

DESIGNATED SUBSTANCE REVIEW

Carleton Place Arena
75 Neelin Street
Carleton Place, Ontario

Prepared for:



Town of Carleton Place
Recreation and Culture
175 Bridge Street, Carleton Place, ON

Prepared By:



CM3 Environmental Inc.
5710 Akins Road, Stittsville, Ontario

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Final Report

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1.0 INTRODUCTION

1.1 Site Background

The subject facility is a two-storey recreation arena located at 75 Neelin Street, in Carleton Place, Ontario. The building is heated by a combination of electric baseboards and forced air gas furnaces.

The facility is mainly used as a recreation arena, and features 2 rinks with multiple changerooms, various offices, maintenance garage, 2 large halls, and several undesignated rooms. The original building was constructed pre-1986 which includes rink 1, hall 1, change rooms, offices, and main lobby. Rink 2 and all associated rooms and hall were constructed in 1999.

1.2 Regulatory Framework

Under Section 30 of the Occupational Health and Safety Act (OHSA), a project “owner shall determine whether any designated substances are present at the project site and shall prepare a list of all designated substances that are present”. Ontario regulation 490/09 “Designated Substances” (O. Reg. 490/09) lists the designated substances as defined by OHSA. The following is a list of substances regulated by O. Reg 490/09.

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

Of the aforementioned designated substances, asbestos is further regulated by Ontario Regulation 278/05, “*Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations*”.

The following Hazardous Building Materials are not Designated Substances regulated by O. Reg. 490/09, but could pose a significant risk to health and safety of workers, occupants, and the environment are included as part of this report. The Ministry of Labour (MOL) recognizes them as workplace hazards and enforces worker protection under the General Duty Clause 25(2) (h) of the OHSA. Clause 25(2) (h) states that the employers are required to “take every precaution reasonable in the circumstances for the protection of a worker”. In such cases the MOL will refer to industry standards and guidelines for the safe handling and management of such materials.

- Polychlorinated Biphenyls (PCBs) - SOR/2008-273
- Ozone Depleting Substances (ODSs) - Federal Halocarbon Regulation 2003, SOR/2003-289
- UFFI - Under the Hazardous Products Act (R.S. C. H-3, S.1)
- Droppings
- Visible Mould
- Radioactivity

Where applicable, regulations pertaining to removal / abatement, and/or disposal of hazardous materials are provided in section 15.0 Recommendations.

1.3 Scope of Work

The scope of this project was to determine the location, condition, quantity and type of hazardous materials present in the building. The surveyors included building structural components, finishes, mechanical and electrical systems. For the purposes of this project, only the substances referenced in section 1.2 are reported.

The designated substances mentioned above may be present in partial and non-accessed areas and concealed spaces (i.e. wall and ceiling cavities). Furthermore, materials located within wall cavities could not be observed in order to determine their condition. In addition, CM3 would extrapolate quantities based on quantities observed in fully accessible locations.

This designated substance survey report has been prepared using the information during the site reconnaissance and analytical data.

1.4 Participants

The assessment was performed by Adam Nguyen of CM3 on April 23rd, 2020. The surveyor was unaccompanied during the site visit however facilities staff was present to open doors when necessary.

All suspect asbestos samples were submitted under chain of custody to EMSL Canada Inc. for analysis. Samples were analyzed by polarized light microscopy with dispersion staining, following USEPA method 600/R-93/116.

Suspect lead-containing paint samples were sent to Paracel Laboratories Ltd. in Ottawa, Ontario for lead content analysis by ICP-OES.

1.5 Limitations

The survey does not refer to substances that may be present in the day-to-day usage for other specialized equipment or areas in buildings (i.e. portable equipment, lead shields, fume hoods, etc.). There is a possibility that materials may exist which could not be reasonably identified within the scope of this assessment, or which were not apparent during previous site visits.

The scope did not include personal items or equipment (owner or occupant), buried or underground services or areas requiring significant demolition to assess. Wall and ceiling

cavities were accessed wherever possible. Destructive investigative techniques were not employed.

1.6 Terminology

1.6.1 List of Acronyms & Abbreviations

TERM	DESCRIPTION	TERM	DESCRIPTION
ACM	Asbestos Containing Material	MDL	Method Detection Limit
CFC	Chlorofluorocarbon	NS	No Standard
cm²	Centimeters squared	ODS	Ozone Depleting Substances
CAEAL	Canadian Association of Environmental Analytical Laboratories	PCBs	Polychlorinated Biphenyls
CM3	CM3 Environmental Inc.	Pb	Lead
DUP	Duplicate	PLM	Polorized Light Microscopy
EPA	Environmental Protection Agency	ppm	Parts Per Million
ESA	Environmental Site Assessment	ppb	Parts Per Billion
ESI	Environmental Site Inspection	PVC	Polyvinyl Chloride
GW	Groundwater	QA/QC	Quality Assurance/Quality Control
Hg	Mercury	RPD	Relative Percent Difference
Ha	Hectare	T	Metric Tonnes
HID	High Intensity Discharge	TEM	Transmission Electron Microscopy
m	Metre	TWAEL	Time-Weighted Average Exposure Level
mg/kg	Milligrams per kilogram	µg/g	Micrograms/gram
m	Metre	µg/L	Micrograms/Litre
		u/g	Underground
		UFFI	Urea Formaldehyde Foam Insulation

1.6.2 Glossary of Terms

Adjacent Property – Any properties that are contiguous or adjoining to the property being assessed.

Approved – Used in reference to a substance or system that has been investigated by a testing agency, accredited by the Standards Council of Canada, or is acceptable to the authority having jurisdiction and has been found to comply with specific requirements and is identified with an authorized marking of the testing agency, as appropriate.

Asbestos Containing Material (ACM) – In Ontario, any building material containing that contains 0.5% or more asbestos is recognized as ACM.

Client – The Town of Carleton Place including representatives of the Town of Carleton Place.

Commercial Property – any property where the primary activities of the land use is commercial (e.g., shopping mall) and not residential or manufacturing. This does not include operations where food is grown.

Contaminant – A substance that causes or may cause an adverse effect.

Contamination – The presence in soil, surface water, groundwater, air, or structures of a substance of concern, or a condition, in concentrations above appropriate pre-established criteria.

Criteria – Limits or levels for substances of concern that are established by regulating bodies.

Canadian Standards Association (CSA) – The Canadian Standards Association (CSA) is a membership association serving industry, government, consumers and other interested parties in Canada and the global marketplace. A leading developer of standards and codes, CSA enhances public safety, improves quality of life, preserves the environment and facilitates trade.

Dangerous Goods – Under the Transportation of Dangerous Goods Act (TDG) a dangerous good is a product, substance or organism included by its nature or by the regulations in any of the classes listed in the schedule of the ACT (Part 2 of the Transportation of Dangerous Goods Act).

Dangerous Goods Carrier – Under the Transportation of Dangerous Goods Act a carrier is a licensed transporter of dangerous goods. A transporter is a hauling firm that picks up properly packaged and labeled hazardous wastes from generators and transports it to designated facilities for treatment, storage, or disposal. Transporters are subject to TDG hazardous waste regulations.

Delineation – The physical and chemical assessment of all affected media at a site in three dimensions (length, width and depth) to the applicable criteria by sampling and analysis to determine the contaminant impact boundaries in a minimum of four horizontal directions.

Designated Substance – Any material that is designated as such in Ontario Regulation 490/09 of the Ontario Occupational Health and Safety Act.

Detection Limit – The smallest concentration or amount of a substance that can be reported as present in a sample with a specified degree of certainty by a definite complete analytical procedure.

Environment – The components of the earth and includes

- (i) air, land, and water;
- (ii) the layers of the atmosphere;
- (iii) organic and inorganic matter and living organisms;
- (iv) the interacting natural systems that include components referred to in subclasses (i) to (iii); and
- (v) may refer to, the socio-economic, environmental health, cultural and other items referred to in the definition of environmental effect.

Environmental Audit – a systematic process of objectively obtaining and evaluating evidence regarding a verifiable assertion about an environmental matter to ascertain the degree of correspondence between the assertion and established criteria, and then communicating the results to the client. A verifiable assertion is a declaration or statement about specific subject matter that is supported by documented data.

Exposure – The amount of a physical or chemical agent that reaches a target or receptor through ingestion, dermal adsorption, and inhalation.

Exposure Pathway – The course a chemical or physical agent takes from a source to an exposed population or organism; it describes a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from a site.

Hazardous Material – A material that may, upon exposure, constitute an identifiable risk to human health or the natural environment. Hazardous material criteria are established with regard to appropriate regulatory requirements.

Ingestion – An exposure type whereby chemical substances enter the body through the mouth and into the gastrointestinal system.

Inhalation – The intake of a substance by receptors through the respiratory tract system.

Lead (Pb) – An inorganic substance that is hazardous to health if breathed or swallowed. Its use in gasoline, paints, and plumbing compounds has been restricted or eliminated by federal laws and regulations. Lead is a criteria pollutant that is regulated under provincial legislation and the National Pollution Release Inventory.

Mercury (Hg) – An inorganic substance that can accumulate in the environment and that is highly toxic to humans if breathed or swallowed.

Monitoring – Measurement of concentrations of chemicals in environmental media or in tissues of humans and other biological receptors/organisms over time.

Mould – a growth of fungi forming on vegetable or animal matter, commonly as a downy or furry coating, and associated with decay or dampness.

Municipality – A city, an incorporated town, a municipality of a county or district or village commissioners. Environmental Act.

Ozone Depleting Substance (ODS) – A family of man-made compounds that includes, but are not limited to, chlorofluorocarbons (CFCs), bromofluorocarbons (halons), methyl chloroform, carbon tetrachloride, methyl bromide, and hydrochlorofluorocarbons (HCFCs). These compounds have been shown to deplete stratospheric ozone, and therefore are typically referred to as ODSs.

Pathway – Any specific route by which a potential receptor or individual may be exposed to an environmental hazard, such as the release of a chemical material.

Polychlorinated Biphenyls (PCBs) – A family of 209 congeners of structurally similar chemicals which are known to suppress the immune system, disturb behaviour and reproduction, contribute to population declines in wildlife, have toxic effects on the developing nervous systems and on liver enzymes, act as a cancer promoter, and cause birth defects.

ppb (parts per billion): An amount of substance in a billion parts of another material.

ppm (parts per million): An amount of substance in a million parts of another material; also expressed by mg/kg or ml/L.

Property – Land and any improvements to land consisting of any physical object attached to the land with some degree of permanence, including buildings and other fixtures. The terms “property” and “site” are used interchangeably.

Property Owner – the owner of a property by legal title. The property owner referred to in this report is the City of Ottawa

Remediation – The management of a contaminated site to prevent minimize, or mitigate damage to human health or the environment. Remediation may include both direct physical actions (e.g., removal, destruction, and containment of contaminants) and institutional controls (e.g., zoning designations or orders).

Residential Property – Any property where the primary activity of the land use is residential or recreational activity.

Risk – The chance of injury or loss, defined as a measure of the probability and severity of an adverse effect to health, property, the environment, or other things of value.

Risk Assessment – A set of scientific methods for defining and estimation the probability and magnitude of undesired effects to receptors resulting from a specific event, such as a human action, a natural catastrophe, or an exposure to a substance.

Storage – The holding of a substance for a temporary period at the end of which it is intended to be processed, used, transported, treated or disposed of.

Urea Formaldehyde Foam Insulation (UFFI) - A type of foamed in-place insulation that releases formaldehyde gas. Under the *Hazardous Products Act updated in 1985* the use of UFFI was banned in Canada.

These definitions were based on those obtained from the Canadian Council of Ministers of the Environment, Canadian Standards Association, Environment Canada, U.S. EPA, Transport Canada dictionaries and Federal and Provincial Agencies.

2.0 EXECUTIVE SUMMARY

CM3 Environmental Inc. (CM3) was commissioned by the Town of Carleton Place to conduct a quantitative asbestos survey for the building located at 75 Neelin Street in Carleton Place, Ontario. This work was completed in order to comply with Ontario Regulation 278/05 “*Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations*” (O. Reg. 278). A Designated Substance Survey (DSS) is also required under Section 30 of the **Occupational Health and Safety Act** in order to identify designated substances that may be present within the proposed project areas.

2.1 General Findings and Recommendations

CM3’s general findings and recommendations are summarized in the following table:

Executive Summary Table		
Designated Substance	Findings	Recommendations
Acrylonitrile	Possibly present in stable form in paints and adhesives.	No concerns.
Arsenic	Possibly present in stable form in paints and adhesives.	No concerns.
Asbestos	Asbestos was confirmed to be present in the following building materials submitted for analysis: Vinyl Floor Tiles (12” x 12” – White with Black Streaks); and, Parging Cement Pipe insulation. In order to maintain the integrity of the roof membrane, no samples were collected as part of this investigation. Therefore, at this time the roof membrane is presumed	Ensure that all asbestos containing materials that have the potential to be damaged during renovation or demolition activities are removed following the actions outlined in Ontario Regulation 278/05. Core sampling of the roof membrane should be completed on a project specific basis. Routine surveillance of asbestos containing materials as per Ontario

	<p>ACM.</p> <p>Due to the age of construction the 1999 addition is not expected to contain ACMs.</p>	Regulation 278/05.
Benzene	Likely present in stable form in roofing asphalt, paints, and adhesives.	No concerns.
Coke Oven Emissions	None identified.	No concerns.
Ethylene Oxides	None identified.	No concerns.
Isocyanates	None identified.	No concerns.
Lead	<p>Interior brown paint on door frames, grey floor paint and exterior red and white paint was found to contain lead.</p> <p>Please refer to the main report body for sampling details.</p> <p>Lead may be present in solder joints, glazing on ceramic finishes and on all copper piping throughout the original phase of construction.</p>	It is recommended that if materials containing lead are to be disturbed, then procedures outlined in the ministry of labour “Guideline – Lead on Construction Projects” should be followed.
Mercury	<p>Mercury vapour is assumed to be present within fluorescent light tubes bulbs that are located in the subject building.</p> <p>Mercury may also be found in stable form in paints and adhesives.</p>	<p>If work on mercury containing materials is likely to produce mercury dust or fumes, for example during welding, torch cutting, grinding, sanding or sandblasting, then proper precautions should be followed.</p> <p>Prior to demolition, all fluorescent light tubes should be packaged and removed by a licensed contractor.</p>
Silica	Crystalline silica is assumed to be present in the building within the acoustic ceiling tiles, drywall/drywall joint compound, and concrete structures such as walls,	During renovation or demolition ensure that work areas are well ventilated, wash stations are present for worker protection and that the maximum allowable

	floors and stairs.	airborne concentration for all silica forms is not exceeded. All work should be completed following the Ministry of Labour “Guideline – Silica on Construction Projects”.
Vinyl Chloride	Likely present in stable form in pipes and interior finishes.	No concerns.
PCBs	PCB’s can be found in equipment such as transformers, capacitors, electromagnets, heat transfer units, hydraulic engine and fluorescent lamp ballasts. Fluorescent lamp ballasts may contain minor quantities of PCBs (23.6 g).	Prior to any renovation or demolition, all ballasts should be compared to the information outlined in the 1991 Environment Canada publication “Identification of Lamp Ballasts Containing PCBs” and removed/disposed of accordingly
ODSs	ODS’s can be found in applications such as refrigerants in heat pumps, refrigerators, freezers and air conditioners (A/C).	Prior to handling and/or disposal, a licensed technician should remove all base building CFCs, in accordance with the Federal Halocarbon Regulation, 2003. Non-base building units (i.e. window A/Cs, refrigerators, and freezers) should be relocated or reused rather than destroyed. If the units will not be relocated, then a licensed technician should remove the refrigerants.
UFFI	No evidence of UFFI was observed during the site investigation.	No concerns.
Droppings	No evidence of droppings was observed during the site investigation.	No concerns.
Visible Mould	No visible mould growth was observed during the site investigation.	No concerns.
Radioactivity	A direct source of radioactivity was not	Further investigation and sampling would be required

	<p>observed. However, certain areas of the Town of Carleton Place are known to have sub-surface geological formations that can produce Radon.</p>	<p>if Radon is deemed a concern for this facility.</p>
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3.0 ASBESTOS

Asbestos is a generic term describing a number of naturally occurring fibrous metamorphic minerals of the hydrous magnesium silicate variety that differ in chemical composition and are suitable for use as non-combustible, non-conducting and chemically resistant materials. The different types of asbestos which may be found in building materials are Chrysotile, Amosite, Tremolite, Actinolite or Anthophyllite.

They belong to two major mineral groups, Serpentine and Amphiboles. Serpentine minerals are flexible and curly whereas amphibole fibres tend to be straight with a fine fibre density that increases the likelihood of becoming and remaining airborne when disturbed. Chrysotile is a Serpentine and Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are Amphiboles.

The physical characteristics and chemical properties of asbestos made it very useful for a wide variety of products to strengthen them, provide heat or electrical insulation, offer fire or chemical resistance, and/or to absorb sound.

The main pathway for exposure to asbestos is inhalation. When inhaled in significant quantities, asbestos fibres can cause asbestosis (a scarring of the lungs which makes breathing difficult), mesothelioma (a rare cancer of the lining of the chest or abdominal cavity) and lung cancer.

As outlined in Ontario Regulation 278/05 “Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations”, any building material containing 0.5% or more asbestos (by weight) is recognized as an asbestos containing material (ACM).

The intent of the Regulation is to reduce worker exposure to asbestos. As such the regulation puts requirements on all stakeholders including building owners and managers to be aware of the presence, if any, of asbestos in their buildings and thus potential work areas. This is generally prescribed by having an "inventory" on hand of all ACM, also referred to as a survey. The regulation also details many other facets of the asbestos industry including removal procedures, health and safety requirements, training, etc. Any personnel working in or around asbestos should have, at a minimum, a basic understanding of the Regulation.

ACMs are categorized as friable or non-friable in order to show how easily they may release asbestos fibres when disturbed.

A material that is **friable** is one which can be crumbled, pulverized or powdered by hand pressure. If a friable ACM is damaged or disturbed, it presents an inhalation risk because asbestos fibres are more easily released into the air. Examples of friable materials include

sprayed fireproofing on structural steelwork, thermal insulation on mechanical systems, or textured finishes.

A **non-friable** asbestos product is one in which the asbestos fibres are bound or locked into the product matrix, so that the fibres are not readily released. Such a product would present a risk for fibre release only when it is subject to significant abrasion through activities such as sanding or cutting with electric power tools. Examples of non-friable asbestos products include vinyl asbestos floor tiles, acoustic ceiling tiles, and asbestos cement products.

Where suspect-ACMs could not be sampled, in order to maintain the integrity of the building component (i.e. roofing membranes, exterior finishes), these materials are referred to as Presumed Asbestos-Containing Materials (PACMs). PACMs are treated as though they are ACMs until laboratory analysis proves otherwise. Typically, samples are collected and submitted for analysis on a project-by-project basis.

3.1 Target Materials

Asbestos was used widely in construction materials including but not limited to:

- Insulation (i.e., pipe runs, boilers, pipe fittings, and gaskets);
- Spray-on coating/fireproofing;
- Cement products including cement sheets and exterior shingles and fences;
- Drywall joint compound filler;
- Plasters and decorative interior finishes;
- Acoustical ceiling tiles;
- Roofing felts and shingles;
- Vinyl floor tiles and sheet flooring; and,
- Mastics, tars, glues, and caulking.

In order to fully assess the potential presence/absence for the above materials CM3 personnel employ a methodical room-by-room field procedure. This procedure requires the inspector to observe and note the following building components as is part of our QA/QC program:

- Floor
- Wall
- Ceiling
- Structure
- Mechanical/Electrical
- Other
- Exterior

3.2 Analytical Procedure

Suspect materials were primarily assessed by visual inspection. On the basis of this inspection, select samples were collected from discrete locations using industry-accepted,

safe sampling techniques that include the pre-wetting of materials and concealment of materials after collection.

The number of samples collected is based on the suspect building materials present and the sampling criteria outlined in Table 1 “Bulk Materials Samples” of Ontario Regulation 278/05.

All suspect asbestos samples were submitted under chain of custody to EMSL Canada Inc. for analysis. Samples were analyzed by polarized light microscopy with dispersion staining, following USEPA method 600/R-93/116. Suspect lead-containing paint samples were sent to EMSL Inc. in Ottawa, Ontario.

The laboratory analytical reports are presented in **APPENDIX A**.

3.3 Reporting & Risk Assessment

CM3 provides all building information, methodology, laboratory results, and findings within the report. All information respecting detailed findings, quantities, access issues, conditions, and action items are reported.

3.3.1 Assessment of Condition

Spray Applied Fireproofing, Insulation, and Texture Finishes

To evaluate the condition of ACM spray applied as fireproofing, thermal insulation, or texture, decorative or acoustic finishes, the following criteria are applied:

GOOD - Surface of material shows no significant signs of damage, deterioration or delamination. Up to 1 percent visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the surveyor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes un-encapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed, and encapsulated fireproofing or texture finishes where the encapsulation has been applied after the damage or fallout occurred.

POOR - Sprayed materials show signs of damage, delamination or deterioration. More than 1 percent damage to surface of ACM spray.

In observation areas where damage exists in isolated locations; both GOOD and POOR condition may be reported. The extent or percentage of each condition will be recorded on the survey or re-assessment form. FAIR condition is not utilized in the evaluation of the sprayed fireproofing, sprayed insulation, or texture coat finishes.

The evaluation of ACM spray applied as fireproofing, non-mechanical thermal insulation, or texture, decorative or acoustic finishes which are present above ceilings, may be limited by the number of observations made, and by building components such as ducts or full height walls (walls that may rise to the underside of the floor above or roof deck) that obstruct the above ceiling observations. Persons entering the ceiling are advised to be watchful for ACM DEBRIS prior to accessing or working above ceilings in areas of buildings with ACM regardless of the reported condition.

Mechanical Insulation

The evaluation of the condition of mechanical insulation (on boilers, breaching, ductwork, piping, tanks, equipment etc.) utilizes the following criteria:

GOOD - Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor surface damage (i.e., scuffs or stains), but the jacketing is not penetrated.

FAIR - Minor penetrating damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges should be minor to none.

POOR - Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.

The evaluation of mechanical insulation may be limited by the number of observations made and building components such as ducts or full height walls that obstruct observations. It is not possible to observe each foot of mechanical insulation from all angles.

Non-friable and Potentially Friable Materials

Non-friable materials generally have little potential to release airborne fibres, even when damaged by mechanical breakage. However, some non-friable materials, i.e., exterior asbestos cement products, may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly deteriorated non-friable material, the material should be treated as a friable product.

Debris from Friable ACM

The presence of fallen ACM is noted separately from the presumed friable ACM source (sprayed fireproofing, thermal insulation, texture, decorative or acoustic finishes or mechanical insulation) and is referred to as DEBRIS.

Debris from Damaged Non-Friable ACM

The presence of fallen ACM from damaged non-friable ACM is also reported separately from the non-friable ACM source. Only fallen non-friable ACM that has become friable is reported as DEBRIS.

The identification of the exact location or presence of DEBRIS on the top of ceiling tiles is limited by the number of observations made and the presence of building components such as ducts or full height walls that obstruct observations. Workers are advised to be watchful for the presence of DEBRIS prior to accessing or working in proximity to mechanical insulation or above ceilings in areas of buildings with ACM regardless of the reported presence or absence of DEBRIS.

3.3.2 Evaluation of Accessibility

The accessibility of building materials known or suspected of being ACM is rated according to the following criteria:

ACCESS (A) - Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users may result in disturbance of ACM not normally within reach from floor level.

ACCESS (B) - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: areas within reach from a fixed ladder or catwalk, i.e., tops of equipment, mezzanines, frequently entered pipe chases, tunnels and service areas.

ACCESS (C) EXPOSED - Areas of the building above 8'-0" where use of a ladder is required to reach the ACM. Only refers to ACM that is exposed to view, from the floor or ladder, without the removal or opening of other building components such as ceiling tiles, or service access door or hatch. Does not include infrequently accessed service areas of the building.

ACCESS (C) CONCEALED - Areas of the building that require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems. Includes rarely entered crawl spaces, attic spaces, etc. Observations will be limited to the extent visible from the access points.

ACCESS (D) - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc. is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine materials in ACCESS D.

3.3.3 Action Matrix and Definitions

Immediately clean-up **DEBRIS** that is likely to be disturbed.

Remove, repair or enclose friable ACM in **POOR** or **FAIR** condition whose continued deterioration will result in **DEBRIS** that is likely to be disturbed.

The following factors are also considered in making site-specific recommendations for compliance with the regulation and the practical implementation of the Asbestos Management Plan:

i) ACM in **POOR** condition is not routinely repairable. If an abatement action is necessary, removal is the recommended action (enclosure is a viable option in unusual circumstances).

ii) Mechanical insulation in **FAIR** condition can be repaired or removed based on the following general recommendations applied on a case by case basis (Note: Either repair or removal are legally acceptable options for the treatment of ACM found in **FAIR** condition): Repair ACM mechanical insulation found in **FAIR** condition in **ACCESS (B)** or **ACCESS (C EXPOSED)** areas.

Remove ACM mechanical insulation found in **FAIR** condition in **ACCESS (B)** and **ACCESS (C EXPOSED)** areas, where future damage to the ACM is likely to occur.

Remove ACM mechanical insulation found in **FAIR** condition with **ACCESS (A)** to eliminate the potential for re-damaging ACM by all building users.

iii) ACM in **GOOD** condition present in **ACCESS (A)** can be managed by surveillance, as long as it is not disturbed by future renovation, maintenance or demolition. However, proactive removal of the ACM in **ACCESS (A)** should be considered where damage is possible by ongoing occupant activity (accidental or intentional).

iv) Non-friable or manufactured products are considered in the action matrix as follows:

Non-friable or manufactured products reported in **POOR** condition or friable **DEBRIS** resulting from the deterioration of non-friable ACM are treated as friable materials and the appropriate Action, depending on accessibility, is determined from the Action Matrix for friable ACM.

For non-friable or manufactured products reported in **GOOD** condition, Action 7 (surveillance) is recommended regardless of Accessibility.

v) Remove all ACM from a particular area where small quantities of asbestos are present and removal will negate the need for the use of the Asbestos Management Plan in that area.

With these principles in mind, the following Action Matrix Tables establish the recommended asbestos control action. Note that factors not included in the above discussion, such as an owner's policy decision to remove material, knowledge of upcoming maintenance, etc., may result in a recommendation that differs from this table. The **ACTIONS** are described in full following the table.

Table 1 Action Matrix

ACCESS	CONDITION			
	GOOD	FAIR	POOR	DEBRIS
(A)	ACTION 5/7 ¹	ACTION 5/6 ²	ACTION 3	ACTION 1
(B)	ACTION 7	ACTION 6/5 ³	ACTION 3	ACTION 1
(C) EXPOSED	ACTION 7	ACTION 6	ACTION 4	ACTION 2
(C) CONCEALED	ACTION 7	ACTION 7	ACTION 4	ACTION 2
(D)	ACTION 7	ACTION 7	ACTION 7	ACTION 7

¹ If material in **ACCESS (A)/GOOD** condition is not removed **ACTION 7** is required.

² If material in **ACCESS (A)/FAIR** condition is not removed **ACTION 6** is required.

³ Remove ACM in **ACCESS (B)/FAIR** condition if ACM is likely to be disturbed.

Action Definitions

ACTION 1 - Immediate Clean-Up of DEBRIS that is Likely to Be Disturbed

Restrict access that is likely to cause a disturbance of the ACM **DEBRIS** and clean up ACM **DEBRIS** immediately. Utilize correct asbestos procedures. This action is required for compliance with regulatory requirements. The surveyor should immediately notify the Asbestos Coordinator of this condition.

ACTION 2 - Type 2 Precautions for Entry into Areas with ACM DEBRIS

At locations where ACM **DEBRIS** can be isolated in lieu of removal or cleaned up, use appropriate means to limit entry to the area. Restrict access to the area to persons utilizing Type 2 asbestos precautions. The precautions will be required until the ACM **DEBRIS** has been cleaned up, and the source of the **DEBRIS** has been stabilized or removed.

ACTION 3 - ACM Removal Required for Compliance

Remove ACM for compliance with regulatory requirements. Utilize asbestos procedures appropriate to the scope of the removal work.

ACTION 4 - Type 2 Precautions for Access into Areas Where ACM is present and Likely to be disturbed by Access

Use Type 2 asbestos precautions when entry or access into an area is likely to disturb the ACM. **ACTION 4** must be used until the ACM is removed (Use ACTION 1 or 2 if **DEBRIS** is present).

ACTION 5 - Proactive ACM Removal

Remove ACM in lieu of repair, or at locations where the presence of asbestos in **GOOD** condition is not desirable.

ACTION 6 - ACM Repair

Repair ACM found in **FAIR** condition, and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work treat ACM as material in **GOOD** condition and implement **ACTION 7**. If ACM is likely to be damaged or disturbed, during normal use of the area or room, implement **ACTION 5**.

ACTION 7 - Routine Surveillance

Institute routine surveillance of the ACM. Trained workers or contractors must use appropriate asbestos precautions (Type 1, Type 2 or Type 3) during disturbance of the remaining ACM.

3.4 Findings

Suspect ACMs were collected from discrete random locations throughout the building and submitted for analysis on a positive-stop basis.

3.4.1 Exterior Finishes

The exterior of the facility consists of concrete block and corrugated steel siding with wood on the exterior canopy.

The roof is a flat roof system. In order to maintain the integrity of the roof membrane, no samples were collected as part of this investigation. Therefore, at this time the roof membrane is presumed ACM.

Three (3) samples of brown caulking (CLK01A-C) were collected from the exterior windows and submitted for asbestos content analysis. No asbestos was detected in the samples analyzed.

Three (3) samples of grey caulking (CLK02A-C) were collected from the exterior windows and submitted for asbestos content analysis. No asbestos was detected in the samples analyzed.

3.4.2 Flooring

The interior flooring mainly consisted of vinyl floor tiles and concrete with rubber flooring located in some areas.

Three (3) samples the vinyl floor tiles (VFT01A-C) described as 12" x 12" beige with brown were collected from the 2nd floor hall and submitted for asbestos content analysis. No asbestos was detected in the samples analyzed.

Three (3) samples the vinyl floor tiles (VFT02A-C) described as 12" x 12" brown with dark brown were collected from the 2nd floor hall and submitted for asbestos content analysis. No asbestos was detected in the samples analyzed.

Three (3) samples the vinyl floor tiles (VFT03A-C) described as 12" x 12" white with black streaks were collected from the room next to the main entrance and submitted for asbestos content analysis. Sample VFT03A was found to contain 1% chrysotile asbestos by laboratory analysis. The vinyl floor tile is considered a non-friable material and was in good condition at time of assessment.

Three (3) samples the vinyl floor tiles (VFT04A-C) described as 12" x 12" white with black flecks were collected from room next to the main entrance and submitted for asbestos content analysis. No asbestos was detected in the samples analyzed.

No other suspect asbestos-containing floor finishes were observed.

3.4.3 Interior Finishes

The interior wall finishes primarily consist of concrete with drywall in random locations and plaster skim coat at the entrance to rink #2. Three (3) samples (DJC01A-C) of drywall joint compound were collected and submitted for asbestos analysis. No asbestos was detected in the samples analyzed.

The walls around the doorway to rink #2 is concrete with a plaster skim coat finish. Three (3) samples (P01A-C) of the plaster skim coat were collected and submitted for asbestos content analysis. No asbestos was detected in the samples analyzed.

3.4.4 Ceiling Tiles

The ceilings throughout the building are either concrete or acoustic ceiling tiles. Three (3) samples of acoustic ceiling tiles (ACT01A-C) described as 'pinholes and flecks' measuring 2'

by 4' were collected from the corridor leading to rink #2 and submitted for asbestos content analysis. No asbestos was detected in the samples collected.

Three (3) samples of acoustic ceiling tiles (ACT02A-C) described as 'pinholes and fissures' measuring 2' by 4' were collected from the main lobby and submitted for asbestos content analysis. No asbestos was detected in the samples collected.

Three (3) samples of acoustic ceiling tiles (ACT03A-C) described as 'pinholes and random flecks' measuring 2' by 4' were collected from the main lobby and submitted for asbestos content analysis. No asbestos was detected in the samples collected.

Fibreglass ceiling tiles were observed in the room next to the main entrance, which does not pose a concern with regards to asbestos and as such, was not sampled.

3.4.5 Thermal Systems Insulation

Pipes insulated with non-asbestos fiberglass insulation are present throughout the building on domestic water systems. Parging cement insulation was observed on elbows in the mechanical room. Three (3) sample of parging cement (IPC01A-C) was collected from a pipe elbow and submitted for asbestos content analysis. Sample PC01A was found to contain 10% chrysotile asbestos by laboratory analysis. The parging cement insulation is a friable ACM. Two (2) pipe fittings are present and insulated with asbestos-containing parging cement and was in good condition at time of assessment.

Based on observations, and the nature of building construction additional asbestos-containing insulation is expected to be present on pipe systems located in concealed areas such as wall cavities, pipe chases, and ceiling spaces.

4.0 LEAD

Lead is a naturally occurring metal element and is the most common metal found in the environment. Pure metallic lead was primarily used to make products such as electric storage batteries, ammunition, solder, radiation shields, pipes and sheaths for electric cables. The most common organic lead compounds are tetraethyl (TEL) and tetra methyl (TML) lead that were used as anti-knock agents in gasoline. Inorganic lead compounds such as lead oxides, chromates, carbonates and nitrates are commonly found in insecticides, pigments, paints, frits, glasses, plastics and rubber compounds.

Lead may affect the health of workers if it is in a form that may be inhaled, ingested, or absorbed through skin. Lead dust consists of small, solid particles of metallic lead or lead compounds that are generated by sanding, grinding, polishing, and sawing operations. Lead fume is produced in significant amounts when solid lead or materials containing lead are heated to temperatures above 500°C, as in welding and flame cutting or burning.

Paint chip samples were collected from painted surfaces within the building. All paint chip samples were collected by scraping the paint down to the base material substrate to ensure collection of all layers of paint. Care was taken to avoid collection of the underlying substrate to reduce analytical substrate matrix interference.

Paint chip samples were submitted to a third-party laboratory (EMSL) for the determination of lead content. Analysis was conducted by the laboratory following EPA 6020 – Digestion, ICP-MS. Results were reported by the laboratory as micrograms per grams (ug/g).

A variety of paints were observed throughout the building. The paint samples submitted for analysis represent the overall majority of paint that exists within the facility. Paints that exist on a single door, a cabinet, a small area, etc., may be considered lead-based paint. A total of seven (7) samples of paint were collected throughout the facility and submitted for analysis.

- PB-01 White paint – <20 parts per million (ppm);
- PB-02 Red exterior paint – 2620 ppm
- PB-03 White exterior paint – 186 ppm
- PB-04 Beige paint – <20 ppm
- PB-05 Cream paint – <20 ppm
- PB-06 Grey floor paint – 216000 ppm; and,
- PB-07 Brown door/frames paint – 1280 ppm.

For the purposes of our assessment, any paint containing lead at a concentration of 0.5% by weight (i.e. 5,000ug/g, or 5,000ppm) or greater is lead-based paint (LBP). These paints represent the greatest potential exposure if disturbed. Paints confirmed to contain lead at a concentration of at least 0.009% by weight (i.e. 90ug/g, or 90ppm) but less than 0.5% by weight are considered to be lead-containing paints (LCP). These paints may present an exposure hazard depending on the type of work activities (i.e. degree of disturbance) and length of exposure. Paint with lead concentrations below 0.009% by weight are not considered to be lead-containing and represent little to no lead exposure hazard. In summary, samples PB-02, PB-03 and PB-07 were found to be LCP and sample PB-06 was found to be LBP

Lead may also be present in solder joints, glazing on ceramic finishes and on all copper piping within throughout the original phase of construction.

Analytical results are provided in **Appendix A**.

5.0 SILICA

Silica occurs naturally as crystalline or amorphous material. It is normally found in concrete, mortar, acoustic ceiling tiles, and stucco finishes. Crystalline silica is more toxic than amorphous silica, and therefore, is only regulated under the Occupational Health and Safety Act. The TWAEEL of a work to silica dust is to be maintained at the lowest practical level with a view to achieving an ambient air concentration lower than 0.10 mg/m³ of air for quartz and tripoli, and 0.05 mg/m³ of air for cristobalite and tridynite.

Silica is expected to be present in the concrete building materials, non-fiberglass acoustic ceiling tiles, plaster and drywall joint compound. No sampling was completed for silica analysis.

6.0 MERCURY

Mercury may be commonly found in thermostats, fluorescent lamp tubes and High Intensity Discharge (HID) light bulbs. Mercury or mercury vapour within light fixtures, thermometers, thermostats and electrical switches poses no risks to workers or occupants provided that the mercury containers remain intact and undisturbed.

The TWAEL of a worker to mercury compounds is to be maintained at the lowest practical level and not to exceed an eight-hour average concentration of 0.05 mg/m³ of air for all mercury except alkyl mercury oxide for which a concentration of 0.01 mg/m³ of air should not be exceeded.

Mercury vapor is expected to be present within fluorescent lighting identified throughout the building. Mercury may also be used as a preservative in paints.

7.0 ARSENIC

Arsenic can be found in paint on roofing flashings, floors, walls and on the underside of the concrete ground floor structures in old buildings. The Time-Weighted Average Exposure Limits (TWAEL) of a worker exposed to airborne arsenic is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 10 mg/m³ of air.

Considering the age of the building, arsenic could be present in the above listed materials. However, there is a low probability of finding arsenic-based coatings and minor amounts of this metal did not justify that the sampling be performed in the present assessment.

8.0 OTHER DESIGNATED SUBSTANCES

8.1 ACRYLONITRILE

Acrylonitrile is used to produce polymers such as acrylonitrile-butadiene-styrene (ABS) resins. These polymers are used in the manufacturing of a wide range of commercial products (i.e., automotive parts, clothing, carpets, etc.).

Workers are typically exposed to acrylonitrile at manufacturing facilities that produce the aforementioned products through inhaling its vapour, direct skin contact, or through ingestion. Although, acrylonitrile may be present in some of the building materials, including adhesives and coatings, the chemical will likely be bonded in the polymer form. Therefore, it is not expected that an adverse exposure to acrylonitrile will occur unless the building materials are heated to extreme temperatures.

The TWAEL of a worker exposed to airborne acrylonitrile is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 4.3 mg/m³ of air (2 ppmv).

In its hardened polymer form, acrylonitrile is not expected to release emissions that would exceed the allowable limits. Pure acrylonitrile was not identified within the subject building.

8.2 BENZENE

Benzene is typically found in petroleum-based products such as gasoline and diesel fuels, asphalt and other hydrocarbon-based products. Based on the age of the subject building it is unlikely that benzene is present in the paints, adhesives, roofing materials. Furthermore, over time, the benzene compound typically volatilizes out of the products and is released into the ambient air. Therefore, it is likely that only trace levels of benzene exist in the building.

Health effects of benzene exposure include irritation of eyes, skin, respiratory system, dizziness, and nausea. Benzene is classified as potential human carcinogens.

The TWAEL of a worker exposed to airborne benzene is to be maintained at the lowest practical level with a view to achieving an ambient air concentration lower than 3.2 mg/m³ of air (1 ppmv) and not exceed an eight-hour average concentration of 16 mg/m³ of air (5 ppmv).

Direct sources of benzene emissions were not identified within the building.

8.3 COKE OVEN EMISSIONS

Coke oven emissions are the exhaust released during the burning process of coke (pure carbon). This process was not observed and is not expected to take place within this building; therefore, it is unlikely that coke oven emission concentrations will exceed the maximum allowable TWAEV of 0.15mg/m³for occupants in the structure.

8.4 ETHYLENE OXIDE

Ethylene oxides are used in production of many foams, adhesives, and paints. Over time, ethylene oxide will volatilize out of these materials and may be present in trace amounts in the ambient air in the building. It is not expected that ethylene oxide levels will become hazardous to occupants in the structure.

Processes that may release ethylene oxide to ambient air were not identified within the subject building.

8.5 ISOCYANATES

Isocyanates are raw materials from which all polyurethane products are made. Over time, isocyanates may volatilize out of these materials but will only be present in trace amounts.

Health effects of isocyanate exposure include irritation of skin and mucous membranes, chest tightness, and difficult breathing. Isocyanates include compounds classified as potential human carcinogens and known to cause cancer in animals. The main effects of hazardous exposures are occupational asthma and other lung problems, as well as irritation of the eyes, nose, throat, and skin.

The TWAEL of a worker exposed is isocyanate dust is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 0.2 µmoles/m³ of air (0.005 ppmv).

Manufactured products under normal conditions do not typically pose a health risk. However, sawing or scraping uncured polyurethane that still contains some unreacted-NCO groups will release isocyanate dust. Uncured polyurethanes were not identified within the subject building.

8.6 VINYL CHLORIDE

Vinyl Chloride is found in many applications such as PVC pipes and fittings.

The TWAEEL of a worker exposed to vinyl chloride emission is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 5.2 mg/m³ of air (1 ppmv).

Vinyl chloride in the PVC compound is bound in a solid matrix that is unlikely to become airborne. Vinyl chloride emissions are not likely to exceed the prescribed limits within the subject building.

9.0 POLYCHLORINATED BIPHENYLS (PCBs)

Chlorobiphenyls (PCB's) can be found in equipment such as transformers, capacitors, electromagnets, heat transfer unit, hydraulic engine and fluorescent lamp ballasts. Two federal Canadian Environmental Protection Act (CEPA) regulations apply to the use and storage of PCB's. The **Chlorobiphenyls Regulation (SOR/2008-273)** limits the quantity of out of service PCB materials that can be stored at a facility for more than 6 months to 1 kg of PCB. There are also several government policies and guidelines that outline safe practices for the handling and storage of PCB containing material. Fluorescent lamp ballasts may contain minor quantities of PCBs (23.6 g). No out of service ballasts were observed and it is unlikely that the above quantity would ever be exceeded.

Random suspect fluorescent lamp ballasts were inspected during the site reconnaissance and compared to the information outlined in the 1991 Environment Canada publication "Identification of Lamp Ballasts Containing PCBs". No PCB containing ballasts were observed. However, due to the overall quantity of ballast it was impractical to inspect all ballasts during this assessment; therefore, it is possible that PCB containing ballasts are present within the building.

10.0 OZONE DEPLETING SUBSTANCES (ODSs)

ODSs have been widely used in many industrial, commercial and residential applications. They can be found in applications such as refrigerants in heat pumps, refrigerators, freezers and air conditioners (A/C); blowing agents for plastics, foam product and insulation; cleaning agents for metals, electronic equipment and components; and as dry-cleaning fluids.

Ontario Regulation 463/10 "Ozone Depleting Substances and Other Halocarbons", made under the Environmental Protection Act, outlines definitions for what chemical substances constitute an ODS. The regulation also defines the requirements for sale, transfer, handling, labelling and worker training.

Sources of ODSs in the building were primarily movable contents, or non-base building such as A/Cs, refrigerators, chillers, and freezers, and several hand-held portable fire extinguishers.

11.0 UREA FORMALDEHYDE FOAM INSULATION (UFFI)

UFFI was developed in Europe in the 1950's as an improved means of insulating difficult to reach cavities in house walls. It was typically injected through 1cm to 2cm diameter holes drilled in interior or exterior walls. During the 1970's when concerns about energy efficiency led to efforts to improve insulation in Canada, UFFI became an important insulation product for existing buildings. Most installations occurred between approximately 1970 and Dec. 1980. The use of UFFI was then banned by the Canadian Hazardous Products Act.

Interior and exterior spaces were inspected to identify if UFFI was present. No hole's indicative of the possible injection of UFFI were identified in the interior or exterior walls of the building.

12.0 DROPPINGS

Bird and animal droppings may present a health risk. The most serious health risks arise from disease organisms that grow in the nutrient rich accumulations of bird and animal droppings. Fungal diseases are associated with bird, bat and animal droppings. The two most common diseases associated with bird and bat droppings are histoplasmosis and cryptococcosis. No droppings were observed on site.

13.0 VISIBLE MOULD

Moulds and fungi are ubiquitous in nature and are necessary for the breakdown of leaves, wood and other plant debris. These micro-organisms can enter a building directly or by their spores being carried in by the air, people, or contents, etc.

Mould need three things to grow: moisture, food source, and optimum temperatures. The key factor is moisture. In modern buildings, moisture is present as the result of:

- Flooding;
- leaks in the roof or plumbing;
- sealed buildings that do not allow excess moisture to escape;
- sources such as cooking facilities, showers, etc.; or,
- excess humidity.

This assessment has been performed to determine presence of visible mould growth and is limited in its nature. No sampling (air, bulk, lift, etc.) was completed as part of this assessment. A visual inspection of interior surfaces in the subject building was completed by CM3 to identify areas where apparent mould was most likely to proliferate (i.e., areas where water damage/staining was visible on building material surfaces). An intrusive assessment was not completed as part of this investigation. Assessing potential health risks to potential building occupants was beyond the scope of our investigation.

Material observed with black staining and/or a textured and discoloured appearance is described as apparent or suspect mould propagation. No water staining and suspect mould propagation were observed at this time.

14.0 RADIOACTIVITY

The presence of radioactive material was not observed during the site visit and is not considered to be an issue of potential environmental concern. However, certain areas of the Town of Carleton Place are known to have sub-surface geological formations that can produce Radon.

15.0 RECOMMENDATIONS

CM3 provides the following recommendations based on the information provided by the City, our observations, the regulatory framework, and the Statement of Limitations provided in Section 17 of this report.

15.1 Asbestos

Disturbance of friable and non-friable asbestos is regulated by Ontario Regulation 278/05.

Prior to renovation or demolition, the project owner must ensure that any ACMs that have the potential to be disturbed are removed or enclosed. Workers conducting this activity must be adequately trained and supplied with sufficient personal protective equipment. In addition, the maximum allowable airborne fibre concentration for asbestos should not be approached or exceeded.

Based on site observations, the ACM action matrix, and lab findings CM3 provides the following recommendations for the asbestos containing materials identified within the subject building.

1. ACTION 7 Routine Surveillance:

- Maintain updated asbestos management records.
- Routine surveillance of ACMs.
- Annual reassessment, as per Ontario Regulation 278/05.

The Regulation defines work classification based on the type of material being handled, the condition of the material and quantity of material being handled. In general terms they are referenced as the following:

Type 1 measures and procedures, or low risk work, and requires basic engineering controls and worker protection (e.g., perimeter tape, drop sheets, etc.).

Type 2 measures and procedures, or moderate risk work, and requires upgraded engineering controls and worker protection (e.g., enclosures, wash stations, etc.).

Type 3 measures and procedures, or high risk work, and requires maximum engineering controls and worker protection (e.g., enclosures, showers, multi stage decontamination, etc.).

15.2 Lead

If work on lead containing materials is likely to produce lead dust or fumes, for example during welding, torch cutting, grinding, sanding or sandblasting, then proper precautions should be followed. As best industry practice, CM3 recommends that the ministry of Labour “Guideline for Lead on Construction Projects” be followed when working with potential lead hazards.

The Time-Weighted Average Exposure Limits (TWAEL) of a worker to lead is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 0.05 mg/m³ of air for non-tetraethyl lead and 0.10 mg/m³ of air in the case of tetraethyl lead.

Waste generated from demolition activities that contain lead, such as lead-based paint undergo Toxicity Characteristic Leaching Procedure testing in order to classify the waste. If the concentration of lead exceeds that of the leachate quality criteria then waste must be classified as hazardous and must be disposed of at a landfill that accepts hazardous waste in accordance with O. Reg 347, as amended.

Similar to the asbestos Regulation, the guideline outlines suggestions for worker protection, protective equipment, and defines the different work classifications for working on materials that contain lead.

The guideline defines work classification based on the type of material being handled, the condition of the material and quantity of material being handled. In general terms they are referenced as the following:

Type 1 measures and procedures, or low risk work, and requires basic engineering controls and worker protection (e.g., perimeter tape, drop sheets, etc.).

Type 2 measures and procedures, or moderate risk work, and requires upgraded engineering controls and worker protection (e.g., enclosures, wash stations, etc.).

Type 3 measures and procedures, or high-risk work, and requires maximum engineering controls and worker protection (e.g., enclosures, showers, multi stage decontamination, etc.).

15.3 Mercury

If mercury (Hg) is removed or relocated, work must be completed in accordance with Ontario Regulation 490/09. Recycling of fluorescent light tubes should be performed by a contractor. If removed, fluorescent tubes must be recycled.

Mercury may also be present as a preservative in paints.

The TWAEL of a worker to mercury is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 0.025 mg/m³ of air for all forms of mercury except alkyl compounds which is 0.01 mg/m³ of air. If work on mercury containing materials

is likely to produce mercury dust or fumes, for example during welding, torch cutting, grinding, sanding or sandblasting, then proper precautions should be followed.

15.4 Silica

Silica occurs naturally as crystalline material in concrete and cement. Crystalline silica is significantly more toxic than amorphous silica. Therefore, for health reasons, only crystalline varieties are regulated under Ontario Regulation 490/09 as one of the designated substances. Silica dust can be generated through such processes such as blasting, grinding, crushing or sandblasting silica-containing material. Silica is often found contained within concrete walls, stairs and ramps. Therefore, appropriate respiratory protection and ventilation must be utilized during construction and demolition. As best industry practice CM3 recommends that the ministry of Labour “Guideline for Silica on Construction Projects” is followed when dealing with potential silica hazards.

Similar to the asbestos Regulation, the guideline outlines suggestions for worker protection, protective equipment, and defines the different work classifications for working on materials that contain silica.

The guideline defines work classification based on the type of material being handled, the condition of the material and quantity of material being handled. In general terms they are referenced as the following:

Type 1 measures and procedures, or low risk work, and requires basic engineering controls and worker protection (e.g., perimeter tape, drop sheets, etc.).

Type 2 measures and procedures, or moderate risk work, and requires upgraded engineering controls and worker protection (e.g., enclosures, wash stations, etc.).

Type 3 measures and procedures, or high-risk work, and requires maximum engineering controls and worker protection (e.g., enclosures, showers, multi stage decontamination, etc.).

15.5 PCBs

During any lighting refit or during routine maintenance the old ballast should be inspected for PCBs. Any ballasts found to contain PCBs should be stored separately on a temporary basis until they can be disposed of by a licensed waste hauler.

15.6 Radioactivity

Further investigation and sampling would be required if Radon is deemed a concern for this facility.

16.0 DSR SUMMARY TABLE

Table 2 - Summary of Designated Substances

Designated Substance	Material	Friable Y/N	Location	Sample ID	Concentration / Content	Quantity/ Condition	Recommendation
Asbestos	Mechanical Insulation	Y	Mechanical Room	PC01A-C	10% Chrysotile	2 fittings	Routine surveillance.
	12" x 12" Vinyl Floor Tiles (White w/Black Streaks)	N	Room Next to Main Entrance	VFT03A-C	1% Chrysotile	~200Sq Ft	Routine surveillance.
	Roofing Material	N	Roof	Not sampled	Presumed to contain until proven otherwise via laboratory analysis	N/A	Sample on a project-by-project basis.
Lead	Paint, Exterior Red	NA	Exterior Panels	PB-02	2620 ppm	Good	Project-by-project sampling and controls.
	Paint, Exterior White	NA	Exterior Walls	PB-03	186 ppm	Good	Project-by-project sampling and controls.
	Paint, Brown	NA	Interior Doors and Frames	PB-07	1280 ppm	Good	Project-by-project sampling and controls.
	Paint, Grey Floor	NA	Mechanical Room Floors	PB-06	216000 ppm	Good	Project-by-project sampling and controls.
	Glazing on Ceramic Finishes	NA		N/A	May be present	N/A	Project-by-project sampling and controls.
	Solder joints on copper piping	NA		N/A	May be present	N/A	Project-by-project sampling and controls.
Mercury	Fluorescent Light Tubes	NA	Throughout the building	N/A	Vapour is assumed to be present	N/A	Routine surveillance. Remove and package prior to renovation / demolition.
	Painted Surfaces	NA	Throughout the building	N/A	May be present	N/A	None concerns. Project-by-project controls.

Silica	Cementitious construction materials (e.g. concrete, drywall, acoustic tiles, etc.)	NA	Throughout the building.	N/A	Assumed to be present in concrete structures.	N/A	None concerns. Project-by-project controls.
PCB	Light Ballasts	NA	Throughout the building	N/A	May be present	N/A	None concerns. Project-by-project controls.
ODSs	Non-base building contents (i.e. refrigerators, A/Cs, freezers, fire extinguishers)	NA	Throughout the building	N/A	May be present	N/A	None concerns. Project-by-project controls.
Radioactivity	Radon Gas	NA	Basement	N/A		N/A	Further investigation and sampling required to determine if Radon is a concern for this facility.

*Table 3- Typical Unit Rates for Asbestos Remediation**

Material	Unit	Rate/Range
Flooring (Tile)	Sq.ft.	\$2-4
Flooring (Sheet)	Sq.ft.	\$4-5
Plaster	Sq.ft.	\$10-15
Drywall	Sq.ft.	\$8-10
Ceiling Texture	Sq.ft.	\$10
Acoustic Tiles	Sq.ft.	\$4-8
Mechanical:		
Fittings	each	\$50
Straight Runs	Linear Ft	\$25
Caulking	Linear Ft	\$4

*The unit rates list is an estimate only and based on recent project costs observed in industry. Taxes, profit, consulting not included. Contractors are likely to be higher or lower than listed rates based on numerous factors including seasonal workloads, amount of competition and how the work is specified (i.e., Type 3, Glove Bag, etc.).

17.0 STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by CM3 Environmental Inc. for **Town of Carleton Place**. It is intended for the sole and exclusive use of **Town of Carleton Place and their authorized agents** for the purpose(s) set out in this report. Any use of, reliance on or decision made based on this report by any person other than **Town of Carleton Place** for any purpose, or by **Town of Carleton Place** for a purpose other than the purpose(s) set out in this report, is the sole responsibility of such other person or **Town of Carleton Place** and CM3 Environmental Inc. make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

Any conclusions or recommendations made in this report reflect CM3 Environmental Inc.'s judgment based on the following limited investigations: visual site inspection(s) on the date(s) set out in this report; examination of public records; and interviews with individuals having information about the site. While efforts have been made to substantiate information provided by third parties, CM3 Environmental Inc. makes no representation or warranty as to its completeness or accuracy.

This report has been prepared for specific application to this site. Unless otherwise stated, the findings cannot be extended to previous or future site conditions; portions of the site which were unavailable for direct investigation; subsurface locations which were not investigated directly; or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site; and substances addressed by the investigation may exist in areas of the site not investigated or in quantities not ascertained.

Nothing in this report is intended to constitute or provide a legal opinion. CM3 Environmental Inc. makes no representation as to the requirements of or compliance with environmental laws, rules, regulations or policies established by federal, provincial or local government bodies. Revisions to the regulatory standards referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary.

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Appendix A – Analytical Results/Laboratory Certificates of Analysis



EMSL Canada Inc.

22 Antares Drive Suite 102 Ottawa, ON K2E 7Z6
Phone/Fax: (343) 882-6076 / (343) 882-6077
<http://www.EMSL.com> / ottawalab@EMSL.com

EMSL Canada Order 672000694
Customer ID: 55CMTE42
Customer PO:
Project ID:

Attn: Richard Pope
CM3 Environmental Inc.
5710 Akins Rd
Stittsville, ON K2S 1B8

Phone: (613) 838-2323
Fax:
Collected: 4/24/2020
Received: 4/24/2020
Analyzed: 5/01/2020

Proj: RCP

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: VFT01A-Vinyl Floor Tile **Lab Sample ID:** 672000694-0001

Sample Description: 2nd floor/12"x12" beige w/ brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Beige	0.0%	100.0%	None Detected	

Client Sample ID: VFT01A-Mastic **Lab Sample ID:** 672000694-0001A

Sample Description: 2nd floor/12"x12" beige w/ brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: VFT01B-Vinyl Floor Tile **Lab Sample ID:** 672000694-0002

Sample Description: 2nd floor/12"x12" beige w/ brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: VFT01B-Mastic **Lab Sample ID:** 672000694-0002A

Sample Description: 2nd floor/12"x12" beige w/ brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: VFT01C-Vinyl Floor Tile **Lab Sample ID:** 672000694-0003

Sample Description: 2nd floor/12"x12" beige w/ brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Beige	0.0%	100.0%	None Detected	

Client Sample ID: VFT01C-Mastic **Lab Sample ID:** 672000694-0003A

Sample Description: 2nd floor/12"x12" beige w/ brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: VFT02A-Vinyl Floor Tile **Lab Sample ID:** 672000694-0004

Sample Description: 2nd floor/12"x12" brown w/ dark brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	



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EMSL Canada Order 672000694
Customer ID: 55CMTE42
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: VFT02A-Mastic **Lab Sample ID:** 672000694-0004A
Sample Description: 2nd floor/12"x12" brown w/ dark brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: VFT02B-Vinyl Floor Tile **Lab Sample ID:** 672000694-0005
Sample Description: 2nd floor/12"x12" brown w/ dark brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: VFT02B-Mastic **Lab Sample ID:** 672000694-0005A
Sample Description: 2nd floor/12"x12" brown w/ dark brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: VFT02C-Vinyl Floor Tile **Lab Sample ID:** 672000694-0006
Sample Description: 2nd floor/12"x12" brown w/ dark brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: VFT02C-Mastic **Lab Sample ID:** 672000694-0006A
Sample Description: 2nd floor/12"x12" brown w/ dark brown floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: VFT03A-Vinyl Floor Tile **Lab Sample ID:** 672000694-0007
Sample Description: Room next to entrance/12"x12" white w/ black streaks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	White	0.0%	99.0%	1% Chrysotile	

Client Sample ID: VFT03A-Mastic **Lab Sample ID:** 672000694-0007A
Sample Description: Room next to entrance/12"x12" white w/ black streaks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: VFT03B **Lab Sample ID:** 672000694-0008
Sample Description: Room next to entrance/12"x12" white w/ black streaks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020					Positive Stop (Not Analyzed)



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EMSL Canada Order 672000694
 Customer ID: 55CMTE42
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: VFT03C **Lab Sample ID:** 672000694-0009

Sample Description: Room next to entrance/12"x12" white w/ black streaks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020					Positive Stop (Not Analyzed)

Client Sample ID: VFT04A-Vinyl Floor Tile **Lab Sample ID:** 672000694-0010

Sample Description: Room next to entrance/12"x12" white w/ black flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: VFT04A-Mastic **Lab Sample ID:** 672000694-0010A

Sample Description: Room next to entrance/12"x12" white w/ black flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: VFT04B-Vinyl Floor Tile **Lab Sample ID:** 672000694-0011

Sample Description: Room next to entrance/12"x12" white w/ black flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: VFT04B-Mastic **Lab Sample ID:** 672000694-0011A

Sample Description: Room next to entrance/12"x12" white w/ black flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: VFT04C-Vinyl Floor Tile **Lab Sample ID:** 672000694-0012

Sample Description: Room next to entrance/12"x12" white w/ black flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: VFT04C-Mastic **Lab Sample ID:** 672000694-0012A

Sample Description: Room next to entrance/12"x12" white w/ black flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: DJC01A **Lab Sample ID:** 672000694-0013

Sample Description: Throughout/Drywall joint compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	White	0.0%	100.0%	None Detected	



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EMSL Canada Order 672000694
 Customer ID: 55CMTE42
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: DJC01B **Lab Sample ID:** 672000694-0014
Sample Description: Throughout/Drywall joint compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: DJC01C **Lab Sample ID:** 672000694-0015
Sample Description: Throughout/Drywall joint compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: P01A **Lab Sample ID:** 672000694-0016
Sample Description: By entrance to 2nd rink/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: P01B **Lab Sample ID:** 672000694-0017
Sample Description: By entrance to 2nd rink/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: P01C **Lab Sample ID:** 672000694-0018
Sample Description: By entrance to 2nd rink/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: PC01A **Lab Sample ID:** 672000694-0019
Sample Description: Furnace room/Parging cement

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	35.0%	55.0%	10% Chrysotile	

Client Sample ID: PC01B **Lab Sample ID:** 672000694-0020
Sample Description: Furnace room/Parging cement

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020					Positive Stop (Not Analyzed)

Client Sample ID: PC01C **Lab Sample ID:** 672000694-0021
Sample Description: Furnace room/Parging cement

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020					Positive Stop (Not Analyzed)



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EMSL Canada Order 672000694
 Customer ID: 55CMTE42
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: ACT01A **Lab Sample ID:** 672000694-0022

Sample Description: Corridor to 2nd rink/2x4 pinhole w/ fleck ceiling tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	70.0%	30.0%	None Detected	

Client Sample ID: ACT01B **Lab Sample ID:** 672000694-0023

Sample Description: Corridor to 2nd rink/2x4 pinhole w/ fleck ceiling tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	70.0%	30.0%	None Detected	

Client Sample ID: ACT01C **Lab Sample ID:** 672000694-0024

Sample Description: Corridor to 2nd rink/2x4 pinhole w/ fleck ceiling tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	35.0%	65.0%	None Detected	

Client Sample ID: ACT02A **Lab Sample ID:** 672000694-0025

Sample Description: Main lobby/2x4 pinhole w/ fissures ceiling tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	70.0%	30.0%	None Detected	

Client Sample ID: ACT02B **Lab Sample ID:** 672000694-0026

Sample Description: Main lobby/2x4 pinhole w/ fissures ceiling tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	70.0%	30.0%	None Detected	

Client Sample ID: ACT02C **Lab Sample ID:** 672000694-0027

Sample Description: Main lobby/2x4 pinhole w/ fissures ceiling tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	70.0%	30.0%	None Detected	

Client Sample ID: ACT03A **Lab Sample ID:** 672000694-0028

Sample Description: Main lobby/2x4 pinhole w/ large random fleck

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	85.0%	15.0%	None Detected	

Client Sample ID: ACT03B **Lab Sample ID:** 672000694-0029

Sample Description: Main lobby/2x4 pinhole w/ large random fleck

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	85.0%	15.0%	None Detected	



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Customer ID: 55CMTE42
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: ACT03C **Lab Sample ID:** 672000694-0030

Sample Description: Main lobby/2x4 pinhole w/ large random fleck

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	80.0%	20.0%	None Detected	

Client Sample ID: CLK01A **Lab Sample ID:** 672000694-0031

Sample Description: Exterior/Brown caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: CLK01B **Lab Sample ID:** 672000694-0032

Sample Description: Exterior/Brown caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: CLK01C **Lab Sample ID:** 672000694-0033

Sample Description: Exterior/Brown caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Brown	0.0%	100.0%	None Detected	

Client Sample ID: CLK02A **Lab Sample ID:** 672000694-0034

Sample Description: Exterior/Grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: CLK02B **Lab Sample ID:** 672000694-0035

Sample Description: Exterior/Grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: CLK02C **Lab Sample ID:** 672000694-0036

Sample Description: Exterior/Grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	5/01/2020	Gray	0.0%	100.0%	None Detected	



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

EMSL Canada Order 672000694
Customer ID: 55CMTE42
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Analyst(s):

Ewa Krupinska PLM (26)
Simon Parent PLM (16)

Reviewed and approved by:

Simon Parent, Laboratory Manager
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government

Samples analyzed by EMSL Canada Inc. Ottawa, ON

Initial report from: 05/01/202014:58:47

Certificate of Analysis

CM3 Environmental Inc.

5710 Akins Road
Ottawa, ON K2S 1B8
Attn: Adam Nguyen

Client PO: Carlton Place Arena
Project:
Custody:

Report Date: 29-Apr-2020
Order Date: 24-Apr-2020

Order #: 2017340

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

Parcel ID	Client ID
2017340-01	Pb01-White
2017340-02	Pb02-Red Ext
2017340-03	Pb03-White ext
2017340-04	Pb04-Beige
2017340-05	Pb05-Cream
2017340-06	Pb06-Grey Floor
2017340-07	Pb07-Brown

Approved By:



Dale Robertson, BSc
Laboratory Director

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

Certificate of Analysis
Client: **CM3 Environmental Inc.**
Client PO: **Carlton Place Arena**

Report Date: 29-Apr-2020

Order Date: 24-Apr-2020

Project Description:

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-OES	based on MOE E3470, ICP-OES	28-Apr-20	28-Apr-20

Sample and QC Qualifiers Notes

1- Gen-19 : Complete separation of paint from substrate not possible for this sample and a small amount of substrate has been included in the paint digestion.

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Certificate of Analysis
 Client: CM3 Environmental Inc.
 Client PO: Carlton Place Arena

Report Date: 29-Apr-2020
 Order Date: 24-Apr-2020
 Project Description:

Sample Results

Lead				Matrix: Paint
				Sample Date: 23-Apr-20
Parcel ID	Client ID	Units	MDL	Result
2017340-01	Pb01-White	ug/g	20	<20
2017340-02	Pb02-Red Ext	ug/g	20	2620 [1]
2017340-03	Pb03-White ext	ug/g	20	186
2017340-04	Pb04-Beige	ug/g	20	<20
2017340-05	Pb05-Cream	ug/g	20	<20
2017340-06	Pb06-Grey Floor	ug/g	20	216000 [1]
2017340-07	Pb07-Brown	ug/g	20	1280

Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Matrix Blank									
Lead	ND	20	ug/g						
Matrix Duplicate									
Lead	ND	20	ug/g	ND			NC	30	
Matrix Spike									
Lead	219	20.00	ug/g	ND	85.6	70-130			

Appendix B – Plans/Drawings

LEGEND :

- ASBESTOS BULK SAMPLE LOCATION
- ▲ LEAD BULK SAMPLE LOCATION
- 1999 PHASE OF CONSTRUCTION
- ASBESTOS CONTAINING VINYL FLOOR TILES
- ASBESTOS CONTAINING MECHANICAL INSULATION

NOTE:

—PIPES INSULATED WITH FRIABLE ASBESTOS INSULATION MAY BE PRESENT IN INACCESSIBLE SPACES SUCH AS ABOVE SOLID CEILINGS, IN CHASES, IN COLUMN ENCLOSURES, WALL CAVITIES AND WITHIN SHAFTS.

—THE ROOF MEMBRANE IS CONSIDERED ASBESTOS CONTAINING TILL PROVEN OTHERWISE VIA LABORATORY ANALYSIS.



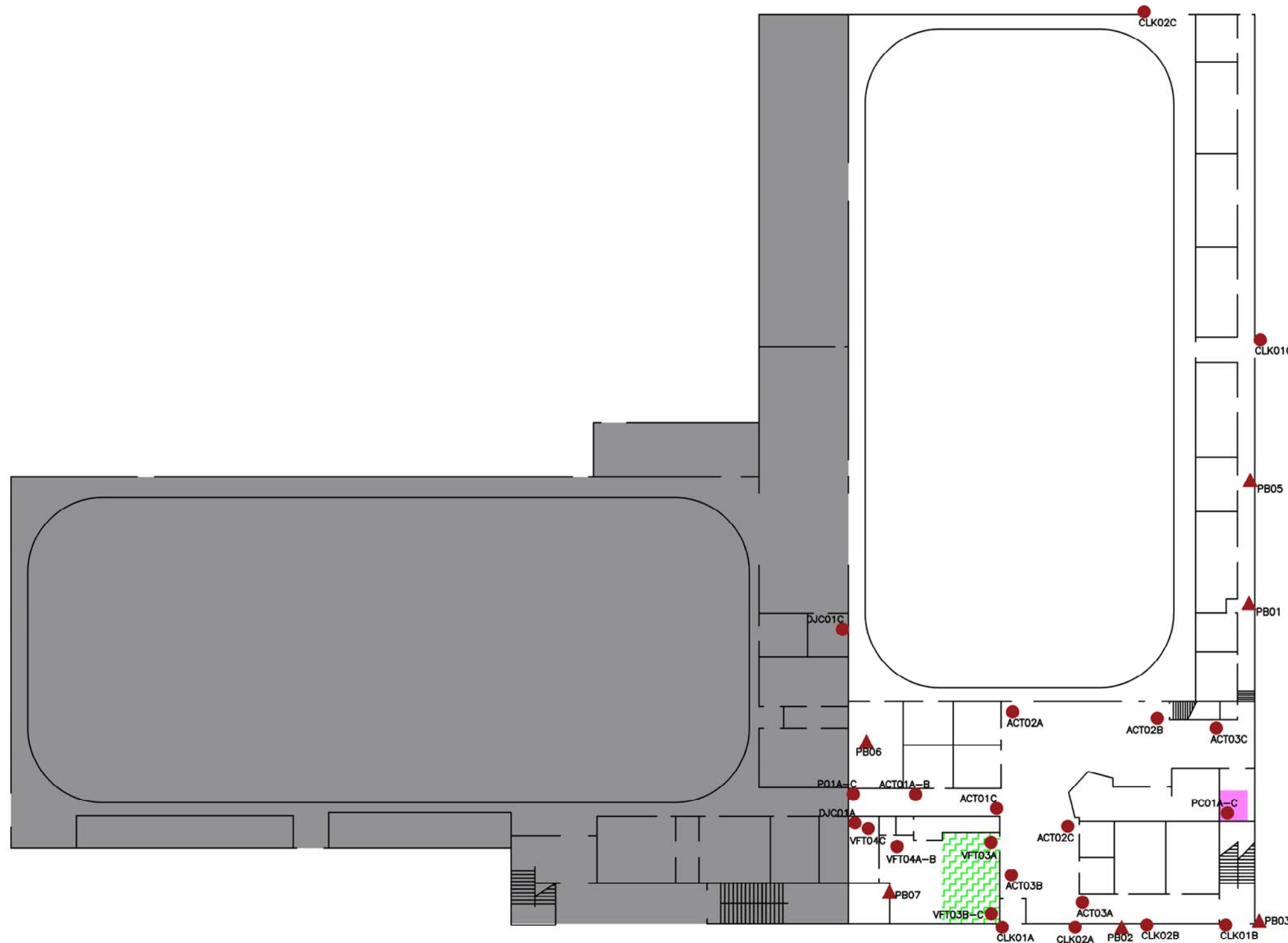
TOWN OF CARLETON PLACE
 CARLETON PLACE ARENA
 75 NEELIN ST, CARLETON PLACE, ONTARIO

FLOOR PLAN

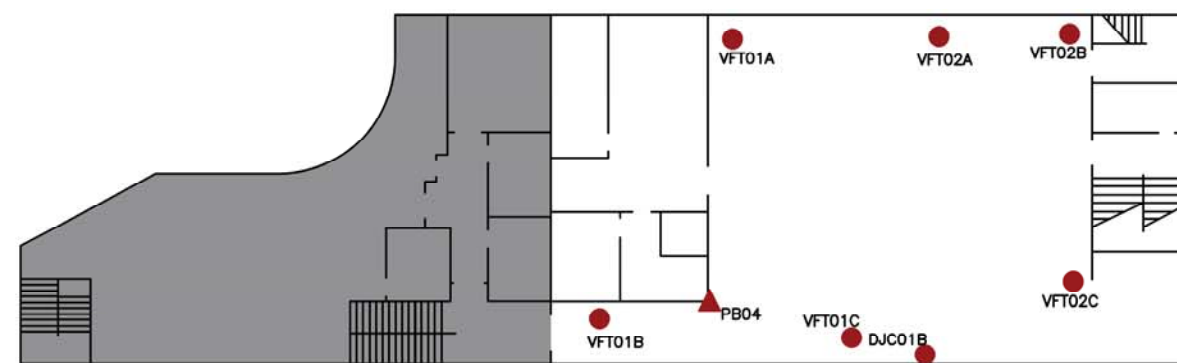
ASBESTOS LOCATION PLAN

SCHEMATIC LAYOUTS TO SHOW LOCATIONS AND TYPES OF ASBESTOS.

	DATE: MAY 2020	DWG. No.
	SCALE: AS NOTED	1
	DRAWN: A.N	
	APPROVED: R.P	



GROUND FLOOR



SECOND FLOOR

Appendix C – Photographic Log

**Designated Substance Review
Carleton Place Arena
75 Neelin Street, Carleton Place, Ontario**



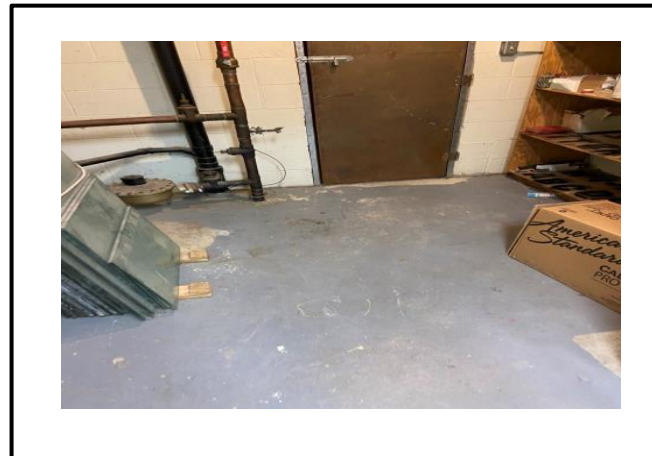
Photograph 1: Carleton Place Arena– Exterior



Photograph 2: Parging Cement Elbow – Mechanical Room



Photograph 3: 12" x 12" White w/Black Streaks Vinyl Floor Ties – Room Next to Main Entrance.



Photograph 4: Lead-Based Grey Floor in Mechanical Room.



Photograph 5: Exterior Lead-Containing Red and White Paint.



Photograph 6: Lead-Containing Doors and Frames