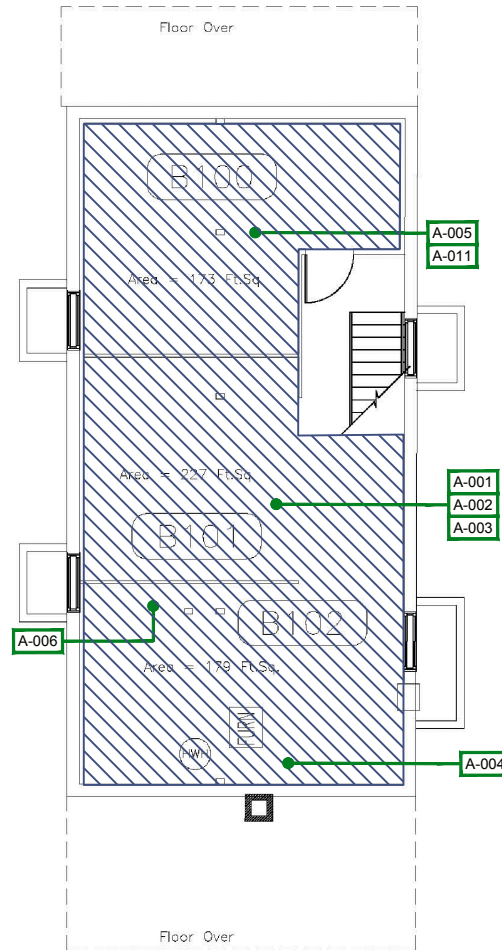
Marr Residence
ACM Inventory

Included/Excluded	Floor	Room #	Area Description	Elements	Subelements	Material Description	Accessibility	Suspect?	Sampled?	Asbestos Containing Material?	Condition	Field Notes	Sample Type	Sample ID	Sample Date	Asbestos Type	ACM Product	% of asbestos	Friable	Sprayed-on	Maintenance	Inspection	Priority	Potential for Disturbance	Recommended Action	Quantity	Photograph ID	Labelling Type		
Included	M	202	North Bedroom	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.					
Included	M	203	West Bedroom	Walls	Walls	Plaster	High	No	Yes	No	Good		Bulk	A-013	14-Jun-17															
Included	M	203	West Bedroom	Floor	Floor	Wood	High	No	No	No	Good																			
Included	M	203	West Bedroom	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014																
Included	M	203	West Bedroom	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.					
Included	M	204	South Bedroom	Walls	Walls	Plaster	High	No	Yes	No	Good		Bulk	A-014	14-Jun-17															
Included	M	204	South Bedroom	Floor	Floor	Wood	High	No	No	No	Good																			
Included	M	204	South Bedroom	Ceiling	Ceiling	Plaster	High	No	Yes	No	Good			VS A-008, A-009, A-010, A-011, A-012, A-013, A-014																
Included	M	204	South Bedroom	Mechanical	Drain Lines	Cast Iron Joint Packing	High	No	Yes	No	Good		Bulk	A-018	14-Jun-17															
Included	M	204	South Bedroom	Mechanical	Heating	Heat Register with Potential Asbestos Duct Paper Wrap	High	Yes	Yes	Potential	Good	Potential asbestos-containing duct paper wrap may be located on the heat registers below the floor.													Inspect and sample if scheduled for removal.					
Included	E	Exterior	Exterior	Walls	Walls	Concrete Scratch Coat	High	No	Yes	No	Good		Bulk	A-019, A-020, A-021	14-Jun-17															
Included	E	Exterior	Exterior	Walls	Walls	Brick Mortar	High	No	Yes	No	Good			VS A-007, A-015, A-016																
Excluded		Exterior	Roof	Exterior Roof	Exterior Roof							Not assessed due to scope of work.																		





APPENDIX D

Floor Plans



LEGEND

-  ASBESTOS SAMPLE LOCATION
-  ASBESTOS - CONTAINING DUCT PAPER WRAP

NOTE(S)

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
2. ASBESTOS-CONTAINING CHIMNEY AND DUCT PAPER WRAP MAY BE LOCATED IN CONCEALED LOCATIONS THROUGHOUT THE BUILDING.
3. ALL VISIBLE ASBESTOS-CONTAINING CHIMNEY PAPER WRAP WAS REMOVED IN 2017.

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED: 10/03/2014.

CLIENT
 CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-08-14

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

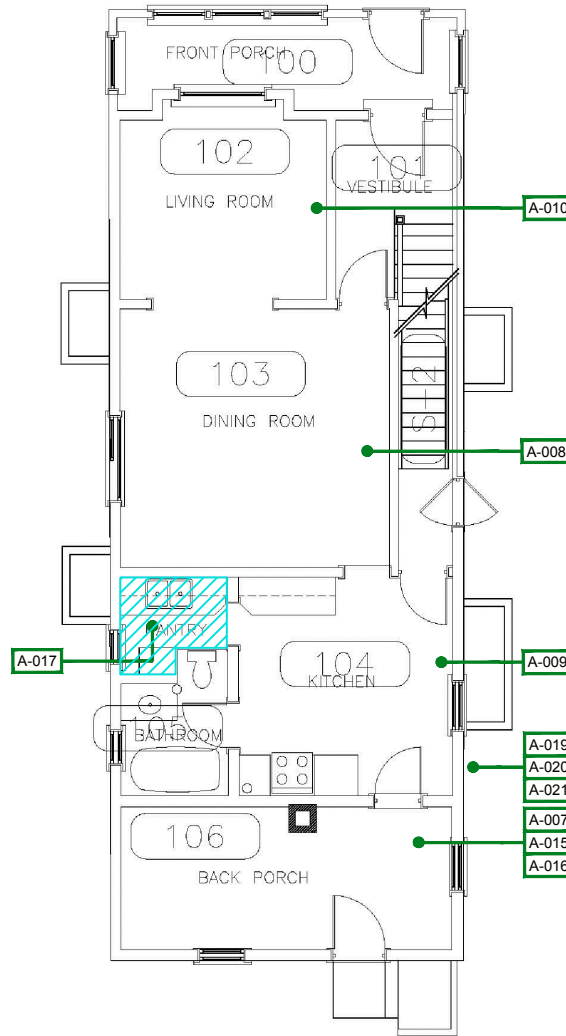
PROJECT
 ASBESTOS ASSESSMENT
 MARR RESIDENCE
 326 - 11 STREET EAST

TITLE
LOWER FLOOR

PROJECT NO. 1667963	CONTROL 1000-HM-000	REV. 0	FIGURE 1
------------------------	------------------------	-----------	-------------

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

26 mm



LEGEND

- ASBESTOS SAMPLE LOCATION
- ASBESTOS - CONTAINING INCANDESCENT LIGHT FIXTURE PAPER

NOTE(S)

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
2. ASBESTOS-CONTAINING CHIMNEY AND DUCT PAPER WRAP MAY BE LOCATED IN CONCEALED LOCATIONS THROUGHOUT THE BUILDING.

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED: 11/03/2014.

CLIENT
 CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-08-14

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

PROJECT
 ASBESTOS ASSESSMENT
 MARR RESIDENCE
 326 - 11 STREET EAST

TITLE
MAIN FLOOR

PROJECT NO.
 1667963

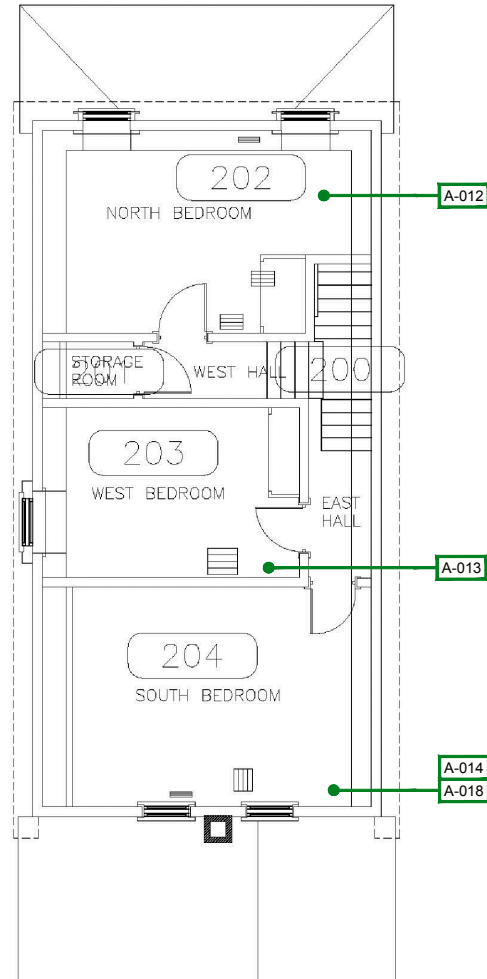
CONTROL
 1000-HM-0002

REV.
 0

FIGURE
2

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

26 mm



LEGEND

● # ASBESTOS SAMPLE LOCATION

NOTE(S)

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
2. ASBESTOS-CONTAINING CHIMNEY AND DUCT PAPER WRAP MAY BE LOCATED IN CONCEALED LOCATIONS THROUGHOUT THE BUILDING.

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED: 11/03/2014.

CLIENT
 CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-08-14

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

PROJECT
 ASBESTOS ASSESSMENT
 MARR RESIDENCE
 326 - 11 STREET EAST

TITLE
SECOND FLOOR

PROJECT NO. 1667963 CONTROL 1000-HM-0003

REV. 0

FIGURE 3

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

26 mm

As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

For more information, visit golder.com

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solutions@golder.com
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Golder Associates Ltd.
16820 107 Avenue
Edmonton, Alberta, T5P 4C3
Canada
T: +1 (780) 483 3499



September 25, 2018

Tanner Huynink
1101 Avenue P North
Saskatoon, Saskatchewan
S7L 7K6

ATTENTION: Tanner Huynink

SUBJECT: Bulk Sample Analysis Report

Please find attached the laboratory results for the bulk sample received by our office on September 12, 2018 from the Marr Residence, located at 326 11th Street East Saskatoon, Saskatchewan. The sample was analyzed for the identification of asbestos. Asbestos **was not** detected within the sample.

The results for the sample submitted was obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume.

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client.

If any questions arise on the results of the attached information, please contact our office. Thank you for this opportunity of service.

Sincerely,



Tyneal Knackstedt
Bersch Consulting Ltd.
B67BLI12H- Marr Residence

Bulk Sample Analysis Report

September 25, 2018

Project Number: B67.18

Client: City of Saskatoon

Contact: Tanner Huynik

Location: Marr Residence – 326 11th Street East

File Number: B67BAI12H

Sample Number	Sample Date	Sample Material	Sample Location and Information	Asbestos	%	Analyst
1a	2018/09/12	Parging - White	Front Step	No Asbestos Detected		EMSL
1b	2018/09/12	Parging - Gray	Front Step	No Asbestos Detected		EMSL

Note: The results for the samples submitted were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume.

September 25, 2018

Tanner Huynink
1101 Avenue P North
Saskatoon, Saskatchewan
S7L 7K6

Attention: Tanner Huynink

Subject: Vermiculite Bulk Sample Analysis Report – Marr Residence, Saskatoon, Saskatchewan

Please find attached the laboratory results for the bulk sample received on September 14, 2018 from the Marr Residence, located at 326 11th Street East Saskatoon, Saskatchewan. The sample was analyzed for the identification of asbestos. Asbestos **was not** detected within the vermiculite sample.

The results for the vermiculite block wall insulation sample was obtained by examination in accordance with the EPA/600/R-04/004 Polarized Light Microscope and Filtration Technique. Based on the sample results, the material is classified as a **non-hazardous** material.

Occupational Health and Safety, 1996 – Section 330 b.1 “asbestos-containing material means: (.i) vermiculite determined to contain any asbestos when tested according to an approved method”

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client.

If any questions arise on the results of the attached information, please contact our office. Thank you for this opportunity of service.

Sincerely,



Tyneal Knackstedt
Bersch Consulting Ltd.
B67BL14H- Marr Residence

Bulk Sample Analysis Report

September 25, 2018

Project Number: B67.18

Client: City of Saskatoon

Contact: Tanner Huynink

Location: Marr Residence – 326 11th Street

East File Number: B67BAI14H

Sample Number	Sample Date	Sample Material	Sample Location and Information	Asbestos	%	Analyst
1	2018/09/14	Vermiculite	Exterior	No Asbestos Detected		EMSL

Note: The results for the samples submitted were obtained by examination in accordance with the EPA/600/R-04/004 Polarized Light Microscope and Filtration Technique.