FISHER ENGINEERING

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LABORATORY

CALA Canadian Association for Laboratory Accreditation Inc.

PRE-RENO
DESIGNATED SUBSTANCE SURVEY

Mechanical Equipment Replacement
Terry Miller Recreation Centre
1295 Williams Parkway, Brampton, ON

Prepared for:
City of Brampton
2 Wellington Street West
City Hall – West Tower 8th floor
Brampton, ON L6Y 4R2

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Project No. FE 23-13212

August 10, 2023

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EXECUTIVE SUMMARY

Fisher Engineering Limited ('Fisher') was retained by the City of Brampton, Building Design and Construction Community Services, to carry out a pre-renovation Designated Substances Survey (DSS) for the Mechanical Equipment Replacement project for the Terry Miller Recreation Centre, located at 1295 Williams Parkway, Brampton, Ontario (hereinafter referred to as the “Site”).

The scope of the DSS consisted of a review of existing environmental reports (where available); visual inspection for the presence of designated substances within the scope of the work areas; collection and analysis of the materials suspected to contain hazardous building materials, particularly asbestos and lead; and to provide recommendations for the safe handling or abatement of these materials prior to any renovation work. The fieldwork was conducted by Mr. Muhammad Junayed, on July 26, 2023.

A summary of the designated substances identified during the survey is presented below:

Asbestos

Sampling was conducted of building materials which were suspected to contain asbestos and expected to be impacted by planned construction activities. A total of twelve (12) bulk samples were collected and submitted to Fisher Environmental Laboratories for Polarized Light Microscopy (PLM) analysis, as outlined in NIOSH Method 9002

- Asbestos was not found in any of the samples collected for analysis, as part of this survey.
- Fisher, therefore, recommends that the planned renovation activities do not require any prior asbestos abatement procedures.

Lead

Seven (7) bulk samples were collected and submitted to Fisher Environmental Laboratories for inductively coupled plasma (ICP) analysis, as outlined in NIOSH method 7300.

- Elevated concentrations of lead-containing paint were not found in the grey paint on the floor collected for analysis.
- Measurable concentrations of lead were identified in the yellow/red paint on the base, white paint on the wall, grey paint on the floor, light tan paint on the compressor, blue/red paint on the wall, and light brown paint on the wall, but are below the action limit.
- No immediate recommendations are warranted with regard to lead.

Mercury

- Mercury is present as a vapour in fluorescent light bulbs.
- No immediate recommendations are warranted with regard to mercury.
- If work activities affect the fluorescent light bulbs, Fisher recommends that the presumed mercury-containing fluorescent light tubes be removed and disposed of in accordance with O. Reg. 558/00.

Silica

- Crystalline silica is a constituent of all concrete and masonry products at the Site.
- Renovation works that are likely to generate silica-containing dust shall be carried out in accordance with the following regulations and guidelines:
    - Guideline: Silica on Construction Projects (issued by Ontario Ministry of Labour);
    - Designated Substances Regulation, O. Reg. 490/09; and
    - Regulation for Construction Projects, O. Reg. 213/91.

Other Designated Substances

- The other designated substances (acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride) would not be expected to be present at the Site and were not observed during the current survey.
- No recommendations are warranted with regard to these other designated substances.

1.0. INTRODUCTION

Fisher Engineering Limited ('Fisher') was retained by the City of Brampton, Corporate Real Estate Management, to carry out a pre-renovation Designated Substances Survey (DSS) for the Terry Miller Recreation Centre, located at 1295 Williams Parkway, Brampton, Ontario (hereinafter referred to as the "Site").

The scope of the DSS consisted of a review of existing environmental reports (where available); visual inspection for the presence of designated substances within the scope of the work areas; collection and analysis of the materials suspected to contain hazardous building materials, particularly asbestos and lead; and to provide recommendations for the safe handling or abatement of these materials prior to any renovation work.

The assessment scope did not include the entire building. Rather, the assessment was limited to areas where renovation activities are proposed as demonstrated to Fisher on provided drawings on July 13, 2023. The fieldwork was conducted by Mr. Muhammad Junayed, on July 26, 2023.

The following work areas were included in the current survey:

- ✓ Compressor Room for replacement of compressors for the ice rink
- ✓ Ice rink area Replacement of Dehumidifiers for the ice rink
- ✓ Zamboni Room
- ✓ Electrical and Mechanical Room

DSS reports are required prior to any construction, demolition or restoration project that can take place in Ontario. As per Section 30 of the Ontario Occupational Health and Safety Act (OHSA), designated substances and other potentially hazardous building materials must be identified prior to any work being done that may disturb these materials and result in unnecessary exposure of workers and building occupants. The designated substances include:

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

2.0. METHODOLOGY

Fisher followed the protocols outlined in Ontario OHSA for collecting and analyzing bulk samples of materials suspected to contain asbestos or lead. Visual assessment of the material was the primary method of identification with occasional physical contact to collect bulk samples or examine for underlying layers.

Representative bulk samples were collected of materials suspected of containing asbestos or lead. The tools used by the investigator to collect the bulk samples were cleaned after each sample was collected to avoid cross-contamination. Samples were placed in plastic sealable containers, marked with a unique sample number and transported to an independent accredited laboratory for analysis.

Where applicable, samples of suspect materials were collected to establish asbestos or lead content. Samples were grouped according to the similarity of appearance (“homogeneous” materials). The frequency at which the samples were collected was sufficient to obtain a general representation of the presence of these materials at the Site. Samples collected are presumed to be representative of the respective building materials in place at the Site. However, due to potential past renovations, alterations, repairs, or phases of construction, individual materials may not be representative of the samples collected.

The laboratory certificate of analysis is included in Appendix A. Site plans to indicate the project scope of work areas and bulk sample locations are included in Appendix B. Representative photos of Site conditions encountered at the time of the current survey are included in Appendix C.

3.0. DOCUMENT AND REPORT REVIEW

At the time of the assessment, no previous reports for the Site were available to review.

4.0. FINDINGS

Asbestos-Containing Materials

Sampling was conducted of building materials which were suspected to contain asbestos and expected to be impacted by planned construction activities. A total of twelve (12) bulk samples were collected and submitted to Fisher Environmental Laboratories for Polarized Light Microscopy (PLM) analysis, as outlined in NIOSH Method 9002. The results of the PLM analysis are summarized in Table 1, below.

Table 1 - Summary of Bulk Asbestos Sample Analysis (Polarized Light Microscopy)

Sample No.	Sample Location	Sample Description	Asbestos Content (% by Weight/Type)
23-1593-01 to 03	Wall	Mortar	None Detected
23-1593-04 to 06	Around Conduit	Red, Fire Stop	None Detected
23-1593-07 to 09	Pipe	Pipe Insulation	None Detected
23-1593-10 to 12	Around Dehumidifiers	Red, Sealant	None Detected

Ontario Regulation 278/05 - Asbestos on Construction Projects and in Buildings and Repair Operations (O. Reg. 278/05) defines an “asbestos-containing” material as that with an asbestos content equal to or greater than 0.5% by weight.

Laboratory analysis revealed asbestos was not found in any of the collected samples.

In addition to the above findings and reviewing of the Site, the following observations were noted.

- ☐ Flexible duct connectors were observed in the duct system at the Site during the survey. These materials are made of polyester with Polyvinyl Chloride (PVC) coating, and rubber, and are considered as not asbestos-containing materials.
- ☐ Fiberglass insulation was observed on the pipes and mechanical units in the building; this material is non-asbestos-containing.
- ☐ PVC pipes were observed within specified work areas; this material does not contain asbestos.

Based on the findings of the current survey conducted within the scope of the work areas, asbestos was not identified in the following building materials:

- Mortar on the wall,
- Red Sealant,
- Red Firestop, and
- Pipe insulation in pipe.

ACM may be present at the Site that is not identified in this report. Should additional suspected ACM not outlined in this report be discovered, it should be presumed as ACM until sample analysis determines asbestos content. Precautions should be taken when dismantling solid wall or ceiling finishes, or any other building surfaces which may conceal potential ACM. Such

precautions include but are not limited to, isolation measures and appropriate personal protective equipment.

Lead-Containing Materials

Seven (7) bulk samples were collected and submitted to Fisher Environmental Laboratories for inductively coupled plasma (ICP) analysis, as outlined in NIOSH method 7300. The results of the sample analysis are summarized in Table 2, below.

Table 2 – Summary of Lead Paint Sample Analysis

Sample No.	Sample Location	Sample Description	Lead Content (ppm and % by Weight)
23-1593-13	Base of the Compressor	Yellow/Red Paint	424 ppm
23-1593-14	Wall	White Paint	542 ppm
23-1593-15	Wall	Grey Paint	10 ppm (0.0010%)
23-1593-16	Floor	Grey Paint	31 ppm
23-1593-17	Compressor	Light Tan Paint	51 ppm
23-1593-18	Wall	Blue/Red Paint	25 ppm
23-1593-19	Wall	Light Brown Paint	82 ppm

The Ontario Ministry of Labour (MOL) has not prescribed criteria defining “lead-containing” materials. Further, the MOL has not established a lower limit for concentrations of lead in paint, below which precautions do not need to be considered during construction projects. However, except for aggressive disturbance of painted finishes, (e.g., abrasive blasting, torch cutting, or grinding), Fisher believes that a lead content below 0.1% by weight (1,000 ug/g or 1000 ppm) represents a concentration in which lead content is not the limiting hazard for construction hygiene purposes.

No elevated concentration of lead, above the action limit (greater than 0.1% lead), was found in the collected paint samples.

A detectable concentration of lead was found in the collected yellow/red, white, grey, light tan, blue/red, and light brown paint samples, however, below the action limit (less than 0.1% lead). Therefore, the planned renovation activities do not require any prior lead abatement procedures.

Other Designated Substances

During the current survey, no sampling for mercury was conducted. However, fluorescent light tubes (known to contain mercury) were observed at the Site. No other building materials or components suspected to contain mercury were noted during the building survey.

Crystalline silica is a constituent of all concrete and masonry products present at the Site. While the cutting, grinding, or demolition of materials containing silica is not anticipated at the Site, these activities should be completed in accordance with Ontario MOL Guidelines for Silica on Construction projects. Specifically, the Guideline prescribes respiratory protection, site isolation, and the use of wetting to control dust emissions during the cutting, grinding, drilling, or demolition of silica-containing materials. Please refer to the Guideline for details concerning Silica on Construction Projects.

No other designated substances or other potentially hazardous building materials were identified in the proposed project scope areas. If additional suspected designated substances or other potentially hazardous building materials not identified in this report pertaining to the Site are discovered, work should be stopped and the material(s) in question should be sampled for determination of content.

5.0. RECOMMENDATIONS

Based on the observations and findings outlined above, Fisher recommends are as follows:

Asbestos:

- ❑ Asbestos was not found in any of the samples collected and analyzed. Therefore, the planned renovation activities do not require asbestos abatement procedures.

Lead:

- ❑ No immediate recommendations for lead removal are warranted at this time.

Mercury:

- ❑ No immediate recommendations are warranted with regard to mercury.
- ❑ However, if the disturbance of the identified fluorescent light tubes presumed to contain mercury is planned as part of the anticipated construction activities, Fisher recommends that these items be removed and disposed of in accordance with O. Reg. 558/00.

Silica:

- ❑ Renovations and/or demolition operations that are likely to generate silica-containing dust shall be carried out in accordance with the following requirements:
    - Guideline: Silica on Construction Projects (issued by Ontario MOL);
    - Designated Substances Regulation, O. Reg. 490/09; and
    - Regulation for Construction Projects, O. Reg. 213/91.

6.0. LIMITATIONS

Fisher Engineering Limited accepts responsibility for the competent performance of its duties in executing this assignment within the normal standards of the profession, but disclaims responsibility for consequential damages, if any.

The scope of the survey is based on prior agreement with the client, and the rationale given in this report. The building survey findings rely on the professional interpretation of selective sampling and analysis. Sample analysis results have been applied to homogenous materials in unsampled locations; it was not within the scope of work to carry out an exhaustive sampling and analysis program.

This report was prepared for the City of Brampton, Building Design and Construction Community Services. The scope of services performed may not be appropriate for the purposes of other users, and any use or reuse of this document or its findings or recommendations represented herein is at the sole risk of any other user.

We trust that the information provided in the report meets your current requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Prepared by:

Muhammad Junayed, B.Sc., EP
Project Manager

Reviewed by:

LICENSED PROFESSIONAL ENGINEER
D. A. FISHER
PROVINCE OF ONTARIO

David A. Fisher, B.A.Sc., C.Chem., P.Eng.
Principal

APPENDIX A – LABORATORY CERTIFICATE OF ANALYSIS

FISHER ENVIRONMENTAL LABORATORIES

FULL RANGE ANALYTICAL SERVICES • SOIL/WATER/AIR TESTING • ENVIRONMENTAL COMPLIANCE PACKAGES • 24 HOUR EMERGENCY RESPONSE • CALA ACCREDITED

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F.E. Job #: 23-1593
Project Name: Pre-Reno DSS
Project ID: FM-P 23-13212
Date Sampled: 26-Jul-2023
Date Received: 27-Jul-2023
Date Reported: 3-Aug-2023
Location: 1295 Williams Parkway
Brampton, ON

Certificate of Analysis

Analysis Requested:	Asbestos, Lead
Sample Description:	19 Bulk Sample(s)

Client Sample ID	Lab Sample ID	Sample Matrix	Fibre Type	Asbestos Content
1A - Mortar, Wall	23-1593-1	Mortar		Not Detected
1B - Mortar, Wall	23-1593-2	Mortar		Not Detected
1C - Mortar, Wall	23-1593-3	Mortar		Not Detected
2A - Fire Stop, Red, around Conduit	23-1593-4	Fire Stop		Not Detected
2B - Fire Stop, Red, around Conduit	23-1593-5	Fire Stop		Not Detected
2C - Fire Stop, Red, around Conduit	23-1593-6	Fire Stop		Not Detected
3A - Pipe Insulation, Pipe	23-1593-7	Insulation		Not Detected
3B - Pipe Insulation, Pipe	23-1593-8	Insulation		Not Detected
3C - Pipe Insulation, Pipe	23-1593-9	Insulation		Not Detected

Certificate of Analysis

Analysis Requested:	Asbestos, Lead
Sample Description:	21 Bulk Sample(s)

Client Sample ID	Lab Sample ID	Sample Matrix	Fibre Type	Asbestos Content
4A - Sealant, Dehumidifier	23-1593-10	Sealant		Not Detected
4B - Sealant, Dehumidifier	23-1593-11	Sealant		Not Detected
4C - Sealant, Dehumidifier	23-1593-12	Sealant		Not Detected

Fisher Environmental Laboratories (Lab ID #: 2745) is accredited by CALA (Canadian Association for Laboratory Accreditation Inc.) for asbestos analysis by PLM.

ANALYTICAL METHOD:

Asbestos has been done in accordance with normal professional standard using the following Fisher Environmental Lab Method: Asbestos by PLM (Polarized Light Microscope) F-26, Rev.2.2.

Certificate of Analysis

Analysis Requested:	Asbestos, Lead
Sample Description:	19 Bulk Sample(s)

Client Sample ID	Lab Sample ID	Sample Matrix	Lead (ppm)	Comments
LP101 - Yellow/Red Paint, Base	23-1593-13	Paint	424	
LP102 - White Paint, Wall	23-1593-14	Paint	542	
LP103 - Grey Paint, Wall	23-1593-15	Paint	10	
LP104 - Grey Paint, Floor	23-1593-16	Paint	31	
LP105 - Light Tan Paint, Compressor	23-1593-17	Paint	51	
LP106 - Blue/Red Paint, Wall	23-1593-18	Paint	25	
LP107 - Light Brown Paint, Wall	23-1593-19	Paint	82	

< result obtained was below RL (Reporting Limit).

QA/QC Report

Parameter	Blank (ppm)		LCS (%)		CRM (%)	
	Result	RL	Recovery	AR	Recovery	AR
Lead	<10	10	98	80-120	100	70-130

Parameter	Duplicate (%)					
	RPD	AR				
Lead	0.1	0-30				

LEGEND:

RL - Reporting Limit
LCS - Laboratory Control Sample
MS - Matrix Spike
AR - Acceptable Range
RPD - Relative Percent Difference

ANALYTICAL METHODS:

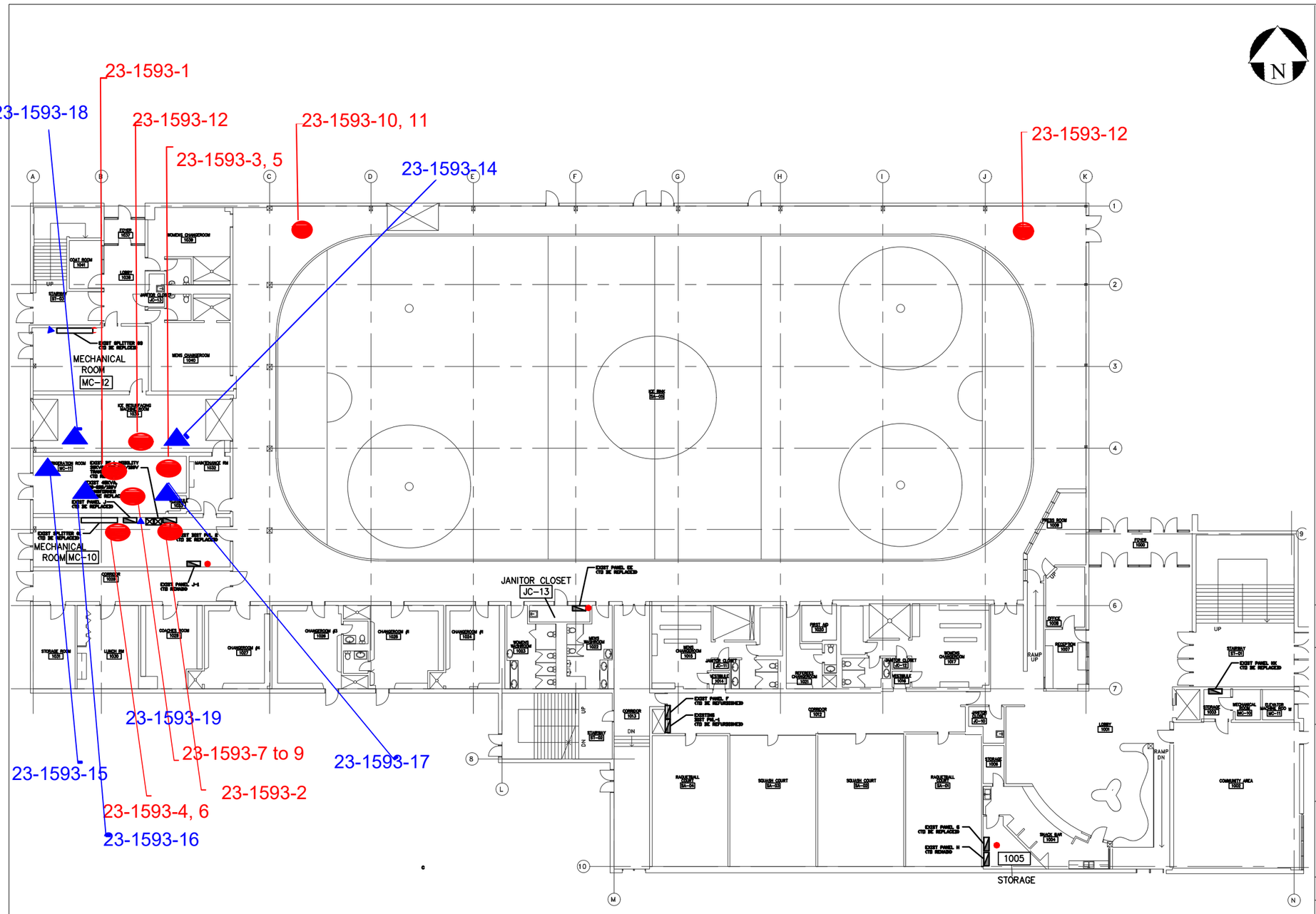
Metals (Lead) - Method # F-1, Rev. 4.5, Standard Operation Procedure for determination of Metals by the Inductively Coupled Plasma- Optical. Method used by Fisher Environmental Lab complies with the Standard Methods for the Examination of Water and Wastewater, 20th Ed 3120-B.

Authorized by: _____

Roger Lin, Ph. D., C. Chem.
Laboratory Manager

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Ronggen (Roger) Lin
CHEMIST

APPENDIX B – SITE PLANS



Legend

- Asbestos Sample Location
- Lead Sample Location

Figure 1

LOCATION:

1295 William Pkwy
Brampton, Ontatio.

BUILDING NAME:

Terry Miller Rec. Centre

First Floor Plan
Asbestos and Lead Sample Locations

CLIENT: City of Brampton			
PROJECT NUMBER: FE-P 23-13212	DATE: Aug 2023	DRW BY: ZA	
CAD FILE: FIG1	SCALE: Not to Scale	CHK BY: RS	

brampton.ca BRAMPTON Flower City

APPENDIX C – SITE PHOTOGRAPHS

Picture 1, 2: non-asbestos-containing pipe, sealant and non-lead-containing paint.

Picture 3: Non-asbestos-containing black sealant around the dehumidifiers