



May 31, 2017

CITY OF SASKATOON

Asbestos-Containing Building Materials Assessment Report - Lions Arena



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.

REPORT





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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 Lions Arena (the Site) located at 2205 McEown Avenue in Saskatoon, Saskatchewan. This assessment report details our findings, conclusions and recommendations for the Site. A walkthrough of the Site was conducted on February 22, 2017 and the assessment was conducted on April 18, 2017 by Kody Henderson, OHS Project Manager. Asbestos-containing building materials were identified within the Lions Arena 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 Lions Arena was constructed in 1968 and consists of numerous change rooms, offices spaces, and a rink on the main floor and mechanical rooms within the basement as well as a 2009/2010 addition consisting of Rooms 114 to 121. Also located along the side of the Site on the main floor is a mechanical room and garage/zamboni room. During the assessment, Rooms 114 to 121 were treated as one functional space, the remaining main floor change rooms, offices, and rink as a second functional space, the mechanical room and garage/zamboni room as a third functional space, and the basement mechanical rooms as a fourth 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.
- A floor plan outlining the sample locations and locations of identified asbestos-containing materials is provided in Appendix D.
- Please refer to Sections 4.0 and 7.0 of this report for a summary of the limitations encountered.

3.1 Asbestos-Containing Materials

A total of thirty-seven (37) samples of building materials were collected and tested for asbestos content during the assessment of the Lions Arena. Six (6) 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 below.

- Drywall Joint Compound (select rooms only); and
- Vermiculite Insulation (select block walls only).

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

Drywall Joint Compound

Eight (8) samples of drywall joint compound were collected during the assessment. Three of the samples collected within the second functional space were found to contain 1.8% to 2.1% Chrysotile asbestos. Asbestos-containing drywall joint compound (see Photograph 1 in Appendix B) was observed in the following locations:

- Room 107 (approximately 120 ft²);
- Room 108 (approximately 210 ft²);
- Room 109 (approximately 210 ft²); and
- Room 110 (approximately 120 ft²).

The additional drywall joint compound samples were collected from the third functional space. All drywall joint compound samples collected within the third functional space were found to not contain asbestos. Drywall joint compound was not observed in the remaining functional spaces.



Vermiculite Insulation

Three (3) samples of vermiculite were collected during the assessment. All three of the samples collected within the second functional space were found to contain 1.2% to 1.5% Actinolite asbestos. Asbestos-containing vermiculite (see Photograph 2 in Appendix B) was confirmed in the following locations:

- Room 104 (approximately 120 ft²);
- Room 112A (approximately 60 ft²); and
- Room 113 (approximately 120 ft²).

During the assessment, Golder cored into approximately 13 locations to evaluate for the presence of absence of vermiculite. The vermiculite insulation was observed to be located sporadically throughout the Site along exterior and interior walls. It is assumed that the vermiculite insulation is located around the perimeter walls of Rooms 113 to 101 based upon where the vermiculite insulation was observed, however this was not confirmed within each room. Please refer to the floor plan provided in Appendix D for the anticipated locations of the vermiculite. Further investigation activities may be required to confirm the exact locations of the vermiculite.

Based upon the assumption that the vermiculite is located in the perimeter walls of the Rooms 113 to 101, Golder has provided approximate quantities within each room below.

- Room 101 (approximately 750 ft²) (assumed);
- Room 102 (approximately 265 ft²) (assumed);
- Room 103 (approximately 265 ft²) (assumed);
- Room 104 (approximately 120 ft²) (confirmed);
- Room 106 (approximately 120 ft²) (assumed);
- Room 107 (approximately 250 ft²) (assumed);
- Room 108 (approximately 100 ft²) (assumed);
- Room 110 (approximately 350 ft²) (assumed);
- Room 111 (approximately 200 ft²) (assumed);
- Room 111A (approximately 60 ft²) (assumed);
- Room 112 (approximately 200 ft²) (assumed);
- Room 112A (approximately 60 ft²) (confirmed); and
- Room 113 (approximately 625 ft²) (exterior wall confirmed, interior perimeter walls assumed).



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 (excluding the second functional space);
- White firestop;
- Loose grey vinyl sheet flooring with black and white specks;
- Red firestop;
- Grey duct mastic;
- Black wall mastic;
- 1'x2' Black floor tile;
- White duct mastic;
- White plastic panel caulking;
- White pipe caulking;
- White door caulking;
- Black and grey vinyl sheet flooring;
- Grey floor levelling compound;
- Grey vinyl sheet flooring with white and black specks;
- Black floor mastic;
- Brown floor putty;
- Black bleacher seating;
- Exterior white penetration caulking;
- Exterior green building caulking;
- Exterior grey firestop;
- Exterior white window caulking;
- The drain lines throughout the site were not observed to have suspect packing and were observed to be insulated with fibreglass in select locations;
- The duct work throughout the site was observed to be uninsulated or insulated with fibreglass insulation;
- The piping throughout the site was observed to be insulated with fibreglass and had PVC fittings; and
- The mechanical insulation within Room 122 was observed to be a black Styrofoam-like insulation and is not suspected of containing asbestos.



4.0 EXCLUDED AREAS AND MATERIALS

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

- Floor levelling compound was encountered and sampled at the time of the assessment. If additional floor levelling compound is encountered during demolition activities, additional sampling should be conducted to evaluate the presence or absence of asbestos.
- 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.
- The duct connector fabric throughout the site was not sampled as causing damage to the fabric could potential release fibres in the air distribution system. If the duct connector fabric is scheduled for impact, further sampling may be required.
- Golder was unable to access Room 102 during the assessment. If work activities are scheduled within this area, further sampling may be required. If building materials within Room 102 are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- Golder assessed the exterior metal cladding for potential asbestos-containing materials where possible. Due to the potential to affect the building envelope, the metal cladding was not impacted or removed to assess below. If the metal cladding is 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 drywall joint compound of Rooms 107 to 110 and vermiculite block wall cavity insulation within select locations of the 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.

Drywall Joint Compound

If scheduled for impact, asbestos-containing grey firestop should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual (2017)*. Alternatively, as the drywall joint compound was observed in good condition, and with a priority rating of 5 (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.

Vermiculite Insulation

If scheduled for impact, asbestos-containing vermiculite insulation should be abated following high-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual (2017)*. Alternatively, as the vermiculite insulation is enclosed within block wall, with a priority rating of 5 (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.

6.0 SURVEY LIMITATIONS

This report is based on data and information collected by Golder during the assessment conducted on April 18, 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.



ASBESTOS-CONTAINING BUILDING MATERIALS ASSESSMENT REPORT - LIONS ARENA

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.

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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: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6213931
Client No.: A-001
Percent Asbestos:
None Detected

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

Location: Room B3
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213932
Client No.: A-002
Percent Asbestos:
None Detected

Analyst Observation: Grey Floor Tile
Client Description: Loose Grey VSF with Black and White Specks
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room B3
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213933
Client No.: A-003
Percent Asbestos:
None Detected

Analyst Observation: Red/Black Caulk
Client Description: Red Firestop
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room B2
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213934
Client No.: A-004
Percent Asbestos:
None Detected

Analyst Observation: Grey Mastic
Client Description: Grey Duct Mastic
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room B2
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213935
Client No.: A-005
Percent Asbestos:
None Detected

Analyst Observation: Black Mastic
Client Description: Black Wall Mastic
Percent Non-Asbestos Fibrous Material:
25 Cellulose


Location: Room B2
Facility:
Percent Non-Fibrous Material:
75


Lab No.: 6213936
Client No.: A-006
Percent Asbestos:
None Detected

Analyst Observation: Black Floor Tile
Client Description: 1'X2' Black Floor Tile
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 114
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: 4/24/2017
Date Analyzed: 05/01/2017
Signature: 
Analyst: Randy Caran

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

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

Report Date: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6213937
Client No.: A-007
Percent Asbestos:
None Detected

Analyst Observation: White/Grey Mastic
Client Description: White Duct Mastic
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 114
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213938
Client No.: A-008
Percent Asbestos:
None Detected

Analyst Observation: White Caulk
Client Description: White Firestop
Percent Non-Asbestos Fibrous Material:
1 Fibrous Glass

Location: Room 114B
Facility:
Percent Non-Fibrous Material:
99

Lab No.: 6213939
Client No.: A-009
Percent Asbestos:
None Detected

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

Location: Room 124
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213940
Client No.: A-010
Percent Asbestos:
None Detected

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

Location: Room 124
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213941
Client No.: A-011
Percent Asbestos:
None Detected

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


Location: Room 124
Facility:
Percent Non-Fibrous Material:
100

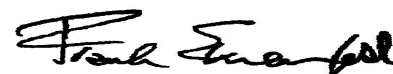
Lab No.: 6213942
Client No.: A-012
Percent Asbestos:
None Detected

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

Location: Room 124
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: 4/24/2017
Date Analyzed: 05/01/2017
Signature: 
Analyst: Randy Caran

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

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

Report Date: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6213943
Client No.: A-013

Percent Asbestos:
None Detected

Analyst Observation: White Joint Compound
Client Description: Drywall Joint Compound

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 124
Facility:

Percent Non-Fibrous Material:
100

Lab No.: 6213944
Client No.: A-014

Percent Asbestos:
None Detected

Analyst Observation: White Caulk
Client Description: White Plastic Panel
Caulking

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 124
Facility:

Percent Non-Fibrous Material:
100

Lab No.: 6213945
Client No.: A-015

Percent Asbestos:
None Detected

Analyst Observation: Grey Mastic
Client Description: Grey Duct Mastic

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 124
Facility:

Percent Non-Fibrous Material:
100

Lab No.: 6213946
Client No.: A-016

Percent Asbestos:
None Detected

Analyst Observation: White Caulk
Client Description: White Pipe Caulking

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 122
Facility:

Percent Non-Fibrous Material:
100

Lab No.: 6213947
Client No.: A-017

Percent Asbestos:
PC 2.1 Chrysotile

Analyst Observation: Off-White Joint
Compound
Client Description: Drywall Joint Compound

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 109
Facility:

Percent Non-Fibrous Material:
97.9

Lab No.: 6213948
Client No.: A-018

Percent Asbestos:
PC 2.1 Chrysotile

Analyst Observation: Off-White Joint
Compound
Client Description: Drywall Joint Compound

Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 108
Facility:

Percent Non-Fibrous Material:
97.9

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

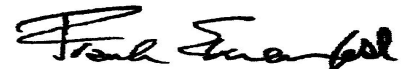
Date Received: 4/24/2017

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Analyst: Randy Caran

Approved By:



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

Report Date: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6213949
Client No.: A-019
Percent Asbestos:
None Detected

Analyst Observation: White Caulk
Client Description: White Door Caulking
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 108
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213950
Client No.: A-020
Percent Asbestos:
None Detected

Analyst Observation: White Caulk
Client Description: White Pipe Caulking
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 107
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213951
Client No.: A-021
Percent Asbestos:
None Detected

Analyst Observation: Grey Mastic
Client Description: Grey Duct Mastic
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 107
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213952
Client No.: A-022
Percent Asbestos:
None Detected

Analyst Observation: Grey Vinyl Sheet
Flooring
Client Description: Black and Grey Vinyl Sheet
Flooring
Percent Non-Asbestos Fibrous Material:
5 Cellulose


Location: Room 109
Facility:
Percent Non-Fibrous Material:
95

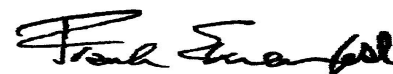
Lab No.: 6213952(L2)
Client No.: A-022
Percent Asbestos:
None Detected

Analyst Observation: Yellow Mastic
Client Description: Black and Grey Vinyl Sheet
Flooring
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 109
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: 4/24/2017
Date Analyzed: 05/01/2017
Signature: 
Analyst: Randy Caran

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

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

Report Date: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6213953
Client No.: A-023

Analyst Observation: Grey Leveling
Compound
Client Description: Grey Floor Leveling
Compound

Location: Room 109
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6213954
Client No.: A-024

Analyst Observation: White/Grey Mastic
Client Description: White Duct Mastic

Location: Room 113
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6213955
Client No.: A-025

Analyst Observation: Black Floor Tile
Client Description: 1'X2' Black Floor Tile

Location: Room 112
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6213956
Client No.: A-026

Analyst Observation: Grey Vinyl Sheet
Flooring
Client Description: Grey VSF with White and
Black Specks

Location: Room 101
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6213956(L2)
Client No.: A-026

Analyst Observation: White Mastic
Client Description: Grey VSF with White and
Black Specks

Location: Room 101
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.

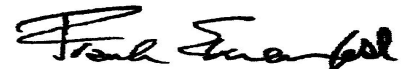
Date Received: 4/24/2017

Date Analyzed: 05/01/2017

Signature:

Analyst: Randy Caran

Approved By:



Frank E. Ehrenfeld, III
Laboratory Director

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Edmonton AB T5P 4C3

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Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6213957
Client No.: A-027
Percent Asbestos:
PC 1.8 Chrysotile

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

Location: Room 110
Facility:
Percent Non-Fibrous Material:
98.2

Lab No.: 6213958
Client No.: A-028
Percent Asbestos:
None Detected

Analyst Observation: Black Mastic
Client Description: Black Floor Mastic
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rink
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213959
Client No.: A-029
Percent Asbestos:
None Detected

Analyst Observation: Grey Putty
Client Description: Brown Floor Putty
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rink
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213960
Client No.: A-030
Percent Asbestos:
None Detected

Analyst Observation: Black Floor Tile
Client Description: Black Bleacher Vinyl
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rink
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213961
Client No.: A-031
Percent Asbestos:
PC 1.2 Actinolite

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

Location: Room 113
Facility:
Percent Non-Fibrous Material:
98.8

This sample contains vermiculite mineral and may be a candidate for additional analytical procedures. Please see the sections following your report titled Recommendations for Vermiculite Analysis. (EPA 600/R-04/004)


Lab No.: 6213962
Client No.: A-032
Percent Asbestos:
PC 1.2 Actinolite

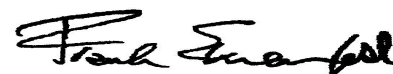
Analyst Observation: Brown/Grey Vermiculite
Client Description: Vermiculite
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Room 112A
Facility:
Percent Non-Fibrous Material:
98.8

This sample contains vermiculite mineral and may be a candidate for additional analytical procedures. Please see the sections following your report titled Recommendations for Vermiculite Analysis. (EPA 600/R-04/004)

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

Date Received: 4/24/2017
Date Analyzed: 05/01/2017
Signature: 
Analyst: Randy Caran

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

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

Report Date: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
Project No.: 1667963

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6213963
Client No.: A-033
Percent Asbestos:
PC 1.5 Actinolite

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

Location: Room 104
Facility:
Percent Non-Fibrous Material:
98.5

This sample contains vermiculite mineral and may be a candidate for additional analytical procedures. Please see the sections following your report titled Recommendations for Vermiculite Analysis. (EPA 600/R-04/004)

Lab No.: 6213964
Client No.: A-034
Percent Asbestos:
None Detected

Analyst Observation: White Caulk
Client Description: White Penetration Caulking
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Exterior
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213965
Client No.: A-035
Percent Asbestos:
None Detected

Analyst Observation: Blue/White Caulk
Client Description: Green Building Caulking
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Exterior
Facility:
Percent Non-Fibrous Material:
100

Lab No.: 6213966
Client No.: A-036
Percent Asbestos:
None Detected

Analyst Observation: Grey Caulk
Client Description: Grey Firestop
Percent Non-Asbestos Fibrous Material:
None Detected


Location: Exterior
Facility:
Percent Non-Fibrous Material:
100

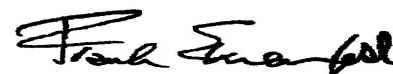
Lab No.: 6213967
Client No.: A-037
Percent Asbestos:
None Detected

Analyst Observation: Grey/White Caulk
Client Description: White Building Caulk
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Exterior
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: 4/24/2017
Date Analyzed: 05/01/2017
Signature: 
Analyst: Randy Caran

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

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

Report Date: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
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.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

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: 5/1/2017
Report No.: 534882 - PLM
Project: Asbestos Surveys - City of Saskatoon (Lions Arena)
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 Drywall Joint Compound.



Photograph 2: Asbestos-Containing Vermiculite Insulation.

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APPENDIX C

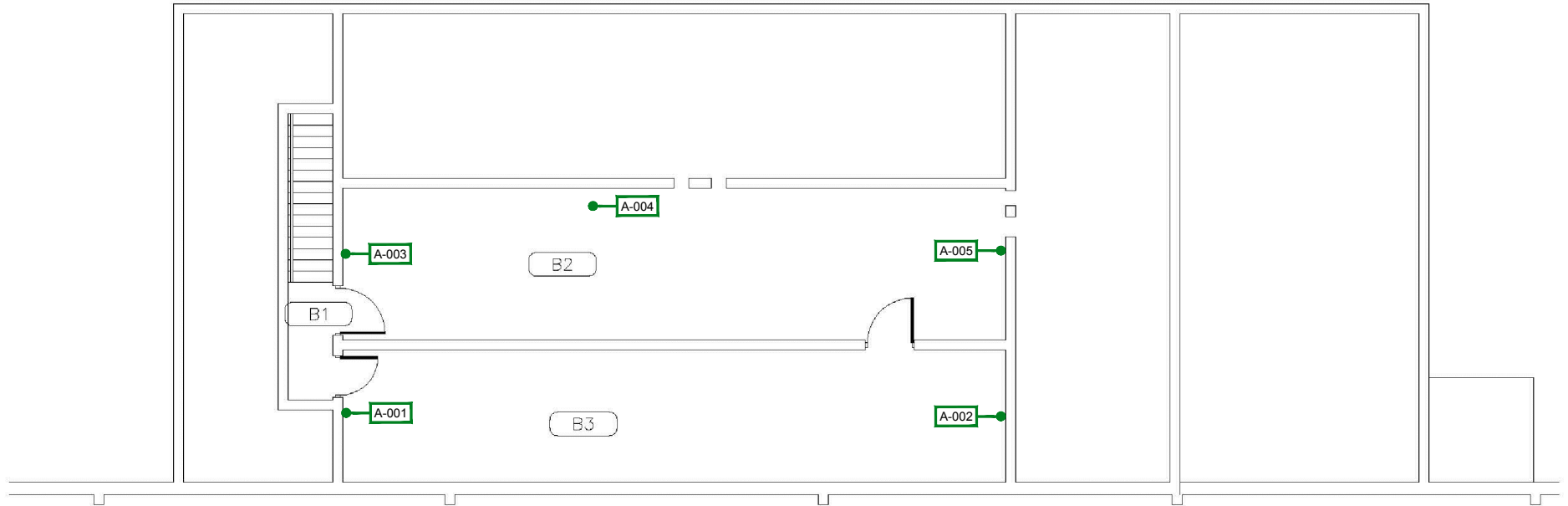
Room by Room Spreadsheet

| 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 | B | B3 | Mechanical Room | Walls | Interior Walls | Concrete Walls | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Floor | Floor | Concrete | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Ceiling | Ceiling | Concrete | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Doors | Suspect Fire Door | Suspect Fire Door | High | Yes | No | Potential | Good | Not sampled as damage to the door would affect it's operational requirement. | | | | | | | Potential | No | | Annually | | Low | Inspect and sample if scheduled for removal. | 1 | | |
| Included | B | B3 | Mechanical Room | Ceiling Space | Ceiling Space | N/A | N/A | N/A | N/A | N/A | N/A | No ceiling space present | | | | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Mechanical | Piping | Metal Pipes | High | No | No | No | Good | Bare or insulated with fiberglass and PVC fittings. | | | | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Mechanical | Piping | Drain Lines | High | No | No | No | Good | Drain lines not insulated and no suspect packing observed. | | | | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Electrical | Electrical Panels and Components | Electrical Panels and Components | High | Yes | No | Potential | Good | Not sampled due to safety concerns. | | | | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Miscellaneous | Sheet Flooring | Loose Sheet Flooring Material | High | No | Yes | No | Good | | Bulk | A-002 | 18-Apr-17 | | | | | | | | | | | | | |
| Included | B | B3 | Mechanical Room | Miscellaneous | Firestop | White Firestop | High | No | Yes | No | Good | | Bulk | A-001 | 18-Apr-17 | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Walls | Interior Walls | Concrete Walls | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Walls | Interior Walls | Black Wall Mastic | High | No | Yes | No | Good | | Bulk | A-005 | 18-Apr-17 | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Floor | Floor | Concrete | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Ceiling | Ceiling | Concrete | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Doors | Suspect Fire Door | Suspect Fire Door | High | Yes | No | Potential | Good | Not sampled as damage to the door would affect it's operational requirement. | | | | | | | Potential | No | | Annually | | Low | Inspect and sample if scheduled for removal. | 1 | | |
| Included | B | B2 | Mechanical Room | Ceiling Space | Ceiling Space | N/A | N/A | N/A | N/A | N/A | N/A | No ceiling space present | | | | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Mechanical | Piping | Metal Pipes | High | No | No | No | Good | Bare or insulated with fiberglass and PVC fittings. | | | | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Mechanical | Piping | Drain Lines | High | No | No | No | Good | Drain lines not insulated and no suspect packing observed. | | | | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Mechanical | Duct Work | Grey Duct Mastic | High | No | Yes | No | Good | Duct work not insulated with suspect insulation. | Bulk | A-004 | 18-Apr-17 | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Electrical | Electrical Panels and Components | Electrical Panels and Components | High | Yes | No | Potential | Good | Not sampled due to safety concerns. | | | | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Miscellaneous | Firestop | Red Firestop | High | No | Yes | No | Good | | Bulk | A-003 | 18-Apr-17 | | | | | | | | | | | | | |
| Included | B | B2 | Mechanical Room | Miscellaneous | Firestop | White Firestop | High | No | Yes | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Walls | Interior Walls | Concrete Walls | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Floor | Floor | Concrete | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Ceiling | Ceiling | Concrete | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Ceiling Space | Ceiling Space | N/A | N/A | N/A | N/A | N/A | N/A | No ceiling space present | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Mechanical | Piping | Metal Pipes | High | No | No | No | Good | Bare or insulated with fiberglass and PVC fittings. | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Mechanical | Piping | Drain Lines | High | No | No | No | Good | Drain lines not insulated and no suspect packing observed. | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Mechanical | Duct Work | Duct Work | High | No | No | No | Good | Duct work not insulated with suspect insulation. | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Miscellaneous | Firestop | Red Firestop | High | No | Yes | No | Good | | | | | | | | | | | | | | | | | |
| Included | B | B1 | Mechanical Room | Miscellaneous | Firestop | White Firestop | High | No | Yes | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 101 | Lobby | Walls | Interior Walls | Block Wall | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 101 | Lobby | Walls | Exterior and Perimeter Walls | Vermiculite | High | Yes | Yes | Yes | Good | Suspected to be located in exterior and perimeter walls. | | VS-A-033 | | Actinolite | Vermiculite | 1.2% to 1.5% | Yes | No | No | Annually | 5 | Moderate | Manage in place. | 750 ft ² | Photograph 2 | Door Jamb |
| Included | M | 101 | Lobby | Floor | Floor | Grey Vinyl Sheet Flooring with White | High | No | Yes | No | Good | | Bulk | A-026 | 18-Apr-17 | | | | | | | | | | | | | |
| Included | M | 101 | Lobby | Ceiling | Ceiling | Metal Deck | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 101 | Lobby | Ceiling Space | Ceiling Space | N/A | N/A | N/A | N/A | N/A | N/A | Open ceiling space | | | | | | | | | | | | | | | | |
| Included | M | 101 | Lobby | Doors | Regular Door | Non Suspect Door | High | No | No | No | Good | Non-suspect door | | | | | | | | | | | | | | | | |
| Included | M | 101 | Lobby | Mechanical | Duct Work | White Duct Mastic | High | No | Yes | No | Good | Duct work not insulated with suspect insulation. | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Walls | Interior Walls | Block Wall | High | No | No | No | Good | Block wall shared with Rink was observed to be hollow. | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Walls | Exterior and Perimeter Walls | Vermiculite | High | Yes | Yes | Yes | Good | Suspected to be located in exterior and perimeter walls. | | VS-A-033 | | Actinolite | Vermiculite | 1.2% to 1.5% | Yes | No | No | Annually | 5 | Moderate | Manage in place. | 265 ft ² | Photograph 2 | Door Jamb |
| Included | M | 103 | Admission | Walls | Interior Walls | Wood | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Floor | Floor | Grey Vinyl Sheet Flooring with White | High | No | Yes | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Ceiling | Ceiling | 2'x4' Ceiling Tile with Small Pinholes | High | No | No | No | Good | Date coded to a time period in which asbestos use was not widespread. | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Ceiling Space | Ceiling Space | Metal Deck | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Doors | Regular Door | Non Suspect Door | High | No | No | No | Good | Non-suspect door. | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Mechanical | Piping | Metal Pipes | High | No | No | No | Good | Bare or insulated with fiberglass and PVC fittings. | | | | | | | | | | | | | | | | |
| Included | M | 103 | Admission | Mechanical | Duct Work | Grey Duct Mastic | High | No | Yes | No | Good | Duct work not insulated with suspect insulation. | | | | | | | | | | | | | | | | |
| Included | M | 104 | Washroom | Walls | Interior Walls | Block Wall | High | No | No | No | Good | Block wall shared with Room 101 was observed to be solid. | | | | | | | | | | | | | | | | |
| Included | M | 104 | Washroom | Walls | Exterior Wall | Vermiculite | High | Yes | Yes | Yes | Good | Vermiculite located in block wall along the exterior. | Bulk | A-033 | 18-Apr-17 | Actinolite | Vermiculite | 1.2% to 1.5% | Yes | No | No | Annually | 5 | Moderate | Manage in place. | 120 ft ² | Photograph 2 | Door Jamb |
| Included | M | 104 | Washroom | Floor | Floor | Grey Vinyl Sheet Flooring with White | High | No | Yes | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 104 | Washroom | Ceiling | Ceiling | Metal Deck | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 104 | Washroom | Ceiling Space | Ceiling Space | N/A | N/A | N/A | N/A | N/A | N/A | No ceiling space present | | | | | | | | | | | | | | | | |
| Included | M | 104 | Washroom | Doors | Regular Door | Non Suspect Door | High | No | No | No | Good | Non-suspect door. | | | | | | | | | | | | | | | | |
| Included | M | 104 | Washroom | Mechanical | Duct Work | White Duct Mastic | High | No | Yes | No | Good | Duct work not insulated with suspect insulation. | | | | | | | | | | | | | | | | |
| Included | M | 105 | Washroom | Walls | Interior Walls | Block Wall | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 105 | Washroom | Floor | Floor | Grey Vinyl Sheet Flooring with White | High | No | Yes | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 105 | Washroom | Ceiling | Ceiling | Metal Deck | High | No | No | No | Good | | | | | | | | | | | | | | | | | |
| Included | M | 105 | Washroom | Ceiling Space | Ceiling Space | N/A | N/A | N/A | N/A | N/A | N/A | No ceiling space present | | | | | | | | | | | | | | | | |
| Included | M | 105 | Washroom | Doors | Regular Door | Non Suspect Door | High | No | No | No | Good | Non-suspect door. | | | | | | | | | | | | | | | | |
| Included | M | 105 | Washroom | Mechanical | Piping | Metal Pipes | High | No | No | No | Good | Bare or insulated with fiberglass and PVC fittings. | | | | | | | | | | | | | | | | |
| Included | M | 105 | Washroom | Mechanical | Duct Work | White Duct Mastic | High | No | Yes | No | Good | Duct work not insulated with suspect insulation. | | | | | | | | | | | | | | | | |
| Included | M | 106 | Washroom | Walls | Interior Walls | Block Wall | High | No | No | No | Good | Block wall shared with Room 111 observed to be solid. | | | | | | | | | | | | | | | | |
| Included | M | 106 | Washroom | Walls | Exterior and Perimeter Walls | Vermiculite | High | Yes | Yes | Yes | Good | Suspected to be located in exterior and perimeter walls. | | VS-A-033 | | Actinolite | Vermiculite | 1.2% to 1.5% | Yes | No | No | Annually | 5 | Moderate | Manage in place. | 120 ft ² | Photograph 2 | Door Jamb |
| Included | M | 106 | Washroom | Floor | Floor | Grey Vinyl Sheet Flooring with White | High | No | Yes | No | Good | | | | | | | | | | | | | | | | | |



APPENDIX D

Floor Plan



NOTE(S)

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
2. ASBESTOS-CONTAINING VERMICULITE INSULATION WAS IDENTIFIED IN SELECT LOCATIONS OF THE SITE. ADDITIONAL ASBESTOS-CONTAINING VERMICULITE INSULATION MAY BE LOCATED IN ADDITIONAL BLOCK WALL THROUGHOUT THE SITE.

LEGEND

- ASBESTOS - CONTAINING SAMPLE LOCATION
- CONFIRMED LOCATION OF ASBESTOS - CONTAINING VERMICULITE
- ASBESTOS - CONTAINING DRYWALL JOINT COMPOUND
- NO ACCESS
- SUSPECTED LOCATION OF ASBESTOS - CONTAINING VERMICULITE

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED BY JUNE 10, 2002.

CLIENT
CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-05-03

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

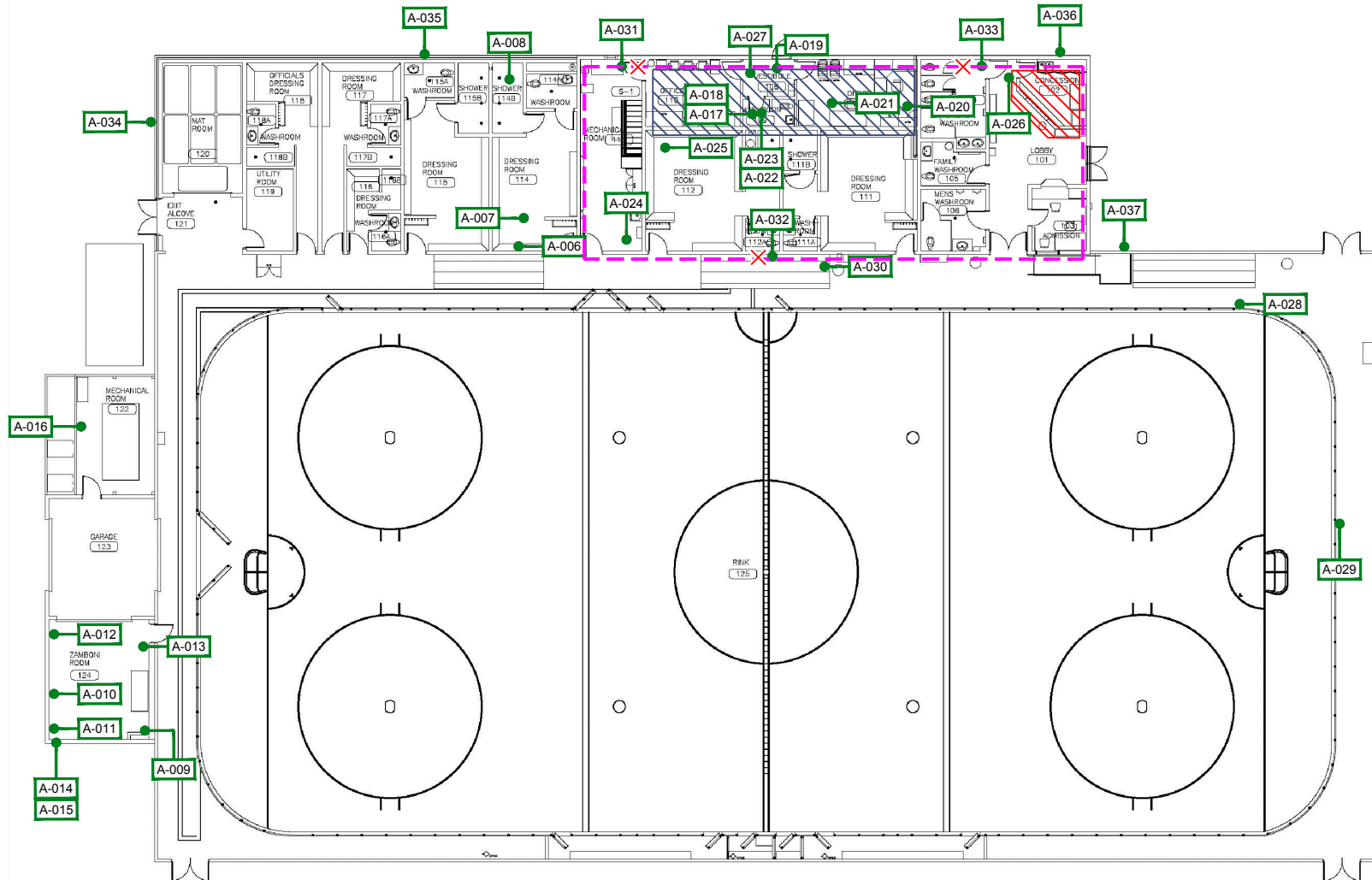
SCHEMATIC ONLY, NOT TO SCALE

PROJECT
**ASBESTOS ASSESSMENT
 LIONS ARENA
 2205 McEOWN AVENUE, SASKATOON**

TITLE
BASEMENT

| | | | |
|------------------------|-------------------------|-----------|-------------|
| PROJECT NO. 1667963 | CONTROL 1000-HM-0001 | REV. 0 | FIGURE 1 |
|------------------------|-------------------------|-----------|-------------|

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



NOTE(S)

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
2. ASBESTOS-CONTAINING VERMICULITE INSULATION WAS IDENTIFIED IN SELECT LOCATIONS OF THE SITE. ADDITIONAL ASBESTOS-CONTAINING VERMICULITE INSULATION MAY BE LOCATED IN ADDITIONAL BLOCK WALL THROUGHOUT THE SITE.

LEGEND

- # ASBESTOS SAMPLE LOCATION
- ✗ CONFIRMED LOCATION OF ASBESTOS - CONTAINING VERMICULITE
- ASBESTOS - CONTAINING DRYWALL JOINT COMPOUND
- NO ACCESS
- SUSPECTED LOCATION OF ASBESTOS - CONTAINING VERMICULITE

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED BY 10/11/2012.

CLIENT
CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-05-03

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

PROJECT
**ASBESTOS ASSESSMENT
 LIONS ARENA
 2205 McEOWN AVENUE, SASKATOON**

TITLE
MAIN FLOOR

PROJECT NO.
 1667963

CONTROL
 1000-HM-0002

REV.
 0

FIGURE
2

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

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April 9, 2020

City of Saskatoon
3130 Laurier Drive
Saskatoon, SK
S7L 5J7

ATTENTION: Dean Buchholz

SUBJECT: Bulk Sample Analysis Report

Please find attached the laboratory results for the bulk samples collected on April 7 & 8, 2020 from the Lions Arena in Saskatoon, SK. The samples were analyzed for the identification of asbestos. Asbestos **was** detected within 2 of the samples.

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.

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,



Brad Berschiminsky
BERSCH CONSULTING LTD.
B67BLD07J lions arena

Bulk Sample Analysis Report

April 9, 2020

Project Number: B67.20

Client: City of Saskatoon

Contact: Dean Buchholz

Location: Lions Arena

File Number: B67BAD07J lions arena

| Sample Number | Sample Date | Sample Material | Sample Location and Information | Asbestos | % | Analyst |
|---------------|-------------|-----------------|---|-------------------------|-----|---------|
| 1 | 2020/04/07 | Drainpipe | Ice Surface Concrete Slab Southeast Drain. | Amosite | 30% | WB/EMSL |
| 2 | 2020/04/07 | Drainpipe | Ice Surface Concrete Slab Southwest Drain. | Amosite | 30% | WB/EMSL |
| 3 | 2020/04/08 | Drain Tile | Ice Surface Weeping Tile Below the Slab along the North Side Running East & West. | No Asbestos Detected | | WB/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.

Photo ID

B67BAD07J - 001

Sample Number

B67BAD07J - 1

Asbestos Containing

Description

Ice Surface

Southeast Drainpipe.



Photo ID

B67BAD07J - 002

Sample Number

B67BAD07J - 2

Asbestos Containing

Description

Ice Surface

Southwest Drainpipe.



Photo ID

B67BAD07J - 003

Sample Number

B67BAD07J – 1 & 2

Asbestos Containing

Description

Ice Surface

Southwest Drainpipe.



Photo ID

B67PRK13I – 004

Sample Number

B67BAD07J – 3

Non Asbestos Containing

Description

Ice Surface

Weeping Tile Below the Slab along the North Side Running East & West.

This photo was taken from the sump pit in the basement mechanical room.

