



## **HAZARDOUS MATERIAL ABATEMENT SPECIFICATIONS**

### **REPLACE CONTROL AND ISOLATION VALVE**

**MCNICOLL AVENUE  
155 MCNICOLL AVENUE  
TORONTO, ONTARIO**

**Submitted To:**

BGIS  
Jean Weiss-Bartelli, Sr. Project Manager  
4175 14<sup>th</sup> Avenue  
Markham, ON  
L3R 0J2

**Prepared by:**

ECOH  
75 Courtneypark Drive West, Unit 1  
Mississauga, ON  
L5W 0E3

**BGIS Project Number: IOP004400**

**ECOH Project No. 29547**

**January 2026**

**LIST OF CONTENTS**

	<b>Page</b>
<b>1. GENERAL</b> .....	<b>2</b>
1.1 General and Related Work.....	2
<b>2. SITE CONDITIONS</b> .....	<b>2</b>
2.2 Outline of Work in Project Area .....	3
2.3 Schedule .....	4
2.4 Supervision .....	5
2.5 Quality Assurance .....	5
2.6 Regulations .....	6
2.7 Notification .....	7
2.8 Submittals .....	7
2.9 Waste Transport and Disposal .....	8
<b>3. PRODUCTS</b> .....	<b>8</b>
Refer to Part 2 of related Sections of work.....	8
<b>4. EXECUTION</b> .....	<b>8</b>
4.1 Refer to Part 3 of related Sections of work.....	9

## 1. GENERAL

### 1.1 General and Related Work

1.1.1 All sections of the specifications form a part of the Contract Document and shall be read to determine their effect upon the work of this section.

1.1.2 Related Work Specified Elsewhere

Division 13, Section 132810	Asbestos Abatement – Type 1
Division 13, Section 132820	Asbestos Abatement – Type 2
Division 13, Section 132830	Asbestos Abatement – Type 3
Division 13, Section 132840	Lead Abatement

Attachments:

- 1) *Pre-Renovation Designated Substance and Hazardous Materials Assessment, Child Care Program McNicoll Avenue, ECOH Management Inc., December 2, 2026.*

1.1.3 This specification fulfils the requirements of the report required by *Designated Substance – Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations*, Ontario Regulation 278/05, Section 10.

1.1.4 The Contractor is responsible to verify all materials and measurements for removal and cleaning purposes. Materials, measurements, and quantities provided herein are for reference only.

1.1.5 It is the intent that any work performed as per project requirements will result in the removal and disposal or decontamination of all asbestos-containing material (ACM) and all materials that have been contaminated by ACM either during or prior to work of this section.

## 2. SITE CONDITIONS

2.1.1 Refer to Attachment 1, for site conditions and description of asbestos-containing materials and hazardous materials present in the project area.

### 2.1.2 Asbestos-Containing Materials

2.1.2.1 Concrete block mortar within the Project Area is **asbestos-containing**.

2.1.2.2 Drywall joint compound present on walls and ceilings within the Project Area is **asbestos-containing**.

2.1.2.3 Lay-in ceiling tiles throughout the Project Area are **asbestos-containing**.

2.1.2.4 White Cementitious firestop present on Steel Joist within the Project Area is **asbestos-containing**.

2.1.2.5 Glue associated with 1'x1' Glue-on ceiling tiles within the Project Area is assumed to be **asbestos-containing**.

## **2.2 Outline of Work in Project Area**

2.2.1 Co-operate fully with the on-site Environmental Abatement Consultant in confirming work areas and methods to be used in performing work. Assist the on-site Abatement Consultant in confirming the extent and specific location of hazardous materials.

2.2.2 The Contractor must have a representative on-site at all times when work is being completed. The Contractor shall provide one Abatement Supervisor to coordinate all work (in all areas) with the Abatement Consultant.

2.2.3 Use of the Glove Bag Methodology in combination with Type 2 or Type 3 asbestos safety precautions is subject to approval by the Abatement Consultant.

2.2.4 Protect all surfaces, building fabric and items not affected by work of this project.

2.2.5 Clean all surfaces of any potentially containing material.

### **2.2.5.1 Recommendations - Asbestos-Containing Materials**

#### **2.2.5.1.1 Concrete Block Mortar (Non-Friable)**

For removal of asbestos containing concrete block mortar using non-powered hand-held tools, work shall be completed following Type 1 asbestos safety precautions, as per Section 132810 and Ontario Regulation 278/05.

For removal of less than one (1) square meter of asbestos-containing concrete block mortar using non-powered hand-held tools or power tools that are attached to a dust-collecting device equipped with a HEPA filter, work shall be completed following Type 2 asbestos safety precautions, as per Section 132820 and Ontario Regulation 278/05.

#### **2.2.5.1.2 Drywall Joint Compound (Non-Friable)**

For removal of less than one (1) square meter of drywall with asbestos-containing joint compound using non-powered hand-held tools work shall be completed following Type 1 asbestos safety precautions, as per Section 132810 and Ontario Regulation 278/05.

For removal of one (1) square meter or more of drywall with asbestos-containing joint compound using non-powered hand-held tools or power tools that are attached to a dust-collecting device equipped with a HEPA filter, work shall be completed following Type 2 asbestos safety precautions, as per Section 132820 and Ontario Regulation 278/05.

**2.2.5.1.3 Lay-in Ceiling Tiles (Potentially Friable)**

For removal of less than 7.5 square meters of asbestos containing lay-in ceiling tiles work shall be completed following Type 1 asbestos safety precautions; provided that ceiling tiles are not broken, cut, drilled, abraded, ground, sanded, or vibrated, as per Section 132810 and Ontario Regulation 278/05.

For removal of one (1) square meter or more of drywall with asbestos-containing joint compound using non-powered hand-held tools or power tools that are attached to a dust-collecting device equipped with a HEPA filter, work shall be completed following Type 2 asbestos safety precautions, as per Section 132820 and Ontario Regulation 278/05.

**2.2.5.1.4 White Cementitious Firestop (Friable)**

For removal of less than one square metre of asbestos-containing white cementitious firestop using non-powered hand-held tools, work shall be completed following Type 2 asbestos safety precautions, as per Section 132820 and Ontario Regulation 278/05.

For removal of one (1) square meter or more of asbestos-containing white cementitious firestop work shall be completed following Type 3, or Type 2 Glovebag where practical, asbestos safety precautions, as per Section 132830 and 132820 respectively and Ontario Regulation 278/05.

**2.2.5.1.5 Glue from associated Glue-on Ceiling Tiles (Non-Friable)**

For removal of assumed asbestos containing glue from associated glue-on ceiling tiles using non-powered hand-held tools, work shall be completed following Type 1 asbestos safety precautions, as per Section 132810 and Ontario Regulation 278/0

**2.2.6 Lead Containing Materials**

2.2.6.1 Lead-containing beige paint present on walls within Classroom/Kitchen (Loc. 205) is present within the Project Area. Lead is also assumed to be present in ceramic tile glazing, wiring connectors and electric cable sheathing, and piping and solder joints on piping.

**2.2.7 Recommendations - Lead-Containing Materials at the Project Area**

2.2.7.1 Removal or disturbance of materials confirmed or assumed to contain lead must be completed in accordance with Ministry of Labour Guideline, "Lead on Construction Projects" dated April 2011, and in accordance with procedures detailed in Section 132840 – Lead Abatement.

**2.3 Schedule**

2.3.1 All work is to be completed in hours as stipulated in future coordination.

2.3.2 The Contractor shall provide a schedule for removal work. The schedule shall be subject to approval and acceptance by the Owner and/or Environmental Abatement Consultant.

## **2.4 Supervision**

2.4.1 The Contractor shall provide an on-site Superintendent that has the authority to oversee all aspects of the work, including but not limited to, negotiation of changes to the contract, scheduling, manpower, equipment, production, communication and co-ordination with the Abatement Consultant.

2.4.2 The Environmental Abatement Consultant reserves the right to reject or accept any Superintendent without explanation.

2.4.3 Training (For Workers and Supervisors, Prior to November 2007): The Contractor shall ensure that training is provided by a competent person from a recognized asbestos training course (minimum 3-day duration) for all workers involved with asbestos operations. In addition, all workers must show proof of completion of an asbestos awareness refresher course that meets the requirements of Ontario Regulation 278/05. Copies of the Certificates issued at successful completion of the training shall be provided to the Abatement Consultant.

2.4.4 Training (For Workers, Subsequent to November 2007): In addition to the above training requirements, the Contractor shall ensure that:

2.4.4.1 Every worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Worker Training Program approved by the Ministry of Training, Colleges and Universities,

2.4.4.2 Every supervisor of a worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Supervisor Training Program approved by the Ministry of Training, Colleges and Universities,

2.4.4.3 Every worker and supervisor successfully completed the appropriate program required before performing or supervising the work to which the program relates,

2.4.4.4 A copy of the document issued by the Ministry of Training, Colleges and Universities, showing that a worker has successfully completed the above-mentioned program or has successfully completed equivalent training in another province or territory of Canada, is provided to the Abatement Consultant.

2.4.5 Supervisory personnel must be on site at all times during work that may disturb hazardous materials.

2.4.6 The Contractor cannot replace supervisory personnel without written approval from the Abatement Consultant.

## **2.5 Quality Assurance**

- 2.5.1 The Contractor shall ensure the removal and handling of Hazardous Materials or contaminated materials are performed by trained and competent personnel. The Environmental Abatement Consultant reserves the right to remove any personnel that, in their opinion, do not meet these qualifications.
- 2.5.2 All related work of this section shall be performed by licensed persons, experienced and qualified for the work required.
- 2.5.3 The Environmental Abatement Consultant is empowered by the Owner to order work to stop when prescribed health and safety measures and/or health and safety procedures and/or health and safety facilities are not, or are likely not to be, fully implemented, as stipulated within the project specifications. Cost of additional work by Contractor and/or Asbestos Abatement Consultant to fully re-establish health and safety measures and/or health and safety procedures and/or health and safety facilities, to meet the requirements stipulated within the project specifications, shall be the burden of the Hazardous Material Abatement Contractor.
- 2.5.4 The Hazardous Material Abatement Contractor is solely responsible for the control of the project, construction practices, their Subcontractors or their agents, employees or other persons performing any of the Work.

## **2.6 Regulations**

- 2.6.1 The Contractor shall comply with Federal, Provincial, and local requirements pertaining to designated substance removal and related general demolition activities, provided that in any case of conflict among those requirements, or with these specifications, the more stringent requirement shall apply. The regulations and guidelines shall include but not be limited to the following:
- 2.6.1.1 Ontario Ministry of Labour, Occupational Health and Safety Division, Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations – made under the Occupational Health and Safety Act, Ontario Regulation 278/05.
- 2.6.1.2 Ontario Ministry of the Environment Regulation 347, as amended, under the Environmental Protection Act.
- 2.6.1.3 Government of Canada Regulations respecting the Handling, Offering for Transport and Transporting of Dangerous Goods. (Extract from the Canada Gazette Part II, dated February 6, 1985).
- 2.6.1.4 Dangerous Goods Transportation Act (DGTA) R.S.O. 1990 c.D1.
- 2.6.1.5 Regulations for Construction Projects O.Reg. 213/91.
- 2.6.1.6 Office of the Fire Commissioner of Canada.
- 2.6.1.7 Ontario Electrical Safety Code, latest edition.
- 2.6.1.8 WHMIS Regulations RRO 1990 Reg. 860.

- 2.6.1.9 Ontario Occupational Health and Safety Act RSO 1990 c0.1, as amended.
- 2.6.1.10 Ministry of Labour Guideline, "Silica on Construction Projects", dated April 2011.
- 2.6.1.11 PCB Regulations (SOR/2008-273), last amended on December 8, 2011.

## **2.7 Notification**

- 2.7.1 The Contractor shall, not later than ten (10) calendar days prior to commencing a Type 3 operation of asbestos material is to be removed, notify, orally and in writing, an inspector at the office of the Ministry of Labour nearest the workplace of the operation. The Contractor must receive a signed Notice of Project (NOP) signed by the Ontario Ministry of Labour.
- 2.7.2 The Contractor shall notify Sanitary Landfill site as per Ontario Regulation 347, as amended, under the Environmental Protection Act.
- 2.7.3 The Contractor shall notify immediately Ontario Ministry of Labour, as required by Ontario Regulation 278/05, Section 10(7), if asbestos-containing materials not identified in the site conditions are discovered during the project.
- 2.7.4 The Contractor shall notify any Subcontractors of all ACM or other designated substances in the work area or in an area in which they may come into contact with it.

## **2.8 Submittals**

- 2.8.1 The Contractor shall prepare prior to commencing work and submit upon request:
  - 2.8.1.1 A site-specific Health and Safety Plan (HASP), to address safety issues, including but not limited to the following:
    - 2.8.1.1.1 Access and emergency evacuation routes from work areas.
    - 2.8.1.1.2 Creating and maintaining clear routes for work area access and emergency evacuation.
    - 2.8.1.1.3 Work site communication.
  - 2.8.1.2 Permits for transportation of asbestos waste and location of landfill.
  - 2.8.1.3 Proof that workers have received WHMIS training.
  - 2.8.1.4 Work Place Safety and Insurance Clearance Certificates.
  - 2.8.1.5 Pre-removal survey of damage in all areas where asbestos abatement will take place or waste will be transported.
  - 2.8.1.6 Proposed schedule including all stages of work.
  - 2.8.1.7 Waste and worker decontamination facilities, platform and hoarding layouts, Material Safety Data Sheets (MSDS) for chemicals or materials used in the course of the project.

- 2.8.1.8 Negative air unit and/or vacuum cleaner performance data and results of D.O.P. tests as required.
- 2.8.1.9 Certificate proving that each worker on-site has been fit tested for the respirator appropriate for the work being performed.
- 2.8.2 The Contractor shall submit names of supervisory personnel who will be responsible for asbestos work area(s). One of these supervisors must remain on site at all times asbestos removal or clean-up is occurring. Submit proof that supervisory personnel have attended training course on asbestos control (3-day minimum duration) and have performed supervisory function on at least 5 other asbestos abatement projects.

## **2.9 Waste Transport and Disposal**

- 2.9.1 The Contractor shall ensure asbestos-containing, hazardous material or asbestos-contaminated materials, removed during abatement are treated, packaged, transported and disposed of as asbestos waste.
- 2.9.2 The Contractor is responsible for the disposal of all waste generated as per regulation.
- 2.9.3 The Contractor shall drop garbage bins at designated locations and keep bins covered and enclosed while at the site. The bin loading area shall be kept clean at all times.
- 2.9.4 The Contractor shall pick-up and drop off garbage bins at pre-approved times, and must not interfere with the Owner's operations.
- 2.9.5 The Contractor shall conform to requirements of Regulations under Environmental Protection Act for Waste Management, transporting and disposal of hazardous waste.
- 2.9.6 The Contractor shall ensure shipment of containers to dump is taken by waste hauler licensed to transport asbestos waste.
- 2.9.7 The Contractor shall provide a bill of lading showing the type and weight of hazardous waste being transported for each load.
- 2.9.8 The Contractor shall check with dump operator to determine type of waste containers acceptable.
- 2.9.9 The Contractor shall ensure dump operator is fully aware of hazardous material being dumped.
- 2.9.10 The Contractor shall co-operate with Ministry of Environment inspectors and immediately carry out instructions for remedial work, where required, to maintain environment, at no additional cost to Owner.

## **3. PRODUCTS**

Refer to Part 2 of related Sections of work.

## **4. EXECUTION**

4.1 Refer to Part 3 of related Sections of work.

**End of Section**

**ASBESTOS ABATEMENT TYPE 1**

**SECTION 132810**

## LIST OF CONTENTS

	<b>Page</b>
<b>1. GENERAL .....</b>	<b>2</b>
1.1 General and Related Work .....	2
1.2 Definitions .....	3
1.3 Worker Protection.....	4
1.4 Visitor Protection .....	6
1.5 Air Monitoring .....	6
<b>2. PRODUCTS.....</b>	<b>6</b>
2.1 Materials and Equipment.....	6
<b>3. EXECUTION.....</b>	<b>8</b>
3.1 Site Preparation .....	8
3.2 Removal .....	8
3.3 Work Area Clean Up and Exit from the Work Area.....	9

1. **GENERAL**

1.1 **General and Related Work**

1.1.1 All sections of the specifications form a part of the Contract Document and shall be read to determine their effect upon the work of this section.

1.1.2 Related Work Specified Elsewhere

Division 13, Section 132800	Scope & Details
Division 13, Section 132820	Asbestos Abatement – Type 2
Division 13, Section 132820	Asbestos Abatement – Type 3
Division 13, Section 132830	Lead Abatement

Attachments:

1) *Pre-Renovation Designated Substance and Hazardous Materials Assessment, Child Care Program McNicoll Avenue*, ECOH Management Inc., December 2, 2026.

1.1.3 This specification fulfils the requirements of the report required by Designated Substance – *Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations*, Ontario Regulation 278/05, Section 10.

1.1.4 The Contractor is responsible to verify all measurements for removal, cleaning, and re-insulation purposes. Measurements and quantities provided herein are for reference only.

1.1.5 It is the intent that work performed as per this section will result in the removal and disposal or decontamination of all asbestos-containing material (ACM) and mould-contaminated materials, as well as all materials that have been contaminated by ACM or mould either during or prior to work of this section.

1.1.6 Refer to Section 132800, Scope and Details Specification, for the following information and requirements;

1.1.6.1 Site Conditions,

1.1.6.2 Outline of Work,

1.1.6.3 Schedule,

1.1.6.4 Supervision,

1.1.6.5 Quality Assurance,

1.1.6.6 Regulations,

1.1.6.7 Notification,

- 1.1.6.8 Submittals, and
- 1.1.6.9 Waste Transport and Disposal.

## **1.2 Definitions**

- 1.2.1 Air Monitoring: The process of measuring the fibre content of a specific volume of air.
- 1.2.2 Amended Water: Water with a non-ionic surfactant wetting agent added to reduce water surface tension to 35 or less dynes, to allow thorough wetting of asbestos fibres.
- 1.2.3 Asbestos: The serpentine and amphibole asbestiform varieties including chrysotile, actinolite, amosite, anthophyllite, crocidolite and tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.
- 1.2.4 Asbestos Abatement Consultant: The Owner or person designated by the owner to provide inspection and air monitoring of the Contractor's work.
- 1.2.5 Asbestos-Containing Material (ACM): Any material that contains 0.5 per cent or more asbestos, of any type or mixture of types, by dry weight.
- 1.2.6 Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.
- 1.2.7 Asbestos Debris: Pieces of ACM that can be identified by colour, texture, or composition, or means dust, if the dust is determined by an accredited Asbestos Abatement Consultant to be ACM.
- 1.2.8 Asbestos Work Area: Where the actual removal, sealing and enclosure of asbestos-containing materials takes place.
- 1.2.9 Authorized Visitor: The Owner or his approved representative and/or persons representing regulatory agencies.
- 1.2.10 Barrier: Any surface that seals off the work area to inhibit the movement of fibres.
- 1.2.11 Clean Area: Either an operating area or an area in which removal work has already been completed.
- 1.2.12 Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.

- 1.2.13 Disposal Bag: A properly labelled 6 mil thick leak-tight plastic bag used for transporting asbestos waste from the work area to the disposal site.
- 1.2.14 D.O.P. Test: Dioctylphthalate aerosol challenge of a HEPA filter system and is used to establish the integrity and effectiveness of the system to filter out asbestos fibres.
- 1.2.15 Filter: A media component used in respirators, vacuum cleaners or negative pressure filter fan units to remove solid or liquid particles from the inspired air.
- 1.2.16 Friable Asbestos Material: Material that contains asbestos that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- 1.2.17 HEPA Filter: High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.
- 1.2.18 Occupied Area: Any area of the building outside the Asbestos Work Area.
- 1.2.19 Polyethylene: Sheeting of type and thickness specified sealed with tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealant, and to prevent escape of asbestos fibres through the sheeting into a clean area.
- 1.2.20 Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- 1.2.21 Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.
- 1.2.22 Work: Includes all services, labour and material required to complete the work as specified in the contract.

### **1.3 Worker Protection**

- 1.3.1 Prior to commencing work instruct workers in all aspects of work procedures and protective measures.
- 1.3.2 Provide workers who request a respirator with personally issued respiratory equipment acceptable to the Occupational Health and Safety Division of the Ontario Ministry of Labour, suitable for the Asbestos exposure.
- 1.3.3 Ensure that suitable respiratory protective equipment is worn by every worker, who has requested a respirator, and who enters the Asbestos

Work Area. A respirator provided by an employer and used by a worker shall be:

- 1.3.3.1 an air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, or better;
- 1.3.3.2 fitted so that there is an effective seal between the respirator and the worker's face;
- 1.3.3.3 assigned to a worker for the worker's exclusive use, if practicable;
- 1.3.3.4 used and maintained in accordance with written procedures that are established by the employer and are consistent with the manufacturer's specifications;
- 1.3.3.5 cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker;
- 1.3.3.6 free of damaged or deteriorated parts. Damaged or deteriorated parts are to be replaced prior to being used by a worker;
- 1.3.3.7 be stored in a convenient, clean and sanitary location; when not in use;
- 1.3.3.8 certified by the US National Institute for Occupational Safety and Health (NIOSH) for exposure to airborne asbestos fibre.
- 1.3.4 If respirators are used in the workplace,
  - 1.3.4.1 The employer shall establish written procedures regarding the selection, use and care of respirators; and
  - 1.3.4.2 A copy of the procedures shall be provided to and reviewed with each worker who is required to wear a respirator.
- 1.3.5 A worker shall not be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
- 1.3.6 Provide workers who request protective clothing with full body disposable coveralls.
- 1.3.7 Ensure that full body disposable coveralls are worn by every worker, who has requested protective clothing, and who enters the Asbestos Work Area. The protective clothing provided by an employer and used by a worker shall be:
  - 1.3.7.1 made of a material which does not readily retain nor permit penetration of asbestos fibres;
  - 1.3.7.2 shall consist of head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing;

- 1.3.7.3 shall include suitable footwear;
- 1.3.7.4 shall be repaired or replaced if torn.
- 1.3.8 Do not eat, drink, smoke or chew except in established locations outside the Asbestos Work Area.

## **1.4 Visitor Protection**

- 1.4.1 Provide clean protective clothing and equipment and approved respirators to Authorized Visitors when requested.
- 1.4.2 Ensure Authorized Visitors have received required training for entry into Asbestos Work Area.

## **1.5 Air Monitoring**

- 1.5.1 If required, air monitoring will be performed following the National Institute for Occupational Safety and Health method 7400.
- 1.5.2 The contractor shall cooperate fully with the owner and/or asbestos abatement consultant in the collection of air monitoring samples, including the collection of personal worker samples, if required.
- 1.5.3 Results of PCM samples of 0.04 fibres per millilitre of air (fibre/mL) or greater, outside of Asbestos Work Area, will indicate asbestos contamination of these areas. The contaminated areas shall be isolated and cleaned in the same manner applicable to the Asbestos Work Area, at no cost to the Owner.

## **2. PRODUCTS**

### **2.1 Materials and Equipment**

- 2.1.1 All tools, equipment, materials and supplies brought to work site must be in good condition and free of asbestos, asbestos debris, and fibrous materials.
- 2.1.2 Disposable tools, equipment, materials and supplies must be of new materials only.
- 2.1.3 Asbestos Waste Containers: Containers for dust and waste shall be, dust tight, suitable for the type of waste, impervious to asbestos and any chemicals used during the removal process, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before being removed from the work area, and removed from the workplace frequently and at regular intervals.

- 2.1.3.1 Waste shall be contained in two separate containers. The inner container shall be a sealable polyethylene bag. Where there are sharp objects included in the waste material, the outer container shall be a sealable fibre type drum, otherwise the outer container may be a sealable polyethylene bag.
- 2.1.3.2 Container must be new materials only.
- 2.1.3.3 Containers shall be as follows:
  - 2.1.3.3.1 Polyethylene Waste Bag: 0.15 mm (6 mil) thick leak-tight polyethylene bags.
  - 2.1.3.3.2 Fibre Drums: 55 US gallon capacity heavy-duty leak tight fibre drums with tight sealing locking metal top and metal bottom.
  - 2.1.3.3.3 Labels: Waste containers shall have a pre-printed cautionary asbestos warning label, acceptable to local dump authorities, clearly visible when ready for removal to disposal site.
- 2.1.4 Drop Sheets: In polyethylene type and size appropriate for the work being performed.
- 2.1.5 First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.
- 2.1.6 HEPA Vacuum: Vacuum with all necessary fittings, tools and attachments. All air must be filtered by HEPA filter before discharge.
- 2.1.7 Lockdown Sealer: Slow-drying sealer shall be a non-staining, clear, water dispersable type that remains tacky on the surface for a minimum of 8 hours for the purpose of trapping any residual airborne fibres during the settling period. Lock-down agent shall be compatible with replacement insulation or fireproofing where required and capable of withstanding service temperature of substrate. The product must have flame spread and smoke development ratings both less than 50 and shall leave no stain when dry. Also referred to as "Lockdown Agent".
- 2.1.8 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness unless otherwise specified, in sheet size to minimize joints.
  - 2.1.8.1 Fibre-Reinforced (Rip-Proof) Polyethylene Sheeting: 8 mil (0.20mm) fabric made up from one layer of 5 mil (0.13 mm) weave and two layers of 1.5 mil (0.04 mm) poly laminate or approved equal. In sheet size to minimize on-site seams and overlaps.
- 2.1.9 Protective Coveralls: Disposable full body coveralls complete with hoods manufactured of a material which does not permit penetration of asbestos fibres.

- 2.1.10 Sprayer: Garden-type portable manual sprayer or water hose with spray attachment if suitable.
- 2.1.11 Tape: Reinforced cloth or fibreglass reinforced tape in 2" or 3" widths suitable for sealing polyethylene sheeting under both wet conditions using amended water, and dry conditions.

### **3. EXECUTION**

#### **3.1 Site Preparation**

- 3.1.1 Establish personal hygiene facilities for workers to wash their hands and face. Washing facilities to include sufficient supplies of disposable hand towels, hand soap, a waste receptacle and a mirror.
- 3.1.2 Provide to the Owner and/or Asbestos Abatement Consultant an itemized list of pre-existing damage in Work Area.
- 3.1.3 Moving of equipment, tools, supplies, and stored materials which can be performed without disturbing ACM will be performed by the contractor.
- 3.1.4 Visible dust shall be removed with a damp cloth/mop or a vacuum equipped with a HEPA filter from any surface in the work area, including the thing to be worked on, if the dust on that surface is likely to be disturbed.
- 3.1.5 The spread of debris and dust from the work area shall be controlled by measures appropriate to the work to be done including the use of drop sheets of fibre-reinforced (rip-proof) polyethylene or other suitable material that is impervious to asbestos. Replace, or overlay, additional layers of fibre reinforced (rip-proof) polyethylene sheeting as required to maintain an efficient and continuous barrier.
- 3.1.6 Prepare sufficient quantities of water mixed with a wetting agent, which is to be used frequently and at regular intervals, to control the spread of debris and dust.
- 3.1.7 Cover floors and furnishings with polyethylene sheeting or Rip-Proof Polyethylene Sheeting before disturbing non-friable ACM.

#### **3.2 Removal**

- 3.2.1 Prior to removal, wet all materials scheduled for removal. Allow materials scheduled for removal sufficient time to absorb wetting agent.
- 3.2.2 All removal work must be completed manually with non-powered hand tools.

- 3.2.3 Undo or remove fasteners if necessary to remove materials.
- 3.2.4 Break materials only if unavoidable.
- 3.2.5 Wet freshly exposed edges of broken materials.
- 3.2.6 Remove material adhered to substrate or supports.
- 3.2.7 Frequently and at regular intervals during the doing of the work, debris and dust waste shall be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in an asbestos waste container.
- 3.2.8 Clean Asbestos Work Area frequently with HEPA vacuum or with wet cleaning methods.
- 3.2.9 Compressed air shall not be used to clean up and remove debris or dust from any surface.
- 3.2.10 Eating, drinking, chewing or smoking shall not be permitted in the work area.
- 3.2.11 Maintain all work areas in a neat and orderly fashion at all times.

### **3.3 Work Area Clean Up and Exit from the Work Area**

- 3.3.1 Immediately upon completion of the work, debris and dust waste shall be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in an asbestos waste container.
- 3.3.2 Following visual acceptance of the removal work by the Owner and/or Asbestos Abatement Consultant, spray the entire surface, where ACM have been removed, with lock-down sealer.
- 3.3.3 Drop sheets shall not be reused.
- 3.3.4 Drop sheets shall be wetted and placed in an asbestos waste container as soon as practicable after completion of the preceding Items of this Section.
- 3.3.5 Carefully roll drop sheets toward the centre of work area. Remove visible debris by means of HEPA vacuum as polyethylene is rolled away.
- 3.3.6 After the work is completed, polyethylene sheeting and similar materials used for barriers and enclosures shall not be reused, but shall be wetted and placed in an asbestos waste container as soon as practicable following completion of the preceding Items of this Section.
- 3.3.7 Barriers and portable enclosures shall not be reused unless they are rigid and can be cleaned thoroughly.

- 3.3.8 After the work is completed, barriers and portable enclosures that will be reused shall be cleaned, by using a vacuum equipped with a HEPA filter or by damp wiping, as soon as practicable following completion of the preceding Items of this Section.
- 3.3.9 All tools, equipment, materials and supplies that will NOT be reused shall be placed in an asbestos waste container as soon as practicable following completion of the preceding Items of this Section.
- 3.3.10 All tools, equipment, materials and supplies that will be reused shall be cleaned, by using a vacuum equipped with a HEPA filter or by damp wiping, as soon as practicable following completion of the preceding Items of this Section.
- 3.3.11 Workers who are provided with protective clothing shall complete the following before leaving the work area;
  - 3.3.11.1 Decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing.
  - 3.3.11.2 If the protective clothing is to be reused, it shall be stored in a sealable plastic bag.
  - 3.3.11.3 If the protective clothing will NOT be reused, place it in an asbestos waste container immediately prior to leaving the work area.
- 3.3.12 Immediately after leaving the work area, all workers shall proceed directly to the established washing facilities to wash hands and face.
- 3.3.13 All workers who requested respiratory protection shall wash, remove and store respirators as per the written procedures that have been established by the employer and as is consistent with the manufacturer's specifications.
- 3.3.14 Reinstall objects and items removed to facilitate removal of ACM.

**End of Section**

**ASBESTOS ABATEMENT TYPE 2**

**SECTION 132820**

**LIST OF CONTENTS**

	<b>Page</b>
<b>1. GENERAL</b> .....	<b>2</b>
1.1 General and Related Work.....	2
1.2 Definitions .....	3
1.3 Worker Protection.....	6
1.4 Visitor Protection .....	8
1.5 Air Monitoring .....	8
<b>2. PRODUCTS</b> .....	<b>8</b>
2.1 Materials and Equipment.....	8
<b>3. EXECUTION</b> .....	<b>11</b>
3.1 Preparation Prior to Contamination .....	11
3.2 Asbestos Removal .....	13
3.3 Teardown of Enclosure and Exit from the Work Area.....	14

1. **GENERAL**

1.1 **General and Related Work**

1.1.1 All sections of the specifications form a part of the Contract Document and shall be read to determine their effect upon the work of this section.

1.1.2 Related Work Specified Elsewhere

Division 13, Section 132800	Scope & Details
Division 13, Section 132810	Asbestos Abatement – Type 1
Division 13, Section 132830	Asbestos Abatement – Type 3
Division 13, Section 132840	Lead Abatement

Attachments:

1) *Pre-Renovation Designated Substance and Hazardous Materials Assessment, Child Care Program McNicoll Avenue*, ECOH Management Inc., December 2, 2026.

1.1.3 This specification fulfils the requirements of the report required by Designated Substance – *Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations*, Ontario Regulation 278/05, Section 10.

1.1.4 The Contractor is responsible to verify all measurements for removal, cleaning, and re-insulation purposes. Measurements and quantities provided herein are for reference only.

1.1.5 It is the intent that work performed as per this section will result in the removal and disposal or decontamination of all asbestos-containing material (ACM) and mould-contaminated materials, as well as all materials that have been contaminated by ACM or mould either during or prior to work of this section.

1.1.6 Refer to Section 132800, Scope and Details Specification, for the following information and requirements;

1.1.6.1 Site Conditions,

1.1.6.2 Outline of Work,

1.1.6.3 Schedule,

1.1.6.4 Supervision,

1.1.6.5 Quality Assurance,

1.1.6.6 Regulations,

1.1.6.7 Notification,

- 1.1.6.8 Submittals, and
- 1.1.6.9 Waste Transport and Disposal.

## **1.2 Definitions**

- 1.2.1 Airlock: A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 1.5 m apart.
- 1.2.2 Air Monitoring: The process of measuring the fibre content of a specific volume of air.
- 1.2.3 Amended Water: Water with a non-ionic surfactant wetting agent added to reduce water surface tension to 35 or less dynes, to allow thorough wetting of asbestos fibres.
- 1.2.4 Asbestos: The serpentine and amphibole asbestiform varieties including chrysotile, actinolite, amosite, anthophyllite, crocidolite and tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.
- 1.2.5 Asbestos Abatement Consultant: The Owner or person designated by the owner to provide inspection and air monitoring of the Contractor's work.
- 1.2.6 Asbestos-Containing Material (ACM): Any material that contains 0.5 per cent or more asbestos, of any type or mixture of types, by dry weight.
- 1.2.7 Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.
- 1.2.8 Asbestos Debris: Pieces of ACM that can be identified by colour, texture, or composition, or means dust, if the dust is determined by an accredited Asbestos Abatement Consultant to be ACM.
- 1.2.9 Asbestos Work Area: Where the actual removal, sealing and enclosure of asbestos-containing materials takes place.
- 1.2.10 Authorized Visitor: The Owner or his approved representative and/or persons representing regulatory agencies.
- 1.2.11 Barrier: Any surface that seals off the work area to inhibit the movement of fibres.
- 1.2.12 Clean Area: Either an operating area or an area in which removal work has already been completed.
- 1.2.13 Curtained Doorway: An arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of

polyethylene over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. All free edges of polyethylene shall be reinforced with duct tape and the bottom edge shall be weighted to ensure proper closing. Each polyethylene sheet shall overlap openings not less than 1.5 m on each side.

- 1.2.14 Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.
- 1.2.15 Disposal Bag: A properly labelled 6 mil thick leak-tight plastic bag used for transporting asbestos waste from the work area to the disposal site.
- 1.2.16 D.O.P. Test: Dioctylphthalate aerosol challenge of a HEPA filter system and is used to establish the integrity and effectiveness of the system to filter out asbestos fibres.
- 1.2.17 Encapsulant: A material that surrounds or embeds asbestos fibres in an adhesive matrix, to prevent release of fibres.
  - 1.2.17.1 Bridging Encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.
  - 1.2.17.2 Penetrating Encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.
  - 1.2.17.3 Removal Encapsulant: A penetrating encapsulant specifically designed to minimize fibre release during removal of asbestos-containing materials rather than for in situ encapsulation.
- 1.2.18 Encapsulation: Applying to asbestos-containing materials, with an encapsulant.
- 1.2.19 Enclosure: 6 mil polyethylene sheeting installed to fully isolate the Type 2 Asbestos Work Area. Enclosure may be a prefabricated self-supporting structure or constructed with a rigid frame, or, when applicable, supported by the ceiling grid. Enclosure shall have polyethylene sheeting as a top at locations where the enclosure does not extend up to the underside of the ceiling or underside of structure.
- 1.2.20 Filter: A media component used in respirators, vacuum cleaners or negative pressure filter fan units to remove solid or liquid particles from the inspired air.
- 1.2.21 Fitting: Unless otherwise described in Site Conditions, all connections of a pipe which include elbows, ends, caps, valves, hangers, tees and unions, etc.
- 1.2.22 Friable Asbestos Material: Material that contains asbestos that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

- 1.2.23 HEPA Filter: High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.
- 1.2.24 Negative Pressure: A system which extracts air directly from the work area, filters such extracted air through a High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building. This system shall maintain a minimum pressure differential of 0.02 inches Water Gauge relative to adjacent areas outside of work areas, be equipped with an alarm to warn of system breakdown (i.e. excessive negative pressure or insufficient negative pressure), and be equipped with an instrument to continuously monitor and automatically record pressure differences.
- 1.2.25 Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
- 1.2.26 Occupied Area: Any area of the building outside the Asbestos Work Area.
- 1.2.27 Polyethylene: Sheetting of type and thickness specified sealed with tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealant, and to prevent escape of asbestos fibres through the sheetting into a clean area.
- 1.2.28 Positive Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during inhalation and exhalation in relation to the air pressure of the outside atmosphere.
- 1.2.29 Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- 1.2.30 Straight run pipes: Part of the building system not included under the description of Fitting, including but not limited to straight, angled or curved sections of pipe, pumps, headers and reducers.
- 1.2.31 Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- 1.2.32 Water Filtration System: A multi-stage filtration system for filtering shower and wastewater. Typically constructed with at least two filters, the primary stage retains 20 microns or larger particles and the final stage removes 5 micron or larger particles.
- 1.2.33 Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted

removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.

- 1.2.34 Work: Includes all services, labour and material required to complete the work as specified in the contract.

### **1.3 Worker Protection**

- 1.3.1 Prior to commencing work instruct workers in all aspects of work procedures and protective measures.

- 1.3.2 Provide workers a respirator with personally issued respiratory equipment acceptable to the Occupational Health and Safety Division of the Ontario Ministry of Labour, suitable for the Asbestos exposure.

- 1.3.3 Ensure that suitable respiratory protective equipment is worn by every worker who enters the Asbestos Work Area. A respirator provided by an employer and used by a worker shall be:

- 1.3.3.1 an air purifying half-mask respirator with N-100, R-100 or P-100 particulate filters, or better;

OR

an air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filters, or better;

OR

a powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, R-100 or P-100 particulate filters, or better;

- 1.3.3.2 fitted so that there is an effective seal between the respirator and the worker's face;

- 1.3.3.3 assigned to a worker for the worker's exclusive use if practicable;

- 1.3.3.4 used and maintained in accordance with written procedures that are established by the employer and are consistent with the manufacturer's specifications;

- 1.3.3.5 cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker;

- 1.3.3.6 free of damaged or deteriorated parts. Damaged or deteriorated parts are to be replaced prior to being used by a worker;

- 1.3.3.7 be stored in a convenient, clean and sanitary location; when not in use;

- 1.3.3.8 certified by the US National Institute for Occupational Safety and Health (NIOSH) for exposure to airborne asbestos fibre.

- 1.3.4 The employer shall establish written procedures regarding the selection, use and care of respirators.
- 1.3.5 A copy of the procedures shall be provided to and reviewed with each worker.
- 1.3.6 A worker shall not be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
- 1.3.7 Provide all workers with full body disposable coveralls.
- 1.3.8 Ensure that full body disposable coveralls are worn by every worker who enters the Asbestos Work Area. The protective clothing provided by an employer and used by a worker shall be:
- 1.3.8.1 made of a material which does not readily retain nor permit penetration of asbestos fibres;
- 1.3.8.2 shall consist of head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing;
- 1.3.8.3 shall include suitable footwear;
- 1.3.8.4 shall be repaired or replaced if torn.
- 1.3.9 Provide other body protection required under applicable safety regulations.
- 1.3.10 Personnel must be fully protected at all times when possibility of disturbance of asbestos exists.
- 1.3.11 Provide and post the procedures described under Worker Protection.
- 1.3.12 Do not eat, drink, smoke or chew except in established locations outside the Asbestos Work Area.
- 1.3.13 Asbestos Abatement Work Area Entry Procedures
- 1.3.13.1 Use asbestos abatement precautions at all times when possibility of disturbance of ACM exists.
- 1.3.13.2 Put on respirator with new or tested filters, coveralls and head covers before entering contaminated Asbestos Work Area. Protective coveralls shall cover all hair and any re-usable clothing.
- 1.3.14 Asbestos Abatement Work Area Exit Procedures
- 1.3.14.1 Remove gross contamination from protective clothing using HEPA vacuum or wet wiping.
- 1.3.14.2 Remove all contaminated clothing and equipment except respirator.
- 1.3.14.3 Exit site and proceed to wash area while wearing respirator.

- 1.3.14.4 Wash exposed skin and respirator with soap and water.
- 1.3.14.5 Remove respirator filters from respirator. Cover inlet side of respirator with tape for storage and re-use or dispose of as asbestos waste.

## **1.4 Visitor Protection**

- 1.4.1 Provide clean protective clothing and equipment and approved respirators to Authorized Visitors.
- 1.4.2 Ensure Authorized Visitors have received required training for entry into Asbestos Work Area.

## **1.5 Air Monitoring**

- 1.5.1 Air monitoring will be performed following the National Institute for Occupational Safety and Health method 7400.
- 1.5.2 The contractor shall cooperate fully with the asbestos abatement consultant in the collection of air monitoring samples, including the collection of personal worker samples, if required.
- 1.5.3 Results of PCM samples of 0.04 fibres per millilitre of air (fibre/mL) or greater, outside of Asbestos Work Area, will indicate asbestos contamination of these areas. The contaminated areas shall be isolated and cleaned in the same manner applicable to the Asbestos Work Area, at no cost to the Owner.

## **2. PRODUCTS**

### **2.1 Materials and Equipment**

- 2.1.1 All tools, equipment, materials and supplies brought to work site must be in good condition and free of asbestos, asbestos debris, and fibrous materials.
- 2.1.2 Disposable tools, equipment, materials and supplies must be of new materials only.
- 2.1.3 Airless Sprayer: Spray equipment for amended water: for application to asbestos-containing materials for saturation prior to removal. Airless spray units are only acceptable, such as Grace Hydrospray or approved equal.
- 2.1.4 Asbestos Waste Containers: Containers for dust and waste shall be, dust tight, suitable for the type of waste, impervious to asbestos and any chemicals used during the removal process, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter

immediately before being removed from the work area, and removed from the workplace frequently and at regular intervals.

- 2.1.4.1 Waste shall be contained in two separate containers. The inner container shall be a sealable polyethylene bag (or where the glove bag method is used, the glove bag itself). Where there are sharp objects included in the waste material, the outer container shall be a sealable fibre type drum, otherwise the outer container may be a sealable polyethylene bag.
- 2.1.4.2 Container must be new materials only.
- 2.1.4.3 Containers shall be as follows:
  - 2.1.4.3.1 Polyethylene Waste Bag: 0.15 mm (6 mil) thick leak-tight polyethylene bags.
  - 2.1.4.3.2 Fibre Drums: 55 US gallon capacity heavy duty leak tight fibre drums with tight sealing locking metal top and metal bottom.
  - 2.1.4.3.3 Labels: Waste containers shall have a pre-printed cautionary asbestos warning label, acceptable to local dump authorities, clearly visible when ready for removal to disposal site.
- 2.1.5 Caulking: One component non-staining acrylic polymer sealant to conform to GSB Specification 19GP-5M.
- 2.1.6 Drop Sheets: In polyethylene type and size appropriate for the work being performed.
- 2.1.7 Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas of work.
- 2.1.8 Encapsulant: Type 1 penetrating Class A water based encapsulant conforming to CGSB 1-GP-205M and approved by the Fire Marshall having flame spread and smoke development ratings both less than fifty (50). Acceptable products: Ocean 666, Decadex Fire Check equivalent or better.
- 2.1.9 Fine Atomizing Spray Nozzle: Nozzle for airless sprayer capable of delivering not less than 1 gallon per minute of fine particle spray of amended water.
- 2.1.10 First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.
- 2.1.11 Flame-Resistant Polyethylene Sheeting: A single polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films, 0.15 mm (6 mils) thickness.

- 2.1.12 Garden Sprayer: A hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or fine spray of liquid of amended water under pressure.
- 2.1.13 Ground Fault Panel: Electrical panel, installed by licensed electrician and equipped as follows:
- 2.1.13.1 Ground fault circuit interrupters of sufficient capacity to power temporary electrical equipment and lights in Asbestos Work Area.
- 2.1.13.2 Interrupters to have a 5 mA ground fault protection.
- 2.1.13.3 Necessary accessories including main switch disconnect, ground fault interrupter lights, test switch to ensure unit is working, and reset switch.
- 2.1.13.4 Openings sealed to prevent moisture or dust penetration.
- 2.1.14 HEPA Vacuum: Vacuum with all necessary fittings, tools and attachments. All air must be filtered by HEPA filter before discharge.
- 2.1.15 Lockdown Sealer: Slow-drying sealer shall be a non-staining, clear, water dispersable type that remains tacky on the surface for a minimum of 8 hours for the purpose of trapping any residual airborne fibres during the settling period. Lock-down agent shall be compatible with replacement insulation or fireproofing where required and capable of withstanding service temperature of substrate. The product must have flame spread and smoke development ratings both less than 50 and shall leave no stain when dry. Also referred to as "Lockdown Agent".
- 2.1.16 Negative Air Unit: Portable air handling system which extracts air directly from the Asbestos Work Area and discharges the air to the exterior of the Asbestos Work Area. Equipped as follows:
- 2.1.16.1 Prefilter and HEPA filter. Air must pass HEPA filter before discharge.
- 2.1.16.2 Pressure differential gauge to monitor filter loading.
- 2.1.16.3 Auto shut off and warning system for HEPA filter failure.
- 2.1.16.4 Separate hold down clamps to retain HEPA filter in place during change of prefilter.
- 2.1.17 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness unless otherwise specified, in sheet size to minimize joints.
- 2.1.17.1 Fibre-Reinforced (Rip-Proof) Polyethylene Sheeting: 8 mil (0.20mm) fabric made up from one layer of 5 mil (0.13 mm) weave and two layers of 1.5 mil (0.04 mm) poly laminate or approved equal. In sheet size to minimize on-site seams and overlaps.
- 2.1.17.2 Flame-Resistant Polyethylene Sheeting: A single polyethylene film that conforms to requirements set forth by the National Fire Protection

Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films, 6 mil (0.15 mm) thickness.

- 2.1.18 Power Washer: Spray equipment for saturation of asbestos-containing material with amended water for cleaning of surfaces in abatement work area after asbestos removal, capable of delivering an airless stream of water at a pressure of not less than 1200 psi or exceeding 2500 psi.
- 2.1.19 Protective Coveralls: Disposable full body coveralls complete with hoods manufactured of a material which does not permit penetration of asbestos fibres.
- 2.1.20 Scaffolding: The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.
- 2.1.21 Spray Cement: Spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- 2.1.22 Tape: Reinforced cloth or fibreglass reinforced tape in 2" or 3" widths suitable for sealing polyethylene sheeting under both wet conditions using amended water, and dry conditions.
- 2.1.23 Temporary Lighting: Provide general service incandescent lamps or fluorescent lamps of wattage required for adequate illumination as required by the work. Protect lamps with guard cages grounded together to distribution panel or tempered glass enclosures.
- 2.1.24 Wetting Agent: Non-sudsing surface active agent. Acceptable product Aqua-Gro or approved equal.

### **3. EXECUTION**

#### **3.1 Preparation Prior to Contamination**

- 3.1.1 Establish personal hygiene facilities for workers to wash their hands and face. Washing facilities to include sufficient supplies of disposable hand towels, hand soap, a waste receptacle and a mirror.
- 3.1.2 Visible dust shall be removed with a damp cloth/mop or a vacuum equipped with a HEPA filter from any surface in the work area, including the thing to be worked on, if the dust on that surface is likely to be disturbed.
- 3.1.3 Provide to the Asbestos Abatement Consultant an itemized list of pre-existing damage in Work Area.
- 3.1.4 Moving of equipment, tools, supplies, and stored materials which can be performed without disturbing ACM will be performed by the contractor.

- 3.1.5 Disable air handling system affecting Asbestos Work Area. Seal ventilation ducts to and from the work area. The air handling system shall not be enabled until completion of work.
- 3.1.6 Shut off and lock out electrical power within the enclosure.
- 3.1.7 For operations requiring either 1) removing all or part of a false ceiling to obtain access to a work area, if ACM is likely to be lying on the surface of the false ceiling, or 2) the removal or disturbance of one square metre or less of friable ACM, and where the enclosure is prepared with opaque materials (i.e. orange rip-proof polyethylene), the enclosure shall include one or more transparent (clear) window areas to allow observation of the entire work area from outside the enclosure.
- 3.1.8 Erect polyethylene hoarding walls between Occupied Area and Work Area to create the Asbestos Work Area Enclosure. Construct a frame for the enclosure from 50 mm x 100 mm (2" x 4") construction grade wood studs and polyethylene. If the potential exists for the disturbance of ACM during the construction of the enclosure, wear a respirator and suitable protective clothing; ensure that the enclosure is of adequate size to permit the storage of equipment and waste.
- 3.1.9 Support polyethylene sheeting enclosures as required or as directed by Asbestos Abatement Consultant.
- 3.1.10 Seal all below deck openings, including opening at the deck, to the work area using polyethylene, spray adhesive, tape, caulking, etc.
- 3.1.11 Provide a sealed polyethylene top for free standing enclosures.
- 3.1.12 Enclosure may be supported from the deck system(s), if applicable.
- 3.1.13 Install temporary lighting as required in Asbestos Work Area Enclosure.
- 3.1.14 Cover floor and wall surfaces and other articles inside enclosure or forming the enclosure with polyethylene sheeting. Lay floor sheeting first and return up wall surface in a fashion that wall sheeting will overlap by at least 12".
- 3.1.15 Overlap perimeter polyethylene to form flap doorway.
- 3.1.16 Construct a transfer room for entry to and exit from the enclosure when it is necessary to move workers or materials between Occupied Areas and the Asbestos Work Area.
- 3.1.17 Establish negative pressure in Asbestos Work Areas as follows:
  - 3.1.17.1 Use HEPA Vacuum, or HEPA Negative Air Unit if requested by the Asbestos Abatement Consultant, which has been DOP tested.
  - 3.1.17.2 Insert vacuum hose into Enclosure. Provide enough hose to reach all areas of Enclosure.

- 3.1.17.3 Operate HEPA vacuum continuously until dismantling of Enclosure.
- 3.1.17.4 Provide sufficient negative air pressure to exchange a volume of air equivalent to that of the Asbestos Work Area a minimum of every 20 minutes.
- 3.1.18 Post signs at doorways leading into a contaminated area.  
Such signs shall read:

**CAUTION**

***Asbestos Hazard Area***

***No Unauthorized Entry***

***Wear assigned protective equipment***

***Breathing asbestos dust may cause serious bodily harm***

**3.2 Asbestos Removal**

- 3.2.1 Before beginning work, remove visible dust from surfaces in the work area. Use HEPA vacuum, or damp cloths where damp cleaning is considered more appropriate. The use of compressed air is strictly forbidden.
- 3.2.2 All removal work must be completed manually with non-powered hand tools.
- 3.2.3 Undo or remove fasteners if necessary to remove materials.
- 3.2.4 Wet materials containing asbestos to be removed, disturbed, or sealed, with amended water. Use garden type low velocity fine mist sprayer. Perform work in a manner to reduce the creation and spread of dust. Keep material wetted as work proceeds and as additional layers of material are exposed.
- 3.2.5 Break materials only if unavoidable.
- 3.2.6 Wet freshly exposed edges of broken materials.
- 3.2.7 Remove material adhered to substrate or supports.
- 3.2.8 Place waste directly into waste disposal bags. Wherever possible, asbestos-containing material should be removed in sections as intact as possible. Do not allow material to fall to floor.
- 3.2.9 Frequently and at regular intervals during the doing of the work, debris and dust waste shall be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in an asbestos waste container.
- 3.2.10 Clean surfaces where asbestos has been removed by means of wire brushes, steel wool, or other suitable tools.

- 3.2.11 Immediately after completion of the work, clean up dust and waste containing asbestos using a HEPA vacuum or by damp wiping.
- 3.2.12 Double bag all waste as it is taken out of the Asbestos Work Area Enclosure.
- 3.2.13 Clean the entire Asbestos Work Area by means of HEPA vacuuming or wet wiping when removal of ACM is complete.
- 3.2.14 All tools, equipment, materials and supplies that will NOT be reused shall be placed in an asbestos waste container as soon as practicable following completion of the preceding Items of this Section.
- 3.2.15 All tools, equipment, materials and supplies that will be reused shall be cleaned, by using a vacuum equipped with a HEPA filter or by damp wiping, as soon as practicable following completion of the preceding Items of this Section.
- 3.2.16 Place materials used to form Enclosure, disposable coveralls, and other contaminated waste in asbestos waste bags for disposal. All waste is to be double bagged and independently sealed.
- 3.2.17 Apply a heavy coat of sealant using a fine mist sprayer to all surfaces in the work area.
- 3.2.18 The Enclosure shall remain erected until the sealant has dried or, if required, until an air sample is collected inside the enclosure, and the levels are below 0.04f/cc.
- 3.2.19 Compressed air shall not be used to clean up and remove debris or dust from any surface.
- 3.2.20 Eating, drinking, chewing or smoking shall not be permitted in the work area.
- 3.2.21 Maintain all work areas in a neat and orderly fashion at all times.

### **3.3 Teardown of Enclosure and Exit from the Work Area**

- 3.3.1 Carefully roll polyethylene toward the centre of enclosure. Remove visible debris by means of HEPA vacuum as polyethylene is rolled away.
- 3.3.2 Drop sheets shall not be reused.
- 3.3.3 Drop sheets shall be wetted and placed in an asbestos waste container as soon as practicable after completion of the preceding Items of this Section.
- 3.3.4 After the work is completed, polyethylene sheeting and similar materials used for barriers and enclosures shall not be reused, but shall be wetted and placed in an asbestos waste container as soon as practicable following completion of the preceding Items of this Section.

- 3.3.5 Barriers and portable enclosures shall not be reused unless they are rigid and can be cleaned thoroughly.
- 3.3.6 After the work is completed, barriers and portable enclosures that will be reused shall be cleaned, by using a vacuum equipped with a HEPA filter or by damp wiping, as soon as practicable following completion of the preceeding Items of this Section.
- 3.3.7 Prior to leaving the work area, workers shall decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing.
  - 3.3.7.1 If the protective clothing is to be reused, it shall be stored in a sealable plastic bag.
  - 3.3.7.2 If the protective clothing will NOT be reused, place it in an asbestos waste container immediately prior to leaving the work area.
- 3.3.8 Immediately after leaving the work area, all workers shall proceed directly to the established washing facilities to wash hands and face.
- 3.3.9 All workers shall wash, remove and store respirators as per the written procedures that have been established by the employer and as is consistent with the manufacturer's specifications.
- 3.3.10 Reinstall objects and items removed to facilitate removal of ACM.

**End of Section**

**ASBESTOS ABATEMENT TYPE 3**

**SECTION 132830**

## LIST OF CONTENTS

	Page
<b>1. GENERAL</b> .....	<b>2</b>
1.1 General and Related Work .....	2
1.2 Definitions.....	3
1.3 Worker Protection.....	6
1.4 Visitor Protection .....	8
1.5 Air Monitoring .....	8
<b>2. PRODUCTS</b> .....	<b>9</b>
2.1 Materials and Equipment.....	9
<b>3. EXECUTION</b> .....	<b>13</b>
3.1 Preparation Prior to Contamination .....	13
3.2 Contaminated Preparation.....	18
3.3 Work above Ceilings.....	19
3.4 Asbestos Removal .....	19
3.5 Application of Lock Down Agent.....	21
3.6 Asbestos Work Area Teardown and Dismantling .....	21
3.7 Re-establishment of Objects and Systems.....	23

1. **GENERAL**

1.1 **General and Related Work**

1.1.1 All sections of the specifications form a part of the Contract Document and shall be read to determine their effect upon the work of this section.

1.1.2 Related Work Specified Elsewhere

Division 13, Section 132800	Scope & Details
Division 13, Section 132810	Asbestos Abatement – Type 1
Division 13, Section 132820	Asbestos Abatement – Type 2
Division 13, Section 132840	Lead Abatement

Attachments:

1) *Pre-Renovation Designated Substance and Hazardous Materials Assessment, Child Care Program McNicoll Avenue, ECOH Management Inc., December 2, 2026.*

1.1.3 This specification fulfils the requirements of the report required by Designated Substance – *Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations*, Ontario Regulation 278/05, Section 10.

1.1.4 The Contractor is responsible to verify all measurements for removal, cleaning, and re-insulation purposes. Measurements and quantities provided herein are for reference only.

1.1.5 It is the intent that work performed as per this section will result in the removal and disposal or decontamination of all asbestos-containing material (ACM) and mould-contaminated materials, as well as all materials that have been contaminated by ACM or mould either during or prior to work of this section.

1.1.6 Refer to Section 132800, Scope and Details Specification, for the following information and requirements;

1.1.6.1 Site Conditions,

1.1.6.2 Outline of Work,

1.1.6.3 Schedule,

1.1.6.4 Supervision,

1.1.6.5 Quality Assurance,

1.1.6.6 Regulations,

1.1.6.7 Notification,

- 1.1.6.8 Submittals, and
- 1.1.6.9 Waste Transport and Disposal.

## **1.2 Definitions**

- 1.2.1 Airlock: A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 1.5 m apart.
- 1.2.2 Air Monitoring: The process of measuring the fibre content of a specific volume of air.
- 1.2.3 Amended Water: Water with a non-ionic surfactant wetting agent added to reduce water surface tension to 35 or less dynes, to allow thorough wetting of asbestos fibres.
- 1.2.4 Asbestos: The serpentine and amphibole asbestiform varieties including chrysotile, actinolite, amosite, anthophyllite, crocidolite and tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.
- 1.2.5 Asbestos Abatement Consultant: The Owner or person designated by the owner to provide inspection and air monitoring of the Contractor's work.
- 1.2.6 Asbestos-Containing Material (ACM): Any material that contains 0.5 per cent or more asbestos, of any type or mixture of types, by dry weight.
- 1.2.7 Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.
- 1.2.8 Asbestos Debris: Pieces of ACM that can be identified by colour, texture, or composition, or means dust, if the dust is determined by an accredited Asbestos Abatement Consultant to be ACM.
- 1.2.9 Asbestos Work Area: Where the actual removal, sealing and enclosure of asbestos-containing materials takes place.
- 1.2.10 Authorized Visitor: The Owner or his approved representative and/or persons representing regulatory agencies.
- 1.2.11 Barrier: Any surface that seals off the work area to inhibit the movement of fibres.
- 1.2.12 Clean Area: Either an operating area or an area in which removal work has already been completed.
- 1.2.13 Curtained Doorway: An arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of

polyethylene over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. All free edges of polyethylene shall be reinforced with duct tape and the bottom edge shall be weighted to ensure proper closing. Each polyethylene sheet shall overlap openings not less than 1.5 m on each side.

- 1.2.14 Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.
- 1.2.15 Disposal Bag: A properly labelled 6 mil thick leak-tight plastic bag used for transporting asbestos waste from the work area to the disposal site.
- 1.2.16 D.O.P. Test: Dioctylphthalate aerosol challenge of a HEPA filter system and is used to establish the integrity and effectiveness of the system to filter out asbestos fibres.
- 1.2.17 Encapsulant: A material that surrounds or embeds asbestos fibres in an adhesive matrix, to prevent release of fibres.
  - 1.2.17.1 Bridging Encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.
  - 1.2.17.2 Penetrating Encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.
  - 1.2.17.3 Removal Encapsulant: A penetrating encapsulant specifically designed to minimize fibre release during removal of asbestos-containing materials rather than for in situ encapsulation.
- 1.2.18 Encapsulation: Applying to asbestos-containing materials, with an encapsulant.
- 1.2.19 Enclosure: 6 mil polyethylene sheeting installed to fully isolate the Type 3 Asbestos Work Area. Enclosure may be a prefabricated self-supporting structure or constructed with a rigid frame, or, when applicable, supported by the ceiling grid. Enclosure shall have polyethylene sheeting as a top at locations where the enclosure does not extend up to the underside of the ceiling or underside of structure
- 1.2.20 Filter: A media component used in respirators, vacuum cleaners or negative pressure filter fan units to remove solid or liquid particles from the inspired air.
- 1.2.21 Fitting: Unless otherwise described in Site Conditions, all connections of a pipe which include elbows, ends, caps, valves, hangers, tees and unions.
- 1.2.22 Friable Asbestos Material: Material that contains asbestos that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

- 1.2.23 Glovebag: A sack with inward projecting long sleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.
- 1.2.24 HEPA Filter: High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.
- 1.2.25 Negative Pressure: A system which extracts air directly from the work area, filters such extracted air through a High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building. This system shall maintain a minimum pressure differential of 0.02 inches Water Gauge relative to adjacent areas outside of work areas, be equipped with an alarm to warn of system breakdown (i.e. excessive negative pressure or insufficient negative pressure), and be equipped with an instrument to continuously monitor and automatically record pressure differences.
- 1.2.26 Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
- 1.2.27 Occupied Area: Any area of the building outside the Asbestos Work Area.
- 1.2.28 Polyethylene: Sheetting of type and thickness specified sealed with tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealant, and to prevent escape of asbestos fibres through the sheetting into a clean area.
- 1.2.29 Positive Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during inhalation and exhalation in relation to the air pressure of the outside atmosphere.
- 1.2.30 Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- 1.2.31 Straight run pipes: Part of the building system not included under the description of Fitting, including but not limited to straight, angled or curved sections of pipe, pumps, headers and reducers.
- 1.2.32 Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- 1.2.33 Water Filtration System: A multi-stage filtration system for filtering shower and wastewater. Typically constructed with at least two filters, the primary stage retains 20 microns or larger particles and the final stage removes 5 micron or larger particles.

1.2.34 Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.

1.2.35 Work: Includes all services, labour and material required to complete the work as specified in the contract.

### **1.3 Worker Protection**

1.3.1 Prior to commencing work instruct workers in all aspects of work procedures and protective measures.

1.3.2 Provide workers a respirator with personally issued respiratory equipment acceptable to the Occupational Health and Safety Division of the Ontario Ministry of Labour, suitable for the Asbestos exposure.

1.3.3 Ensure that suitable respiratory protective equipment is worn by every worker who enters the Asbestos Work Area. A respirator provided by an employer and used by a worker shall be:

1.3.3.1 an air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filters, or better;

OR

a powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, R-100 or P-100 particulate filters, or better;

1.3.3.2 fitted so that there is an effective seal between the respirator and the worker's face,

1.3.3.3 assigned to a worker for the worker's exclusive use,

1.3.3.4 used and maintained in accordance with the procedures specified by the equipment manufacturer,

1.3.3.5 cleaned, disinfected and inspected after use on each shift, or more often if necessary,

1.3.3.6 free of damaged or deteriorated parts replaced prior to being used by a worker,

1.3.3.7 be stored in a convenient, clean and sanitary location; when not in use,

1.3.3.8 certified by the US National Institute for Occupational Safety and Health (NIOSH) or the British Standards Institution for exposure to airborne asbestos fibre.

1.3.4 The employer shall establish written procedures regarding the selection, use and care of respirators.

- 1.3.5 A copy of the procedures shall be provided to and reviewed with each worker.
- 1.3.6 A worker shall not be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
- 1.3.7 Provide all workers with full body disposable coveralls.
- 1.3.8 Ensure that full body disposable coveralls are worn by every worker who enters the Asbestos Work Area. The protective clothing provided by an employer and used by a worker shall be:
  - 1.3.8.1 made of a material which does not readily retain nor permit penetration of asbestos fibres;
  - 1.3.8.2 shall consist of head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing;
  - 1.3.8.3 shall include suitable footwear;
  - 1.3.8.4 shall be repaired or replaced if torn.
- 1.3.9 Provide other body protection required under applicable safety regulations.
- 1.3.10 Personnel must be fully protected at all times when possibility of disturbance of asbestos exists.
- 1.3.11 Provide and post the procedures described under Worker Protection.
- 1.3.12 Do not eat, drink, smoke or chew except in established locations outside the Asbestos Work Area.
- 1.3.13 Asbestos Abatement Work Area Entry Procedures
  - 1.3.13.1 Use asbestos abatement precautions at all times when possibility of disturbance of ACM exists.
  - 1.3.13.2 Remove all clothing including undergarments and footwear in Clean Change Room.
  - 1.3.13.3 Store all street clothes, uncontaminated footwear, towels, etc. in the Clean Change Room.
  - 1.3.13.4 Put on respirator with new or tested filters, and coveralls in Clean Change Room.
  - 1.3.13.5 Proceed into Asbestos Work area through the Shower Unit.
- 1.3.14 Asbestos Abatement Work Area Exit Procedures

- 1.3.14.1 Remove gross contamination from protective clothing using HEPA vacuum or wet wiping.
- 1.3.14.2 Proceed to Equipment and Access Room and remove all contaminated clothing and equipment except respirator.
- 1.3.14.3 Store contaminated footwear, hard hats, etc. in Equipment and Access Room.
- 1.3.14.4 Proceed naked to showers while still wearing respirator
- 1.3.14.5 While in shower, clean outside of respirator with soap and water. Thoroughly wet body, head and hair, remove respirator and wash body, head and hair. Wet clean inside and outside of respirator face piece
- 1.3.14.6 Cover inlet side of respirator filter(s) with tape prior to entering the Clean Change Room.
- 1.3.14.7 If the filters are to be discarded, remove from the respirator and dispose of as asbestos waste.
- 1.3.15 Proceed to the Clean Change Room, dry off and dress in street clothing.

#### **1.4 Visitor Protection**

- 1.4.1 Provide clean protective clothing and equipment and approved respirators to Authorized Visitors.
- 1.4.2 Ensure Authorized Visitors have received required training for entry into Asbestos Work Area.

#### **1.5 Air Monitoring**

- 1.5.1 Air monitoring will be performed following the National Institute for Occupational Safety and Health method 7400.
- 1.5.2 The contractor shall cooperate fully with the asbestos abatement consultant in the collection of air monitoring samples, including the collection of personal worker samples, if required.
- 1.5.3 Results of PCM samples of 0.04 fibres per millilitre of air (fibre/mL) or greater, outside of Asbestos Work Area, will indicate asbestos contamination of these areas. The contaminated areas shall be isolated and cleaned in the same manner applicable to the Asbestos Work Area, at no cost to the Owner.
- 1.5.4 Clearance air monitoring samples will be collected after a suitable settling period following application of lock-down agent. Clearance air monitoring will be completed following details of Subsection 18(5) of Ontario Regulation 278/05. All clearance air samples must not exceed 0.01 fibre/mL for the Work Area to be deemed clean.

## 2. PRODUCTS

### 2.1 Materials and Equipment

- 2.1.1 All tools, equipment, materials and supplies brought to work site must be in good condition and free of asbestos, asbestos debris, and fibrous materials.
- 2.1.2 Disposable tools, equipment, materials and supplies must be of new materials only.
- 2.1.3 Airless Sprayer: Spray equipment for amended water: for application to asbestos-containing materials for saturation prior to removal. Airless spray units are only acceptable, such as Grace Hydrospray or approved equal.
- 2.1.4 Asbestos Waste Containers: Containers for dust and waste shall be, dust tight, suitable for the type of waste, impervious to asbestos and any chemicals used during the removal process, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before being removed from the work area, and removed from the workplace frequently and at regular intervals.
- 2.1.4.1 Waste shall be contained in two separate containers. The inner container shall be a sealable polyethylene bag (or where the glove bag method is used, the glove bag itself). Where there are sharp objects included in the waste material, the outer container shall be a sealable fibre type drum, otherwise the outer container may be a sealable polyethylene bag.
- 2.1.4.2 Container must be new materials only.
- 2.1.4.3 Containers shall be as follows:
- 2.1.4.3.1 Polyethylene Waste Bag: 0.15 mm (6 mil) thick leak-tight polyethylene bags.
- 2.1.4.3.2 Fibre Drums: 55 US gallon capacity heavy duty leak tight fibre drums with tight sealing locking metal top and metal bottom.
- 2.1.4.3.3 Labels: Waste containers shall have a pre-printed cautionary asbestos warning label, acceptable to local dump authorities, clearly visible when ready for removal to disposal site.
- 2.1.5 Caulking: One component non-staining acrylic polymer sealant to conform to GSB Specification 19GP-5M.
- 2.1.6 Drop Sheets: In polyethylene type and size appropriate for the work being performed.
- 2.1.7 Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths

or use waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas of work.

- 2.1.8 Encapsulant: Type 1 penetrating Class A water based encapsulant conforming to CGSB 1-GP-205M and approved by the Fire Marshall having flame spread and smoke development ratings both less than fifty (50). Acceptable products: Ocean 666, Decadex Fire Check equivalent or better.
- 2.1.9 Fine Atomizing Spray Nozzle: Nozzle for airless sprayer capable of delivering not less than 1 gallon per minute of fine particle spray of amended water.
- 2.1.10 Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.
- 2.1.11 First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.
- 2.1.12 Flame-Resistant Polyethylene Sheeting: A single polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films, 0.15 mm (6 mils) thickness.
- 2.1.13 Foam: Low density polyurethane expanding foam Froth-Pack or equivalent or better.
- 2.1.14 Garden Sprayer: A hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or fine spray of liquid of amended water under pressure.
- 2.1.15 Ground Fault Panel: Electrical panel, installed by licensed electrician and equipped as follows:
- 2.1.15.1 Ground fault circuit interrupters of sufficient capacity to power temporary electrical equipment and lights in Asbestos Work Area.
- 2.1.15.2 Interrupters to have a 5 mA ground fault protection.
- 2.1.15.3 Necessary accessories including main switch disconnect, ground fault interrupter lights, test switch to ensure unit is working, and reset switch.
- 2.1.15.4 Openings sealed to prevent moisture or dust penetration.
- 2.1.16 HEPA Vacuum: Vacuum with all necessary fittings, tools and attachments. All air must be filtered by HEPA filter before discharge.
- 2.1.17 Lockdown Sealer: Slow-drying sealer shall be a non-staining, clear, water dispersable type that remains tacky on the surface for a minimum of 8

hours for the purpose of trapping any residual airborne fibres during the settling period. Lock-down agent shall be compatible with replacement insulation or fireproofing where required and capable of withstanding service temperature of substrate. The product must have flame spread and smoke development ratings both less than 50 and shall leave no stain when dry. Also referred to as "Lockdown Agent".

- 2.1.18 Negative Air Unit: Portable air handling system which extracts air directly from the Asbestos Work Area and discharges the air to the exterior of the Asbestos Work Area. Equipped as follows:
  - 2.1.18.1 Prefilter and HEPA filter. Air must pass HEPA filter before discharge.
  - 2.1.18.2 Pressure differential gauge to monitor filter loading.
  - 2.1.18.3 Auto shut off and warning system for HEPA filter failure.
  - 2.1.18.4 Separate hold down clamps to retain HEPA filter in place during change of prefilter.
- 2.1.19 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness unless otherwise specified, in sheet size to minimize joints.
  - 2.1.19.1 Fibre-Reinforced (Rip-Proof) Polyethylene Sheeting: 8 mil (0.20mm) fabric made up from one layer of 5 mil (0.13 mm) weave and two layers of 1.5 mil (0.04 mm) poly laminate or approved equal. In sheet size to minimize on-site seams and overlaps.
  - 2.1.19.2 Flame-Resistant Polyethylene Sheeting: A single polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films, 6 mil (0.15 mm) thickness.
- 2.1.20 Power Washer: Spray equipment for saturation of asbestos-containing material with amended water for cleaning of surfaces in abatement work area after asbestos removal, capable of delivering an airless stream of water at a pressure of not less than 1200 psi or exceeding 2500 psi.
- 2.1.21 Protective Coveralls: Disposable full body coveralls complete with hoods manufactured of a material which does not permit penetration of asbestos fibres.
- 2.1.22 Scaffolding: The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.
- 2.1.23 Shower: General shower shall be of the walk-through type to permit use by one person at a time.
  - 2.1.23.1 Shower Enclosure: Shower enclosure shall be of a minimum 24-gauge steel walls with baked enamel, galvanized steel, aluminum or stainless steel finish, 16 gauge floor with porcelain enamel finish, brass drain and tapping for mixing valve. Shower installation shall be complete with globe

- valve for tempered water with a shower head complete with orifice to restrict the flow to 2.5 USGPM.
- 2.1.23.2 Shower Head and Controls: Provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower separately with water from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.
- 2.1.23.3 Shower Hose Bib: Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4" National Standard male hose outlet.
- 2.1.23.4 Shower Filters: Provide multi-stage cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the work area. Provide units with disposable filter elements where the primary filter passes particle 20 microns and smaller and the final filter passes particles 5 microns and smaller. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
- 2.1.23.5 Shower Pan: Provide one-piece waterproof shower pan of minimum size 4' x 8' by 6" deep. Fabricate from seamless fibreglass minimum 1/16" thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seams or, copper or lead with soldered seams.
- 2.1.24 Spray Cement: Spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- 2.1.25 Sump Pump: Provide totally submersible waterproof sump pump with integral float switch and shall have a manual switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump.
- 2.1.26 Tape: Reinforced cloth or fibreglass reinforced tape in 2" or 3" widths suitable for sealing polyethylene sheeting under both wet conditions using amended water, and dry conditions.
- 2.1.27 Temporary Lighting: Provide general service incandescent lamps or fluorescent lamps of wattage required for adequate illumination as required by the work. Protect lamps with guard cages grounded together to distribution panel or tempered glass enclosures.
- 2.1.28 Water Heater: ULC rated electric water heater appropriately sized for project to supply hot water for the Decontamination Unit shower. Activate from ground fault panel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with rigid

pipng. Drip pans shall consist of a 4'x 4' x 6" deep pan, made of 19 gauge galvanized steel, with handles.

- 2.1.29 Wetting Agent: Non-sudsing surface active agent. Acceptable product Aqua-Gro or approved equal.

### **3. EXECUTION**

#### **3.1 Preparation Prior to Contamination**

- 3.1.1 Establish personal hygiene facilities for workers to wash their hands and face. Washing facilities to include sufficient supplies of disposable hand towels, hand soap, a waste receptacle and a mirror.

- 3.1.2 Provide to the Asbestos Abatement Consultant an itemized list of pre-existing damage in Work Area.

- 3.1.3 Move equipment, tools, supplies, stored materials, etc. which can be performed without disturbing ACM, to a location designated by the Owner's Representative.

- 3.1.4 Install Worker Decontamination Facility. Worker Decontamination Enclosure System shall comprise of Equipment and Access Room, a Shower Room, and a Clean Room, as follows:

- 3.1.4.1 Equipment and Access Room: build an Equipment and Access Room between Shower Room and work areas, with two air locks, one to the Shower Room and one to work areas. The Equipment and Access Room shall be large enough to accommodate the storage of work boots, or any other protective clothing that might be used again, and at least three workers allowing them sufficient space to undress comfortably.

- 3.1.4.2 Shower Room: build a Shower Room between the Clean Room and Equipment and Access Room, with two air locks, one to the Clean Room and one to Equipment and Access Room. Provide a constant supply of hot and cold water. The Shower Room shall have individual controls inside the room to regulate water temperature and flow. Provide piping/high pressure hoses and connect to water sources and drains. Pump waste water through a 5 micrometre filter system acceptable to Consultant before directing into drains. Provide soap, clean towels and appropriate containers for disposal of used respirator filters. One shower shall be established for every 6 workers within the Asbestos Work Area.

- 3.1.4.3 Clean Room: build a Clean Room between the Shower Room and clean areas outside of enclosures, with two air locks, one to outside of enclosures and one to Shower Room. Provide lockers or hangers for workers street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install a mirror to permit

- workers to fit respiratory equipment properly, and sufficient hangers and hooks.
- 3.1.5 Construct three-chamber Decontamination Enclosures as follows:
- 3.1.5.1 Build suitable framing for enclosures, and line with polyethylene sheeting sealed with tape. Framing shall be constructed of 2" x 4" studs (stud grade) at 24" o/c (max.) with 2" x 4" wood sill and top plates (stud grade) fastened with a minimum of two 3 1/2" common nails per stud end. Use one layer of rip-proof polyethylene on floors. Use 2 layers of opaque rip-proof polyethylene sheeting on walls and ceiling: an inner layer made up of 6 mil poly, and an outer layer made up of rip-proof polyethylene.
- 3.1.5.2 Build curtained doorways between enclosures.
- 3.1.6 Erect walls separating Asbestos Work Area from Occupied Areas as follows:
- 3.1.6.1 Build suitable floor to ceiling lumber stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal all joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create an airtight barrier.
- 3.1.6.2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.
- 3.1.6.3 Caulk as required, edges of partition both sides at floor, walls and around fixtures.
- 3.1.7 Supply water as required for Asbestos Work Area and Decontamination Facilities. Water to be supplied from an existing potable water system. Contractor is responsible for all fittings. Contractor shall install using vacuum breakers or other backflow preventer as required by local authority.
- 3.1.7.1 Water supply shall be by means of copper pipe, or high pressure hoses, and fittings on high-pressure hose and fittings. A master shut-off valve shall be installed adjacent to, and on the clean side, of the decontamination facility. Any hose and hose connections must be for high pressure only and downstream of the master shut-off valve and is not to be left under pressure unattended. Maintain hose connections and outlet valves in leak proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.
- 3.1.8 Provide and install drainage facilities from temporary shower.
- 3.1.9 Provide and install drainage in removal work areas as required.
- 3.1.10 Provide and install a filtration system to filter all water to be disposed of from the removal and decontamination area.

- 3.1.11 Pre-clean all surfaces in the Asbestos Work Area. Visible dust shall be removed with a damp cloth/mop or a vacuum equipped with a HEPA filter from any surface in the work area, including the thing to be worked on, if the dust on that surface is likely to be disturbed.
- 3.1.12 Disable fire alarms, heat detectors, and smoke detectors in the Asbestos Work Area. At no time are the above systems to be affected in areas outside the Asbestos Work Area. Coordinate with, and notify Owner. Notify emergency services.
  - 3.1.12.1 Provide Fire Watch services for any areas where life safety devices are deactivated and may be vacant for any period of time.
- 3.1.13 Erect sealed worker platforms, where necessary, as follows:
  - 3.1.13.1 Shop drawings of all platform layouts, hoarding and details to be submitted to Asbestos Abatement Consultant prior to commencing work.
  - 3.1.13.2 Scaffolding and platforms, if required, shall be designed by a professional engineer and built in accordance to the design.
  - 3.1.13.3 Install support bases of sufficient dimension and strength to protect floors. Repair or replace damage caused by erection, weight or dismantling of platform.
  - 3.1.13.4 Install platform supports in and around existing fixtures, walls, doors and equipment so as not to interfere with the operating, use, or maintenance of space or equipment. Leave 36" (900 mm) clear around all operating equipment.
  - 3.1.13.5 Install platform to maintain a minimum clear height of 7'-0" (2135 mm).
  - 3.1.13.6 Construct a framework of metal scaffolding or equivalent on top of which the working platform is to be placed. The working platform shall consist of one layer of rip-proof polyethylene below scaffold boards over which plywood (of sufficient thickness to support personnel and equipment as required by Occupational Health and Safety Act and Regulations) is nailed in place.
  - 3.1.13.7 Caulk and tape plywood seams to provide a barrier to water penetration.
  - 3.1.13.8 Seal platform to prevent any water leakage during removal by covering working platform with moisture impermeable barrier consisting of at least two layers of rip-proof polyethylene.
  - 3.1.13.9 Install Hoarding Walls so as to completely isolate platform from Occupied Area.
  - 3.1.13.10 Install fluorescent lighting at underside of platforms to maintain existing lighting levels.
  - 3.1.13.11 Provide 1 emergency escape hatch for each 500 square feet (50 square meters) of platform. The hatch is to be constructed in a water and air tight

- manner that can be readily opened in an emergency situation. Provide emergency lighting at each hatch.
- 3.1.14 Erect tunnels, where necessary, as follows:
    - 3.1.14.1 Minimum interior clear width of tunnel to be 3'-7" (1100 mm).
    - 3.1.14.2 Install Hoarding walls at both sides of the tunnel so as to isolate the tunnel from the asbestos work area.
    - 3.1.14.3 Maintain a minimum clear height of 7'-0" (2135 mm) to the underside of the tunnel roof.
    - 3.1.14.4 Install 2" x 6" (50 mm x 150 mm) wood or metal roof joists at 16" (400 mm) o/c. with continuous 2" x 6" (50 mm x 150 mm) headers.
    - 3.1.14.5 Cover roof joists with 3/4" (20 mm) plywood sheeting.
    - 3.1.14.6 Caulk and tape joints in plywood, and cover with two layers of rip-proof polyethylene. One layer to extend continuously over rip-proof polyethylene on the perimeter walls.
    - 3.1.14.7 Install one layer of good one side plywood at underside of joist.
    - 3.1.14.8 Install fluorescent lighting at underside of tunnel to maintain existing lighting levels.
  - 3.1.15 Erect equipment enclosures where specified as per Mechanical or Electrical drawings.
  - 3.1.16 Carefully protect items scheduled to remain in place using polyethylene, spray adhesive, tape, caulking, etc.
  - 3.1.17 Seal all below deck openings, and openings at deck level, to Asbestos Work Area using polyethylene, spray adhesive, tape, caulking, etc., including but not limited to windows, doors, vents, diffusers, etc.
  - 3.1.18 Seal all openings in floor using plugs, tape, caulking, rip-proof polyethylene, etc. Floor openings are to be sealed independently prior to installation of floor polyethylene. Include floors of duct and service shafts.
  - 3.1.19 For operations requiring the use of a power tool on a non-friable product, where the work area is not enclosed by walls, and where the enclosure is prepared with opaque materials (i.e. orange rip-proof polyethylene), the enclosure shall include one or more transparent (clear) window areas to allow observation of the entire work area from outside the enclosure.
  - 3.1.20 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Fire Commissioner of Canada and Provincial Fire Marshall.
  - 3.1.21 Provide a fire extinguisher at each emergency exit and in both sides of the decontamination facilities.

- 3.1.22 Install temporary lighting in all work areas at levels that will provide for a safe and efficient use of the work area. Install battery powered emergency lights so as to light exit routes through Asbestos Work Area.
- 3.1.23 Protect floors as follows, as applicable,
  - 3.1.23.1 If plaster ceilings or other items are being demolished that may damage finishes, protect surfaces with plywood.
  - 3.1.23.2 Sprayed fireproofing removal, install 2 layers of 6-mil rip proof polyethylene.
  - 3.1.23.3 Floor on grade and/or concrete, install 1 layer of 6-mil rip proof polyethylene.
  - 3.1.23.4 For all areas, extend floor protection a minimum of 12" up all vertical surfaces in the Asbestos Work Area. Each layer of polyethylene is to be laid and sealed independently of each other.
- 3.1.24 Install 2 layers of polyethylene on all walls forming the perimeter of the Asbestos Work Area. Each layer of polyethylene is to be laid and sealed independently of each other. Overlap wall polyethylene with floor polyethylene by a minimum of 12" (305 mm) at each layer.
- 3.1.25 In areas where walls do not enclose the Asbestos Work Area, erect polyethylene hoarding walls between Occupied Area and Work Area to create the Asbestos Work Area Enclosure. Construct a frame for the enclosure from 50 mm x 100 mm (2" x 4") construction grade wood studs and polyethylene. If the potential exists for the disturbance of ACM during the construction of the enclosure, wear a respirator and suitable protective clothing; ensure that the enclosure is of adequate size to permit the storage of equipment and waste.
  - 3.1.25.1 Support polyethylene sheeting enclosures as required or as directed by Asbestos Abatement Consultant.
  - 3.1.25.2 Enclosure may be supported from the deck system(s), if applicable.
- 3.1.26 Provide a sealed polyethylene top for free standing enclosures. Overlap perimeter polyethylene to form flap doorway.
- 3.1.27 Establish negative pressure in Asbestos Work Areas as follows:
  - 3.1.27.1 Distribute negative air filter/fan units evenly around the Asbestos Work Area. Remove windows, if required, and replace with 1/2" plywood with appropriately sized openings for exhaust. Switch the negative air pressure system to the "ON" mode and operate continuously until final completion of the work, including final cleanup. Exhaust air to the outside of the Work Area. A spare negative air unit will be fully installed and ready to operate as a backup unit. The negative air pressure system must have the capacity to exchange air volume of the work area four times per hour and maintain a minimum of 0.02 inches of water gauge differential.

Operate negative pressure system continuously from the time the first polyethylene is installed to seal openings until final completion of the work including final cleanup and air testing. Replace pre-filters and HEPA filters as required and on a regular basis to maintain even and constant draw across negative air unit. Do not discharge negative air ducting within 25 feet of building access points. Replace windows removed for discharge panels upon completion of project, if window removal was required.

- 3.1.27.2 Provide sufficient negative air pressure to exchange a volume of air equivalent to that of the Asbestos Work Area a minimum of every 15 minutes.
- 3.1.27.3 Leak test negative air units in place using DOP/PAO method prior to each Type 3 or Level III operation.
- 3.1.27.4 Do not discharge negative air units into Occupied Areas unless specified or with written approval from Asbestos Abatement Consultant.
- 3.1.28 Isolate at panel and disconnect or ground existing power supply to Asbestos Work Area where necessary. Power supply to remaining areas of building must not be disrupted during work of this section.
- 3.1.29 Post signs at locations where access to a sealed Asbestos Work Area is possible. Signs shall be installed at Curtained Doorways leading directly into a contaminated area. Such signs shall read:

**CAUTION**

***Asbestos Hazard Area***

***No Unauthorized Entry***

***Wear assigned protective equipment***

***Breathing asbestos dust may cause serious bodily harm***

- 3.1.30 Do not proceed with work of Contaminated Preparation without obtaining written permission from the Asbestos Abatement Consultant. Provide a minimum of 24 hours notice to consultant for the need of an inspection.

**3.2 Contaminated Preparation**

- 3.2.1 Use full personal protective procedures and equipment, amended water and HEPA vacuums during contaminated preparation.
- 3.2.2 Disable air-handling system affecting Asbestos Work Area. Seal ventilation ducts to and from the work area. The air handling system shall not be enabled until completion of work.
- 3.2.3 Shut off and lock out electrical power within the enclosure. Refer to electrical specifications.

- 3.2.4 Remove and dispose of ceilings and other obstructions to access ducts supplying into and exhausting from the Asbestos Work Area, or ducts to remain live within the Asbestos Work Area.
- 3.2.5 Where applicable, seal ducts supplying into and exhausting from the Asbestos Work Area during one shift, as follows:
  - 3.2.5.1 Cut and cap ducts as close as possible to perimeter of Asbestos Work Area.
  - 3.2.5.2 Cap with metal of gauge equal to sheet metal being capped.
  - 3.2.5.3 Seal seams of cap with duct sealant, tape and polyethylene sheeting.

### **3.3 Work above Ceilings**

- 3.3.1 Remove and dispose of ceilings and other obstructions around perimeter to access upper perimeter of the Asbestos Work Area.
- 3.3.2 Remove ceilings in sections equal to the work that can be performed in one shift.
- 3.3.3 Seal holes in existing perimeter walls, columns, deck, etc. exposed by removal of ceiling at upper perimeter of Asbestos Work Area.
- 3.3.4 Cover Asbestos Work Area upper perimeter walls with 2 layers of 6-mill rip proof, independently sealed, polyethylene.
- 3.3.5 Remove and replace remaining ceiling tiles with grid and support systems.
- 3.3.6 Temporarily support and protect with polyethylene, existing items to remain that were previously supported by the ceiling systems.
- 3.3.7 Protect electrical systems to remain in the Asbestos Work Area with polyethylene and tape, including but not limited to communication systems, coaxial, triaxial, fire and public address systems, wiring, conduit, speakers, heat and smoke detectors, alarms, lights, equipment, junction boxes, speakers, thermostats, light fixtures, etc.
  - 3.3.7.1 Refer to electrical specifications for additional direction.
- 3.3.8 Do not proceed with work of Ceiling Removal without obtaining written permission from the Asbestos Abatement Consultant. Provide a minimum of 24 hours notice to consultant for the need of an inspection.

### **3.4 Asbestos Removal**

- 3.4.1 Spray asbestos material with water containing the specified wetting agent, using airless spray equipment capable of providing a "mist" application to prevent release of fibres. Saturate the asbestos material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during work process to maintain saturation and to

- minimize asbestos fibre dispersion. Score the outer surface where water does not penetrate the outer layers.
- 3.4.2 Remove the saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed, pack the material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport. Collect wastewater from the floor, do not allow it to pool. Mist the air continuously where asbestos is being disturbed with amended water using one dedicated airless sprayer equipped with a fine atomizing nozzle. If fibre levels exceed 2.0 f/cc, then additional dedicated sprayer(s) will be required as directed by the Asbestos Abatement Consultant. Contain wastewater in sealable plastic containers, suitable for transport and disposal without leaking or dispose of by pumping into a settling tank, filtering the water using specified filters, and then pumping into a sanitary sewer.
- 3.4.3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination washroom. Wash containers thoroughly in decontamination washroom, and store in holding room pending removal to unloading room and outside. Ensure that containers are removed from the holding room by workers who have entered from uncontaminated areas dressed in clean coveralls.
- 3.4.4 After completion of removal work, all surfaces from which asbestos has been removed shall be wire brushed and wet-sponged to remove all visible material. During this work the surfaces shall be kept wet.
- 3.4.5 Where Asbestos Abatement Consultant decides complete removal of asbestos-containing material is impossible due to obstructions such as structural members or major service elements, and provides written direction, seal the material as directed by the Consultant.
- 3.4.6 After wire brushing and wet sponging to remove visible asbestos, wet clean the entire work area including the Equipment and Access Room, and equipment used in the process.
- 3.4.7 All tools, equipment, materials and supplies that will NOT be reused shall be placed in an asbestos waste container as soon as practicable following completion of the preceding Items of this Section.
- 3.4.8 All tools, equipment, materials and supplies that will be reused shall be cleaned, by using a vacuum equipped with a HEPA filter or by damp wiping, as soon as practicable following completion of the preceding Items of this Section.
- 3.4.9 Compressed air shall not be used to clean up and remove debris or dust from any surface.

- 3.4.10 Eating, drinking, chewing or smoking shall not be permitted in the work area.
- 3.4.11 Maintain all work areas in a neat and orderly fashion at all times.
- 3.4.12 Pre-filters on fan units shall be treated as asbestos waste and disposed of accordingly.
- 3.4.13 Do not proceed with work of applying Lock Down Agent without obtaining written permission from the Asbestos Abatement Consultant indicating a visual clearance inspection has been performed and the site is satisfactory to the Consultant. Provide a minimum of 24 hours notice to consultant for the need of a visual clearance inspection.

### **3.5 Application of Lock Down Agent**

- 3.5.1 After completion of the final cleaning and after the Asbestos Abatement Consultant has passed a visual cleanliness inspection, spray sealant (approved by the Asbestos Abatement Consultant) on all surfaces in the Asbestos Work Area.
- 3.5.2 Allow an 8-hour settling period, or a time period accepted by the Asbestos Abatement Consultant, for the sealer to dry. During this settling period, no entry or activity will be permitted in the work area.
- 3.5.3 Obtain written permission from Asbestos Abatement Consultant to proceed with Asbestos Work Area Tear Down and Dismantling following acceptable clearance air monitoring results of 0.01 f/mL. Should clearance air monitoring results exceed 0.01 f.mL, the contractor will, at no cost to the owner, reclean the entire Asbestos Work Area and apply another coat of Lock Down Agent.

### **3.6 Asbestos Work Area Teardown and Dismantling**

- 3.6.1 Maintain the perimeter seal and Type 3 procedures and use worker decontamination facility.
- 3.6.2 Operate negative air units during teardown.
- 3.6.3 Remove all polyethylene, tape, polyurethane foam, caulking and enclosures from Asbestos Work Area.
- 3.6.4 Remove asbestos contaminated floor polyethylene by carefully rolling away from walls to centre of Asbestos Work Area.
- 3.6.5 For areas that will require application of new sprayed fire proofing, remove top layer of polyethylene sheeting from surfaces protected by two layers of polyethylene sheeting. The inner layer of polyethylene will remain until all re-fireproofing is complete.

- 3.6.6 Cut the lower layer of polyethylene sheeting to expose the baseboards, windowsills, cabinets, shelves and other horizontal surfaces that may be contaminated by fallen ACM.
- 3.6.7 Carefully roll polyethylene toward the centre of enclosure. Remove visible debris by means of HEPA vacuum as polyethylene is rolled away.
- 3.6.8 After the work is completed, polyethylene sheeting and similar materials used for barriers and enclosures shall not be reused but shall be wetted and placed in an asbestos waste container as soon as practicable following completion of the preceding Items of this Section.
- 3.6.9 Barriers and portable enclosures shall not be reused unless they are rigid and can be cleaned thoroughly.
- 3.6.10 Place Polyethylene, tape, cleaning material, clothing and other contaminated waste in asbestos waste containers and dispose of as asbestos waste.
- 3.6.11 Seal vacuum hoses and fittings, flexible ductwork and all tools used in contaminated work site in 6 mil polyethylene bags prior to removal from Work Area.
- 3.6.12 Wash equipment used in contaminated Asbestos Work Area to remove all asbestos contamination, or double bag for transportation prior to being removed from Asbestos Work Area, via waste and equipment decontamination facility.
- 3.6.13 Clean up Asbestos Work Area, Equipment and Access area, washing/Showering Room, and other enclosures that may be contaminated.
- 3.6.14 Remove polyethylene protection and hoarding walls where hoarding walls separate occupied areas from work area.
- 3.6.15 Hoarding walls to remain are identified on drawings, if applicable.
- 3.6.16 Remove polyethylene sheeting from contaminated side of decontamination facilities.
- 3.6.17 Wash and mop with clean water all surfaces in the Asbestos Work Area.
- 3.6.18 Remove all temporary lights, ground fault panels and Negative Pressure Units.
- 3.6.19 Remove negative air unit prefilters. Dispose of as asbestos contaminated waste.
- 3.6.20 Immediately upon shutting down negative air units, seal air inlet grill and exhaust vent with polyethylene and tape.
- 3.6.21 Maintain all hoarding walls adjacent to areas where ACM is present and in good condition.

3.6.22 Remove decontamination facilities, platforms and platform scaffolding, tunnels, etc.

3.6.23 Damp mop and clean with HEPA vacuum Occupied Areas previously below platforms, tunnels and decontamination facilities with HEPA vacuum.

**3.7 Re-establishment of Objects and Systems**

3.7.1 Make good at completion of work, all damage not identified in pre-removal survey.

3.7.2 Reinstall objects and items removed to facilitate removal of ACM.

**End of Section**

**LEAD ABATEMENT**

**SECTION 132840**

**LIST OF CONTENTS**

	<b>Page</b>
<b>1. GENERAL</b> .....	<b>2</b>
1.1 General and Related Work.....	2
1.2 Site Conditions.....	2
1.3 Outline of Work.....	2
1.4 Schedule.....	3
1.5 Supervision.....	3
1.6 Quality Assurance.....	4
1.7 Definitions.....	4
1.8 Regulations.....	9
1.9 Notification.....	10
1.10 Submittals.....	10
1.11 Worker Protection.....	11
1.12 Visitor Protection.....	12
1.13 Air Monitoring.....	13
1.14 Waste Transport And Disposal.....	13
<b>2. PRODUCTS</b> .....	<b>14</b>
2.1 Materials and Equipment.....	14
<b>3. EXECUTION</b> .....	<b>18</b>
3.1 General Measures and Procedures.....	18
3.2 Measures and Procedures for Type/Class 1 Operations.....	19
3.3 Measures and Procedures for Type/Class 2 A/B Operations.....	19
3.4 Measures and Procedures for Type/Class 3 A/B Operations.....	21
3.5 Measures and Procedures for Cleaning of Lead Dust.....	25
3.6 Preparation Prior to Contamination.....	26
3.7 Contaminated Preparation.....	28
3.8 Lead-Abatement Work Area Dismantling.....	28

**1. GENERAL**

**1.1 General and Related Work**

1.1.1 All sections of the specifications form a part of the Contract Document and shall be read to determine their effect upon the work of this section.

1.1.2 Related Work Specified Elsewhere

Division 13, Section 132800	Scope and Details
Division 13, Section 132810	Asbestos Abatement – Type 1
Division 13, Section 132820	Asbestos Abatement – Type 2
Division 13, Section 132830	Asbestos Abatement – Type 3

Attachments:

1) *Pre-Renovation Designated Substance and Hazardous Materials Assessment, Child Care Program McNicoll Avenue, ECOH Management Inc., December 2, 2026.*

1.1.3 It is the intent that lead abatement performed as per this section will result in the removal and disposal of all lead paint and lead-containing materials as well as any materials that may have been contaminated by lead dust either during or prior to work of this Section.

1.1.4 The Contractor is responsible to verify all measurements for removal, cleaning, and re-insulation purposes. Measurements and quantities provided herein are for reference only.

**1.2 Site Conditions**

1.2.1 Refer to Section 132800: Scope and Details and the *Pre-Renovation Designated Substances and Assessment* Attachment 1 for details of site conditions.

**1.3 Outline of Work**

1.3.1 The Contractor shall perform all work in manner to reduce dust creation to lowest levels practicable.

1.3.2 Prior to commencing bulk removal and cleaning work, any equipment to remain in the Lead-Abatement Work Area is to be vacuumed/wiped clean and protected with polyethylene sheeting by the Contractor.

1.3.3 The Contractor shall protect sprinkler heads, smoke & heat sensors and fire alarms, in all Lead-Abatement Work Areas, from damage.

1.3.4 The Contractor shall protect surfaces, building fabric and items not specified for removal, remaining within Lead-Abatement Work Areas.

- 1.3.5 The Contractor shall post warning signs stating that Abatement work is in progress and the type of Abatement (i.e. lead dust) at to individual work enclosures.
- 1.3.6 Class 1 lead abatement procedures shall be followed when removing lead paint and lead-containing materials (when using a power tool that has an effective dust collection system equipped with a HEPA filter or using a non-powered hand tool, other than manual scraping or sanding).
- 1.3.7 Class 2 lead abatement procedures shall be followed when removing lead coatings or materials by scraping or sanding using non-powered hand tools.
- 1.3.8 Refer to Item 3.2 and 3.3 respectively for specific Class 1 and Class 2 removal procedures.
- 1.3.9 During the cleaning of lead-contaminated dust, if generated by work of this Section, the Contractor shall use Ledizolv Detergent, manufactured by LSZ Incorporated, for removal of lead-contaminated dust. Equivalent cleaners may be substituted, but are subject to approval by the Environmental Abatement Consultant. Follow manufactures recommended detergent concentration for the intended application.
- 1.3.10 Prior to start of abatement work, the Contractor shall provide all MSDS information to the on-site Environmental Abatement Consultant for all chemical agents used for work procedures.
- 1.3.11 Negative air units that exhaust into occupied areas shall be Dioctylphthalate (DOP) tested. If negative air units are taken off-site between work Phases, DOP testing will be required each time returned.
- 1.3.12 Water supply will be available at no cost.
- 1.3.13 Hydro supply will be available at no cost.

#### **1.4 Schedule**

- 1.4.1 Refer to Section 132800: Hazardous Material Abatement - Scope and Details.

#### **1.5 Supervision**

- 1.5.1 The Contractor shall provide an on-site Superintendent that has the authority to oversee all aspects of the work, including but not limited to, negotiation of changes to the contract, scheduling, manpower, equipment, production, and communication and co-ordination with the Environmental Abatement Consultant.
- 1.5.2 The Environmental Abatement Consultant reserves the right to reject or accept any Superintendent without explanation.

- 1.5.3 Supervisory personnel shall hold a recognized certificate proving attendance at a lead removal training course (3 day minimum duration) acceptable to Environmental Abatement Consultant and have supervised a minimum of five (5) other lead abatement projects of a similar size and nature.
- 1.5.4 The Contractor shall have supervisory personnel on site at all times during work.
- 1.5.5 The Contractor shall not replace supervisory personnel without written approval from the Environmental Abatement Consultant.

## **1.6 Quality Assurance**

- 1.6.1 The Contractor shall ensure the removal and handling of lead paint and lead-containing building materials is performed by trained and competent personnel. The Environmental Abatement Consultant reserves the right to remove any personnel that, in their opinion, does not meet these qualifications.
- 1.6.2 All related work of this section shall be performed by licensed persons, experienced and qualified for the work required.
- 1.6.3 The Environmental Abatement Consultant is empowered to order work to stop when a breach of any containment enclosure has, or is likely to occur. Cost of additional work by Contractor and/or Environmental Abatement Consultant to remedy conditions shall be the burden of the Contractor.
- 1.6.4 The Contractor is solely responsible for the control of the project, construction practices, his Subcontractors or their agents, employees or other persons performing any of the Work.

## **1.7 Definitions**

- 1.7.1 Airlock: A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 1.5 m apart.
- 1.7.2 Air Monitoring: The process of measuring the lead-contaminated dust content of a specific volume of air.
- 1.7.3 Amended Water: Water with a non-ionic surfactant wetting agent added to reduce water surface tension to 35 or less dynes, to allow thorough wetting of settled dust.
- 1.7.4 Lead-Abatement Work Area: Where the actual removal of lead-containing or lead-contaminated materials takes place.

- 1.7.5 Authorized Visitor: The Owner or his approved representative and/or persons representing regulatory agencies.
- 1.7.6 Barrier: Any surface that seals off the Lead-Abatement Work Area to inhibit the movement of dust.
- 1.7.7 Clean Area: Either an operating area or an area in which removal work has already been completed.
- 1.7.8 Competent Personnel: a worker who is qualified because of knowledge, training and experience to perform the work; is familiar with the Ontario Occupational Health and Safety Act and with the provisions of the regulations that apply to the work, and; has knowledge of all potential or actual danger to health or safety in the work.
- 1.7.9 Curtained Doorway: An arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of polyethylene over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. All free edges of polyethylene shall be reinforced with duct tape and the bottom edge shall be weighted to ensure proper closing. Each polyethylene sheet shall overlap openings not less than 1.5 m on each side.
- 1.7.10 Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.
- 1.7.11 Disposal Bag: A properly labelled 6 mil thick leak-tight plastic bag used for transporting lead waste from the Lead-Abatement Work Area to the disposal site.
- 1.7.12 DOP / PAO Test: Dioctylphthalate / Poly Alpha Olefin aerosol challenge of a HEPA filter system and is used to establish the integrity and effectiveness of the system to filter out lead particles and dust.
- 1.7.13 Enclosure: 6 mil polyethylene sheeting installed to fully isolate Lead-Abatement Work Area. Enclosure may be a prefabricated self supporting structure or constructed with a rigid frame, or, when applicable, supported by the ceiling grid. Enclosure shall have polyethylene sheeting as a top at locations where the enclosure does not extend up to the underside of the ceiling or underside of structure.
- 1.7.14 Filter: A media component used in respirators, vacuum cleaners or negative pressure filter fan units to remove solid or liquid particles from the inspired air.

- 1.7.15 Fitting: Unless otherwise described in Site Conditions, all connections of a pipe which include elbows, ends, caps, valves, hangers, tees and unions, etc.
- 1.7.16 HEPA Filter: High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.
- 1.7.17 Negative Pressure: A system which extracts air directly from the Lead-Abatement Work Area, filters such extracted air through a High Efficiency Particulate Air filtering system, and discharges this air directly outside Lead-Abatement Work Area to exterior of building. This system shall maintain a minimum pressure differential of 0.02 inches Water Gauge relative to adjacent areas outside of Lead-Abatement Work Areas, be equipped with an alarm to warn of system breakdown (i.e. excessive negative pressure or insufficient negative pressure), and be equipped with an instrument to continuously monitor and automatically record pressure differences.
- 1.7.18 Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
- 1.7.19 Occupied Area: Any area of the building outside the Lead-Abatement Work Area.
- 1.7.20 Polyethylene: Sheeting of type and thickness specified sealed with tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealant, and to prevent escape of lead particulate through the sheeting into a clean area.
- 1.7.21 Positive Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during inhalation and exhalation in relation to the air pressure of the outside atmosphere.
- 1.7.22 Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- 1.7.23 Straight run pipes: Part of the building system not included under the description of Fitting, including but not limited to straight, angled or curved sections of pipe, pumps, headers and reducers.
- 1.7.24 Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- 1.7.25 Type/Class 1 Lead Operations: Defined by the Ministry of Labour document "*Guideline - Lead on Construction Projects*", dated April 2011,

and the Environmental Abatement Council of Canada (EACC) document; “*Lead Guideline for Construction, Renovation, Maintenance or Repair*”, dated October 2014, includes the following operations:

- 1.7.25.1 Removal of lead-containing or lead-based paints and surface coatings with a chemical gel/stripper or paste.
- 1.7.25.2 Application of lead-containing or lead-based paints and surface coatings with a brush, roller or sponge.
- 1.7.25.3 Installation or removal of lead sheeting or flashing.
- 1.7.25.4 Installation or removal of lead-containing packing, babbitt, caulking, gasket or similar material.
- 1.7.25.5 Removal of materials coated with lead-containing or lead-based paints and surface coatings, using non-powered hand tools, where the material remains chiefly intact and is not crumbled, pulverized or powdered.
- 1.7.25.6 Operating construction or demolition equipment (e.g. excavator, bulldozer) during building renovation or demolition where lead-based paints or surface coatings are present on building materials and are being disturbed.
- 1.7.25.7 Soldering with lead solder.
- 1.7.25.8 Removing lead-containing or lead-based paints or surface coatings with a heat gun.
- 1.7.25.9 Removing lead-containing and lead-based paints and surface coatings using a high-pressure water jet (e.g. pressure washer)
- 1.7.26 Type/Class 2A Lead Operations: Defined by the Ministry of Labour document “*Guideline - Lead on Construction Projects*”, dated April 2011, and the Environmental Abatement Council of Canada (EACC) document; “*Lead Guideline for Construction, Renovation, Maintenance or Repair*”, dated October 2014, includes the following operations:
  - 1.7.26.1 Removal of lead-containing or lead-based paints and surface coatings or lead-containing materials using a power tool that has an effective dust collection system equipped with a HEPA filter.
  - 1.7.26.2 Welding, torching or high temperature cutting of lead-containing materials indoors when using an effective fume collector or smoke eater that filters and exhausts lead fume and expels it directly outdoors (away from occupants, entrances, walkways, rest areas, etc.). Fume collector or smoke eater must have effective source control and capture velocity, minimum of 0.5 metres per second (100 feet per minute) at the work surface.
  - 1.7.26.3 Welding, torching or high temperature cutting of lead-containing and lead-based paints and surface coatings or lead-containing materials outdoors.

- 1.7.26.4 Removal of lead-containing mortar using handheld non-powered tools.
- 1.7.26.5 Removal of lead-containing and lead-based paints and surface coatings or lead-containing materials by scraping or sanding (including wet sanding) using non-powered hand tools.
- 1.7.26.6 Demolition of plaster or building components that crumble, pulverize or powder and are covered with lead-containing or lead-based paints or surface coatings.
- 1.7.26.7 Clean up and removal of a significant amount of lead-containing dust and debris (that can be made easily airborne) using wet methods or HEPA vacuums.
- 1.7.27 Type/Class 2B Lead Operations: Defined by the Ministry of Labour document "*Guideline - Lead on Construction Projects*", dated April 2011, and the Environmental Abatement Council of Canada (EACC) document; "*Lead Guideline for Construction, Renovation, Maintenance or Repair*", dated October 2014, includes the following operations:
  - 1.7.27.1 Spray application of lead-containing paints and surface coatings.
- 1.7.28 Type/Class 3A Lead Operations: Defined by Ministry of Labour document "*Guideline - Lead on Construction Projects*", dated April 2011, and the Environmental Abatement Council of Canada (EACC) document; "*Lead Guideline for Construction, Renovation, Maintenance or Repair*", dated October 2014, includes the following operations:
  - 1.7.28.1 Removal of lead-containing or lead-based paints and surface coatings or lead-containing materials using a power tool without an effective dust collection system equipped with a HEPA filter.
  - 1.7.28.2 Welding, torching or high temperature cutting of lead-containing materials indoors or in a confined space (e.g. within a ditch or pit).
  - 1.7.28.3 Removal of lead-containing mortar using a powered cutting device.
  - 1.7.28.4 Burning of a material containing lead.
  - 1.7.28.5 Removal, cleaning or repair of a ventilation system or ductwork used for controlling lead exposure
  - 1.7.28.6 Spray application of lead-based paints and surface coatings.
  - 1.7.28.7 In the absence of an exposure assessment;
    - 1.7.28.7.1 demolition or cleanup of a facility where lead-containing products were manufactured and significant dust and debris, which can be made easily airborne, is present.
    - 1.7.28.7.2 cleanup of dust and debris down range of a firing station in an indoor firing range.

- 1.7.28.7.3 an operation that may expose a worker to lead dust, fume or mist that is not a Class 1, Class 2, or Class 3B operation.
- 1.7.29 Type/Class 3B Lead Operations: Defined by Ministry of Labour document “*Guideline - Lead on Construction Projects*”, dated April 2011, and the Environmental Abatement Council of Canada (EACC) document; “*Lead Guideline for Construction, Renovation, Maintenance or Repair*”, dated October 2014, includes the following operations:
- 1.7.29.1 Abrasive blasting of lead-containing and lead-based paints and surface coatings or lead-containing materials (including wet, slurry and dry abrasive blasting and dry-ice blasting).
- 1.7.30 Water Filtration System: A multi-stage filtration system for filtering shower and wastewater. Typically constructed with at least two filters, the primary stage retains 20 microns or larger particles and the final stage removes 5 micron or larger particles.
- 1.7.31 Work: Includes all services, labour and material required to complete the work as specified in the contract.
- 1.7.32 Work Area(s): Area(s) where work takes place that will, or may disturb lead-containing materials.

## **1.8 Regulations**

- 1.8.1 The Contractor shall comply with Federal, Provincial, and local requirements pertaining to lead dust, provided that in any case of conflict among those requirements or with these specifications the more stringent requirement shall apply. The regulations shall include but not be limited to the following:
- 1.8.1.1 Ontario Ministry of Labour, Health and Safety Branch, Guideline for Lead on Construction Projects, September 2004.
- 1.8.1.2 Ontario Ministry of the Environment Regulation 347, under the Environmental Protection Act, as amended by Ontario Regulation 558/00.
- 1.8.1.3 Government of Canada Regulations respecting the Handling, Offering for Transport and Transporting of Dangerous Goods. (Extract from the Canada Gazette Part II, dated February 6, 1985).
- 1.8.1.4 Dangerous Goods Transportation Act (DGTA) R.S.O. 1990 c.D1.
- 1.8.1.5 Regulations for Construction Projects O.Reg. 213/91.
- 1.8.1.6 Office of the Fire Commissioner of Canada.
- 1.8.1.7 Ontario Electrical Safety Code, latest edition.
- 1.8.1.8 WHMIS Regulations RRO 1990 Reg. 860.

1.8.1.9 Ontario Occupational Health and Safety Act RSO 1990 c0.1, as amended.

## **1.9 Notification**

1.9.1 The Contractor shall notify Sanitary Landfill site as per Ontario Regulation 347, as amended, under the Environmental Protection Act.

1.9.2 The Contractor shall inform all sub trades of the presence of designated substances and/or hazardous materials present within the Subject Demolition Area.

## **1.10 Submittals**

1.10.1 Prior to commencing work, the Contractor shall prepare and submit:

1.10.1.1 A site-specific Health and Safety Plan (HASP), to address safety issues, including but not limited to the following;

1.10.1.1.1 Access and emergency evacuation from Lead-Abatement Work Areas.

1.10.1.1.2 Creating and maintaining clear routes for Lead-Abatement Work Area access and emergency evacuation.

1.10.1.1.3 Work site communication.

1.10.1.2 Proof that workers have received WHMIS training.

1.10.1.3 Work Place Safety and Insurance Clearance Certificates.

1.10.1.4 Ministry of Labour Notice of Project form.

1.10.1.5 Pre-removal survey of damage in all areas where abatement will take place or waste will be transported. The contractor is responsible for the repair or replacement of any damaged articles, materials or building systems or finishes caused during the course of abatement work.

1.10.1.6 Proposed schedule including all stages of work.

1.10.1.7 Shop drawings for each Lead-Abatement Work Area detailing, as is applicable to project requirements, waste and worker decontamination facilities, platform and hoarding layouts, Material Safety Data Sheets (MSDS) for chemicals or materials used in the course of the project.

1.10.1.8 Negative air unit performance data and results of D.O.P. tests as required.

1.10.1.9 Certificate proving that each worker on-site has been fit tested for the respirator appropriate for the work being performed.

1.10.2 The Contractor shall submit names of supervisory personnel who will be responsible for Lead-Abatement. One of these supervisors shall remain on site at all times abatement or clean up is occurring. Submit proof that supervisory personnel have attended training course on lead control (3

day minimum duration) and have performed supervisory function on at least 5 other lead abatement projects of a similar size and nature.

## **1.11 Worker Protection**

- 1.11.1 Prior to commencing work, the Contractor shall instruct workers in all aspects of work procedures and protective measures.
- 1.11.2 The Contractor shall, provide workers with personally issued marked respiratory equipment acceptable to the Occupational Health and Safety Division of the Ontario Ministry of Labour, suitable for the expected lead dust exposure.
- 1.11.3 Ensure that suitable respiratory protective equipment is worn by every worker who enters the Asbestos Work Area. A respirator provided by an employer and used by a worker shall be:
  - 1.11.3.1 One of the following types depending on the classification of work and method removal;
    - 1.11.3.1.1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filters;
    - 1.11.3.1.2 Air purifying full-facepiece respirator with N-100, R-100 or P-100 particulate filters;
    - 1.11.3.1.3 Powered air purifying respirator equipped with a tight-fitting facepiece (half or full-facepiece) and a high efficiency filter or N-100, R-100 or P-100 particulate filters;
    - 1.11.3.1.4 Negative pressure (demand) supplied air respirator equipped with a full-facepiece;
    - 1.11.3.1.5 Continuous flow supplied air respirator equipped with a tight fitting facepiece (half or full-facepiece);
    - 1.11.3.1.6 Pressure demand supplied air respirator equipped with a half or full-facepiece mask.
  - 1.11.3.2 Fitted so that there is an effective seal between the respirator and the worker's face;
  - 1.11.3.3 Assigned to a worker for the worker's exclusive use, if practical;
  - 1.11.3.4 Used and maintained in accordance with the procedures specified by the equipment manufacturer;
  - 1.11.3.5 Cleaned, disinfected and inspected after use on each shift, or more often if necessary;
  - 1.11.3.6 Free of damaged or deteriorated parts replaced prior to being used by a worker;

- 1.11.3.7 Be stored in a convenient, clean and sanitary location; when not in use;
- 1.11.3.8 Certified by the US National Institute for Occupational Safety and Health (NIOSH) for exposure to airborne particulates.
- 1.11.4 The Contractor shall establish written procedures regarding the selection, use and care of respirators.
- 1.11.5 A copy of the procedures shall be provided to and reviewed with each worker by the Contractor.
- 1.11.6 A worker shall not be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
- 1.11.7 The Contractor shall provide all workers with full body disposable coveralls.
- 1.11.8 The Contractor shall ensure that full body disposable coveralls are worn by every worker who enters the Lead-Abatement Work Area. The protective clothing provided by an employer and used by a worker shall:
  - 1.11.8.1 Be made of a material which does not readily retain nor permit penetration of lead particulate;
  - 1.11.8.2 Consist of head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent lead particulate from reaching the garments and skin under the protective clothing;
  - 1.11.8.3 Include suitable footwear;
  - 1.11.8.4 Be repaired or replaced if torn.
  - 1.11.8.5 Provide other body protection required under applicable safety regulations.
- 1.11.9 The Contractor shall ensure that personnel are fully protected at all times when possibility of exposure to lead dust exists.
- 1.11.10 The Contractor shall provide and post in Clean Change Room the procedures described under Worker Protection.
  - 1.11.10.1 No person shall eat, drink, smoke or chew except in established locations outside the Lead-Abatement Work Area.
  - 1.11.10.2 Personnel shall be fully protected at all times when possibility of disturbance of lead dust exists.
- 1.12 Visitor Protection**
  - 1.12.1 The Contractor shall provide clean protective clothing and equipment and approved respirators to Authorized Visitors.

1.12.2 The Contractor shall ensure that Authorized Visitors have received required training for entry into Lead-Abatement Work Area.

### **1.13 Air Monitoring**

1.13.1 Air monitoring may be performed by the Environmental Consultant at all stages of the abatement.

1.13.2 The Contractor shall cooperate fully with the Environmental Consultant in the collection of air monitoring samples, including the collection of personal worker samples, if required.

1.13.3 The occupational exposure limit for lead is 0.05 mg/m<sup>3</sup>, required by the MOL, under O. Reg. 490/09, as amended. Results of air samples of 0.025 mg/m<sup>3</sup>, or greater, outside of Abatement Work Area, will be deemed as the action level, at which will require a modification of abatement procedures to reduce airborne lead dust concentrations. Results of air samples of 0.05 mg/m<sup>3</sup> or greater, outside of Lead-Abatement Work Area, will indicate lead dust contamination of these areas. The contaminated areas shall be isolated and cleaned in the manner applicable for the clean-up of lead-contaminated dust by the Contractor, at no cost to the Owner.

1.13.4 Clearance air monitoring samples shall be collected by the Environmental Consultant after a suitable settling period following application of lock-down agent. Clearance levels must be less than 0.05 mg/m<sup>3</sup> for the Lead-Abatement Work Area to be deemed clean.

### **1.14 Waste Transport And Disposal**

1.14.1 The Contractor shall ensure lead-contaminated materials, removed during abatement are treated, packaged, transported and disposed of as lead waste.

1.14.2 The Contractor shall drop garbage bins at designated locations. Keep bins covered and enclosed while at the site. Bin loading area shall be kept clean at all times.

1.14.3 The Contractor shall pick-up and drop off garbage bins at pre-approved times, and shall not interfere with the Owners operations.

1.14.4 The Contractor shall conform to requirements of Regulations under Environmental Protection Act for Waste Management, transporting and disposal of hazardous waste.

1.14.5 The Contractor shall ensure shipment of containers to dump is taken by a waste hauler licensed to transport lead waste.

1.14.6 The Contractor shall ensure that a bill of lading, showing the type and weight of hazardous waste being transported, is completed for each load.

- 1.14.7 The Contractor shall check with dump operator to determine type of waste containers acceptable.
- 1.14.8 The Contractor shall ensure dump operator is fully aware of hazardous material being dumped.
- 1.14.9 The Contractor shall co-operate with Ministry of the Environment and Climate Change inspectors and immediately carry out instructions for remedial work at dump to maintain environment, at no additional cost to Owner.

## 2. PRODUCTS

### 2.1 Materials and Equipment

- 2.1.1 The Contractor shall ensure that all tools, equipment, materials and supplies brought to work site are in good condition and free of lead, lead debris, and lead-contaminated materials.
- 2.1.2 The Contractor shall ensure that disposable tools, equipment, materials and supplies are of new materials only.
- 2.1.3 Airless Sprayer: Spray equipment for water: for application to lead dust contaminated materials. Airless spray units are only acceptable, such as Grace Hydrospray or approved equal.
- 2.1.4 Caulking: One component non-staining acrylic polymer sealant to conform to GSB Specification 19GP-5M.
- 2.1.5 Drop Sheets: In polyethylene type and size appropriate for the work being performed.
- 2.1.6 Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas of work.
- 2.1.7 Flame-Resistant Polyethylene Sheeting: A single polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films, 0.15 mm (6 mils) thickness.
- 2.1.8 Fine Atomizing Spray Nozzle: Nozzle for airless sprayer capable of delivering not less than 1 gallon per minute of fine particle spray of water.
- 2.1.9 First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.
- 2.1.10 Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or

- grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.
- 2.1.11 Foam: Low density polyurethane expanding foam Froth-Pack or equivalent or better.
- 2.1.12 Garden Sprayer: A hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or fine spray of liquid of water under pressure.
- 2.1.13 Ground Fault Panel (All sections require approval from the Owner): Electrical panel, installed by licensed electrician and equipped as follows:
- 2.1.13.1 Ground fault circuit interrupters of sufficient capacity to power temporary electrical equipment and lights in Lead-Abatement Work Area.
- 2.1.13.2 Interrupters to have a 5 mA ground fault protection.
- 2.1.13.3 Necessary accessories including main switch disconnect, ground fault interrupter lights, test switch to ensure unit is working, and reset switch.
- 2.1.13.4 Openings shall be sealed by the Contractor to prevent moisture or dust penetration.
- 2.1.14 HEPA Vacuum: Vacuum with necessary fittings, tools and attachments. Discharged air must pass through a HEPA filter.
- 2.1.15 Lead Dust Waste Containers: The Contractor shall ensure that waste is contained in two separate containers that are dust-tight and impervious to lead dust and any chemicals used during the removal process. The inner container shall be a sealable polyethylene bag. Where there are sharp objects included in the waste material, the outer container shall be a sealable fibre type drum, otherwise the outer container may either be a sealable polyethylene bag. Containers shall be as follows:
- 2.1.15.1 Lock-down Agent: Sealant for purpose of trapping residual dust. Product shall have flame spread and smoke development ratings both less than 50. Product shall leave no stain when dry. Lock-down agent shall be compatible with replacement insulation or fireproofing where required and capable of withstanding service temperature of substrate.
- 2.1.15.2 Polyethylene Waste Bag: 0.15 mm (6 mil) thick leak-tight polyethylene bags labelled as required by sub-section 3.5 Waste Disposal.
- 2.1.15.3 Fibre Drums: 55 US gallon capacity heavy duty leak tight fibre drums with tight sealing locking metal top and metal bottom.
- 2.1.15.4 Labels: Waste containers shall have a pre-printed cautionary lead dust warning label, acceptable to local dump authorities, clearly visible when ready for removal to disposal site.

- 2.1.16 Negative Air Unit: Portable air handling system that extracts air directly from the Lead-Abatement Work Area and discharges the air to the exterior of the Lead-Abatement Work Area. Equipped as follows:
- 2.1.16.1 Prefilter and HEPA filter. Air must pass HEPA filter before discharge.
- 2.1.16.2 Pressure differential gauge to monitor filter loading.
- 2.1.16.3 Auto shut off and warning system for HEPA filter failure.
- 2.1.16.4 Separate hold down clamps to retain HEPA filter in place during change of prefilter.
- 2.1.17 Polyethylene Sheeting: A single polyethylene film, 0.15 mm (6 mil) minimum thickness unless otherwise specified.
- 2.1.18 Power Washer: Spray equipment for saturation of lead dust contaminated material with water for cleaning of surfaces in Lead-Abatement Work Area after lead dust removal, capable of delivering an airless stream of water at a pressure of not less than 1200 psi or exceeding 2500 psi.
- 2.1.19 Protective Coveralls: Disposable full body coveralls complete with hoods manufactured of a material that does not permit penetration of lead particulates.
- 2.1.20 Rip Proof Polyethylene Sheeting: Woven fibre reinforced fabric bonded both sides with polyethylene sheeting. 0.20 mm (8 mil) fabric made up from 0.13 mm (5 mil) weave and 2 layers 0.04 mm (1.5 mil) poly laminate.
- 2.1.21 Scaffolding: The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.
- 2.1.22 Sealer: Slow-drying sealer shall be a non-staining, clear, water dispersable type that remains tacky on the surface for a minimum of 8 hours for the purpose of trapping any residual airborne dust during the settling period. The product shall have flame spread and smoke development ratings both less than 50 and shall leave no stain when dry. Acceptable products: Borden Polyco 804, Double AD TC-55, equivalent or better. Also referred to as "Lockdown Agent".
- 2.1.23 Shower: General shower shall be of the walk through type to permit use by one person at a time. Receive approval from the Owner before erecting a shower system.
- 2.1.23.1 Shower Enclosure: Shower enclosure shall be of a minimum 24 gauge steel walls with baked enamel, galvanized steel, aluminum or stainless steel finish, 16 gauge floor with porcelain enamel finish, brass drain and tapping for mixing valve. Shower installation shall be complete with globe valve for tempered water with a showerhead complete with orifice to restrict the flow to 2.5 USGPM.

- 2.1.23.2 Shower Pan: Provide one piece waterproof shower pan of minimum size 4' x 8' by 6" deep. Fabricate from seamless fibreglass minimum 1/16" thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seams or, copper or lead with soldered seams.
- 2.1.23.3 Shower Head and Controls: Provide a factory-made showerhead producing a spray of water that can be adjusted for spray size and intensity. Feed shower separately with water from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.
- 2.1.23.4 Hose Bib: Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4" National Standard male hose outlet.
- 2.1.23.5 Filters: The Contractor shall provide multi-stage cascaded filter units on drain lines from showers or any other water source carrying lead-contaminated water from the Lead-Abatement Work Area. Provide units with disposable filter elements where the primary filter passes particle 20 microns and smaller and the final filter passes particles 5 microns and smaller. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
- 2.1.24 Spray Cement: Spray adhesive in aerosol cans that is specifically formulated to stick tenaciously to sheet polyethylene.
- 2.1.25 Sump Pump: Provide totally submersible waterproof sump pump with integral float switch and shall have a manual switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump.
- 2.1.26 Tape: Reinforced cloth or fibreglass reinforced tape in 2" or 3" widths suitable for sealing polyethylene sheeting under both wet conditions, and dry conditions.
- 2.1.27 Temporary Lighting: Provide general service incandescent lamps or fluorescent lamps of wattage required for adequate illumination as required by the work. Protect lamps with guard cages grounded together to distribution panel or tempered glass enclosures.
- 2.1.28 Water Heater: ULC rated electric water heater appropriately sized for project to supply hot water for the Decontamination Unit shower. Activate from ground fault panel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with rigid piping. Drip pans shall consist of a 12" x 12" x 6" deep pan, made of 19 gauge galvanized steel, with handles.

### 3. EXECUTION

#### 3.1 General Measures and Procedures

- 3.1.1 Washing facilities consisting of a wash basin, water, soap and towels shall be provided by the Contractor and workers shall use these washing facilities before eating, drinking, smoking or leaving the project.
- 3.1.2 Gloves shall be provided as necessary and the worker shall wear the gloves.
- 3.1.3 Use removal methods that minimize dust generation whenever possible.
- 3.1.4 Suppress any dust generated.
- 3.1.5 Workers shall not eat, drink, chew gum or smoke in the Lead-Abatement Work Area.
- 3.1.6 The Contractor shall clean up dust and waste frequently, and at regular intervals, and place the dust and waste in a container that is;
  - 3.1.6.1 Dust tight,
  - 3.1.6.2 Suitable for the type of waste,
  - 3.1.6.3 Identified as containing lead waste,
  - 3.1.6.4 Cleaned with a damp cloth or a vacuum equipped with a HEPA filter, or placed in a clean bag so that a clean exterior surface is achieved immediately prior to removal from the work area, and
  - 3.1.6.5 Removed from the workplace frequently and at regular intervals,
  - 3.1.6.6 Evaluated for lead-content and disposed of in accordance with applicable regulations.
- 3.1.7 Clean-up after each operation shall be done to prevent lead contamination and exposure to lead.
- 3.1.8 The use of 6 mil polyethylene bags as a waste container is acceptable provided it is appropriate for the type of waste. Double bagging of waste is recommended.
- 3.1.9 Drop sheets shall be used below all lead operations which may produce dust, chips, or debris containing lead.
- 3.1.10 Dry removal of lead-containing or lead-based paints and surface coatings shall be minimized whenever possible.
- 3.1.11 Wetting of materials shall be conducted whenever possible to control dust. The addition of wetting agents should be considered. Wetting should not be used if it may create a hazard or cause damage.

- 3.1.12 Wet methods should be incorporated in the operation to reduce dust generation. Examples of wet methods include wetting surfaces, wet mist, wet scraping and wet shovelling.
- 3.1.13 Dust and waste shall be cleaned up and removed by vacuuming with a HEPA filter equipped vacuum.
- 3.1.14 Cleaning with compressed air or dry sweeping shall not be performed. Sweeping compounds shall be used where wetting is not possible.
- 3.1.15 All equipment, tools, respirators and clothing shall be cleaned by damp wiping, or with a vacuum equipped with a HEPA filter, prior to removal from the work area.
- 3.1.16 Protection of porous or fibrous surfaces is imperative as it is very difficult to remove lead-containing dust from these surfaces. If the material cannot be adequately protected from lead dust or waste it shall be removed and disposed of.
- 3.1.17 Any water generated from cleaning or removal operations must be appropriately contained, treated or disposed of in accordance with applicable legislation
- 3.1.18 The Lead-Abatement Work Area shall be inspected at least once daily by the Contractor to ensure that the Lead-Abatement Work Area is clean.

**3.2 Measures and Procedures for Type/Class 1 Operations**

- 3.2.1 All general measures and procedures shall be implemented.
- 3.2.2 Respirators should not be necessary if all general health and safety procedures are followed. However, any worker who requests a respirator shall be provided with a half-mask particulate respirator with N-, R- or P-series particulate filters, and 95, 99 or 100% efficiency, or better.
- 3.2.3 Coveralls should not be necessary if all general health and safety procedures are followed. However, any worker who requests coveralls shall be provided with coveralls and the worker shall wear the coveralls.

**3.3 Measures and Procedures for Type/Class 2 A/B Operations**

- 3.3.1 Washing facilities consisting of a wash basin, clean water, soap (consider the use of lead-specific soaps and hygiene indicators based on the scope of the Operation) and towels shall be provided. Workers shall use these washing facilities upon leaving the work area and before eating, drinking or smoking.
- 3.3.2 Respirators shall be provided and the worker shall wear the respirator.

- 3.3.3 Gloves, coveralls and other Personal Protective Equipment (PPE) shall be provided and the worker shall wear the PPE.
- 3.3.4 Signage is required and the area shall be delineated to control access. Signs shall be posted in sufficient numbers to warn of the lead hazard and shall state in large clearly visible letters that, i) there is a lead hazard, and ii) Access to the work area is restricted to persons wearing protective clothing.
- 3.3.5 Use removal methods that minimize dust generation whenever possible.
- 3.3.6 Suppress any dust generated.
- 3.3.7 Workers shall not eat, drink, chew or smoke in the work area.
- 3.3.8 Dust and waste shall be cleaned up at regular intervals and placed in a container that is;
  - 3.3.8.1 dust tight,
  - 3.3.8.2 suitable for the type of waste,
  - 3.3.8.3 identified as lead waste,
  - 3.3.8.4 cleaned with a damp cloth or a vacuum equipped with a HEPA filter, or placed in a clean bag so that a clean exterior surface is achieved immediately prior to removal from the work area,
  - 3.3.8.5 removed from the workplace frequently and at regular intervals, and
  - 3.3.8.6 evaluated for lead-content and disposed of in accordance with applicable regulations.
- 3.3.9 The use of 6 mil polyethylene bags as a waste container is acceptable provided it is appropriate to the type of waste. Double bagging of waste is recommended.
- 3.3.10 Drop sheets shall be used below all lead operations that may produce dust, chips, or debris containing lead.
- 3.3.11 Air-handling (supply and return) systems servicing the area of the Class 2 Operation shall be removed from service or isolated to prevent migration of lead through the air handling system.
- 3.3.12 Dry removal of lead-containing or lead-based paints and surface coatings shall be minimized whenever possible.
- 3.3.13 Wetting of materials shall be conducted whenever possible to control dust. The addition of wetting agents should be considered. Wetting should not be used if it may create a hazard or cause damage.
- 3.3.14 Wet methods shall be incorporated in the operation to reduce dust generation. Examples of wet methods include wetting surfaces, wet mist, wet scraping and wet shovelling.

- 3.3.15 Cleaning with compressed air or dry sweeping shall not be performed. Sweeping compounds shall be used where wetting is not possible.
- 3.3.16 All equipment, tools, respirators and clothing shall be cleaned by damp wiping, or using a vacuum equipped with a HEPA filter, prior to removal from the work area.
- 3.3.17 Protection of porous or fibrous surfaces is imperative as it is very difficult to remove lead-containing dust from these surfaces. If the material cannot be adequately protected from lead dust or waste it shall be removed and disposed of.
- 3.3.18 Any water generated from cleaning or removal operations must be appropriately contained, treated or disposed of in accordance with applicable legislation.
- 3.3.19 Where a dust generating operation is carried out, additional local mechanical ventilation shall be provided to remove dust, mist and fumes at the source. Local mechanical ventilation is recommended for welding, burning or high temperature cutting and for the removal of lead-containing and lead-based paints and surface coatings using power tools that are equipped with a dust collection device attached to a HEPA filter. Where local mechanical ventilation is used, the following should be met:
  - 3.3.19.1 Air velocity at the source of dust, mist or fume generation shall be no less than 0.5 m/sec (100 ft./min).
  - 3.3.19.2 Air discharged from the local mechanical ventilation system shall pass through a HEPA filter.

### **3.4 Measures and Procedures for Type/Class 3 A/B Operations**

- 3.4.1 A competent supervisor must be present at all times during Class 3 Operations. Only workers and supervisors with proper training shall perform Class 3 Operations.
- 3.4.2 Washing facilities consisting of a wash basin, clean water, soap (consider the use of lead-specific soaps and hygiene indicators) and towels shall be provided. Workers shall use these washing facilities upon leaving the work area and before eating, drinking or smoking.
- 3.4.3 Respirators shall be provided and the worker shall wear the respirator.
- 3.4.4 Gloves, coveralls and other PPE shall be provided and the worker shall wear the PPE.

- 3.4.5 Signage is required and the area shall be delineated to control access. Signs shall be posted in sufficient numbers to warn of the lead hazard and shall state in large clearly visible letters that, i) there is a lead hazard, and ii) access to the work area is restricted to persons wearing protective clothing.
- 3.4.6 Use removal methods that minimize dust generation whenever possible.
- 3.4.7 Suppress any dust generated.
- 3.4.8 Workers shall not eat, drink, chew or smoke in the work area.
- 3.4.9 Dust and waste shall be cleaned up at regular intervals and placed in a container that is,
- 3.4.9.1 dust tight,
- 3.4.9.2 suitable for the type of waste,
- 3.4.9.3 identified as lead waste,
- 3.4.9.4 cleaned with a damp cloth or a vacuum equipped with a HEPA filter, or placed in a clean bag so that a clean exterior surface is achieved immediately prior to removal from the work area,
- 3.4.9.5 removed from the workplace frequently and at regular intervals, and
- 3.4.9.6 evaluated for lead-content and disposed of in accordance with applicable regulations.
- 3.4.10 The use of 6 mil polyethylene bags as a waste container is acceptable provided it is appropriate for the type of waste. Double bagging of waste is recommended.
- 3.4.11 Enclosures shall be used to separate the work area from other construction activities or work areas, and to prevent lead exposure to persons not directly involved in the lead operation. Barriers should only be used where full and partial enclosures are not practicable.
- 3.4.12 Drop sheets shall be used below all lead operations that may produce dust, chips, or debris containing lead.
- 3.4.13 For Class 3a operations conducted indoors where work areas are not accessible to the public, barriers, partial enclosures, or full enclosures may be used.
- 3.4.14 For all other all other Class 3 operations conducted indoors full enclosures shall be used.
- 3.4.15 For Class 3a and 3b operations conducted outdoors, barriers, partial enclosures, or full enclosures shall be provided.

3.4.16 ***Barriers, Partial Enclosures and Full Enclosures***

- 3.4.16.1 Ropes or barriers do not prevent the release of contaminated dust or other contaminants into the environment. However, barriers can be used to restrict access to only workers who are adequately protected with proper PPE, and prevent entry of individuals not directly involved in the operation. Ropes or barriers shall be placed at a distance far enough from the operation that allows the lead-containing dust to settle. If this is not achievable, warning signs shall be posted at the distance where the lead-containing dust settles to warn that access is restricted to persons wearing PPE. Ropes or barriers shall be located no less than 10 metres from the work area.
- 3.4.16.2 Partial enclosures may consist of vertical and/or horizontal tarps and drop sheets (e.g. polyethylene sheeting). The tarps shall overlap and be securely fixed together at the seams. A partial enclosure is not a recommended containment system if significant dust is being generated, however is suitable for containing flakes and chips.
- 3.4.16.3 Full enclosures are tight enclosures (with tarps that are generally impermeable (e.g. polyethylene sheeting) with fully sealed joints and chambered air lock entryways/exits and upper seals). Full enclosures allow minimal or no fugitive emissions to reach the area outside the enclosure. For full enclosures, the following requirements shall be met:
- 3.4.16.3.1 The enclosure shall be made of windproof materials that are impermeable to dust.
- 3.4.16.3.2 The enclosure shall be supported by a secure, adequate and safe structure.
- 3.4.16.3.3 All joints in the enclosure shall be fully sealed.
- 3.4.16.3.4 Entrances to the enclosure shall be equipped with air locks (curtain walls, flap doors, zipper doors or solid doors).
- 3.4.16.3.5 The escape of dust, mist, fume, waste, blast media and debris from the enclosure shall be prevented.
- 3.4.16.3.6 General mechanical ventilation shall be provided by a HEPA filtered unit to remove contaminated air from the enclosure. Clean and safe make-up air that is free from hazardous dust, mist, vapours or fumes shall be provided to replace the exhausted air.
- 3.4.16.3.7 Filters used on ventilation equipment shall be adequate to ensure that exhausted air quality meets applicable environmental legislation and standards.

- 3.4.16.3.8 The air velocity within the enclosure shall provide an average minimum cross-draft or down-draft past each worker during abrasive blasting operations as follows.
- 3.4.16.3.8.1 cross draft capture velocity of 0.5 m/sec (100 ft./min) at the worker breathing zone.
- 3.4.16.3.8.2 Down draft capture velocity of 0.25 m/sec (50 ft./min) at the worker breathing zone.
- 3.4.17 The spread of lead dust from the work area shall be prevented by creating and maintaining within the enclosed area a minimum negative air pressure of 0.02 inches of water column (5 pascal), relative to the area outside the enclosed work area and/or 6 air changes per hour. Pressure differential readings must be taken and logged at regular intervals during lead removal.
- 3.4.18 Air-handling systems (supply and return) servicing the area of the Class 3 Operation shall be removed from service or isolated to prevent migration of lead through the air handling system.
- 3.4.19 Dry removal of lead-containing or lead-based paints and surface coatings shall be minimized whenever possible.
- 3.4.20 Wetting of materials shall be conducted whenever possible to control dust. The addition of wetting agents should be considered. Wetting should not be used if it may create a hazard or cause damage.
- 3.4.21 Wet methods shall be incorporated in the operation to reduce dust generation. Examples of wet methods include wetting surfaces, wet mist, wet scraping and wet shovelling.
- 3.4.22 Cleaning with compressed air or dry sweeping shall not be performed. Sweeping compounds shall be used where wetting is not possible.
- 3.4.23 All equipment, tools, respirators and clothing shall be cleaned by damp wiping, or using a vacuum equipped with a HEPA filter, prior to removal from the work area.
- 3.4.24 Protection of porous or fibrous surfaces is imperative as it is very difficult to remove lead-containing dust from these surfaces. If the material cannot be adequately protected from lead dust or waste it shall be removed and disposed of.
- 3.4.25 Any water generated from cleaning or removal operations must be appropriately contained, treated or disposed of in accordance with applicable legislation.

3.4.26 Where a dust generating operation is carried out, additional local mechanical ventilation shall be provided to remove dust, mist and fumes at the source. Local mechanical ventilation is recommended for welding, burning or high temperature cutting and for the removal of lead-containing and lead-based paints and surface coatings using power tools that are not equipped with a dust collection device attached to a HEPA filter. Where local mechanical ventilation is used, the following should be met:

3.4.26.1 Air velocity at the source of dust, mist or fume generation shall be no less than 0.5 m/sec (100 ft./min).

3.4.26.2 Air discharged from the local mechanical ventilation system shall pass through a HEPA filter.

3.4.27 ***Class 3 Decontamination Facility***

3.4.28 Establishing a decontamination facility is required for workers conducting Class 3 operations. The decontamination facility shall be located as close as practicable to the work area and shall consist of:

3.4.29 A suitable area for taking off contaminated protective clothing.

3.4.30 A shower that includes;

3.4.30.1 Hot and cold water with individual controls inside the room to regulate water flow and temperature; or

3.4.30.2 Water of a constant temperature that is not less than 40° Celsius or more than 50° Celsius.

3.4.30.3 Clean towels.

3.4.30.4 Soap that is suitable for removing lead, and

3.4.30.5 Hygiene indicators to visually confirm that lead has been removed from workers hands.

3.4.31 A suitable area for changing in to street clothes and for storing clean clothing and equipment

**3.5 Measures and Procedures for Cleaning of Lead Dust**

3.5.1 Should contamination be discovered, either by visual inspections or by results of air sample analysis, clean-up of effected areas shall be cleaned by the Contractor using the procedures of this Section. All general measures and procedures and measures for Type 2 Operations shall be implemented.

3.5.1.1 Using vacuums equipped with HEPA filters, the Contractor shall clean all surfaces prior to using detergent solution.

- 3.5.1.2 The Contractor shall clean and rinse all hard surfaces by any one, or combination, of the following methods: Container, rinse bucket and clean rags; OR spray bottle, rinse bucket and clean rags; OR Mop and two buckets.
- 3.5.1.3 For porous and other hard-to-clean surfaces, the Contractor shall scrub surfaces with detergent solution and allow soaking for 10 minutes prior to rinsing. In addition to pre-cleaning with vacuums equipped with HEPA filters, hard-to-clean or very dirty surfaces may require additional pre-cleaning with heavy duty or degreasing detergent.
- 3.5.1.4 Regardless of chosen methodology, the Contractor shall work from top to bottom (i.e. from deck to floor), beginning in the farthest point of entry into the work enclosure.
- 3.5.1.5 The Contractor shall clean and rinse all mechanical, electrical components and conduits.
- 3.5.1.6 The Contractor shall clean and rinse any exposed structural components (i.e. deck, exposed beams, columns, etc.).
- 3.5.1.7 The Contractor shall clean and rinse a small area at a time before doing the next area.
- 3.5.1.8 When using rags, the Contractor shall use folding technique to expose fresh rag for cleaning. Rinse rag in clean water prior to solution application. Frequently, and at regular intervals, replace soiled rags with clean rags.
- 3.5.1.9 Frequently, and at regular intervals, the Contractor shall dispose of dirty water and use clean rinse water.
- 3.5.1.10 The Contractor shall complete final rinsing with clean water.
- 3.5.1.11 The Contractor shall avoid re-contamination of clean areas.
- 3.5.2 The Contractor shall clean the deck surface and all surfaces within the Lead-Abatement Work Area.
- 3.5.3 The Contractor shall dispose of as lead waste, all materials that may be contaminated with lead dust (i.e. rags and/or un-restorable items).

### **3.6 Preparation Prior to Contamination**

- 3.6.1 The Contractor shall move equipment, tools, supplies and stored materials that can be moved without disturbing lead dust.
  - 3.6.1.1 The Contractor shall erect polyethylene hoarding walls to separate the Work from any Occupied Area.
- 3.6.2 The Contractor shall pre-clean all surfaces in the Lead-Abatement Work Area, using a HEPA vacuum or damp cloth prior to installing protection.

- 3.6.3 The Contractor shall remove fixtures, equipment etc. specified to be removed, and that can be removed without disturbing the lead dust.
- 3.6.4 The Contractor shall seal all below ceiling openings to Lead-Abatement Work Area using polyethylene, tape, caulking, etc., including but not limited to windows, doors, vents, diffusers, etc.
- 3.6.5 The Contractor shall seal all openings in floor using plugs, tape, caulking, rip-proof polyethylene, etc. Floor openings are to be sealed independently prior to installation of floor polyethylene. Include floors of duct and service shafts.
- 3.6.6 The Contractor shall maintain emergency and fire exits from Lead-Abatement Work Area, or establish alternative exits satisfactory to Fire Commissioner of Canada and Provincial Fire Marshall.
- 3.6.7 The Contractor shall provide a fire extinguisher at each emergency exit and in both sides of the decontamination facilities.
- 3.6.8 The Contractor shall install temporary lighting in all Lead-Abatement Work Areas at levels that will provide for a safe and efficient use of the Lead-Abatement Work Area. Install battery powered emergency lights so as to light exit routes through Lead-Abatement Work Area.
- 3.6.9 The Contractor shall install a minimum of 1 layer of rip proof polyethylene over floor surfaces. Extend floor protection a minimum of 12" up all vertical surfaces in the Lead-Abatement Work Area. If more than 1 layer is used, each layer of polyethylene is to be laid and sealed independently of each other.
- 3.6.10 The Contractor shall install 2 layers of polyethylene all walls forming the perimeter of the Lead-Abatement Work Area. Each layer of polyethylene is to be laid and sealed independently of each other. Overlap floor polyethylene with wall polyethylene by a minimum of 12" (305 mm) at each layer.
- 3.6.11 The Contractor shall isolate at panel and disconnect or ground existing power supply to Lead-Abatement Work Area where necessary. Power supply to remaining areas of building must not be disrupted during work of this section.
- 3.6.12 The Contractor shall not proceed with work of Contaminated Preparation without obtaining written permission from the Environmental Consultant. The Contractor shall provide a minimum of 24 hours notice to consultant for the need of an inspection.

### **3.7 Contaminated Preparation**

- 3.7.1 The Contractor shall use full personal protective procedures and equipment, and HEPA vacuums during contaminated preparation.
- 3.7.2 The Contractor shall shut down HVAC systems affecting the Lead-Abatement Work Area after normal building operating hours only.
- 3.7.3 The Contractor shall remove and dispose of obstructions to access ducts supplying into and exhausting from the Lead-Abatement Work Area.
- 3.7.4 The Contractor shall seal ducts supplying into and exhausting from the Lead-Abatement Work Area during one shift.
  - 3.7.4.1 The Contractor shall clean outside and seal duct or equipment with rip-proof polyethylene and other products so as to make air tight.
  - 3.7.4.2 The Contractor shall smoke test seals regularly.

### **3.8 Lead-Abatement Work Area Dismantling**

- 3.8.1 The Contractor shall remove all polyethylene, tape, polyurethane foam, caulking and enclosures from Lead-Abatement Work Area.
- 3.8.2 The Contractor shall remove lead contaminated floor polyethylene by carefully rolling away from walls to centre of the Lead-Abatement Work Area.
- 3.8.3 The Contractor shall remove visible dust or residue found during removal of polyethylene using a HEPA vacuum.
- 3.8.4 The Contractor shall place Polyethylene, tape, cleaning material, clothing and other contaminated waste in lead waste containers and dispose of as lead waste.
- 3.8.5 The Contractor shall seal vacuum hoses and fittings, flexible ductwork and all tools used in contaminated work site in 6 mil polyethylene bags prior to removal from Lead-Abatement Work Area.
- 3.8.6 The Contractor shall decontaminate equipment used in Lead-Abatement Work Area, or double bag for transportation prior to being removed from Lead-Abatement Work Area.
- 3.8.7 The Contractor shall remove polyethylene protection and hoarding walls where hoarding walls separate occupied areas from Lead-Abatement Work Area.
- 3.8.8 The Contractor shall wash and mop with clean water all surfaces in the Lead-Abatement Work Area.
- 3.8.9 The Contractor shall remove all temporary lights, ground fault panels.

- 3.8.10 The Contractor shall maintain all hoarding walls adjacent to areas where lead dust is present.
- 3.8.11 The Contractor shall damp mop and clean with HEPA vacuum Occupied Areas previously below platforms, tunnels and decontamination facilities with HEPA vacuum.
- 3.8.12 Prior to leaving the work area,
  - 3.8.12.1 Workers shall decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing.
  - 3.8.12.2 Remove protective clothing by rolling the clothing outward and downward onto itself so the clean interior of the protective clothing is on the exterior after removal.
  - 3.8.12.3 Workers shall remove all contaminated clothing and equipment except respirator.
  - 3.8.12.4 If the protective clothing is to be reused, it shall be stored in a sealable plastic bag by the worker.
  - 3.8.12.5 If the protective clothing will NOT be reused, the worker shall place it in a lead waste container immediately prior to leaving the work area.
  - 3.8.12.6 Immediately after leaving the work area, all workers shall proceed directly to the established washing facilities to wash hands and face while wearing the respirator.
  - 3.8.12.7 Workers shall wash exposed skin and respirator with soap and water.
  - 3.8.12.8 All workers shall wash, remove and store respirators as per the written procedures that have been established by the employer and as is consistent with the manufacturer's specifications. Respirator filters for re-use shall be removed from respirators prior to washing the respirator or shall be disposed of as lead waste.

**End of Section**

## Attachment 1

Pre-Renovation Designated Substance and Hazardous Materials Assessment, Child  
Care Program McNicoll Avenue, ECOH Management Inc., December 2, 2026.



Environmental Consulting  
Occupational Health

**PRE-RENOVATION DESIGNATED SUBSTANCES AND  
HAZARDOUS MATERIALS ASSESSMENT**

**CHILD CARE PROGRAM  
MCNICOLL AVENUE  
155 MCNICOLL AVENUE  
TORONTO, ON**

**Prepared for:**

**BGIS**

4175 14<sup>th</sup> Avenue

Markham, ON L3R 0J2

**Attention: Jean Weiss-Bartelli, Sr. Project Manager**

**Prepared by:**

**ECOH**

75 Courtneypark Drive West, Unit 1  
Mississauga, ON L5W 0E3

**BGIS Project No.: IONP004400**

**ECOH Project No.: 29547**

**December 2, 2025**

## 1. INTRODUCTION

ECOH Management Inc. (ECOH) was retained by BGIS to conduct a Pre-Renovation Designated Substances and Hazardous Materials Survey (the “Survey”) regarding the planned upgrade to replace perimeter convactor controls, isolation valves, and thermostats throughout the McNicoll Avenue Child Care Program located at 155 McNicoll Avenue, Toronto, ON (the “Site”). Mr. Pathik Tadvil completed an assessment on November 17, 2025. The assessment included a visual inspection and testing for the presence of Designated Substances (asbestos, lead, mercury, etc.) and other hazardous materials (such as mould, UFFI, PCBs, etc.) as required.

BGIS has informed ECOH of plans to upgrade and replace perimeter convactor controls, isolation valves, and thermostats throughout the aforementioned facility (the “Project Area”). The intent of this survey is to identify designated substances and potentially hazardous materials, which may be demolished, removed, or disturbed during the renovation work. Certain materials (i.e., roofing felts, mechanical gaskets, etc.) may not be sampled for the presence of hazardous materials to avoid compromising the integrity of mechanical systems or the building envelope, or were beyond the scope of work.

## 2. DETAILS AND OBSERVATIONS

1. Areas of investigation were determined based on project information and/or floor plans provided by BGIS and are limited to the Project Area that may be impacted by the planned renovation scope of work.
2. The following report was reviewed to determine the presence of asbestos and designated substances in the project area, and supplemented by additional sampling as necessary:
  - a) The HMIS (Hazardous Materials Inventory System) *All Data Report* database as of November 5, 2025.
3. Laboratory results for bulk asbestos and lead samples collected during this assessment are attached to this report in Appendix I.
4. Site photographs of various sampled materials are attached to the report as Appendix II.
5. General site conditions and asbestos-related information, as it pertains to the project scope of work, includes the following:
  - a) Flooring within the Project Area is composed of the following materials:
    - Various Vinyl floor tile. These materials have been previously sampled and determined to be **asbestos-containing (0.5-5% Chrysotile)**, however, flooring is not expected to be disturbed based off the renovation scope of work.

- Vinyl Sheet Flooring: This material was previously sampled and confirmed to be non-asbestos containing.
  - Ceramic Tile Grout. This material is present in the Project Area but are not expected to be disturbed by the renovation scope of work.
- b) Walls within the Project Area are composed of the following materials:
- Drywall and Joint Compound. This material was previously sampled and confirmed to be **asbestos-containing (0.5-5% Chrysotile)**.
  - Concrete Block Mortar. This material was previously sampled and confirmed to be **asbestos-containing (0.5% Chrysotile)**.
  - Masonry Brick Mortar. This material was previously sampled and determined to contain trace concentration of asbestos (<0.25% Chrysotile). The trace quantities of asbestos are below the regulatory threshold of an “asbestos-containing material” in Ontario (greater than or equal to 0.5% asbestos content) and as such is not considered to be an asbestos-containing material.
  - Ceramic Tile Grout. This material is present in the Project Area but are not expected to be disturbed by the renovation scope of work.
- c) Ceilings within the Project Area are composed of the following materials.
- Drywall and Joint Compound. This material was previously sampled and confirmed to be **asbestos-containing (0.5-5% Chrysotile)**.
  - 1' x 1' Glue on ceiling tiles (Medium fissures and pinholes). Three (3) representative samples were collected (Sample ID: 29547-ASB-01A-C) from the Project Area and determined by laboratory analysis to be non-asbestos containing.
    - 1' x 1' Glue-on ceiling tile associated mastic. This material was not accessible for sampling during the assessment and is **assumed to be asbestos-containing**.
  - 2' x 4' Lay-in ceiling tiles (Round fissures and pinholes). Three (3) representative samples were collected (Sample ID: 29547-ASB-02A-C) from the Project Area and determined by laboratory analysis to be non-asbestos containing.
  - 2' x 4' Lay-in ceiling tiles (Long fissures and pinholes). Three (3) representative samples were collected (Sample ID: 29547-ASB-03A-C) from the Project Area and determined by laboratory analysis to be non-asbestos containing.
  - 2' x 4' Lay-in ceiling tiles (Textured). This material was previously sampled and confirmed to be **asbestos-containing (0.5-5% Chrysotile)**.
  - 2' x 4' Lay-in ceiling tiles (Small Fissures and Pinholes). This material was previously sampled and confirmed to be non-asbestos containing.
  - Fibreglass panels. This material is not suspected to contain asbestos.

- d) Structural components (deck, beams, joists, etc.) in the Project Area are composed of metal.
- White Cementitious Material on Steel Joists. Three (3) representative samples were collected (Sample ID: 29547-ASB-05A-C) from the Project Area and determined by laboratory analysis to be **asbestos-containing material (0.5% Chrysotile)**.
- e) Observed straight sections of pipe in the Project Area are either uninsulated or insulated with non-asbestos fibreglass.
- f) Duct systems in the Project Area are either uninsulated or insulated with non-asbestos fibreglass.
- g) Grey Caulking. Three (3) representative samples of this material were collected (29547-ASB-04A-C) and determined by laboratory analysis to be non-asbestos containing.
- h) Window Sealer. Three (3) representative samples of this material were collected (29547-ASB-06A-C) and determined by laboratory analysis to be non-asbestos containing.
- i) The following **asbestos-containing materials** are known to be present in the Project Area; However, these materials are not expected to be disturbed by the renovation scope of work:
- Parging cement,
  - Gasket,
  - Cementitious firestopping material,
  - Gold sink mastic,
  - Caulking on roof mechanical and flashing,
  - Various patterned vinyl floor tiles and associated mastic.

Please refer to Table 1 for a summary of the results for asbestos sampling.

Table 1: Summary of Asbestos Sampling			
Sample Number	Location	Description of Material	Result
29547-ASB-01A	Classroom 101 (Loc. 108)	1' x 1' Glue-on ceiling tiles – Medium Fissures and Pinholes	None Detected
29547-ASB-01B	Classroom 101 (Loc. 108)	1' x 1' Glue-on ceiling tiles – Medium Fissures and Pinholes	None Detected
29547-ASB-01C	Classroom 101 (Loc. 108)	1' x 1' Glue-on ceiling tiles – Medium Fissures and Pinholes	None Detected
29547-ASB-02A	Classroom/Sleep Room (Loc. 113)	2' x 4' Lay-in ceiling tiles – Round Fissures and Pinholes	None Detected

Table 1: Summary of Asbestos Sampling			
Sample Number	Location	Description of Material	Result
29547-ASB-02B	Classroom/Sleep Room (Loc. 113)	2' x 4' Lay-in ceiling tiles – Round Fissures and Pinholes	None Detected
29547-ASB-02C	Classroom/Sleep Room (Loc. 113)	2' x 4' Lay-in ceiling tiles – Round Fissures and Pinholes	None Detected
29547-ASB-03A	Stairwell 2 <sup>nd</sup> Floor (Loc. 201)	2' x 4' Lay-in ceiling tiles – Long Fissures and Pinholes	None Detected
29547-ASB-03B	Stairwell 2 <sup>nd</sup> Floor (Loc. 201)	2' x 4' Lay-in ceiling tiles – Long Fissures and Pinholes	None Detected
29547-ASB-03C	Stairwell 2 <sup>nd</sup> Floor (Loc. 201)	2' x 4' Lay-in ceiling tiles – Long Fissures and Pinholes	None Detected
29547-ASB-04A	Classroom (Loc. 101)	Grey Caulking	None Detected
29547-ASB-04B	Classroom (Loc. 101)	Grey Caulking	None Detected
29547-ASB-04C	Classroom (Loc. 101)	Grey Caulking	None Detected
29547-ASB-05A	Classroom/Kitchen (Loc. 109)	White Cementitious Material	<b>0.5% Chrysotile</b>
29547-ASB-05B	Classroom/Kitchen (Loc. 109)	White Cementitious Material	<b>Stop Positive (Not Analyzed)</b>
29547-ASB-05C	Classroom/Kitchen (Loc. 109)	White Cementitious Material	<b>Stop Positive (Not Analyzed)</b>
29547-ASB-06A	Office (Loc. 108)	Window Sealer	None Detected
29547-ASB-06B	Office (Loc. 108)	Window Sealer	None Detected
29547-ASB-06C	Office (Loc. 108)	Window Sealer	None Detected
- Shading Indicates Positive Sample			

6. Although no regulations exist in Ontario, guidelines indicate that paints and surface coatings that contain 0.5% lead concentration by dry weight (i.e., concentrations of lead at or above 0.5%, or 5000 parts per million (ppm)) is considered to be a “lead-based paint or surface coating”. Paints or surface coatings that contain concentrations of lead greater than 0.1% by dry weight (1000 ppm), and less than 0.5% by dry weight (5000 ppm), is considered to be a “lead-containing paint or surface coating”. Paints or surface coatings that contain concentrations of lead at, or below, 0.1% by dry weight (1000 ppm) is considered to be a “low-level lead paint or surface coating”.

The presence of lead in paint was assessed by the collection and submission of bulk material samples to a professional laboratory for analysis by flame atomic absorption spectroscopy.

Please refer to Table 2 for a summary of the bulk paint chip analysis results for lead.

Table 2: Summary of Lead Sampling			
Sample Number	Location	Description of Material	Results
29547-Pb-01	Office (Loc. 108)	Beige Paint on Wall	92 ppm
29547-Pb-02	First Aid Room (Loc. 104)	Brown Paint on Radiator	8 ppm
29547-Pb-03	Office (Loc. 206)	Green Paint on Wall	<5 ppm
29547-Pb-04	Classroom (Loc. 205)	Sky Blue Paint on Wall	34 ppm
29547-Pb-05	Office (Loc. 206)	Blue Paint on Wall	<5 ppm
29547-Pb-06	Classroom (Loc. 101)	Light Blue Paint on Wall	57 ppm
29547-Pb-07	Classroom (Loc. 216)	Orange Paint on Wall	44 ppm
29547-Pb-08	Classroom/Kitchen (Loc. 205)	Beige Paint on Wall	<b>1,160 ppm</b>
<i>- Shading Indicates Positive Sample</i>			

The following paints are lead-containing:

- Beige Paint on Wall – **1,160 ppm**

No other major sources of lead or lead-containing products were observed during this survey. However, the following should be noted: lead may be present in wiring connectors, ceramic tile glazing, electric cable sheathing, and in solder joints on copper piping.

7. Fluorescent lamp ballasts and transformers present within the Project Area are assumed to contain polychlorinated biphenyls (PCBs).
8. Free crystalline silica in the form of common construction sand is present in all gypsum, concrete and masonry products within the work areas.
9. Mercury may be present in minor quantities within the Project Area in the following forms: as a possible constituent of paints and adhesives and as a vapour within fluorescent light tubes.
10. Other designated substances and hazardous materials including Arsenic, Acrylonitrile, Benzene, Coke Oven Emissions, Ethylene Oxide, Ozone Depleting Substances, Isocyanates, Visible Mould, and Vinyl Chloride Monomer were not observed within the Project Area.

### 3. DISCUSSION AND RECOMMENDATIONS

The following recommendations meet requirements of the Occupational Health and Safety Act. Asbestos recommendations meet the requirements of Ontario Regulation 278/05 Designated Substance –*Asbestos on Construction Projects and in Buildings and Repair Operations*. Based upon the observations of this assessment, ECOH offers the following for your consideration.

1. As asbestos-containing materials (ACMs) are present throughout the Project Area, ECOH recommends that all workers have asbestos awareness and respirator training before commencing work. Asbestos awareness training will provide on-site workers the understanding of asbestos-related health and safety issues; the ability to recognize ACMs and any situation that may present a potential asbestos exposure, and the ability to respond appropriately to an inadvertent disturbance of ACM in the work area.
2. The following is recommended for the removal or disturbance of confirmed ACMs present in the Project Area if **required to complete the project scope of work**:
  - Non-friable asbestos-containing concrete block mortar observed throughout the Facility/Project Area:
    - Type 1 Asbestos Safety Precautions should be utilized for the disturbance or removal of concrete block mortar, provided that materials are wetted to control the spread of dust or fibres and work is done only by means of non-powered hand-held tools; or
    - Type 2 Asbestos Safety Precautions should be utilized for the disturbance or removal of concrete block mortar, provided that any power tools used are attached to dust-collecting devices equipped with HEPA filters.
  - Potentially friable asbestos-containing ceiling tiles observed throughout the Facility/Project Area:
    - Type 1 Asbestos Safety Precautions should be utilized for the disturbance or removal of less than 7.5 square meters of asbestos-containing ceiling tiles; provided that ceiling tiles are not broken, cut, drilled, abraded, ground, sanded or vibrated.
    - Type 2 Asbestos Safety Precautions should be utilized for the disturbance or removal of more than or equal to 7.5 square meters of asbestos-containing ceiling tiles; provided that ceiling tiles are not broken, cut, drilled, abraded, ground, sanded or vibrated.
  - Friable asbestos-containing white cementitious material observed on structural joists in the Facility/Project Area:
    - Type 2 Asbestos Safety Precautions must be utilized for the disturbance or removal of one square meter (~10 sq.ft.) or less of friable ACMs.

- Type 2 Glove Bag Asbestos Safety Precautions can be utilized where practical.
  - Type 3 Asbestos Safety Precautions must be utilized for the disturbance or removal of more than one square meter of friable ACMs.
  - Potentially friable drywall joint compound observed throughout the Facility/Project Area:
    - Type 1 Asbestos Safety Precautions should be utilized for the disturbance or removal of less than one square metre of asbestos-containing drywall.
    - Type 2 Asbestos Safety Precautions should be utilized for the disturbance or removal of one square metre or more of asbestos-containing drywall.
3. During work, if additional materials are revealed beyond what are described in this report, and historical reports referenced herein (i.e., materials not identified or materials that are not homogenous to those identified or materials that become revealed during the work), additional testing for asbestos-content should be completed immediately and prior to disturbance of the material.
4. Any work involving the disturbance of “lead-containing” paints should be conducted following recommendations detailed within the Ministry of Labour document Guideline - Lead on Construction Projects, dated November 2022, and the Environmental Abatement Council of Canada (EACC) Lead Guideline, dated January 2025.

Work shall be classified as follows, as per the EACC Lead Guideline:

- Removal of lead-containing or lead-based paints and surface coatings with a chemical gel/stripper or paste is a Class 1 lead operation.
- Removal of lead-containing or lead-based paints and surface coatings with a heat gun is a Class 1 lead operation.
- Removal of materials coated with lead-containing or lead-based paints and surface coatings, using non-powered hand tools, where the material remains chiefly intact and is not crumbled, pulverized or powdered is a Class 1 lead operation.
- Removal of lead-containing coatings or materials using a power tool that has an effective dust collection system equipped with a HEPA filter is a Class 2a lead operation.
- Removal of lead-containing or lead-based paints or materials by scraping or sanding using non-powered hand tools is a Class 2a lead operation.
- Manual demolition of lead-painted plaster walls (or similar building components that will crumble, pulverize, or powder) when striking with a sledgehammer or similar tool is a Class 2a lead operation.

- Removal of lead-containing coatings or materials using power tools without an effective dust collection system equipped with a HEPA filter is a Class 3a lead operation.
- Abrasive blasting of lead-containing coatings or materials is a Class 3b lead operation.

Renovation, demolition or general construction work involving the removal of materials containing only trace concentrations of lead (i.e., lead concentrations below 0.1% by dry weight, or 1000ppm) can be completed without lead specific safety precautions provided that:

- a) Work does not include 'fume generating activities' (heat producing) such as welding, torching, burning, high temperature cutting, etc.,
  - b) Work does not include dust-generating activities such as grinding, cutting or chemical stripping,
  - c) Dust levels are maintained below 3mg/m<sup>3</sup>, and
  - d) General health and safety construction procedures are implemented, which would include dust suppression methods, proper respiratory protection (minimum of a 1/2-face respirator) and protective clothing, as is appropriate for the work being completed.
5. If work requires the replacement of fluorescent light ballasts, all ballasts should be disassembled to observe serial codes and then compared to standard PCB Identifier Code literature. Ballasts with unidentifiable serial codes, or from manufacturers who are not included in the standard PCB Identifier Code literature or are not clearly labelled as "PCB Free", or no date is clearly visible (ballasts dated 1981, or afterwards, do not contain PCBs), must be assumed to contain PCBs.
  6. Ballasts and transformers confirmed or assumed to contain PCBs must be disposed of following Ontario Regulation 362 of the Environmental Protection Act, O. Reg 347/90 and Transportation of Dangerous Goods Act (TDGA) requirements.
  7. Any work involving the disturbance of materials that may contain silica must be conducted following recommendations detailed in the Ministry of Labour document *Guideline - Silica on Construction Projects*, dated November 2022.
  8. Other designated substances and hazardous materials, if present, would not be expected to be a source of concern during work of this project and should be adequately addressed using general health and safety precautions including, in part, the use of dust suppression techniques and appropriate respiratory protection.
  9. Should work be required in other areas of the building, beyond the area subjected to this assessment, additional site investigations should be completed to assess the presence of Designated Substances or Hazardous Materials.

## 4. STATEMENT OF LIMITATIONS

Due to the nature of building construction, and on-going building activities, some limitations exist to the thoroughness of a building assessment. The field observations, measurements and analysis are considered sufficient in detail and scope to form a reasonable basis for the findings and conclusions presented in this report. The observations, results and conclusions drawn by ECOH Management Inc. (ECOH) are limited to the specific scope of work for which ECOH was retained and are based solely on information generated as a result of the specific scope of work authorized by BGIS. Only those items that are capable of being observed and are reasonably obvious to ECOH personnel or have been identified to ECOH by other parties, can be reported. ECOH has exercised a degree of thoroughness and competence that is consistent with the profession during the execution of this assessment. ECOH considers the opinions and information as they are presented in this report to be factual at the time of the assessment. The conclusions are limited to the specific locations of where testing and/or observations were completed during the course of the assessment.

It is important to note that work was completed with the utmost care and our extensive expertise in carrying out assessments. ECOH believes that the information collected during the assessment concerning the Work Area is reliable. No other warranties are implied or expressed. ECOH, to the best of its knowledge, believes this report to be accurate, however, ECOH cannot guarantee the completeness or accuracy of information supplied to ECOH by third parties. It should also be noted that any investigation regarding the presence of hazardous materials in the work area is based on interpretation of conditions determined at specific sampling locations, and conditions may vary between sampling locations.

ECOH is an Environmental Consulting Company and as such any results or conclusions presented in this report should not be construed as legal advice. The material in this report reflects ECOH's professional interpretation of information available at the time of report preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. ECOH accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. Should additional information become available that suggests other environmental issues of concern beyond that described in this report, ECOH retains the right to review this information and modify conclusions and recommendations presented in this report accordingly.

## 5. CLOSURE

We trust that this report meets your requirements, and we thank you for the opportunity to be of service. Should you have any questions, please do not hesitate to contact the undersigned.

### ECOH

Environmental Consulting  
Occupational Health

**Prepared by:**



**Pathik Tadvi, B. Tech. Civil  
Environmental Technologist**

**Reviewed by:**



**Byron Chiu, MBA, B.Sc.  
Senior Project Manager**

**APPENDICES:**

**Appendix I:** Laboratory Analysis Report – Bulk Sample Analyses

**Appendix II:** Site Photographs

---

# APPENDIX I

Laboratory Analysis Report – Bulk Sample Analyses

---

# Laboratory Analysis Report

To:

**Pathik Tadvi**  
ECOH Management Inc.  
75 Courtney Park Drive West  
Unit 1  
Mississauga, Ontario  
L5W 0E3

**EMC LAB REPORT NUMBER:** A127577  
**Job/Project Name:** 155 McNicoll Ave, Toronto, ON  
**Analysis Method:** Polarized Light Microscopy – EPA 600  
**Date Received:** Nov 19/25      **Date Analyzed:** Nov 21/25  
**Analyst:** Rahul Patel  
**Reviewed By:** Malgorzata Sybydlo

**No. of Phases Analyzed:** 16  
**Job No:** 29547  
**Number of Samples:** 18  
**Date Reported:** Nov 24/25

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
29547-ASB-01A	A127577-1	1'x1' glue-on ceiling tile – medium fissures and pinholes – classroom 101 (loc. 108)	Grey, ceiling tile	ND	75	25
29547-ASB-01B	A127577-2	1'x1' glue-on ceiling tile – medium fissures and pinholes – classroom 101 (loc. 108)	Grey, ceiling tile	ND	75	25
29547-ASB-01C	A127577-3	1'x1' glue-on ceiling tile – medium fissures and pinholes – classroom 101 (loc. 108)	Grey, ceiling tile	ND	75	25
29547-ASB-02A	A127577-4	2'x4' lay-in ceiling tile – round fissures and pinholes – classroom/ sleep room (loc. 113)	Grey, ceiling tile	ND	75	25
29547-ASB-02B	A127577-5	2'x4' lay-in ceiling tile – round fissures and pinholes – classroom/ sleep room (loc. 113)	Grey, ceiling tile	ND	75	25
29547-ASB-02C	A127577-6	2'x4' lay-in ceiling tile – round fissures and pinholes – classroom/ sleep room (loc. 113)	Grey, ceiling tile	ND	75	25
29547-ASB-03A	A127577-7	2'x4' lay-in ceiling tile – long fissures and pinholes – stairwell 2 <sup>nd</sup> floor (loc. 201)	Grey, ceiling tile	ND	75	25
29547-ASB-03B	A127577-8	2'x4' lay-in ceiling tile – long fissures and pinholes – stairwell 2 <sup>nd</sup> floor (loc. 201)	Grey, ceiling tile	ND	75	25

**EMC LAB REPORT NUMBER:** A127577

**Client's Job/Project Name/No.:** 29547

**Analyst:** Rahul Patel

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
29547-ASB-03C	A127577-9	2'x4' lay-in ceiling tile – long fissures and pinholes – stairwell 2 <sup>nd</sup> floor (loc. 201)	Grey, ceiling tile	ND	75	25
29547-ASB-04A	A127577-10	Grey caulking on wall – classroom (loc. 101)	Grey, caulking	ND		100
29547-ASB-04B	A127577-11	Grey caulking on wall – classroom (loc. 101)	Grey, caulking	ND		100
29547-ASB-04C	A127577-12	Grey caulking on wall – classroom (loc. 101)	Grey, caulking	ND		100
29547-ASB-05A	A127577-13	White, cementitious material on steel joist above lay-in ceiling tile – classroom/ kitchen (loc. 109)	Grey, cementitious material	<b>Chrysotile</b>	<b>0.5</b>	99.5
29547-ASB-05B	A127577-14	White, cementitious material on steel joist above lay-in ceiling tile – classroom/ kitchen (loc. 109)	NA	NA		
29547-ASB-05C	A127577-15	White, cementitious material on steel joist above lay-in ceiling tile – classroom/ kitchen (loc. 109)	NA	NA		
29547-ASB-06A	A127577-16	Window sealer – office (loc. 108)	Grey, caulking	ND		100
29547-ASB-06B	A127577-17	Window sealer – office (loc. 108)	Grey, caulking	ND		100
29547-ASB-06C	A127577-18	Window sealer – office (loc. 108)	Grey, caulking	ND		100

**Note:**

1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method.
2. The results are only related to the samples analyzed. **ND** = None Detected (no asbestos fibres were observed), **NA** = Not Analyzed (analysis stopped due to a previous positive result).

**EMC LAB REPORT NUMBER:** A127577

**Client's Job/Project Name/No.:** 29547

**Analyst:** Rahul Patel

3. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
4. The Ontario Regulatory Threshold for asbestos is 0.5%. The limit of quantification (LOQ) is 0.5%.

**C.O.C.:** -

**REPORT No:** 25-036011 - Rev. 0

**Report To:**

EMC Scientific Inc.  
 5800 Ambler Dr. #100  
 Mississauga, ON L4W 4J4

**CADUCEON Environmental Laboratories**

2378 Holly Lane  
 Ottawa, ON K1V 7P1

**Attention: Alister Haddad**

DATE RECEIVED: 2025-Nov-21  
 DATE REPORTED: 2025-Nov-24  
 SAMPLE MATRIX: Paint Chips

CUSTOMER PROJECT: 155 McNicoll Ave, Toronto  
 P.O. NUMBER: 29547

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
ICP/OES (Solid)	8	OTTAWA	NSAUNDERS	2025-Nov-24	D-ICP-02	EPA 6010

R.L. = Reporting Limit  
 NC = Not Calculated

Test methods may be modified from specified reference method unless indicated by an \*

Client I.D.	Sample I.D.	Date Collected	Parameter
			Units
			R.L.
			Lead
			ppm
			5
			-
29547-Pb-01 Beige paint on wall loc 108	25-036011-1	2025-Nov-18	92
29547-Pb-02 Brown paint on radiator loc 103	25-036011-2	2025-Nov-18	8
29547-Pb-03 Green paint on wall loc 206	25-036011-3	2025-Nov-18	<5
29547-Pb-04 Sky blue paint on wall loc 205	25-036011-4	2025-Nov-18	34
29547-Pb-05 Blue paint on wall loc 206	25-036011-5	2025-Nov-18	<5
29547-Pb-06 Light blue paint on wall loc 101	25-036011-6	2025-Nov-18	57
29547-Pb-07 Orange paint on wall loc 216	25-036011-7	2025-Nov-18	44
29547-Pb-08 Light yellow paint on wall loc 109	25-036011-8	2025-Nov-18	1160



**Michelle Dubien**  
**Data Specialist**

The analytical results reported herein refer to the samples as received and relate only to the items tested. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

---


# APPENDIX II

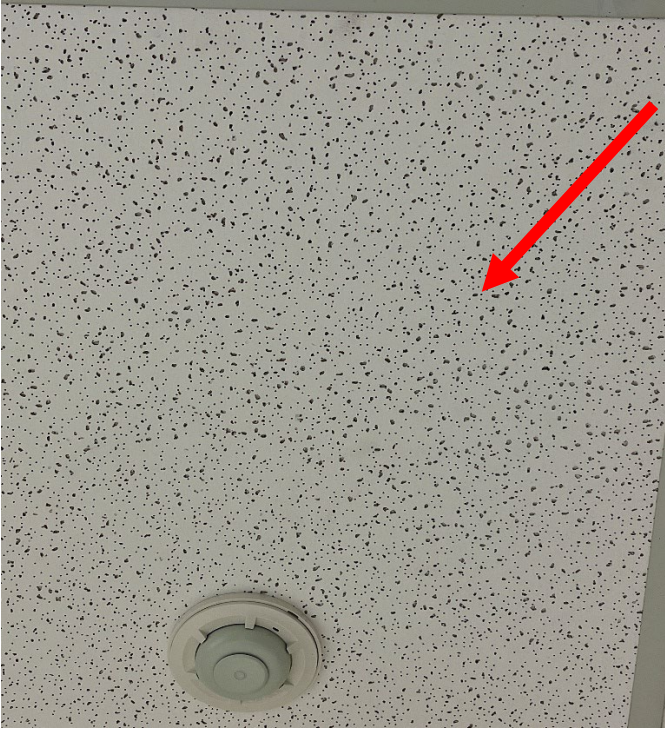
## Site Photographs

---



<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.:</b> 29547
-----------------------------	---	------------------------------

<b>Photo No. 1.</b>	
<b>Date:</b> November 18, 2025	
<b>Location:</b> 1 <sup>st</sup> Floor, Classroom 101 (Loc. 108)	
<b>Description:</b> Representative photo of 1'x1' glue-on ceiling tile – medium fissures and pinholes.  This material was sampled and determined by laboratory analysis to be non-asbestos containing.	

<b>Photo No. 2.</b>	
<b>Date:</b> November 18, 2025	
<b>Location:</b> 1 <sup>st</sup> Floor, Classroom/Sleep Room (Loc. 113)	
<b>Description:</b> Representative photo of 2'x4' lay-in ceiling tile – round fissures and pinholes.  This material was sampled and determined by laboratory analysis to be non-asbestos containing.	



<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.:</b> 29547
-----------------------------	---	------------------------------

**Photo No. 3.**

**Date:**  
November 12, 2025

**Location:** 2<sup>nd</sup> Floor,  
Stairwell (Loc. 201)

**Description:**

Representative photo of 2'x4' lay-in ceiling tile – long fissures and pinholes

This material was sampled and determined by laboratory analysis to be non-asbestos containing.



**Photo No. 4.**

**Date:**  
November 12, 2025

**Location:** 1<sup>st</sup> Floor,  
Classroom (Loc. 101)

**Description:**

Representative photo of grey caulking on wall.

This material was sampled and determined by laboratory analysis to be non-asbestos containing.





<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.</b> 29547
-----------------------------	---	-----------------------------

**Photo No. 5.**

**Date:**  
November 12, 2025

**Location:** 1<sup>st</sup> Floor,  
Classroom/Kitchen  
(Loc. 109)

**Description:**  
Representative photo of white cementitious material on steel joist above 2'x4' lay-in ceiling tile.

This material was sampled and determined by laboratory analysis to be **asbestos-containing (0.5% Chrysotile)**.



**Photo No. 6.**

**Date:**  
November 12, 2025

**Location:** 1<sup>st</sup> Floor,  
Office (Loc. 108)


**Description:**  
Representative photo of window sealer.


This material was sampled and determined by laboratory analysis to be non-asbestos containing.






<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.</b> 29547
-----------------------------	---	-----------------------------


<b>Photo No. 7.</b>	
<b>Date:</b> November 12, 2025	
<b>Location:</b> Various location.	
<b>Description:</b> Representative photo of 2'x4' lay-in ceiling tile – textured.  This material was previously sampled and determined by laboratory analysis to be <b>asbestos-containing</b> .	

<b>Photo No. 8.</b>		
<b>Date:</b> November 12, 2025		
<b>Location:</b> Various location.		
<b>Description:</b> Representative photo of drywall and joint compound on wall and ceiling..  This material was previously sampled and determined by laboratory analysis to be <b>asbestos-containing</b> .		



<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.</b> 29547
-----------------------------	---	-----------------------------


<b>Photo No. 9.</b>	
<b>Date:</b> November 12, 2025	
<b>Location:</b> Various location.	
<b>Description:</b>  Representative photo of concrete block mortar on wall.  This material was previously sampled and determined by laboratory analysis to be <b>asbestos-containing</b> .	

<b>Photo No. 10.</b>	
<b>Date:</b> November 12, 2025	
<b>Location:</b> 2 <sup>nd</sup> Floor, Classroom (Loc. 216)	
<b>Description:</b>  Representative photo of orange paint on wall.  This material was sampled and determined by laboratory analysis to be low-level lead (44 ppm).	



<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.</b> 29547
-----------------------------	---	-----------------------------

<b>Photo No. 11.</b>	
<b>Date:</b> November 12, 2025	
<b>Location:</b> 1 <sup>st</sup> Floor, Vestibule (Loc. 103)	
<b>Description:</b>  Representative photo of brown paint on radiator.  This material was sampled and determined by laboratory analysis to be low-level lead (8 ppm).	

<b>Photo No. 12.</b>	
<b>Date:</b> November 12, 2025	
<b>Location:</b> 1 <sup>st</sup> Floor, Office (Loc. 108)	
<b>Description:</b>  Representative photo of Beige Paint on Wall.  This material was sampled and determined by laboratory analysis to be low-level lead (92 ppm).	



<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.:</b> 29547
-----------------------------	---	------------------------------

**Photo No. 13.**

**Date:**  
November 12, 2025

**Location:** 2<sup>nd</sup> Floor,  
Office (Loc. 206)

**Description:**  
Representative photo of green paint on wall.

This material was sampled and determined by laboratory analysis to be low-level lead (<5 ppm).



**Photo No. 14.**

**Date:**  
November 12, 2025

**Location:** 2<sup>nd</sup> Floor,  
Classroom (Loc. 205)

**Description:**  
Representative photo of sky-blue paint on wall.

This material was sampled and determined by laboratory analysis to be low-level lead (34 ppm).





<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.:</b> 29547
-----------------------------	---	------------------------------

**Photo No. 15.**

**Date:**  
November 12, 2025

**Location:** 2<sup>nd</sup> Floor,  
Office (Loc. 206)

**Description:**

Representative photo of blue paint on wall.

This material was sampled and determined by laboratory analysis to be low-level lead (<5 ppm).



**Photo No. 16.**

**Date:**  
November 12, 2025

**Location:** 1<sup>st</sup> Floor,  
Classroom (Loc. 101)

**Description:**

Representative photo of Light Blue.

This material was sampled and determined by laboratory analysis to be low-level lead (57 ppm).





<b>Client Name:</b> BGIS	<b>Site Location:</b> 155 McNicoll Avenue, Toronto, ON	<b>Project No.</b> 29547
-----------------------------	---	-----------------------------

**Photo No. 17.**

**Date:**  
November 12, 2025

**Location:** 1<sup>st</sup> Floor,  
Classroom/Kitchen  
(Loc. 109)

**Description:**  
Representative  
photo of light-yellow  
paint on wall.

This material was  
sampled and  
determined by  
laboratory analysis  
to be **lead-  
containing (1,160  
ppm).**

