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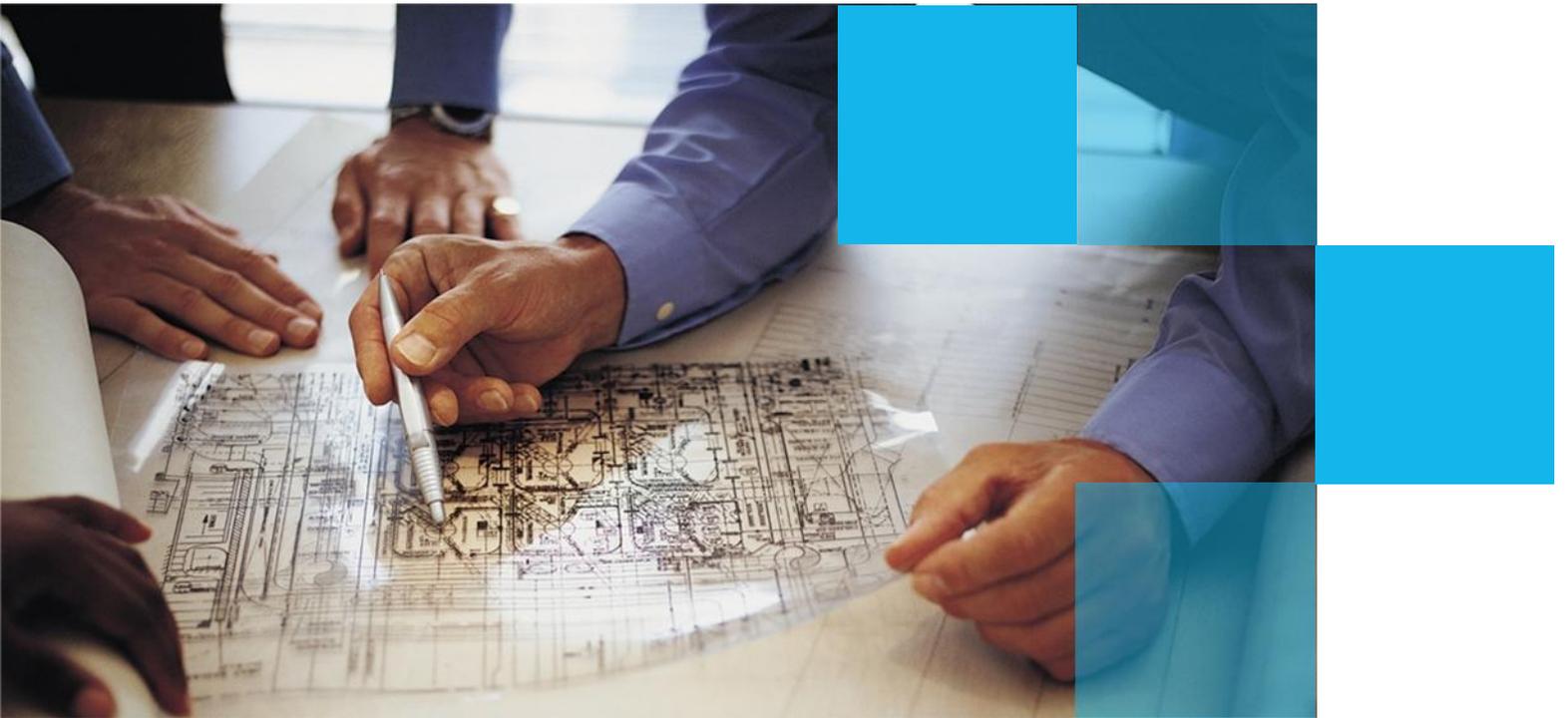
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Canada

Designated Substances Hazardous Materials Survey

Canada Coast Guard Base Prescott, Ontario

PWGSC Project R.066414.001

141-14670-00



SURVEY REPORT

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PWGSC Project R.066414.001
WSP Project 141-14670-00

November 28, 2014

Ms. Selina Chowdhury
Senior Environmental Specialist
Environmental Services
Public Works & Government Services Canada
4900 Yonge Street, 11th Floor
Toronto, Ontario M2N 6A6

Re: Report for the Designated Substances and Hazardous Materials Survey (DSHMS) for the Refurbishment of Canada's Coast Guard Base in Prescott, ON

Dear Ms. Chowdhury:

This report documents relevant background information, methodologies utilized, work undertaken and the findings of the Designated Substances and Hazardous Materials Survey (DSHMS) of the building structures at the Canada Coast Guard Base located in Prescott, ON, conducted by WSP in March 2014.

Please do not hesitate to contact the undersigned if you have any questions.

Yours truly,

WSP Canada Inc.

A handwritten signature in black ink, appearing to read "MS", with a long horizontal flourish extending to the right.

Marc St. Germain, P. Eng.
Environmental Engineer

[Designated Substances and Hazardous Materials Survey Report for the Refurbishment of Canada's Coast Guard Base, Department of Fisheries and Oceans, Prescott, ON]

Executive Summary

WSP Canada Inc. (previously GENIVAR Inc.) was retained by Public Works and Government Services Canada (PWGSC) on behalf of the Department of Fisheries and Oceans (DFO) to conduct a Designated Substances and Hazardous Materials Survey (DSHMS) of the buildings and structures (the buildings) at the Canada Coast Guard Base located in Prescott (CCGB Prescott), Ontario.

The objectives of this survey were as follows:

- 1) To identify Designated Substances and/or hazardous materials that may be present in the buildings at CCGB Prescott;
- 2) To prepare a report documenting the identities, usages and locations of any Designated Substances and hazardous materials identified at CCGB Prescott; and,
- 3) To provide PWGSC and DFO with applicable management considerations in support of the upcoming refurbishment project at CCGB Prescott.

The primary findings of this survey are summarized below:

Designated Substance/ Hazardous Material	Survey Findings
Asbestos	Bulk samples were collected from a number of suspect building materials observed in several buildings at CCGB Prescott. The following building materials were those identified as asbestos-containing material (ACM): <ul style="list-style-type: none"> • <i>Vinyl Floor Tiles (and Mastic)</i>
Lead	Bulk paint samples were collected from each distinct colour of paint observed at CCGB Prescott and submitted for analysis of lead content. A number of the paints observed/sampled were identified as “lead-containing” paints in accordance with the federal <i>Hazardous Products Act (Surface Coating Materials Regulation)</i> . Twenty five (25) of the sampled paints at CCGB Prescott were confirmed to contain greater than 90ppm of lead.
Silica	Building/construction materials known to contain silica such as glass, concrete, masonry, stone and mortar were observed at CCGB Prescott.
Mercury	Mercury vapour is assumed to be present within fluorescent light tubes observed at the subject property. Liquid mercury-containing thermostats were also observed at CCGB Prescott.
PCBs	Polychlorinated Biphenyls (PCBs) may be present in some of the fluorescent light ballasts located throughout the buildings at CCGB Prescott.
ODSs	Refrigerators and air conditioning equipment were observed at CCGB Prescott. This cooling equipment may contain ozone-depleting substances (ODS).
Mould	Although visible mould was not observed, conditions conducive to mould growth, including water staining/damage, were observed during the survey.
Benzene/Fuel Tanks	Benzene is likely a component of the Diesel and Jet Fuel A-1 present in the tanks/barrels observed at the facility.

Table of Contents

Transmittal Letter
 Executive Summary
 Table of Content

1.	INTRODUCTION	1
1.1	Site Description	1
1.2	Survey Objectives	1
1.3	Scope of Work	1
1.4	Regulatory Context	2
1.5	Additional Regulatory Requirements for Asbestos	3
1.6	Additional Regulatory Requirements for Lead	3
1.7	Additional Regulatory Requirements for Waste Management	3
2.	METHODOLOGY	3
2.1	General DSHMS Survey Methodology	3
2.2	Asbestos Survey Methodology	4
2.3	Lead Survey Methodology	5
2.4	Silica.....	6
2.5	Mercury	6
2.6	Polychlorinated Biphenyls (PCBs).....	6
2.7	Ozone-Depleting Substances (ODS).....	6
2.8	Mould	6
3.	OBSERVATIONS AND RESULTS	6
3.1	Asbestos	6
3.1.1	Building A – Main Building	6
3.1.2	Building B – Buoy Maintenance Building	7
3.1.3	Building C – Boat House	9
3.1.4	Building D – Helicopter Hangar.....	9
3.1.5	Building E – Heated Storage Building.....	9
3.1.6	Building F – Metal-Clad Storage Building	10
3.2	Non-Asbestos Bulk Sample Summary.....	10
3.3	Lead-Containing Paints.....	11
3.4	Lead Bulk Sample Summary	13
3.5	Ozone-Depleting Substances (ODS).....	13
3.6	Fuel Storage	14
3.7	Other Designated Substances and Hazardous Materials.....	14
4.	LIMITATIONS	15

List of Tables

Table 1-1	List of Surveyed Buildings at CCGB Prescott.....	1
Table 1-2	Ontario Occupational Health & Safety Regulations for Designated Substances	2
Table 2-1	Minimum Number of Bulk Samples to be Collected Under O. Reg. 278/05 According to Material Area, Application and Friability.....	5
Table 3-1	Asbestos-Containing Materials – Main Building	7
Table 3-2	Asbestos-Containing Materials – Buoy Maintenance Building	8
Table 3-3	Asbestos-Containing Materials – Helicopter Hanger	9
Table 3-4	Summary of Bulk Samples Identified as “Non-Asbestos” at CCGB Prescott	10
Table 3-5	Summary of Paints with Lead Concentrations Greater than 90ppm	11
Table 3-6	Summary of Non Lead-Containing Materials.....	13
Table 3-7	Other Designated Substances and Hazardous Materials identified at CCGB Prescott ...	14

Appendices

Appendix A	Laboratory Certificates of Analysis & Statement of Qualifications
Appendix B	Project Photographs
Appendix C	PWGSC Deputy Minister Directive 057 (DIR 057) <i>Asbestos Management</i>

1. Introduction

1.1 Site Description

WSP Canada Inc. (previously GENIVAR Inc.) was retained by Public Works and Government Services Canada (PWGSC) on behalf of the Department of Fisheries and Oceans (DFO) to conduct a Designated Substances and Hazardous Materials Survey (DSHMS) of the buildings and structures (the buildings) at the Canada Coast Guard Base located in Prescott (CCGB Prescott), Ontario.

CCGB Prescott is mainly comprised of six (6) buildings, including the: Main Building, Buoy Maintenance Building, Boat House, Helicopter Hangar, Heated Storage Building, and Metal-Clad Storage Building. The facility is located on a 2.8 hectare site of irregular shape on the shores of the St. Lawrence River, and has been used as a marine base for over a century.

1.2 Survey Objectives

The DSHMS was completed in advance of a planned refurbishment project for CCGB Prescott. The objectives of this survey were as follows:

- 1) To identify Designated Substances and/or hazardous materials that may be present in the buildings at CCGB Prescott.
- 2) To prepare a report documenting the identities, usages and locations of any Designated Substances and hazardous materials identified at CCGB Prescott.
- 3) To provide PWGSC and DFO with applicable management considerations in consideration of the planned construction/renovation and demolition activities at the CCGB Prescott.

1.3 Scope of Work

The areas and components inspected as part of this project were in accordance with those specified in the Statement of Work (PWGSC Project R.066414.001) for the project dated January 21, 2014.

The six (6) CCGB Prescott buildings and structures surveyed by WSP included:

Table 1-1 List of Surveyed Buildings at CCGB Prescott

Building ID / Name	Description
Building A – Main Building (Offices and Workshops)	2-storey structure (with a mezzanine floor in-between) housing the facility's main offices, shipping/receiving areas, storage areas and various workshops
Building B – Buoy Maintenance Building	1-storey structure used for the repair/maintenance and re-painting of the buoys
Building C – Boat House	1 ½ - storey structure used for storage and boat repairs
Building D – Helicopter Hangar	2-storey structure used for general storage and mail operation (Helicopters are no longer stationed at the base)
Building E – Heated Storage Building	1-storey structure used for the storage of various materials and equipment, including an area used for environmental response
Building F – Metal-Clad Storage Building	1-storey structure with steel framing (Butler type) for storing miscellaneous materials and used equipment

A thorough intrusive, but not destructive, survey was undertaken of the following:

- Building construction materials
- Components, fixtures, and fixed equipment/furniture

- Fuel, oil and/or waste oil storage
- Accessible rooms, areas and building spaces

The DSHMS consisted of the following tasks:

- A systematic (room-by-room) survey of each building or structure
- Collection of bulk samples from suspect materials
- Submission of samples to an accredited independent laboratory for analysis
- Data analysis and identification of Designated Substances and hazardous materials

1.4 Regulatory Context

Section 30 of the *Occupational Health and Safety Act* (the Act) stipulates that prior to the commencement of a project a list shall be prepared of all Designated Substances that are present at the project site (i.e. a Designated Substances survey). In accordance with the Act, the locations of Designated Substances must be identified in writing to all prospective constructors, contractors and sub-contractors who may work, disturb or come into contact with this type of material, at the same time as, or prior to, project tendering.

The term “Designated Substance” refers to the eleven chemical or physical agents specifically identified within the Act. Each of these substances is governed by its own respective regulation that defines the minimum health and safety requirements for assuring safe worker-substance interaction as well as the obligations of employers and workers in workplaces containing said substances. These regulations further stipulate the maximum concentrations of the respective substance to which a worker may be exposed, according to short-term exposure values and time-weighted average exposure values. Table 1-2 lists the eleven chemical/physical agents identified in the act as well as their respective regulations and corresponding amendments.

Table 1-2 Ontario Occupational Health & Safety Regulations for Designated Substances

Designated Substance	Applicable Regulation	Most Recent Amendment
Acrylonitrile	O. Reg. 490/09	O. Reg. 148/12
Arsenic	O. Reg. 490/09	O. Reg. 148/12
Asbestos	O. Reg. 490/09	O. Reg. 148/12
Asbestos (on Construction Projects and in Buildings and Repair Operations)	O. Reg. 278/05	O. Reg. 479/10
Benzene	O. Reg. 490/09	O. Reg. 148/12
Coke Oven Emissions	O. Reg. 490/09	O. Reg. 148/12
Ethylene Oxide	O. Reg. 490/09	O. Reg. 148/12
Isocyanates	O. Reg. 490/09	O. Reg. 148/12
Lead	O. Reg. 490/09	O. Reg. 148/12
Mercury	O. Reg. 490/09	O. Reg. 148/12
Silica	O. Reg. 490/09	O. Reg. 148/12
Vinyl Chloride	O. Reg. 490/09	O. Reg. 148/12

1.5 Additional Regulatory Requirements for Asbestos

Among the Designated Substances, asbestos is unique in that it is governed by two regulations under the Act - one for the general mining and processing operations of asbestos and one for asbestos on construction projects and in buildings and repair operations.

Ontario Regulation 278/05, made under the Act, entitled “Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations” came into effect on November 1st, 2005, with some sections contained therein becoming effective on November 1st, 2007. This regulation revoked and replaced the previous asbestos regulation, O. Reg. 838/90.

O. Reg. 278/05 introduces significant changes to how asbestos management is regulated in Ontario. Many of the regulatory changes adopted by O. Reg. 278/05 were already in wide use in industry as part of best management practices. Noteworthy regulatory changes include modifications to asbestos survey requirements, the management of asbestos on-site, abatement operations and procedures (i.e. Type 1, 2 and 3), the use of personal protective equipment (PPE) and air monitoring requirements.

1.6 Additional Regulatory Requirements for Lead

In April 2005, the Federal *Surface Coating Materials Regulation (SOR/2005-109)* limited the allowable concentration of total lead present in a surface coating material (with some exceptions) to 600 mg/kg (600 ppm).

In December 2010, the Federal Government lowered the total lead limit in surface coating materials from 600 mg/kg to 90 mg/kg under subsections 4(1) and 5(1) and section 8 of the *Surface Coatings Materials Regulations (SOR/2005-109)*. The lowering of this limit aligns Canada with the United States in respect of total lead levels in surface coating materials and certain products with surface coating materials applied to them.

Therefore using this revised threshold limit, those surface coating materials with lead concentrations that exceed 90 ppm (0.009% by weight) are considered to be lead-containing for the purposes of this assignment.

1.7 Additional Regulatory Requirements for Waste Management

The disposal of Designated Substances is regulated under the Ontario *Environmental Protection Act* (the EPA), specifically R.R.O. 1990, Regulation 347, *General – Waste Management* (most recently amended by O. Reg. 334/13). The regulation details the minimum requirements for the appropriate transport and disposal of wastes.

In addition to the EPA waste management requirements, the *Canada Wide Standards on Fluorescent Lamps Containing Mercury* requires that quantities of fluorescent light tubes destined for waste in excess of 25 tubes are to be considered hazardous waste and thus must be disposed of in a manner that is compliant with Regulation 347.

2. Methodology

2.1 General DSHMS Survey Methodology

WSP's DSHMS sought to identify those substances defined as Designated Substances under the *Ontario Occupational Health and Safety Act* including: asbestos (friable and non-friable), lead, mercury, silica, benzene, acrylonitrile, arsenic, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride. In addition, other hazardous materials, such as PCBs, ozone-depleting substances (ODS), urea-formaldehyde foam insulation (UFFI) and other stored chemicals and wastes were included in the survey scope.

The surveyor performed a systematic survey of each building for the purposes of identifying Designated Substances and hazardous materials and documenting observations made about their locations, estimated quantities and respective conditions. These observations form the basis of management considerations and remedial actions provided in Section 4 of this report.

Bulk samples were collected from suspect building materials (materials known as having the potential to be asbestos-containing) for analysis of their asbestos content. Paint chip samples were also collected from paint applications for analysis of their lead content. Survey procedures specific to asbestos-containing materials and lead are documented in Sections 2.2 and 2.3 of this report, respectively.

2.2 Asbestos Survey Methodology

The surveyor inspected each building for the presence of friable and non-friable asbestos-containing materials (ACM). Examples of ACM commonly found in buildings include:

- Sprayed insulation
- Acoustic/texture plaster
- Drywall joint compound
- Mechanical insulation
- Asbestos cement
- Piping
- Acoustic ceiling tiles
- Vinyl floor tiles and vinyl sheet flooring
- Plaster

It should be noted that not all the above listed materials were necessarily observed during this survey.

Bulk samples were collected from suspect materials and analyzed to confirm the presence/absence of asbestos. The collection of bulk material samples was performed according to the procedures documented in the Ontario Ministry of Labour's (MOL) publication *Designated Substances in the Workplace: A Guide to the Asbestos Regulation for Construction Projects, Buildings and Repair Operations*.

O. Reg. 278/05 stipulates the minimum number of samples that must have asbestos concentrations less than 0.5% in order for an area of homogenous material to be not considered asbestos-containing, as given in Table 2-1. A homogeneous sampling area is defined by the USEPA as containing material that is uniform in texture and appearance, was installed at one time and is unlikely to consist of more than one type or formulation of material. The O. Reg. 278/05 sampling requirements are summarized in greater detail in Table 2-1 below.

In addition to meeting the provincial survey requirements, survey guidelines specified in PWGSC's *Departmental Policy 057 – Asbestos Management* was also adhered to.

Table 2-1 Minimum Number of Bulk Samples to be Collected Under O. Reg. 278/05 According to Material Area, Application and Friability

Type of Material	Size of Homogenous Material	Minimum Number of Bulk Samples
Surfacing material, including without limitation material that is applied to surfaces by spraying, by trowelling or otherwise, such as acoustical plaster on ceilings, fireproofing materials on structural members and plaster	Less than 90 m ²	3
	90m ² or more, but less than 450m ²	5
	450m ² or more	7
Thermal insulation, except as described below	Any size	3
Thermal insulation patch	Less than 2m or 0.5m ²	1
Other material	Any size	3

Samples were collected from discrete locations with every attempt to minimize damage. The following procedures for collection of samples were followed:

- The surface of the material was wetted with amended water using a spray bottle. In situations where the material could not be wetted, a plastic bag or other containment device was placed around the sampling device.
- A sample was obtained by one of two methods;
 - 1) A sampling device was slowly pushed into the material with a twisting motion until the entire thickness was penetrated, followed by extraction of the sampling device, or;
 - 2) A knife was cleaned and then used to excise a piece of the material.
- Each sample was placed in a clear bag with a tight closure, labelled appropriately and placed in a second, similar bag. Debris was cleaned with wet paper towels and discarded into a plastic bag.
- Damage to the material sampled was repaired with duct tape and/or filler material as needed.
- A chain of custody form was completed for all samples collected on-site and accompanied samples in transit. Asbestos bulk samples were couriered to EMSL Analytical of Mississauga, Ontario.

A total of one hundred and thirty five (135) bulk samples were collected from suspect building/construction materials and submitted to EMSL Analytical (accredited by NVLAP) for analysis. The number of homogenous samples collected from each suspect building material was done so in accordance with Table 1 of O. Reg. 278/05.

2.3 Lead Survey Methodology

A total of thirty eight (38) paint chip samples collected from distinct paint colours observed within the six (6) building structures were submitted for lead content analysis. Samples were collected with the aid of a thin-bladed knife, which was cleaned prior to each sampling event. The site surveyor selected sample locations where it appeared that the paint application was most representative of all areas on which it was applied. Each paint chip sample was placed in a clear bag with a tight closure, labelled appropriately and placed in a second, similar bag. A chain of custody form was completed and accompanied the bulk samples, sent via courier, to EMSL Analytical of Mississauga, Ontario.

Lead analysis was performed following ASTM Method, ASTM D3335-85A “*Standard Method to test for Low Concentrations of Lead in Paint by Atomic Absorption Spectrophotometry*”.

2.4 Silica

The surveyors inspected CCGB Prescott for the presence of materials known to contain silica. Silica is present in materials such as glass, concrete, masonry, stone and mortar which are prevalent materials in construction.

2.5 Mercury

The surveyors inspected CCGB Prescott for equipment which is likely to contain mercury. Information on the type of equipment, model and serial numbers and quantities were recorded, where available.

2.6 Polychlorinated Biphenyls (PCBs)

The surveyors inspected CCGB Prescott for equipment which may contain PCBs. Equipment that is generally suspected of containing PCBs includes lamp ballasts, transformers, hydraulic fluid, compressors, switchgears and capacitors.

2.7 Ozone-Depleting Substances (ODS)

The surveyors inspected CCGB Prescott for equipment which may contain ODS. Information on the type of equipment, manufacturer, and type and quantity of refrigerants used was recorded, where available.

2.8 Mould

The surveyors inspected CCGB Prescott for the presence of mould. This included a non-intrusive visual assessment of exterior and interior surfaces for evidence of visible mould and/or moisture and water damage.

3. Observations and Results

Laboratory Certificates of Analysis are provided in **Appendix A** of this report. Relevant site photographs taken during the survey are presented in **Appendix B** of this report.

It should be noted that asbestos-containing materials (ACM), Designated Substances or hazardous materials may be concealed by existing building finishes, components or fixtures. If demolition or construction activities uncover materials suspected to be ACM, Designated Substances or hazardous materials, all work must stop and the materials should either be sampled by a qualified person, or presumed to contain the suspected substance. If the material is confirmed, or presumed to be ACM, Designated Substances or hazardous materials it must be handled and disposed of in accordance with the appropriate and applicable guidelines and regulations including, but not limited to: O. Reg. 278/05, O. Reg. 490/09 and R.R.O. 1990, Regulation 347.

3.1 Asbestos

3.1.1 Building A – Main Building

A total of fifty-six (56) bulk material samples were collected from suspected asbestos-containing materials observed in the Main Building. Table 3-1 summarizes only those materials identified to be asbestos-containing materials along with recommended remedial actions for each respective material. In accordance with the requirements of O. Reg. 278/05, homogenous materials (i.e. materials uniform in color and texture) must be considered ACM if any sample is identified to have an asbestos concentration of 0.5% or greater.

Table 3-1 Asbestos-Containing Materials – Main Building

Material	Location	Description	Assessment ¹	Action ²	Photo ³
Vinyl Floor Tile (VFT-1) (including mastic)	<u>Bottom Floor</u> Telecom Room, Stores Room, South Shop, Electronics Shop, Office #31, Foreman Store Room	Approximately 3650 square feet (340 square metres) of VFT-1 (12"x12"; blue with white streak) and underlying mastic	<ul style="list-style-type: none"> - Sample ID: MB-12-VFT1-A to C - Concentration: 19.9% <i>Chrysotile</i> - Material: Non-Friable - Accessibility: A (<i>Areas of the building within reach, from ground level, of all building users. Activities of the building users may result in disturbance of ACM.</i>) - Condition: Good 	<p>Action 7 Routine surveillance of ACM in good condition.</p> <p>Prior to demolition/construction activities, remove these materials following Type 1 abatement procedures – if the material is wetted and the work is done using non-powered hand tools and the mastic is removed using an appropriate solvent.</p> <p>Follow Type 3 abatement procedures – if mastic is removed via sanding or grinding with power tools.</p>	4

1. For sample ID and concentration levels refer to **Appendix A** – Laboratory Certificates of Analysis.
2. Actions recommended are in accordance with O. Reg. 278/05 and with PWGSC Departmental Policy DP 057 Regarding Asbestos Management. Refer to **Appendix C** for Action definitions. Refer to O. Reg. 278/05 for Type 1, 2 & 3 procedures.
3. For photographs taken during the survey refer to **Appendix B** – Project Photographs.

Roof sampling was limited strictly to non-destructive investigation, i.e., the collection of surface roofing materials which would not damage the weather/water-proofing integrity of the roof, including roof ballast filter fabric/cloth and caulking on roof-top HVAC equipment (refer section 3.2 for details). Based on the date of the original building construction there is the potential for some of the roofing materials to contain asbestos. Although no sampled materials returned asbestos containing results, WSP cannot confirm the absence of asbestos in all the roofing materials as no roof-core samples were able to be collected as part of this survey. It is recommended that roof cores (full depth roof membrane samples) be collected and analyzed for asbestos immediately prior to the timing of the roof replacement.

3.1.2 Building B – Buoy Maintenance Building

A total of twenty-four (24) bulk material samples were collected from suspected asbestos-containing materials observed in the Buoy Maintenance Building. Table 3-2 summarizes only those materials identified to be asbestos-containing materials along with recommended remedial actions for each respective material. In accordance with the requirements of O. Reg. 278/05, homogenous materials (i.e. materials uniform in color and texture) must be considered ACM if any sample is identified to have an asbestos concentration of 0.5% or greater.

Table 3-2 Asbestos-Containing Materials – Buoy Maintenance Building

Material	Location	Description	Assessment ¹	Action ²	Photo ³
Vinyl Floor Tile (VFT-1) (including mastic)	Hall Between Shower and Work Area	Approximately 50 square feet (5 square metres) of VFT-1 (12"x12"; blue with white streak, covered by lots of dust/dirt) and underlying mastic	<ul style="list-style-type: none"> - Sample ID: BMR-VFT1-A to C - Concentration: 14.2% Chrysotile - Material: Non-Friable - Accessibility: A <i>(Areas of the building within reach, from ground level, of all building users. Activities of the building users may result in disturbance of ACM.)</i> - Condition: Good 	<p>Action 7 Routine surveillance of ACM in good condition.</p> <p>Prior to demolition/construction activities, remove these materials following Type 1 abatement procedures – if the material is wetted and the work is done using non-powered hand tools and the mastic is removed using an appropriate solvent.</p> <p>Follow Type 3 abatement procedures – if mastic is removed via sanding or grinding with power tools.</p>	36
Vinyl Floor Tile (VFT-3) (including mastic)	Side Entrance (To Locker Area) Immediately To the right of Door	Approximately 50 square feet (5 square metres) of VFT-1 (12"x12"; blue with white streak) and underlying mastic	<ul style="list-style-type: none"> - Sample ID: MB-12-VFT3-A to C - Concentration: 19.9% Chrysotile - Material: Non-Friable - Accessibility: A <i>(Areas of the building within reach, from ground level, of all building users. Activities of the building users may result in disturbance of ACM.)</i> - Condition: Good 	<p>Action 7 Routine surveillance of ACM in good condition.</p> <p>Prior to demolition/construction activities, remove these materials following Type 1 abatement procedures – if the material is wetted and the work is done using non-powered hand tools and the mastic is removed using an appropriate solvent.</p> <p>Follow Type 3 abatement procedures – if mastic is removed via sanding or grinding with power tools.</p>	34

1. For sample ID and concentration levels refer to **Appendix A** – Laboratory Certificates of Analysis.
2. Actions recommended are in accordance with O. Reg. 278/05 and with PWGSC Departmental Policy DP 057 Regarding Asbestos Management. Refer to **Appendix C** for Action definitions. Refer to O. Reg. 278/05 for Type 1, 2 & 3 procedures.
3. For photographs taken during the survey refer to **Appendix B** – Project Photographs.

It is WSP's understanding that the roof of the buoy maintenance building is not scheduled for replacement. Therefore, no roof samples were collected as part of the survey, so to not damage the roof integrity and create a potential water infiltration point. Based on the date of the original building construction there is the potential for some of the roofing materials to contain asbestos. It is recommended that prior to any future roof renovation projects, roof cores (full depth roof membrane samples) be collected and analyzed in order to confirm the absence of asbestos.

3.1.3 Building C – Boat House

A total of ten (10) bulk material samples were collected from suspected asbestos-containing materials observed in the Boat House. Laboratory analysis of these materials did not identify any asbestos content. The roof of the Boat House was reportedly replaced (in its entirety) within the last 10 years and is therefore presumed to not contain asbestos, therefore, roofing material samples were not collected.

3.1.4 Building D – Helicopter Hangar

A total of twenty-nine (29) bulk material samples were collected from suspected asbestos-containing materials observed in the Helicopter Hangar. Table 3-3 summarizes only those materials identified to be asbestos-containing materials along with recommended remedial actions for each respective material. In accordance with the requirements of O. Reg. 278/05, homogenous materials (i.e. materials uniform in color and texture) must be considered ACM if any sample is identified to have an asbestos concentration of 0.5% or greater.

Table 3-3 Asbestos-Containing Materials – Helicopter Hangar

Material	Location ¹	Description	Assessment ¹	Action ²	Photo ³
Vinyl Floor Tile (VFT-1) (including mastic)	Mechanical Area on West Side of Building	Approximately 200 square feet (19 square metres) of VFT-1 (12"x12"; red) and underlying mastic	<ul style="list-style-type: none"> - Sample ID: HH-VFT1-A to C - Concentration: 29.3% Chrysotile - Material: Non-Friable - Accessibility: A (Areas of the building within reach, from ground level, of all building users. Activities of the building users may result in disturbance of ACM.) - Condition: Poor 	<p style="text-align: center;">Action 3 ACM removal required for compliance.</p> <p>Prior to demolition/construction activities, remove these materials following Type 1 abatement procedures – if the material is wetted and the work is done using non-powered hand tools and the mastic is removed using an appropriate solvent.</p> <p>Follow Type 3 abatement procedures – if mastic is removed via sanding or grinding with power tools.</p>	22

1. For sample ID and concentration levels refer to **Appendix A** – Laboratory Certificates of Analysis.
2. Actions recommended are in accordance with O. Reg. 278/05 and with PWGSC Departmental Policy DP 057 Regarding Asbestos Management. Refer to **Appendix C** for Action definitions. Refer to O. Reg. 278/05 for Type 1, 2 & 3 procedures.
3. For photographs taken during the survey refer to **Appendix B** – Project Photographs.

3.1.5 Building E – Heated Storage Building

A total of sixteen (16) bulk material samples were collected from suspected asbestos-containing materials observed in the Heated Storage Building. Laboratory analysis of these materials did not identify any asbestos content.

WSP's surveyors were informed that access to the roof of the Heated Storage Building is only possible through the use of a large mechanical lift, which was not available on site. Therefore the roof was inaccessible, and roofing materials were not sampled during this assessment. Based on the date of the original building construction there is the potential for some of the roofing materials to contain asbestos. WSP cannot confirm the absence of asbestos in all the roofing materials as no roof-core samples were able to be collected as part of this survey. It is recommended that roof cores (full depth roof membrane samples) be collected and analyzed for asbestos immediately prior to the timing of the roof replacement.

3.1.6 Building F – Metal-Clad Storage Building

No suspect asbestos-containing materials were observed within the Metal Clad Storage Building.

3.2 Non-Asbestos Bulk Sample Summary

Table 3-4 summarizes the results of bulk material samples which had either no detectable concentrations of asbestos, or had asbestos concentrations less than the regulated threshold (0.5%) and therefore can be considered as “non-asbestos” in accordance with O. Reg. 278/05.

Table 3-4 Summary of Bulk Samples Identified as “Non-Asbestos” at CCGB Prescott

Building	Material	Description	Sample ID ¹
Main Building	Drywall Joint Compound	Drywall Joint Compound from Walls	MB-DWJC-A to G
	Fire Stop	Fire Stop Material at Pipe Penetrations	MB-2-FS1-A to C
	Acoustic Ceiling Tile 1	2'X4' Ceiling Tile with Small Fissures and Pinholes	MB-2-ACT1-A to C
	Pipe Fitting Insulation 1	Mechanical Insulation on Pipe Elbows	MB-9-FIT-A to C
	Vinyl Floor Tile 2	Beige 12"X12" Vinyl Floor Tile	MB-12-VFT2-A to C
	Vinyl Floor Tile 3	Grey 12"X12" Vinyl Floor Tile	MB-13-VFT3-A to C
	Vinyl Floor Tile 4	Blue With White Fleck 12"X12" Vinyl Floor Tile	MB-13-VFT4-A to C
	Acoustic Ceiling Tile 3	2'X4' Ceiling Tile with Dense Pinholes	MB-16-ACT3-A to C
	Acoustic Ceiling Tile 2	2'X2' Ceiling Tile	MB-18-ACT1-A to C
	Acoustic Ceiling Tile 4	2'X4' Ceiling Tile with Fissures	MB-22-ACT4-A to C
	Valve Insulation	Mechanical Valve Insulation	MB-29-V1-A to C
	Pipe Fitting Insulation 2	Mechanical Insulation on Pipe Elbows	MB-9-FIT2-A to C
	Vinyl Floor Tile 5	White with Fleck 12"X12" Vinyl Floor Tile	MB-31-VFT5-A to C
	Acoustic Ceiling Tile 5	2'X4' Ceiling Tile with Pinholes and Fissures	MB-200-ACT5-A to C
	Mechanical Caulking	Caulking on Mechanical Equipment on Roof	MB-EXT-CAULK-A to C
Roofing fabric	Roof Ballast Filter Fabric/Cloth	MB-EXT-RM-A to C	
Fire Stop 2	Fire Stop Material at Pipe Penetrations	MB-2-FS2-A to C	
Buoy Maintenance Building	Exterior Caulking	Caulking on Exterior Windows and Doors	BMR-CAULK-A to C
	Equipment Insulation	Insulation on Large Paint Equipment	BMR-EQUINS-A to C
	Vinyl Floor Tile 2	Blue with White Fleck 12"X12" Vinyl Floor Tile	BMR-VFT2-A to C
	Drywall Joint Compound	Drywall Joint Compound from Walls	BMR-DWJC-A to G
	Acoustic Ceiling Tile 1	2'X4' Ceiling Tile with Pinholes	BMR-ACT1-A to C
Boat House	Exterior Caulking	Caulking on Exterior Windows and Doors	BH-CAULK-A to C

Building	Material	Description	Sample ID ¹
	Drywall Joint Compound	Drywall Joint Compound from Walls	BH-DWJC-A to G
Helicopter Hangar	Drywall Joint Compound	Drywall Joint Compound from Walls	HH-DWJC-A to G
	Linoleum	Linoleum Flooring in Washroom	HH-LIN-A to C
	Acoustic Ceiling Tile 1	2'X2' Ceiling Tile	HH-ACT1-A to C
	Acoustic Ceiling Tile 2	1'X1' Ceiling Tile	HH-ACT2-A to C
	Vinyl Floor Tile 1	Blue 12"X12" Vinyl Floor Tile	HH-VFT1-A to C
	Vinyl Floor Tile 2	Grey Blue 12"X12" Vinyl Floor Tile	HH-VFT2-A to C
	Vinyl Floor Tile 3	Aqua 12"X12" Vinyl Floor Tile	HH-VFT3-A to C
Heated Storage Building	Vinyl Floor Tile 4	Black 12"X12" Vinyl Floor Tile	HH-VFT4-A to C
	Acoustic Ceiling Tile 1	2'X4' Ceiling Tile	HS-ACT1-A to C
	Acoustic Ceiling Tile 2	1'X1' Ceiling Tile	HS-ACT2-A to C
	Vinyl Floor Tile 1	Blue 12"X12" Vinyl Floor Tile	HS-VFT1-A to C
	Drywall Joint Compound	Drywall Joint Compound from Walls	HS-DWJC-A to G

1. For sample ID and concentration levels refer to **Appendix A** – Laboratory Certificates of Analysis.

3.3 Lead-Containing Paints

A total of thirty eight (38) bulk paint (paint chip) samples were collected from distinct paint colours/applications observed within the six (6) building structures surveyed. For the purposes of this assignment, paint applications with lead concentrations greater than or equal to 90ppm (0.009% by wt) are considered to be “lead-containing” in accordance with the Federal *Surface Coating Materials Regulation (SOR/2005-109)*.

Table 3-5 summarizes only those paints identified with lead concentrations greater than or equal to 90ppm.

Table 3-5 Summary of Paints with Lead Concentrations Greater than 90ppm

Building	Material	Location	Description	Assessment ¹	Action ²
Main Building	Cream Paint	Primary Undercoat Throughout Entire Building	Cream colour paint on most walls throughout building	- Sample ID: MB-Pb2 - Concentration: 160 ppm - Condition: Good	Institute routine surveillance of the paint. It is recommended that areas of lead-containing paints observed to be in fair condition (minor cracking/chipping/flaking), be encapsulated with a fresh coat of paint in order to reduce the likelihood of inhalation,
	Beige Paint	Primary Undercoat Throughout Entire Building	Beige colour paint on most walls throughout building	- Sample ID: MB-Pb3 - Concentration: 130 ppm - Condition: Good	
	Yellow Paint	Exterior Bollards Throughout Site	Yellow Bollard Paint	- Sample ID: MB-Pb7 - Concentration: 42,000 ppm - Condition: Poor	
	Brown Paint	Exterior Paint	Exterior of building	- Sample ID: MB-Pb8 - Concentration: 100 ppm - Condition: Fair	
Buoy Maintenance Building	Cream Paint	Primary Undercoat Throughout Entire Building	Cream colour paint on most walls throughout building	- Sample ID: BMR-Pb1 - Concentration: 130 ppm - Condition: Fair	
	Brown Paint	Exterior Paint	Exterior of building	- Sample ID: MB-Pb3 - Concentration: 2600 ppm - Condition: Good	

Building	Material	Location	Description	Assessment ¹	Action ²
Boat House	Cream Paint	Interior Paint	Interior Walls of Main Floor	- Sample ID: BH-Pb1 - Concentration: 100 ppm - Condition: Fair	<p>ingestion, and dermal absorption of lead.</p> <p>It is recommended that areas of lead-containing paints observed to be in poor condition (severe cracking/chipping/flaking and debris), be removed by a professional environmental contractor.</p> <p>In general, the following procedures are recommended when removing lead-containing materials, coatings and paint applications:</p> <ul style="list-style-type: none"> - Follow Type 1 – if the coating is to be removed with a chemical gel or paste; - Follow Type 2a – if the coating is to be removed by scraping or sanding using non-powered hand tools, or manual demolition of lead-painted building components by striking with sledgehammer or similar tool; - Follow Type 3a – if the coating is to be removed using power tools; or, - Follow Type 3b – if the coating is to be removed by abrasive blasting.
	Grey Paint	Interior Paint	Floor Paint of Main Area	- Sample ID: BH-Pb2 - Concentration: 140 ppm - Condition: Fair	
	Red Paint	Interior Paint	Floor Paint of Boat Area	- Sample ID: BH-Pb3 - Concentration: 3,300 ppm - Condition: Fair	
	Beige Paint	Exterior	Exterior Walls	- Sample ID: BH-Pb4 - Concentration: 18,000 ppm - Condition: Good	
	Green Paint	Exterior	Exterior Windows	- Sample ID: BH-Pb5 - Concentration: 320,000 ppm - Condition: Good	
	Blue Paint	Interior	Interior Windows	- Sample ID: BH-Pb6 - Concentration: 13,000 ppm - Condition: Good	
Helicopter Hangar	Cream Paint	Interior Hangar	Interior Walls	- Sample ID: HH-Pb1 - Concentration: 1,000 ppm - Condition: Good	
	Dark Green Paint	Interior Hangar	Floor Paint of Hangar	- Sample ID: HH-Pb3 - Concentration: 8,000 ppm - Condition: Good	
	Light Brown Paint	Exterior	Exterior Walls	- Sample ID: HH-Pb6 - Concentration: 940 ppm - Condition: Good	
	Brown Floor Paint	Interior North Section of Building	Floor Paint of Mechanical Room	- Sample ID: HH-Pb8 - Concentration: 2,300 ppm - Condition: Good	
Heated Storage Building	Red Paint	Exterior	Exterior Doors and Windows	- Sample ID: HS-EXT-Pb1 - Concentration: 32,000 ppm - Condition: Good	
	Blue Paint	Interior	Ceiling, Walls, and Pillars	- Sample ID: HS-Pb2 - Concentration: 2,100 ppm - Condition: Good	
	Brown Paint	Interior	Doors and Windows	- Sample ID: HS-Pb3 - Concentration: 2,000 ppm - Condition: Good	
	White Paint	Interior	Office Walls and Ceilings	- Sample ID: HS-Pb4 - Concentration: 600 ppm - Condition: Good	
Metal-clad Storage Building	Red Paint	Exterior	Doors	- Sample ID: MC-Pb1 - Concentration: 3,100 ppm - Condition: Fair	

Building	Material	Location	Description	Assessment ¹	Action ²
	White Paint	Interior	Office Walls and Ceiling	- Sample ID: MC-Pb2 - Concentration: 1,100 ppm - Condition: Fair	
	Light Green Paint	Interior	Bay Walls	- Sample ID: MC-Pb3 - Concentration: 5,800 ppm - Condition: Fair	
	Dark Green Paint	Interior	Bay Walls	- Sample ID: MC-Pb4 - Concentration: 38,000 ppm - Condition: Fair	
	Grey Paint	Interior	Bay Walls	- Sample ID: MC-Pb5 - Concentration: 190 ppm - Condition: Fair	

1. For sample ID and concentration levels refer to **Appendix A** – Laboratory Certificates of Analysis.

2. Actions recommended are in compliance with Ontario and federal regulations.

3.4 Lead Bulk Sample Summary

Table 3-6 summarizes bulk paint samples which had no detectable lead concentrations, or had lead concentrations less than 90ppm (0.009% by wt) and are therefore not classified as “lead-containing” in accordance with the *Surface Coatings Materials Regulations (SOR/2005-109)*.

Table 3-6 Summary of Non Lead-Containing Materials

Building	Material	Location/Description	Content	Sample ID ¹
Main Building	Beige Paint	Basement Mechanical Room	<90 ppm	MB-Pb1
	Blue Paint	Telecommunications Storage Walls	<90 ppm	MB-Pb4
	White Paint	White Wall Paint Throughout Building	<90 ppm	MB-Pb5
	Grey Paint	Top Floor Wall Paint	<90 ppm	MB-Pb6
Buoy Maintenance Building	Beige Paint	Beige Wall Paint in Locker Area	<90 ppm	BMR-Pb2
Helicopter Hangar	Lime Green Paint	Hangar Floor Paint	<90 ppm	HH-Pb2
	White Paint	Office Area Wall Paint	<90 ppm	HH-Pb4
	Dark Brown Paint	Exterior Door and Window Paint	<90 ppm	HH-Pb5
	Beige Wall Paint	North Section Main Floor Wall Paint	<90 ppm	HH-Pb7
	Light Blue Paint	North Section 2 nd Floor Wall Paint	<90 ppm	HH-Pb9
	Grey Paint	North Section 2 nd Floor Wall Paint	<90 ppm	HH-Pb10
	Aqua Paint	North Section 2 nd Floor Wall Paint	<90 ppm	HH-Pb11
Black Paint	North Section 2 nd Floor Wall Paint	<90 ppm	HH-Pb12	

1. For sample ID and concentration levels refer to **Appendix A** – Laboratory Certificates of Analysis.

3.5 Ozone-Depleting Substances (ODS)

Certain chemicals are recognized as ozone-depleting substances (ODS) because they breakdown in the stratosphere and release chlorine or bromine, which destroy the stratospheric ozone layer. Most of these substances are also greenhouse gases. Ozone-depleting substances are used as foam blowing agents, solvents, fire extinguishing agents and refrigerants for air conditioning and refrigeration applications.

Fire extinguishers, refrigerators, freezers, and air conditioning units were observed throughout the facility. These pieces of equipment have the potential to contain ozone-depleting substances. Decommissioning and/or removal and disposal of any equipment suspected or confirmed to contain ODS must comply with Federal (FHR 2003), Provincial (O. Reg. 189/94) and Waste Management Regulations (R.R.O. 1990, Regulation 347).

3.6 Fuel Storage

A visual inspection of the facility revealed the presence of a number of storage tanks/barrels containing diesel and Jet A-1 fuel. It is our understanding that these tanks and barrels are used to supply mechanical equipment and vehicles with the appropriate fuel. It appears unlikely that any of these fuel storage containers will be impacted by any of the planned work.

3.7 Other Designated Substances and Hazardous Materials

Table 3-7 summarizes the remaining Designated Substances and hazardous materials included in the DSHMS, and provides observations and appropriate actions if identified at CCGB Prescott.

Table 3-7 Other Designated Substances and Hazardous Materials identified at CCGB Prescott

Material	Description	Action
Mercury	Mercury vapour may be present within fluorescent light tubes observed during the survey. Mercury-containing thermostats were confirmed to be present in the Main Building, Buoy Maintenance Building, Boat House, Helicopter Hangar, and Heated Storage Building.	Removal and disposal of mercury-containing equipment is required prior to demolition activities that may disturb the equipment. The handling, transport, and disposal of mercury containing equipment must follow all applicable provincial and federal regulations and guidelines pertaining to Mercury, including the requirements of O. Reg. 490/09 and the requirements of <i>Reg. 347 – General – Waste Management</i> .
PCBs	Fluorescent light fixtures were observed during the survey. The majority of the light ballasts were observed to be the T12 style and as such have the potential to contain PCB's.	When decommissioned, verify the PCB content of each fluorescent light ballast as per the <i>Environment Canada</i> publication "Identification of Lamp Ballasts Containing PCBs", 1991. Handle, store and dispose of PCB-containing ballasts in accordance with <i>Federal PCB Regulation SOR/92-507</i> and <i>R.R.O. 1990 – Reg. 347</i> .
Silica	Building components containing silica such as concrete floor slabs and walls were observed during the survey.	Work that may disturb silica-containing materials should follow all applicable provincial and federal regulations and guidelines pertaining to Silica including the requirements of <i>O. Reg. 490/09</i> .
Mould	Although no visible mould was observed during the survey, areas of slight water staining/damage were observed in various areas. While, none of this water damage was significant: If left uncorrected, water damage could result in more significant concerns.	It is recommended that the cause of the water damage/staining in these areas be determined and rectified as soon as possible, as these conditions are conducive to mould growth.

Material	Description	Action
Benzene	Benzene is likely a component in diesel, fuel, and oil in tanks, drums, and storage containers observed at CCGB Prescott.	Storage containers, tanks and drums were observed to be in good condition with no visible signs of damage or leakage. It is recommended that these containers be routinely maintained and monitored for any evidence of possible release. Work that may result in exposure to Benzene should follow all applicable provincial and federal regulations and guidelines pertaining to Benzene including the requirements of <i>O. Reg. 490/09</i> .
Acrylonitrile	Acrylonitrile was not observed in the area of work during the time of the survey.	No action required.
Arsenic	Arsenic was not observed in the area of work during the time of the survey.	No action required.
Coke Oven Emissions	Coke oven emissions were not observed in the area of work during the time of the survey.	No action required.
Ethylene Oxide	Ethylene oxide was not observed in the area of work during the time of the survey.	No action required.
Isocyanates	Isocyanates were not observed in the area of work during the time of the survey.	No action required.
Vinyl Chloride	Vinyl chloride was not observed in the area of work during the time of the survey.	No action required.

4. Limitations

This report describes the asbestos-containing materials, Designated Substances and hazardous materials observed by the surveyors at CCGB Prescott. The survey assessed only those structures, finishes and permanent equipment identified in this report. The assessment does not define contaminants that may or may not be present in the soil or air around the site.

The field observations and laboratory analyses presented herein are considered sufficient in detail and scope to form a general inventory of Designated Substances on the site. The findings and conclusions contained herein have been prepared in accordance with generally accepted methods. It is possible that Designated Substances or hazardous materials may exist which could not be reasonably identified within the scope of the assessment or which were not apparent during the site visit. WSP Canada Inc. cannot warrant or guarantee that the information provided herein is absolutely complete or accurate beyond the observations and findings reported during the site visit.

Appendix A

Laboratory Certificates of Analysis



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EMSL Canada Order 551401752
Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

Attn: Marc St. Germain Phone: (514) 386-1481
WSP Canada, Inc. Fax: (905) 475-5994
600 Cochrane Drive Collected:
Suite 500 Received: 3/14/2014
Markham, ON L3R 5K3 Analyzed: 3/17/2014
Proj: 141-14670-00 PRESCOTT

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

Client Sample ID: MB-DWJC-A **Lab Sample ID:** 551401752-0001

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: MB-DWJC-B **Lab Sample ID:** 551401752-0002

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: MB-DWJC-C **Lab Sample ID:** 551401752-0003

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: MB-DWJC-D **Lab Sample ID:** 551401752-0004

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: MB-DWJC-E **Lab Sample ID:** 551401752-0005

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: MB-DWJC-F **Lab Sample ID:** 551401752-0006

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: MB-DWJC-G **Lab Sample ID:** 551401752-0007

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	



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Project ID:

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

Client Sample ID: MB-2-FS1-A **Lab Sample ID:** 551401752-0008
Sample Description: FIRE STOP #1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/Yellow	70%	30%	None Detected	

Client Sample ID: MB-2-FS1-B **Lab Sample ID:** 551401752-0009
Sample Description: FIRE STOP #1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	75%	25%	None Detected	

Client Sample ID: MB-2-FS1-C **Lab Sample ID:** 551401752-0010
Sample Description: FIRE STOP #1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	80%	20%	None Detected	

Client Sample ID: MB-2-ACT1-A **Lab Sample ID:** 551401752-0011
Sample Description: ACOUST CEILING TILE #1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-2-ACT1-B **Lab Sample ID:** 551401752-0012
Sample Description: ACOUST CEILING TILE #1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-2-ACT1-C **Lab Sample ID:** 551401752-0013
Sample Description: ACOUST CEILING TILE #1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Variou	70%	30%	None Detected	

Client Sample ID: MB-9-FIT-A **Lab Sample ID:** 551401752-0014
Sample Description: FITTING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Brown/Various	25%	75%	None Detected	Vermiculite present in sample

Client Sample ID: MB-9-FIT-B **Lab Sample ID:** 551401752-0015
Sample Description: FITTING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/Various	45%	55%	None Detected	



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Client Sample ID: MB-9-FIT-C **Lab Sample ID:** 551401752-0016
Sample Description: FITTING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/Tan/Various	35%	65%	None Detected	

Client Sample ID: MB-12-VFT1-A **Lab Sample ID:** 551401752-0017
Sample Description: VFT1-BLUE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	80.1%	19.9% Chrysotile	

Client Sample ID: MB-12-VFT1-B **Lab Sample ID:** 551401752-0018
Sample Description: VFT1-BLUE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014				Positive Stop (Not Analyzed)	

Client Sample ID: MB-12-VFT1-C **Lab Sample ID:** 551401752-0019
Sample Description: VFT1-BLUE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014				Positive Stop (Not Analyzed)	

Client Sample ID: MB-12-VFT2-A **Lab Sample ID:** 551401752-0020
Sample Description: VFT2-BEIGE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Beige	0.0%	100%	None Detected	

Client Sample ID: MB-12-VFT2-B **Lab Sample ID:** 551401752-0021
Sample Description: VFT2-BEIGE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Beige	0.0%	100%	None Detected	

Client Sample ID: MB-12-VFT2-C **Lab Sample ID:** 551401752-0022
Sample Description: VFT2-BEIGE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Beige	0.0%	100%	None Detected	

Client Sample ID: MB-13-VFT3-A **Lab Sample ID:** 551401752-0023
Sample Description: VFT3-GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Beige	0.0%	100%	None Detected	



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Project ID:

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Client Sample ID: MB-13-VFT3-B **Lab Sample ID:** 551401752-0024
Sample Description: VFT3-GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Beige	0.0%	100%	None Detected	

Client Sample ID: MB-13-VFT3-C **Lab Sample ID:** 551401752-0025
Sample Description: VFT3-GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Beige	0.0%	100%	None Detected	

Client Sample ID: MB-14-VFT4-A **Lab Sample ID:** 551401752-0026
Sample Description: VFT4-BLUE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: MB-14-VFT4-B **Lab Sample ID:** 551401752-0027
Sample Description: VFT4-BLUE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: MB-14-VFT4-C **Lab Sample ID:** 551401752-0028
Sample Description: VFT4-BLUE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: MB-16-ACT3-A **Lab Sample ID:** 551401752-0029
Sample Description: ACOUST CEILING TILE #3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-16-ACT3-B **Lab Sample ID:** 551401752-0030
Sample Description: ACOUST CEILING TILE #3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-16-ACT3-C **Lab Sample ID:** 551401752-0031
Sample Description: ACOUST CEILING TILE #3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Various	70%	30%	None Detected	



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Client Sample ID: MB-18-ACT2-A **Lab Sample ID:** 551401752-0032
Sample Description: ACOUST CEILING TILE #2

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-18-ACT2-B **Lab Sample ID:** 551401752-0033
Sample Description: ACOUST CEILING TILE #2

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-18-ACT2-C **Lab Sample ID:** 551401752-0034
Sample Description: ACOUST CEILING TILE #2

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Various	70%	30%	None Detected	

Client Sample ID: MB-22-ACT4-A **Lab Sample ID:** 551401752-0035
Sample Description: ACOUST CEILING TILE #4

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-22-ACT4-B **Lab Sample ID:** 551401752-0036
Sample Description: ACOUST CEILING TILE #4

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-22-ACT4-C **Lab Sample ID:** 551401752-0037
Sample Description: ACOUST CEILING TILE #4

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Various	70%	30%	None Detected	

Client Sample ID: MB-29-VI-A **Lab Sample ID:** 551401752-0038
Sample Description: VALUE INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
400 PLM Pt Ct	3/17/2014	Gray	0%	100%	<0.25% Chrysotile	

Client Sample ID: MB-29-VI-B **Lab Sample ID:** 551401752-0039
Sample Description: VALUE INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
400 PLM Pt Ct	3/17/2014	Gray	0%	100%	<0.25% Chrysotile	



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EMSL Canada Order 551401752
Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: MB-29-VI-C **Lab Sample ID:** 551401752-0040
Sample Description: VALUE INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/Tan/Various	15%	85%	None Detected	Vermiculite Present

Client Sample ID: MB-29-FIT2-A **Lab Sample ID:** 551401752-0041
Sample Description: FITTING INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
400 PLM Pt Ct	3/17/2014	Gray	0%	100%	<0.25% Chrysotile	

Client Sample ID: MB-29-FIT2-B **Lab Sample ID:** 551401752-0042
Sample Description: FITTING INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
400 PLM Pt Ct	3/17/2014	Gray	0%	99.75%	0.25% Chrysotile	

Client Sample ID: MB-29-FIT2-C **Lab Sample ID:** 551401752-0043
Sample Description: FITTING INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Tan/White/Various	15%	85%	None Detected	Vermiculite Present

Client Sample ID: MB-31-VFT5-A **Lab Sample ID:** 551401752-0044
Sample Description: VFT5-WHITE WITH FLECK

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	White	0.0%	100%	None Detected	

Client Sample ID: MB-31-VFT5-B **Lab Sample ID:** 551401752-0045
Sample Description: VFT5-WHITE WITH FLECK

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	White	0.0%	100%	None Detected	

Client Sample ID: MB-31-VFT5-C **Lab Sample ID:** 551401752-0046
Sample Description: VFT5-WHITE WITH FLECK

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	White	0.0%	100%	None Detected	

Client Sample ID: MB-200-ACT5-A **Lab Sample ID:** 551401752-0047
Sample Description: ACOUST CEILING TILE #5

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	



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Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: MB-200-ACT5-B **Lab Sample ID:** 551401752-0048
Sample Description: ACOUST CEILING TILE #5

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: MB-200-ACT5-C **Lab Sample ID:** 551401752-0049
Sample Description: ACOUST CEILING TILE #5

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Variou	70%	30%	None Detected	

Client Sample ID: MB-EXT-CAULK-A **Lab Sample ID:** 551401752-0050
Sample Description: CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: MB-EXT-CAULK-B **Lab Sample ID:** 551401752-0051
Sample Description: CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: MB-EXT-CAULK-C **Lab Sample ID:** 551401752-0052
Sample Description: CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: MB-EXT-RM-A **Lab Sample ID:** 551401752-0053
Sample Description: ROOF MEMBRANE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Black	70%	30%	None Detected	

Client Sample ID: MB-EXT-RM-B **Lab Sample ID:** 551401752-0054
Sample Description: ROOF MEMBRANE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Black	75%	25%	None Detected	

Client Sample ID: MB-EXT-RM-C **Lab Sample ID:** 551401752-0055
Sample Description: ROOF MEMBRANE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Variou	85%	15%	None Detected	



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Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: MB-201-FS2-A **Lab Sample ID:** 551401752-0056
Sample Description: FIRE STOP 2

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: MB-201-FS2-B **Lab Sample ID:** 551401752-0057
Sample Description: FIRE STOP 2

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: MB-201-FS2-C **Lab Sample ID:** 551401752-0058
Sample Description: FIRE STOP 2

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Analyst(s)

Arabee Sathiasaelan	PLM	(24)
	400 PLM Pt Ct	(4)
Kevin Pang	PLM	(15)
Matthew Davis	TEM Grav. Reduction	(13)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

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Collected:
Received: 3/14/2014
Analyzed: 3/17/2014

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

Client Sample ID: BMR-CAULK-A **Lab Sample ID:** 551401755-0001
Sample Description: EXTERIOR CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: BMR-CAULK-B **Lab Sample ID:** 551401755-0002
Sample Description: EXTERIOR CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	2%	98%	None Detected	

Client Sample ID: BMR-CAULK-C **Lab Sample ID:** 551401755-0003
Sample Description: EXTERIOR CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	1%	99%	None Detected	

Client Sample ID: BMR-EQUINS-A **Lab Sample ID:** 551401755-0004
Sample Description: EQUIPMENT INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Red/Various/Black	0%	100%	None Detected	

Client Sample ID: BMR-EQUINS-B **Lab Sample ID:** 551401755-0005
Sample Description: EQUIPMENT INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Red/Various/Black	0%	100%	None Detected	

Client Sample ID: BMR-EQUINS-C **Lab Sample ID:** 551401755-0006
Sample Description: EQUIPMENT INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Red/Various/Black	0%	100%	None Detected	

Client Sample ID: BMR-VFT1-A **Lab Sample ID:** 551401755-0007
Sample Description: GREY VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Gray	0.0%	100%	None Detected	



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EMSL Canada Order 551401755
Customer ID: 55MACV62
Customer PO: 141-14607-00
Project ID:

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

Client Sample ID: BMR-VFT1-B **Lab Sample ID:** 551401755-0008
Sample Description: GREY VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Gray	0.0%	100%	None Detected	

Client Sample ID: BMR-VFT1-C **Lab Sample ID:** 551401755-0009
Sample Description: GREY VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Gray	0.0%	85.8%	14.2% Chrysotile	

Client Sample ID: BMR-VFT2-A **Lab Sample ID:** 551401755-0010
Sample Description: BLUE VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: BMR-VFT2-B **Lab Sample ID:** 551401755-0011
Sample Description: BLUE VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: BMR-VFT2-C **Lab Sample ID:** 551401755-0012
Sample Description: BLUE VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: BMR-VFT3-A **Lab Sample ID:** 551401755-0013
Sample Description: BLUE WITH FLECK VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: BMR-VFT3-B **Lab Sample ID:** 551401755-0014
Sample Description: BLUE WITH FLECK VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	81.6%	18.4% Chrysotile	

Client Sample ID: BMR-VFT3-C **Lab Sample ID:** 551401755-0015
Sample Description: BLUE WITH FLECK VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014					Positive Stop (Not Analyzed)



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EMSL Canada Order 551401755
Customer ID: 55MACV62
Customer PO: 141-14607-00
Project ID:

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

Client Sample ID: BMR-DWJC-A **Lab Sample ID:** 551401755-0016
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: BMR-DWJC-B **Lab Sample ID:** 551401755-0017
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: BMR-DWJC-C **Lab Sample ID:** 551401755-0018
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: BMR-DWJC-D **Lab Sample ID:** 551401755-0019
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: BMR-DWJC-E **Lab Sample ID:** 551401755-0020
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: BMR-DWJC-F **Lab Sample ID:** 551401755-0021
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: BMR-DWJC-G **Lab Sample ID:** 551401755-0022
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: BMR-ACT1-A **Lab Sample ID:** 551401755-0023
Sample Description: 2X4 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Variou	75%	25%	None Detected	



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Customer PO: 141-14607-00
Project ID:

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

Client Sample ID: BMR-ACT1-B **Lab Sample ID:** 551401755-0024
Sample Description: 2X4 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Various	80%	20%	None Detected	

Client Sample ID: BMR-ACT1-C **Lab Sample ID:** 551401755-0025
Sample Description: 2X4 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Analyst(s)

Arabee Sathiasaelan	PLM	(6)
Kevin Pang	PLM	(10)
Matthew Davis	TEM Grav. Reduction	(8)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

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Fax: (905) 475-5994
Collected:
Received: 3/14/2014
Analyzed: 3/17/2014

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

Client Sample ID: BH-CAULK-A **Lab Sample ID:** 551401757-0001
Sample Description: EXTERIOR CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Brown	0%	100%	None Detected	

Client Sample ID: BH-CAULK-B **Lab Sample ID:** 551401757-0002
Sample Description: EXTERIOR CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Brown	0%	100%	None Detected	

Client Sample ID: BH-CAULK-C **Lab Sample ID:** 551401757-0003
Sample Description: EXTERIOR CAULKING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Brown	0%	100%	None Detected	

Client Sample ID: BH-DWJC-A **Lab Sample ID:** 551401757-0004
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: BH-DWJC-B **Lab Sample ID:** 551401757-0005
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: BH-DWJC-C **Lab Sample ID:** 551401757-0006
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: BH-DWJC-D **Lab Sample ID:** 551401757-0007
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	



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Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: BH-DWJC-E **Lab Sample ID:** 551401757-0008
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: BH-DWJC-F **Lab Sample ID:** 551401757-0009
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: BH-DWJC-G **Lab Sample ID:** 551401757-0010
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Analyst(s)

Arabee Sathiasaelan PLM (4)
Matthew Davis PLM (6)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

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Fax: (905) 475-5994
Collected:
Received: 3/14/2014
Analyzed: 3/17/2014

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

Client Sample ID: HH-DWJC-A **Lab Sample ID:** 551401753-0001
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: HH-DWJC-B **Lab Sample ID:** 551401753-0002
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: HH-DWJC-C **Lab Sample ID:** 551401753-0003
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: HH-DWJC-D **Lab Sample ID:** 551401753-0004
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: HH-DWJC-E **Lab Sample ID:** 551401753-0005
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: HH-DWJC-F **Lab Sample ID:** 551401753-0006
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	

Client Sample ID: HH-DWJC-G **Lab Sample ID:** 551401753-0007
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray	0%	100%	None Detected	



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EMSL Canada Order 551401753
Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: HH-LIN-A **Lab Sample ID:** 551401753-0008
Sample Description: LINOLEUM

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/Tan	35%	65%	None Detected	

Client Sample ID: HH-LIN-B **Lab Sample ID:** 551401753-0009
Sample Description: LINOLEUM

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/Tan/Various	35%	65%	None Detected	

Client Sample ID: HH-LIN-C **Lab Sample ID:** 551401753-0010
Sample Description: LINOLEUM

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/Various	23%	77%	None Detected	

Client Sample ID: HH-ACT1-A **Lab Sample ID:** 551401753-0011
Sample Description: 2X2 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Various	70%	30%	None Detected	

Client Sample ID: HH-ACT1-B **Lab Sample ID:** 551401753-0012
Sample Description: 2X2 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Various	80%	20%	None Detected	

Client Sample ID: HH-ACT1-C **Lab Sample ID:** 551401753-0013
Sample Description: 2X2 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: HH-ACT2-A **Lab Sample ID:** 551401753-0014
Sample Description: 1X1 WASHROOM CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Tan/White	80%	20%	None Detected	

Client Sample ID: HH-ACT2-B **Lab Sample ID:** 551401753-0015
Sample Description: 1X1 WASHROOM CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Tan/White	85%	15%	None Detected	



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EMSL Canada Order 551401753
Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: HH-ACT2-C **Lab Sample ID:** 551401753-0016
Sample Description: 1X1 WASHROOM CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Tan/White	90%	10%	None Detected	

Client Sample ID: HH-VFT1-A **Lab Sample ID:** 551401753-0017
Sample Description: RED MECH ROOM FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Red	0.0%	70.7%	29.3% Chrysotile	

Client Sample ID: HH-VFT1-B **Lab Sample ID:** 551401753-0018
Sample Description: RED MECH ROOM FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014		Positive Stop (Not Analyzed)			

Client Sample ID: HH-VFT1-C **Lab Sample ID:** 551401753-0019
Sample Description: RED MECH ROOM FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014		Positive Stop (Not Analyzed)			

Client Sample ID: HH-VFT2-A **Lab Sample ID:** 551401753-0020
Sample Description: BLUE 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	<0.25% Chrysotile	

Client Sample ID: HH-VFT2-B **Lab Sample ID:** 551401753-0021
Sample Description: BLUE 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HH-VFT2-C **Lab Sample ID:** 551401753-0022
Sample Description: BLUE 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HH-VFT3-A **Lab Sample ID:** 551401753-0023
Sample Description: GREY 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Gray	0.0%	100%	None Detected	



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Customer ID: 55MACV62
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Project ID:

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

Client Sample ID: HH-VFT3-B **Lab Sample ID:** 551401753-0024
Sample Description: GREY 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Gray	0.0%	100%	None Detected	

Client Sample ID: HH-VFT3-C **Lab Sample ID:** 551401753-0025
Sample Description: GREY 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Gray	0.0%	100%	None Detected	

Client Sample ID: HH-VFT4-A **Lab Sample ID:** 551401753-0026
Sample Description: AQUA 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HH-VFT4-B **Lab Sample ID:** 551401753-0027
Sample Description: AQUA 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HH-VFT4-C **Lab Sample ID:** 551401753-0028
Sample Description: AQUA 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HH-VFT5-A **Lab Sample ID:** 551401753-0029
Sample Description: BLACK 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Black	0.0%	100%	None Detected	

Client Sample ID: HH-VFT5-B **Lab Sample ID:** 551401753-0030
Sample Description: BLACK 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Black	0.0%	100%	None Detected	

Client Sample ID: HH-VFT5-C **Lab Sample ID:** 551401753-0031
Sample Description: BLACK 12X12 FLOOR TILE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Black	0.0%	100%	None Detected	



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EMSL Canada Order 551401753
Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Analyst(s)

Arabee Sathiaseelan	PLM	(6)
Kevin Pang	PLM	(10)
Matthew Davis	TEM Grav. Reduction	(13)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

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Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 03/17/2014 16:38:44



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EMSL Canada Order 551401748
 Customer ID: 55MACV62
 Customer PO: 141-14670-00
 Project ID:

Attn: Marc St. Germain Phone: (514) 386-1481
 WSP Canada, Inc. Fax: (905) 475-5994
 600 Cochrane Drive Collected:
 Suite 500 Received: 3/14/2014
 Markham, ON L3R 5K3 Analyzed: 3/17/2014
Proj: 141-14670-00 PRESCOTT

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

Client Sample ID: HS-ACT1-A **Lab Sample ID:** 551401748-0001
Sample Description: 2X4 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: HS-ACT1-B **Lab Sample ID:** 551401748-0002
Sample Description: 2X4 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White	80%	20%	None Detected	

Client Sample ID: HS-ACT1-C **Lab Sample ID:** 551401748-0003
Sample Description: 2X4 PINHOLES CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Gray/White/Various	70%	30%	None Detected	

Client Sample ID: HS-VFT1-A **Lab Sample ID:** 551401748-0004
Sample Description: BLUE VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HS-VFT1-B **Lab Sample ID:** 551401748-0005
Sample Description: BLUE VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HS-VFT1-C **Lab Sample ID:** 551401748-0006
Sample Description: BLUE VFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	3/17/2014	Blue	0.0%	100%	None Detected	

Client Sample ID: HS-ACT2-A **Lab Sample ID:** 551401748-0007
Sample Description: 1X1 OFFICE CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Brown/White	90%	10%	None Detected	



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Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: HS-ACT2-B **Lab Sample ID:** 551401748-0008
Sample Description: 1X1 OFFICE CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Brown/White	90%	10%	None Detected	

Client Sample ID: HS-ACT2-C **Lab Sample ID:** 551401748-0009
Sample Description: 1X1 OFFICE CT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	Brown/White	80%	20%	None Detected	

Client Sample ID: HS-DWJC-A **Lab Sample ID:** 551401748-0010
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: HS-DWJC-B **Lab Sample ID:** 551401748-0011
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: HS-DWJC-C **Lab Sample ID:** 551401748-0012
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: HS-DWJC-D **Lab Sample ID:** 551401748-0013
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: HS-DWJC-E **Lab Sample ID:** 551401748-0014
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Client Sample ID: HS-DWJC-F **Lab Sample ID:** 551401748-0015
Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	



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Customer ID: 55MACV62
Customer PO: 141-14670-00
Project ID:

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

Client Sample ID: HS-DWJC-G

Lab Sample ID: 551401748-0016

Sample Description: DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/17/2014	White	0%	100%	None Detected	

Analyst(s)

Arabee Sathiaseelan	PLM	(8)
Kevin Pang	PLM	(5)
Matthew Davis	TEM Grav. Reduction	(3)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

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Initial report from: 03/17/2014 15:46:46



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Phone: (514) 386-1481
Fax: (905) 475-5994
Received: 03/14/14 4:25 PM
Collected:

Project: 141-14670-00

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
MB-4-Pb1 Site: BEIGE PAINT	0001		3/18/2014	<90 ppm
MB-4-Pb2 Site: CREAM PAINT	0002		3/18/2014	160 ppm
MB-4-Pb3 Site: BEIGE PAINT	0003		3/18/2014	130 ppm
MB-4-Pb4 Site: BLUE PAINT	0004		3/18/2014	<90 ppm
MB-4-Pb5 Site: WHITE PAINT	0005		3/18/2014	<90 ppm
MB-4-Pb6 Site: GREY PAINT	0006		3/18/2014	<90 ppm
MB-4-Pb7 Site: YELLOW PAINT	0007		3/18/2014	42000 ppm
MB-4-Pb8 Site: BROWN PAINT	0008		3/18/2014	100 ppm

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise
Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 03/18/2014 11:58:08



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Phone: (514) 386-1481
Fax: (905) 475-5994
Received: 03/14/14 4:19 PM
Collected:

Project: **PRESCOTT COAST GUARD BASE - 141-14607-00**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
BMR-Pb1 Site: CREAM PAINT	0001		3/18/2014	130 ppm
BMR-Pb2 Site: BEIGE PAINT	0002		3/18/2014	<90 ppm
BMR-Pb3 Site: BROWN PAINT	0003		3/18/2014	2600 ppm

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or other approved signatory

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Initial report from 03/18/2014 13:58:35



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Fax: (905) 475-5994
Received: 03/14/14 4:12 PM
Collected:

Project: **PRESCOTT COAST GUARD BASE - 141-14670-00**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
BH-Pb1 Site: CREAM PAINT	0001		3/17/2014	100 ppm
BH-Pb2 Site: GREY PAINT	0002		3/17/2014	140 ppm
BH-Pb3 Site: RED PAINT	0003		3/17/2014	3300 ppm
BH-Pb4 Site: EXT BEIGE PAINT	0004		3/17/2014	18000 ppm
BH-Pb5 Site: EXT GREEN PAINT	0005		3/17/2014	320000 ppm
BH-Pb6 Site: BLUE PAINT	0006		3/17/2014	13000 ppm

Kevin Pang
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Initial report from 03/18/2014 09:58:08



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Phone: (514) 386-1481
Fax: (905) 475-5994
Received: 03/14/14 4:15 PM
Collected:

Project: **PRESCOTT COAST GUARD BASE - 141-14670-00**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
HS-EXT-Pb1 Site: RED PAINT	0001		3/18/2014	32000 ppm
HS-Pb2 Site: BLUE PAINT	0002		3/18/2014	2100 ppm
HS-Pb3 Site: BROWN PAINT	0003		3/18/2014	2000 ppm
HS-Pb4 Site: WHITE PAINT	0004		3/18/2014	600 ppm

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise
Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 03/18/2014 13:59:05



EMSL Canada Inc.

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> torontolab@emsl.com

EMSL Canada Or 551401754
CustomerID: 55MACV62
CustomerPO: 141-14670-00
ProjectID:

Attn: **Marc St. Germain**
WSP Canada, Inc.
600 Cochrane Drive
Suite 500
Markham, ON L3R 5K3

Phone: (514) 386-1481
Fax: (905) 475-5994
Received: 03/14/14 4:21 PM
Collected:

Project: **PRESCOTT COAST GUARD BASE 141-14670-00**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
HH-Pb1 Site: CREAM PAINT	0001		3/17/2014	1000 ppm
HH-Pb2 Site: LIME GREEN PAINT	0002		3/17/2014	<90 ppm
HH-Pb3 Site: DARK GREEN PAINT	0003		3/17/2014	8000 ppm
HH-Pb4 Site: WHITE PAINT	0004		3/17/2014	<90 ppm
HH-Pb5 Site: DARK BROWN PAINT	0005		3/17/2014	<90 ppm
HH-Pb6 Site: LIGHT BROWN PAINT	0006		3/17/2014	940 ppm
HH-Pb7 Site: BEIGE WALL PAINT	0007		3/17/2014	<90 ppm
HH-Pb8 Site: BROWN FLOOR PAINT	0008		3/17/2014	2300 ppm
HH-Pb9 Site: LIGHT BLUE PAINT	0009		3/17/2014	<90 ppm
HH-Pb10 Site: GREY PAINT	0010		3/17/2014	<90 ppm
HH-Pb11 Site: AQUA PAINT	0011		3/17/2014	<90 ppm
HH-Pb12 Site: BLACK PAINT	0012		3/17/2014	<90 ppm

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise
Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 03/18/2014 10:00:42



EMSL Canada Inc.

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8
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<http://www.EMSL.com> torontolab@emsl.com

EMSL Canada Or 551401750
CustomerID: 55MACV62
CustomerPO:
ProjectID:

Attn: **Marc St. Germain**
WSP Canada, Inc.
600 Cochrane Drive
Suite 500
Markham, ON L3R 5K3

Phone: (514) 386-1481
Fax: (905) 475-5994
Received: 03/14/14 4:28 PM
Collected:

Project: **PRESCOTT COAST GUARD BASE**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
MC-Pb1 Site: RED PAINT	0001		3/18/2014	3100 ppm
MC-Pb2 Site: WHITE PAINT	0002		3/18/2014	1100 ppm
MC-Pb3 Site: LIGHT GREEN PAINT	0003		3/18/2014	5800 ppm
MC-Pb4 Site: DARK GREEN PAINT	0004		3/18/2014	38000 ppm
MC-Pb5 Site: GREY PAINT	0005		3/18/2014	190 ppm

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise
Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 03/18/2014 11:55:16

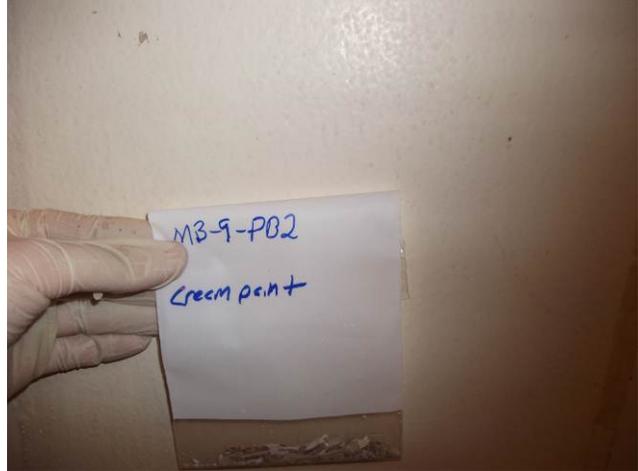
Appendix B

Project Photographs

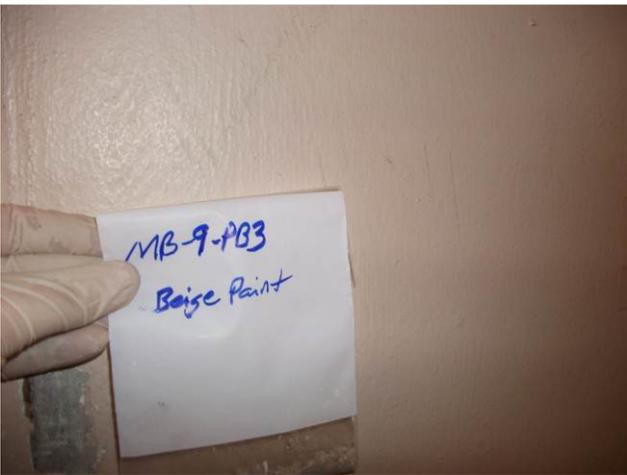
Canada Coast Guard Base
Prescott, Ontario



Photograph 1: Main Building at CCGB Prescott



Photograph 2: Main Building- PB2 – Lead-Based Cream Paint Undercoat Throughout Main Building



Photograph 3: Main Building- PB3 – Lead-Based Beige Paint Undercoat Throughout Main Building



Photograph 4: Main Building – ACM (VFT1) Blue With White Streak 12" X 12" Vinyl Floor Tile

Canada Coast Guard Base
Prescott, Ontario



Photograph 5: Typical Refrigerator Unit Observed in Buildings as CCGB Prescott



Photograph 6: Main Building – Roof Mounted Air Conditioning Unit

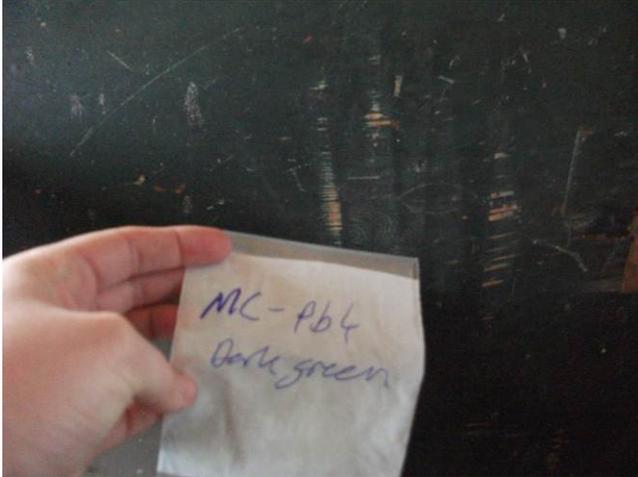


Photograph 7: Roof Ballast Filter Fabric/Cloth on the Roof of the Main Building at CCGB Prescott

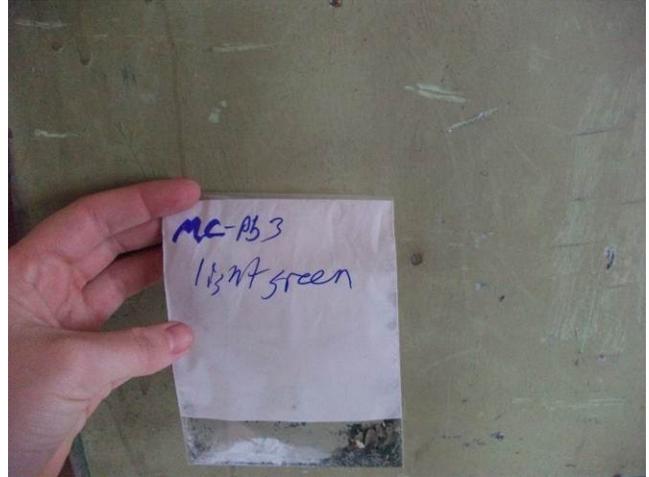


Photograph 8: Metal Clad Storage Building at CCGB Prescott

Canada Coast Guard Base
Prescott, Ontario



Photograph 9: Metal Clad Storage Building – Lead-Based Dark Green Wall Paint



Photograph 10: Metal Clad Storage Building – Lead-Based Light Green Wall Paint



Photograph 11: Metal Clad Storage Building – Lead-Based White Wall Paint



Photograph 12: Metal Clad Storage Building – Lead-Based Red Door Paint

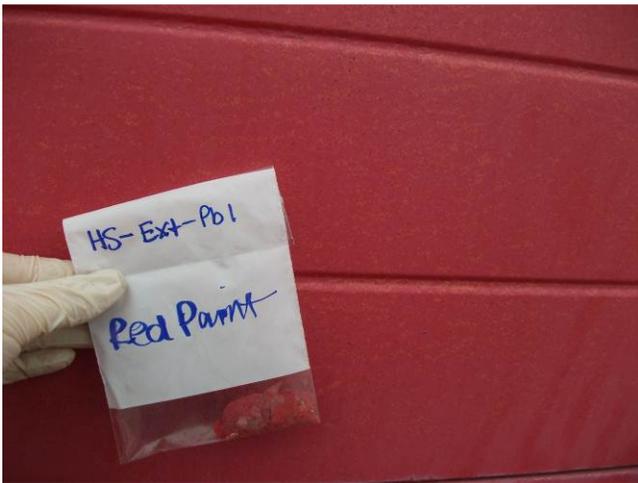
Canada Coast Guard Base
Prescott, Ontario



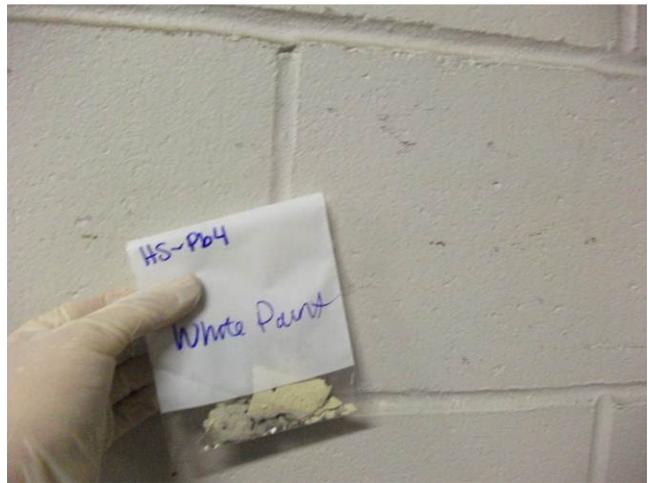
Photograph 13: Metal Clad Storage Building – Lead-Based Grey Wall Paint



Photograph 14: Heated Storage Building at CCGB Prescott

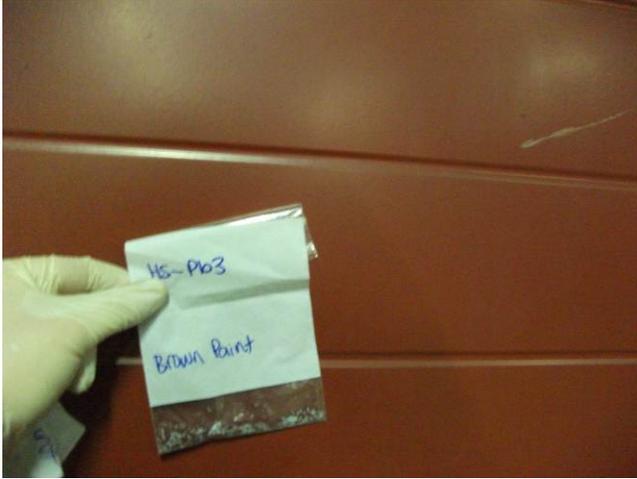


Photograph 15: Heated Storage Building – Lead-Based Red Door Paint

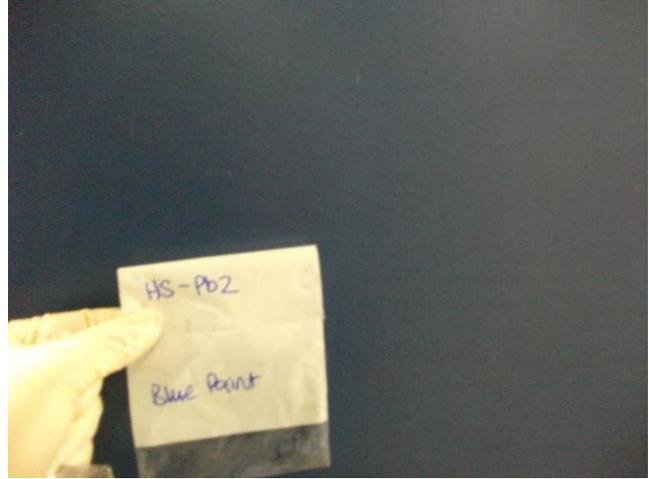


Photograph 16: Heated Storage Building – Lead-Based White Wall Paint

Canada Coast Guard Base
Prescott, Ontario



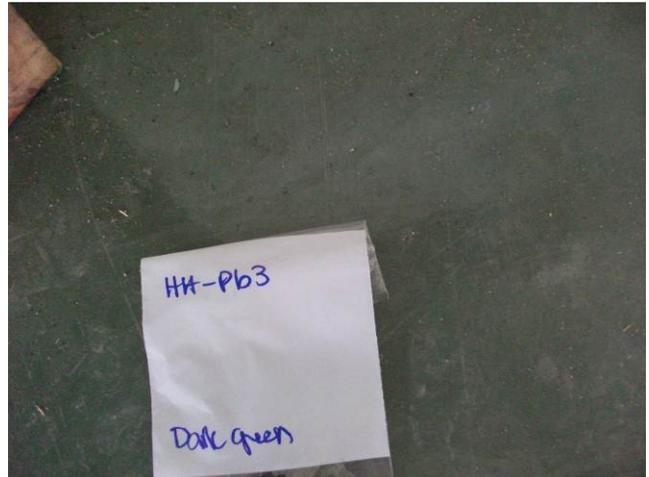
Photograph 17: Heated Storage Building – Lead-Based Brown Door Paint



Photograph 18: Heated Storage Building – Lead-Based Blue Wall Paint

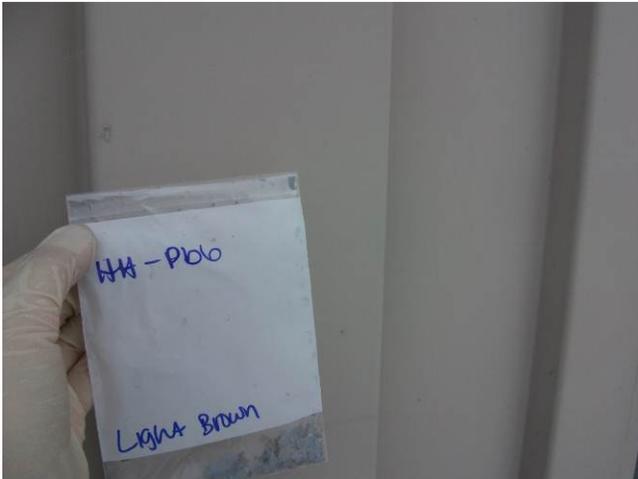


Photograph 19: Helicopter Hangar Building at CCGB Prescott



Photograph 20: Helicopter Hangar Building – Lead-Based Dark Green Floor Paint

Canada Coast Guard Base
Prescott, Ontario



Photograph 21: Helicopter Hangar Building – Lead-Based Light Brown Exterior Wall Paint



Photograph 22: Helicopter Hangar Building – ACM (VFT1) 12" X 12" Red Vinyl Floor Tile

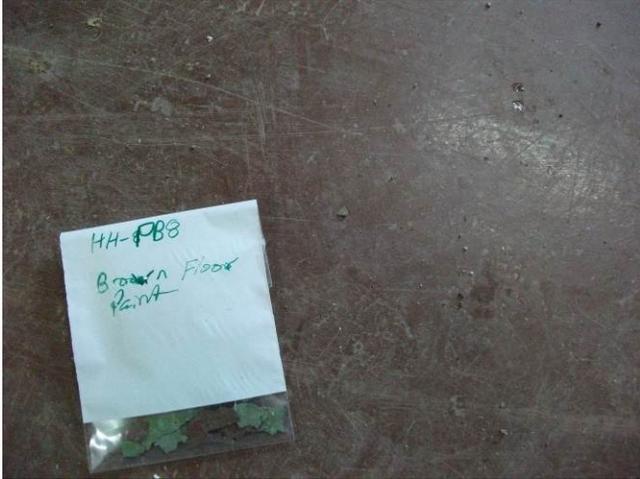


Photograph 23: Helicopter Hangar Building – Diesel Fuel Storage Tank



Photograph 24: Helicopter Hangar Building – Jet Fuel A-1 Fuel Storage Barrel

Canada Coast Guard Base
Prescott, Ontario



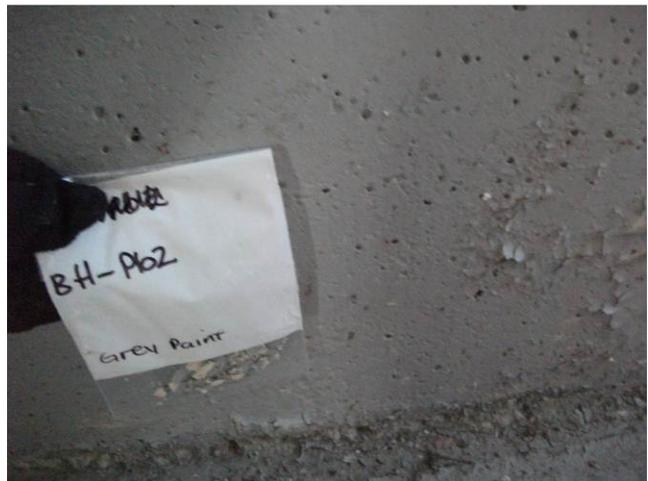
Photograph 25: Helicopter Hangar Building – Lead-Based Brown Floor Paint



Photograph 26: Boat House Building at CCGB Prescott

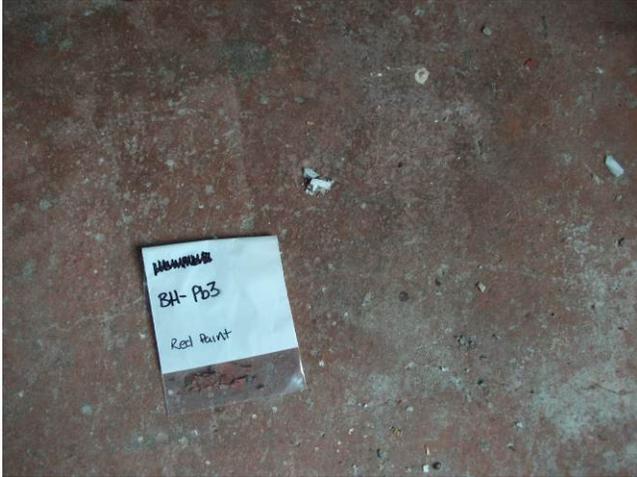


Photograph 27: Boat House Building – Lead-Based Cream Wall Paint



Photograph 28: – Boat House Building – Lead-Based Grey Floor Paint

Canada Coast Guard Base
Prescott, Ontario



Photograph 29: Boat House Building – Lead-Based Red Floor Paint



Photograph 30: Boat House Building – Lead-Based Blue Wall Paint



Photograph 31: Boat House Building – Lead-Based Beige Exterior Wall



Photograph 32: Boat House Building – Lead-Based Green Exterior Window Paint

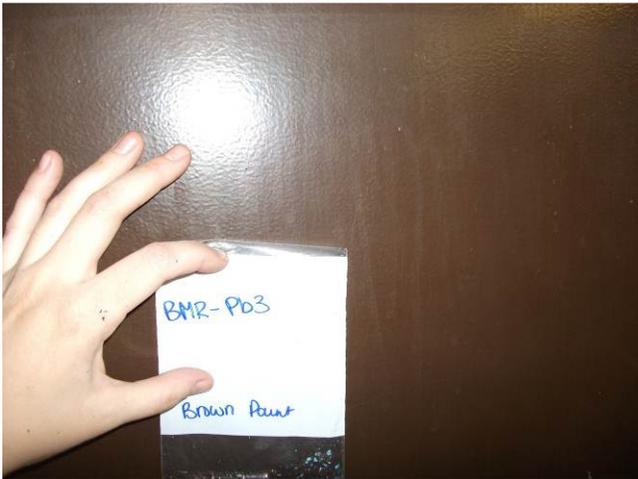
Canada Coast Guard Base
Prescott, Ontario



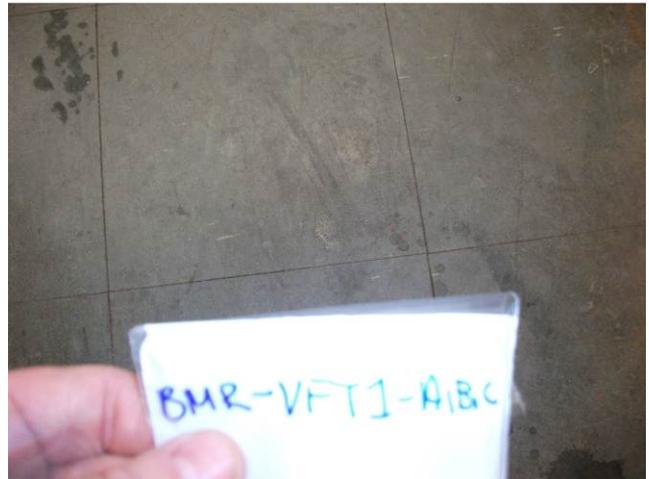
Photograph 33: Buoy Maintenance Building at CCGB Prescott



Photograph 34: Buoy Maintenance Building – ACM (VFT3) Blue With White Streak 12" X 12" Vinyl Floor Tile

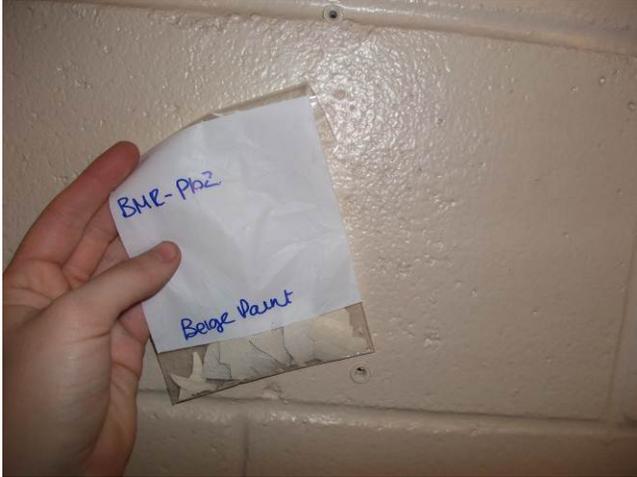


Photograph 35: Buoy Maintenance Building – Lead-Based Brown Exterior Paint



Photograph 36: Buoy Maintenance Building – ACM (VFT1) Blue With White Streak 12" X 12" Vinyl Floor Tile

Canada Coast Guard Base
Prescott, Ontario



Photograph 37: Buoy Maintenance Building – Lead-Based Beige Undercoat Paint



Photograph 38: Typical Mercury Containing Thermostat Observed in Buildings at CCGB Prescott

Appendix C

PWGSC Deputy Minister Directive 057 (DIR 057) Asbestos Management



Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Canada

r o t t H e p e r e o r e



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Departmental
Policies

PWC/SSC
Directives

Branch/Sector
Policies

Treasury Board
Policies

FAQ

P 0
199 12 03

e o o t e t

1. [Background](#)
2. [Policy](#)
3. [Scope](#)
4. [Definitions](#)
5. [Roles and Responsibilities](#)
6. [Guidelines](#)
 1. [Implementation](#)
 2. [Monitoring](#)
7. [Procedures](#)
8. [Compliance](#)
9. [References](#)
10. [Inquiries](#)

[Annex A - Definitions](#)

[Annex B - Roles and Responsibilities](#)

[Annex C - Code of Practice](#)

[Appendix 1 - Evaluation of Asbestos Containing Materials \(ACM\) and Recommendations for Control](#)

[Appendix 2 - Contractor Notification and Acknowledgement](#)

[Appendix 3 - Certificate of Training for Asbestos-Related Work](#)

[Appendix 4 - Asbestos-Related Work Record](#)

[Appendix 5 - Classification of Asbestos-Related Work](#)

[Appendix 6 - Work Procedures](#)

1

1. Public Works and Government Services Canada shall comply with all federal, provincial, territorial and municipal regulations, statutes and requirements with regard to asbestos containing materials (ACM) in government owned or leased buildings and facilities.
2. This departmental policy and code of practice are established in response to the requirement for a comprehensive approach to departmental asbestos management. This will ensure that the responsibilities of the department, as building owner, tenant, landlord and employer, with respect to safety and health issues and environmental control issues, are fully addressed.
3. This departmental policy and code of practice specify the role

and responsibilities of the Regional Asbestos Coordinator and provide standard methods and procedures to address the following:

1. identification, assessment and inventory of ACM in buildings and facilities;
2. notification to employees, client departments and contractors regarding the presence of friable asbestos;
3. reassessment of friable ACM on an annual basis;
4. maintenance of departmental information regarding ACM;
5. training modules for PWGSC personnel, based on the responsibilities and duties to be undertaken in relation to asbestos management;
6. identification, classification, monitoring, inspection and control of asbestos-related work undertaken by departmental personnel or contractors.



2 P

Public Works and Government Services Canada shall ensure the control of asbestos containing materials (ACM). The responsibilities of the department, as building owner, tenant, landlord and employer, with respect to safety and health issues and environmental control issues, shall be fully addressed and in accordance with the [Canada Labour Code, Part II](#), the [Canada Occupational Safety and Health Regulations, Part X - Hazardous Substances](#), and applicable provincial and territorial occupational health and safety and environmental protection legislation.



3 P

This departmental policy and code of practice apply to all managers, supervisors and employees where the duties required to be undertaken involve the removal, repair or maintenance of ACM. This departmental policy and code of practice apply to any building or facility in which friable material, that may contain asbestos, has been used, and all repairs, alterations or maintenance of any building or facility where ACM may exist.



See [Annex A](#).



P

See [Annex B](#).



1. p e e t t o

The Director, Corporate Environment, Safety and Health shall provide the framework for departmental asbestos management through the provision of approved departmental training modules to meet requirements, and the issue of standard methods and procedures. Training requirements shall be reviewed on an annual basis.

The Regional Asbestos Coordinator shall implement the departmental methods and standards within the region and shall ensure that initial surveys for asbestos are conducted, inventories are developed and properly maintained, and that training requirements for departmental employees are identified and that the training is provided.

2. o tor

The Director, Corporate Environment, Safety and Health shall monitor asbestos management to ensure that requirements are met, and that procedures are established and implemented as required throughout the department.

The Regional Asbestos Coordinator and the Regional Manager responsible for Safety and Health shall review the progress of asbestos surveys and training, and the overall implementation of asbestos management and subsequent safety and health issues, on a quarterly basis.

Training requirements, notifications, records, procedures and other safety and health issues related to asbestos management shall be reviewed on a quarterly basis by the network of Workplace Safety and Health Committees and Representatives.

Issues related to asbestos management that cannot be resolved at the workplace level shall be reported to the Regional Safety and Health Committee. Issues that cannot be resolved at the regional level shall be reported to the National Safety and Health Committee.



P

[Annex C - Code of Practice.](#)



P

Compliance with this departmental policy is mandatory and in accordance with all existing safety and health legislation. The refusal of an employee at any level to comply with this departmental policy or with the provisions of the prescribed codes, standards, regulations, and/or departmental policies will be considered as misconduct.



9

t e t o

- [Canada Labour Code, Part II:](#)
 - [Part II of the Canada Occupational Safety and Health Regulations, \(COSH\), Building Safety,](#)

- Part X of the Canada Occupational Safety and Health Regulations, (COSH), Hazardous Substances,
- Part XIV of the Canada Occupational Safety and Health Regulations, (COSH), Materials Handling.

re ry o r P to

- Occupational Health Evaluation Standard;
- Procedures for occupational exposure to asbestos;
- Canadian National Master Specifications, Sections 13280, 13281 and 13282.

P P to

- DP 007 - Health and Safety Policy;
- DP 017 - Personal Protective Equipment for Employees;
- DP 018 - Hazardous Occurrence Investigating, Reporting and Recording.

t er P to

- Provincial and Territorial Occupational Health and Safety Legislation;
- Provincial and Territorial Environmental Protection Legislation.



10

ep rt e t

Director
Corporate Environment, Safety and Health

e o

Regional Managers responsible for Safety and Health



Original Signed by
R.A. Quail

R. A. Quail
Deputy Minister and
Deputy Receiver General for Canada



e e to

e to o t ter (Matériau contenant de l'amiante (MCA)) means any material found to contain asbestos that is at or above the limit defined by provincial standards, as determined by the standard Polarized Light Microscopy (PLM) method for the analysis of bulk samples.

ep r t e t (ministère) means Public Works and Government Services Canada (PWGSC).

p oyee (employé) means a person employed by the department.

p oyer (employeur) means a supervisor who is responsible for the work of one or more employees at the workplace.

r e e to pro t (produit friable à base d'amiante) means ACM, that when dry, can be crumbled, pulverized or powdered by hand pressure. This definition also includes dust or debris arising from non-friable materials that are, or will become, crumbled, pulverized or powdered, i.e., asbestos containing plaster disturbed by demolition. Friable asbestos-suspect products include: Sprayed asbestos products, (fireproofing, thermal insulation, acoustic insulation or decorative products), applied in 1974 or earlier; Acoustic or texture plaster applied in 1983 or earlier; Mechanical insulation installed in 1983 or earlier, (jacketed or not); Compressed mineral fibre ceiling tiles installed in 1983 or earlier.

H r o o rre e (situation dangereuse) means an event occurring at a PWGSC managed building or worksite, or through the course of an employee's work that results in, or has the potential to result in, a fatality, injury, property damage or an escapement of a hazardous material. For the purpose of investigating, recording and reporting of hazardous occurrences, the following are included under this term: Critical Incidents; Disabling Injuries; Non-Disabling Injuries; Minor Injuries; Minor Occurrences and Near-Misses.

er r e o or te (gestionnaire responsable du lieu de travail) means the person to whom the supervisor reports directly.

Per o r e (personne responsable) means a qualified person, appointed by management, to ensure the safe and proper conduct of an operation, or the work of employees.

Per o prote t e e p e t (équipement de protection individuelle) means any clothing, equipment or device worn or used by a person to protect that person from injury or illness.

e per o (personne qualifiée) means, with respect to a specified duty, an individual who, because of knowledge, training and experience, is qualified to safely and properly perform the duty.

e o or e o , (région ou régional) when utilized in Safety and Health Departmental Policies and Codes of Practice, refers to all Regions and includes the National Capital Area.

e ore p oyer repre e t t e (représentant supérieur de l'employeur) means the individual with the delegated authority to make and carry out decisions of an operational nature, on behalf of the department, for the workplace.

per or (superviseur) means the person at the workplace to whom the employee(s) report(s) directly.

or p e (lieu de travail) means any place where an employee is engaged in work for the department.



e o e e p o t e

1. **r / e y He** are accountable for the implementation of this departmental policy within their areas of responsibility. This accountability is further referenced in [*DP 007, Annex A - Accountability Framework for the Health and Safety Function.*](#)

In addition, Regional Directors General are responsible for appointing a qualified person as the Regional Asbestos Coordinator.

2. **e or p oyer epre e t t e** are responsible for ensuring that all workplaces within their area of responsibility implement the requirements of this departmental policy and code of practice.

3. The **re tor orpor te ro e t ety He t** is responsible for:

1. monitoring the departmental program to ensure that requirements for asbestos management are met, and that procedures are established and implemented as required throughout the department;
2. approving training modules prior to implementation, and ensuring that an annual review of training requirements is undertaken;
3. liaising, on behalf of the department, with regulatory bodies, central agencies, and provincial bodies on matters related to asbestos management.

4. The **H e o r e r**, is responsible for ensuring that the appropriate procedures are implemented so that Asbestos-Related Work Records are maintained on employee files for a period of thirty (30) years.

5. The **e o e to oor tor** is responsible for:

1. implementing the requirements for departmental asbestos management within the region;
2. arranging for initial asbestos surveys and the reassessments of buildings and facilities;
3. preparing standard notification letters regarding the existence of friable asbestos, for issue by Property, Facility or Project Managers;
4. maintaining a data base of survey and reassessment

information relating to the existence of ACM;

5. issuing copies of asbestos inventory and assessment reports and updates to Property and Facility Managers;
 6. classifying asbestos-related project work on behalf of Project Managers, and arranging for the preparation of specifications when required;
 7. ensuring that Property and Facility Managers are aware of the requirements of asbestos management, and ensuring that standard procedures are implemented for asbestos work, required training is provided, current information relating to ACM is available and records are properly maintained;
 8. coordinating training requirements for departmental employees and maintaining records of training;
 9. maintaining all records relating to asbestos management within the region and asbestos work undertaken in the region, i.e., asbestos inventory and assessment reports, training records, notification letters and work records;
 10. reviewing all work requirements that have been classified as Type 3, and undertaking the direction of the work when required;
 11. assisting in the identification of circumstances where an employee is, or may be, exposed to airborne asbestos during work not subject to the precautions required by the Asbestos Management Code of Practice and ensuring that any required hazard assessments are undertaken;
 12. ensuring that the Regional Manager responsible for Safety and Health has been notified in situations where an employee has been exposed to a hazardous occurrence where an investigation may be required;
 13. reviewing asbestos-related work requirements, at random, to ensure that work has been properly classified, and that all required specifications have been addressed;
 14. reviewing, on a quarterly basis, the progress of asbestos surveys and training, and implementation of asbestos management, and safety and health issues with the Regional Manager responsible for Safety and Health.
6. **Property er ty er Pro e t er** shall implement this departmental policy and code of practice as required, based on the nature of their function and the duties for which they are responsible, by:
1. ensuring that the requirements for departmental asbestos management are fully implemented within their area of

responsibility;

2. reviewing all maintenance work requirements against survey information to determine the possibility of friable asbestos being disturbed, and classifying the work based on the approved criteria;
 3. notifying, in writing, Workplace Safety and Health Committees and Representatives, (tenant departments and PWGSC), and employees and contractors of the existence of friable ACM, and providing updates on conditions as modifications or changes are made;
 4. maintaining asbestos inventory, assessment and reassessment reports and ensuring that a copy of this information is maintained in a location that is accessible to maintenance staff and contractors;
 5. obtaining the approval of the Regional Asbestos Coordinator prior to arranging for the removal or repair of damaged or deteriorated friable ACM;
 6. submitting all Type 3 work requirements to the Regional Asbestos Coordinator for review prior to arranging for the work to be undertaken;
 7. consulting the Regional Asbestos Coordinator, when necessary, to determine the impact of a specific project with regards to ACM;
 8. maintaining a stock of required equipment for work classified as Type 1 and Type 2;
 9. identifying and providing a suitable storage area for waste resulting from asbestos work, and arranging for periodic waste removal.
7. **er reo or te per or** shall implement this departmental policy and code of practice as required by the nature of the tasks for which they are responsible, by:
1. ensuring that employees have been provided with the required training to undertake the work;
 2. ensuring that the appropriate personal protective equipment, tools and clothing required for the work are provided;
 3. ensuring that testing, maintenance and storage routines are established and implemented for all personal protective equipment and tools;
 4. identifying a qualified person to undertake the duties of the "Person in Charge";

5. ensuring that an [Asbestos-Related Work Record Form \(PWGSC-TPSGC 55\)](#) is completed for each period of work, and that a copy of this record is submitted to Human Resources Branch to be placed on employee files, and a copy is submitted to the Regional Asbestos Coordinator;
 6. ensuring that all employees required to perform work classified as Type 2 or Type 3 undertake health evaluations as per the requirements of [DP 059 - Health Evaluations - Safety and Health, PWGSC](#);
 7. notifying the Asbestos Coordinator of any hazardous occurrence that has taken place or when there has been a requirement to undertake emergency asbestos-related work for a particular situation.
8. The **Per o r e** is responsible for:
1. ensuring that workers on site have been provided with the required training for the work to be undertaken;
 2. ensuring that all required equipment is on site before commencement of the work;
 3. ensuring that the appropriate personal protective equipment, tools and clothing required for the work are worn and/or utilized;
 4. ensuring that the appropriate procedures for the work are implemented and that all workers are aware of, and comply with, established procedures;
 5. ensuring that all procedures for inspection and air monitoring are implemented based on the classification of the work and the specified requirements;
 6. immediately informing the Manager in Charge of the Worksite or the Supervisor of a hazardous occurrence involving asbestos-related work.
9. **e o er re po e or ety He t** are responsible for:
1. monitoring worksites periodically to ensure that standard procedures are implemented for asbestos work, required training is provided, current information relating to ACM is available and records are properly maintained;
 2. investigating specific workplace complaints concerning asbestos and asbestos-related work and taking appropriate action;
 3. providing assistance and advising the Asbestos Coordinator of specific safety and health issues and requirements related to asbestos management;

4. reviewing, on a quarterly basis, with the Regional Asbestos Coordinator the implementation of asbestos management and safety and health issues.

10. **or p e ety He t o ttee
epre e t t e** are responsible for:

1. participating in hazard investigations to determine the risks and hazards associated with asbestos-related work requirements;
2. monitoring workplaces to ensure that the requirements for asbestos-related work have been addressed, i.e., training has been provided; personal protective equipment is provided and properly utilized; records are maintained and procedures are implemented;
3. reporting immediately, specific workplace complaints related to asbestos management, to the Regional Manager responsible for Safety and Health;
4. undertaking a review of training requirements for asbestos-related work on an annual basis.

11. **p oyee** are responsible for:

1. applying the appropriate practices, procedures and equipment for the type of asbestos-related work;
2. wearing and/or utilizing and maintaining the required personal protective equipment, clothing and tools;
3. reporting immediately, to the Person in Charge, the Manager in Charge of the Worksite, or the Supervisor, all known or suspected conditions or activities that are in violation of approved practices and procedures and that may cause a hazardous occurrence.



e o e o Pr t e

1. **e to r ey e e t e tor e**

To ensure that a complete inventory of ACM that includes friable ACM and the principal types of non-friable ACM is developed, it is necessary to undertake a thorough survey of all government-owned or leased facilities. Once ACMs are identified through surveys and assessments of the materials are made, inventories shall then be established and maintained.

Leasing Space and Friable Asbestos

When space is considered for lease in a building that was constructed before 1983, PWGSC shall request and obtain from

the lessor, an asbestos survey that identifies all friable asbestos materials located within the structure.

This survey shall be signed by and conducted under the direction of a qualified person, competent in asbestos control, i.e., a Professional Engineer, a Certified Industrial Hygienist, or a Registered Occupational Hygienist.

If friable asbestos is present the following rules shall be applied in considering the space:

1. the department shall not lease space when there is friable asbestos material located directly within the space to be occupied;
2. the department may lease space when friable asbestos is present elsewhere in the building, provided that there is an asbestos management program in place that meets the basic requirements of the department, as described herein by the departmental policy and code of practice for asbestos management.

Asbestos Surveys

The Regional Asbestos Coordinator shall undertake the planning and coordination of all asbestos surveys. A detailed survey of each location within the region shall be undertaken initially, in order to determine the presence of ACM, including all friable asbestos materials, applications of floor finishes and asbestos reinforced cement products, i.e., asbestos cement sheeting and piping. This survey shall be conducted on a floor-by-floor and room-by-room basis.

The Regional Asbestos Coordinator shall ensure that all surveys are conducted under the direction of a qualified person competent in asbestos control, i.e., Professional Engineer, Certified Industrial Hygienist, or Registered Occupational Hygienist.

The Regional Asbestos Coordinator shall ensure that each survey is signed off by the qualified person who directed the survey.

Assessment of Asbestos Materials

ACM that is identified during the survey shall be assessed, and recommendations regarding the action to be taken shall be determined as per the specifications provided in [*Appendix 1 - Evaluation of Asbestos Containing Materials \(ACM\) and Recommendations for Control*](#).

[*Appendix 1*](#) provides specific criteria for the assessment of materials based on condition and accessibility, and provides an Action Matrix, which is utilized in determining the recommended action to control ACM based on the particular circumstances. Detailed information regarding the requirements to properly

undertake each action are also provided.

: Analysis of materials to determine asbestos content shall be performed by Health Canada, or by private laboratories accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) of the U.S. National Institute of Science and Technology (NIST), in the use of the Polarized Light Microscopy method. The analysis of bulk samples shall be performed to the detection limits as indicated in [Appendix 1 - Detection Limit of Bulk Analysis](#).

Asbestos Inventories

Once surveys have been completed and assessment of materials has been made, the Asbestos Coordinator shall ensure that this inventory information is entered into the PWGSC Asbestos Management Database. The Asbestos Coordinator shall update this information as changes are made at the various locations, or where new information identifies the existence of ACM not previously identified.

The Asbestos Coordinator shall ensure that Completed Asbestos Inventory, Assessment Reports and Reassessment Reports are forwarded to the respective Property or Facility Manager, and that current copies of these documents are made available at a location in each building or facility that is accessible to maintenance staff, contractors and workplace safety and health committee members and representatives.

: Property and Facility Managers shall notify the Regional Asbestos Coordinator prior to arranging for, or undertaking, removal or repair of damaged or deteriorated friable asbestos materials identified by the Asbestos Inventory and Assessment.

2. o t t o o r e e t o

The Regional Asbestos Coordinator shall provide written notice to Property and Facility Managers concerning the presence of friable ACM, as per the findings of surveys and assessments.

For those locations where a survey and assessment are pending, and the presence of friable ACM is known, the Regional Asbestos Coordinator shall provide interim written notice to the Property or Facility Manager.

Upon receipt of Asbestos Inventory and Assessment reports, the Regional Asbestos Coordinator shall provide updated written notification to Property and Facility Managers.

Property and Facility Managers shall ensure that written notice is provided to the following groups:

- Workplace Safety and Health Committees and Representatives;
- Maintenance Employees;
- Contractors, Inspectors. (Those who may enter parts of

the building or facility where friable ACM may be present, i.e., telecommunications firms, boiler maintenance contractors, inspectors, etc.) See [Appendix 2 - Contractor Notification and Acknowledgement](#).

Copies of all notices issued to Property and Facility Managers shall be maintained by the Regional Asbestos Coordinator.

3. e e e t o r e e t o

The Regional Asbestos Coordinator shall arrange for an annual reassessment of all friable ACM present in exposed locations.

Copies of reassessment reports shall be distributed to Property and Facility Managers. Property and Facility Managers shall provide updated information to the following groups:

- Workplace Safety and Health Committees and Representatives;
- Maintenance Employees;
- Contractors, Inspectors. (Those who may enter parts of the building or facility where friable ACM may be present, i.e., telecommunications firms, boiler maintenance contractors, etc.) See [Appendix 2 - Contractor Notification and Acknowledgement](#).

Property and Facility Managers shall notify the Regional Asbestos Coordinator prior to arranging for, or undertaking, removal or repair of damaged or deteriorated friable ACM.

4. r

Training shall be provided to PWGSC personnel, as required, based on their roles and responsibilities related to asbestos management. Training shall be delivered in modules in order to target specific requirements and related duties, and to avoid duplication.

The duration of training and mode of delivery shall be determined by the Director, Corporate Environment, Safety and Health, in consultation with the National Safety and Health Committee.

The Regional Asbestos Coordinator and the Human Resources Branch, shall maintain records of training.

Training requirements shall be reviewed annually by the network of Workplace Safety and Health Committees and Representatives.

Asbestos Management Training

Asbestos management training shall be provided to the Regional Asbestos Coordinators, Property and Facility Managers, and Project Managers. This training will include an introduction to the asbestos inventory and assessment reports, health hazards of

asbestos exposure, regulations, the Asbestos Management Code of Practice, classification of asbestos work, asbestos project control, and emergency procedures.

Asbestos Procedures Training

Training shall be provided to maintenance workers who will perform Type 1 or Type 2 work. The training will include an introduction to the asbestos inventory and assessment reports, health hazards of asbestos exposure, regulations, the Asbestos Management Code of Practice, Type 1 and Type 2 work practices, and disposal procedures. Upon completion of the training, workers shall sign a form acknowledging the training received. See [Appendix 3 - Certificate of Training for Asbestos-Related Work](#).

Respirator Training

Respirator training shall be provided to all those who will perform Type 2 work, and to employees who will perform Type 1 work and request a respirator. The training will cover limitations of use, fitting, and maintenance of respirators. Persons provided with a respirator will be fit-tested with the assigned respirator, using the CSA irritant smoke method. See [Appendix 6 - Respirator Fitting, Inspection, Cleaning and Disinfecting](#) for procedures and related information regarding respirators.

Employees who will utilize a respirator shall be required to undertake a medical evaluation as per the requirements of [DP 059 - Health Evaluations - Safety and Health, PWGSC](#).

Asbestos Awareness Training

Training shall be provided to all maintenance and operations personnel who may work near asbestos materials.

This training shall also be required for those who supervise workers or contractors who may work near asbestos materials.

The module will introduce the asbestos inventory and assessment reports, health hazards of asbestos exposure, the Asbestos Management Code of Practice, and emergency procedures.

This training shall also be made available to Workplace Safety and Health Committee Members and Representatives.

5. e t t o t o o t r o o e t o
e t e o r

Maintenance Work

Property and Facility Managers, or their designates, are responsible to review all maintenance work for the possibility of the disturbance of ACM when required work is undertaken.

When there are friable or non-friable ACMs in the area, and this material will be disturbed by the work, then the work shall be determined as asbestos-related work and classified as Type 1, Type 2, or Type 3. Appropriate procedures shall be implemented based on the classification of the work. See [Appendix 5 - Classification of Asbestos-Related Work](#), and [Appendix 6 - Work Procedures](#).

If there are friable or non-friable ACMs in the area of maintenance, that will be disturbed by the intended work, the Property or Facility Manager or designate shall classify the work as Type 1, Type 2, or Type 3. Work determined to be a Type 3 classification shall be forwarded to the Asbestos Coordinator for review.

The Regional Asbestos Coordinator shall review all work that is classified as Type 3 asbestos work. The Regional Asbestos Coordinator shall determine, based on the requirements and specific circumstances of the work, the degree of his/her personal involvement in the direction of the work.

If there are friable ACMs in the area of maintenance, and it has been determined that these materials will not likely be disturbed by the maintenance work, the Property or Facility Manager shall inform maintenance staff and/or the contractor of the presence of friable ACMs prior to the commencement of work.

On completion of any maintenance work which involves asbestos removal or repair, a report will be provided to the Regional Asbestos Coordinator which indicates the asbestos-related work that has been completed. See [Appendix 4 - Asbestos-Related Work Record](#). The Regional Asbestos Coordinator will then update the information in the inventory as required, and ensure that this information is distributed as required.

- Property and Facility Managers shall maintain a stock of the approved equipment required for Type 1 and Type 2 asbestos work, where PWGSC staff perform asbestos work.
- When asbestos work is performed by PWGSC staff, asbestos debris shall be packaged in double-bagged containers or other suitable containers, by those completing the project. These containers shall be held at a pre-determined, secure location in the building.
- The Property or Facility Manager shall arrange for periodic collection of asbestos waste containers from this location.

Renovation and Construction Work

Project Managers shall consult the Regional Asbestos Coordinator prior to undertaking renovation or construction work. The Regional Asbestos Coordinator shall review the asbestos survey reports for the possible impact on asbestos materials, prior to all renovation and construction work.

Prior to commencement of projects that include the demolition of plaster installed prior to December 1983, testing of the plaster for asbestos shall be undertaken, unless previous comprehensive testing in the building has shown this plaster to be free of asbestos. Records of plaster test results shall be maintained by the Asbestos Coordinator and the Property or Facility Manager along with the asbestos surveys of the building.

The Regional Asbestos Coordinator, on behalf of the Project Manager, shall classify the work as Type 1, Type 2, or Type 3.

In Ontario, the Project Manager, through the Regional Asbestos Coordinator, shall obtain a Designated Substance Report (a prescribed listing of asbestos, lead, silica, and other hazardous materials) prior to tendering the work.

The Regional Asbestos Coordinator, on behalf of the Project Manager, shall arrange for specifications to be prepared for asbestos work, following the National Master Specification. Alterations to specifications, in order to accommodate specific provincial requirements, shall be determined when required.

Services related to the design and preparation of specifications shall be performed by Consultants or Engineers with the appropriate training, experience and insurance for asbestos-related work. Insurance shall specifically include professional liability with pollution coverage.

When there are friable asbestos materials in the renovation area, and the Regional Asbestos Coordinator has determined that these materials are not likely to be disturbed by the work, the maintenance staff or the contractor must be notified of the presence of friable asbestos materials. The contractor shall be required to sign the Contractor Notification and Acknowledgement Form prior to commencement of the work. See [Appendix 2 - Contractor Notification and Acknowledgement](#).

At the completion of any project work which alters the amount or condition of friable ACM, a report will be provided to the Regional Asbestos Coordinator which indicates the work that has been completed. See [Appendix 4 - Asbestos-Related Work Record](#). The Regional Asbestos Coordinator will then update information in the inventory, and ensure that this information is distributed as required.

6. e t o o r e o r e r e e

Managers in Charge of Worksites and Supervisors shall ensure that an Asbestos-Related Work Record is completed for employees performing Type 2 or Type 3 work, or entering a Type 2 or Type 3 work area. A work record shall be completed for each period of work.

Managers in Charge of Worksites and Supervisors shall ensure that a copy of each work record is forwarded to Human Resources Branch and to the Regional Asbestos Coordinator.

See [Appendix 4](#), for a sample of the Asbestos-Related Work Record.

Human Resources Branch shall maintain Asbestos-Related Work Reports on employee files for a period of thirty (30) years. Asbestos-Related Work Reports shall be maintained by the Office of the Regional Asbestos Coordinator for a period of thirty (30) years.

All PWGSC employees who will perform Type 2 or Type 3 work shall undertake a medical evaluation as per the requirements of [DP 059 - Health Evaluations - Safety and Health, PWGSC](#).

7. e to or Pro e re

Type 1, Type 2, and Glove Bag Procedures

Standard procedures for performing Type 1, Type 2, and Glove Bag asbestos work are provided in [Appendix 6 - Work Procedures](#).

Type 3 Procedures

Type 3 procedures are not included in the standard procedures provided in [Appendix 6 - Work Procedures](#).

Procedures for Type 3 work are developed for the particular work to be undertaken, and the specific circumstances and worksite. These procedures shall be developed in compliance with the National Master Specification, Section 13282, Asbestos Abatement (maximum precautions).

Emergency Procedures

Procedures for asbestos work, required on an emergency basis, as an immediate response to floods, pipe breaks, ceiling collapses, or other emergencies that affect asbestos materials, are provided in [Appendix 6 - Work Procedures](#). These procedures shall be implemented to protect those undertaking the work, and to protect all others from, or limit exposure to, airborne asbestos.

Emergency procedures, indicated in [Appendix 6 - Work Procedures](#), shall be followed as closely as possible, in the event of an emergency situation.

Emergency Plans

An Emergency Plan that corresponds with the emergency procedures for the specific site shall be developed and implemented, to ensure that safety and health requirements are addressed in the event of emergency situations that require work shut-down and evacuation.

8. e to or pe to r o tor

Type 1 and Type 2 Work

Type 1 and Type 2 work shall be subject to the standard maintenance or project inspection requirements for non-asbestos work. Asbestos-specific air monitoring or inspection is not mandatory.

Type 3 Work

The Regional Asbestos Coordinator, on behalf of the Project Manager, may arrange for the inspection and air monitoring during Type 3 asbestos projects. These services shall be provided by consultants or engineers with the appropriate training, experience and insurance for asbestos-related work.

When Type 3 work is to be undertaken in an occupied building, or in a building in use, daily inspection and air monitoring shall be required. If the building is not occupied, inspection shall be at critical stages of the work, unless provincial standards require daily inspection, as necessary in Quebec and British Columbia.

All Type 3 removal projects shall be subject to final clearance air testing. The clearance criteria shall be a maximum fibre concentration of 0.01 fibre/ml of air, as determined by the standard Phase Contrast Microscope (PCM) method.

9. r o t o r y

Air Monitoring for Hazard Assessment

When the Regional Asbestos Coordinator is requested to, and has determined the requirement for, air monitoring under normal conditions of building use (i.e., away from asbestos work), the measurements shall be made by the Transmission Electron Microscopy (TEM) analytical method.

Air monitoring shall not be used as the primary method for the assessment of hazard from asbestos materials.

Air Monitoring During Asbestos Work

The Regional Asbestos Coordinator shall arrange for air monitoring during Type 3 work, as required, to confirm the safety of work practices and the effectiveness of work area isolation. These measurements shall be made by the Phase Contrast Microscope (PCM) method recognized by Human Resources Development Canada (HRDC) - Labour Programs and provincial occupational health and safety authorities.

PCM measurements shall be made by National Institute of Occupational Safety and Health (NIOSH) method 7400, except work in British Columbia and Quebec, where provincial analytical methods are in place.

Analysis of PCM samples shall be performed by Health Canada

or individuals or organizations successfully participating in a recognized external quality control program.

Bulk Sample Collection and Analysis

Procedures for collection and labeling of bulk samples for asbestos analysis are detailed in [Appendix 6 - Work Procedures](#).

Analysis of materials to determine asbestos content shall be performed by Health Canada or by private laboratories accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) of the U.S. National Institute of Science and Technology (NIST). The laboratories shall report to the limits of detection as indicated in [Appendix 1 - Detection Limit of Bulk Analysis](#).

Maintenance of Records

The Regional Asbestos Coordinator shall maintain copies of all reports and records relating to testing, sampling and analysis undertaken for buildings and facilities within the region.

10. **H r e t o**

When an employee is or may be exposed to airborne asbestos as a result of direct disturbance of asbestos materials during maintenance, renovation or construction work not subject to the appropriate precautions required by the Asbestos Code of Practice, or by similar inadvertent direct contact not subject to the appropriate precautions, the Regional Asbestos Coordinator shall appoint a qualified person to conduct a hazard assessment. This assessment must consider the potential hazard, and must conclude as to whether the hazardous material could be present.

The Regional Asbestos Coordinator shall notify, in writing, the Workplace Safety and Health Committee or Representatives of this assessment.

The assessment shall determine the potential hazard, and must conclude as to whether the hazardous material could be present as an airborne hazard, at a level of at least 50% of the exposure limit. When it has been determined that the hazardous material could be present at a level of at least 50% of the exposure limit, a control plan must be instituted.

Control Plans for Asbestos

When an assessment has determined that asbestos could be present as an airborne hazard, at a level of at least 50% of the exposure limit, a control plan must be established and implemented to address the following requirements:

- a record of where asbestos materials are located;
- written procedures for control;
- medical surveillance, when applicable;

- o training of employees.

The control plan must be reviewed at least once per year, or as new information is received that changes the requirements of the plan.



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1. e e to o to

Spray Applied Fireproofing, Insulation and Texture Finishes

In evaluating the condition of ACM spray applied as fireproofing, thermal insulation or texture, decorative or acoustic finishes, the following criteria apply:

Surface of material shows no significant signs of damage, deterioration or delamination. Up to one 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 unencapsulated 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.

- P** Sprayed materials show signs of damage, delamination or deterioration. More than one 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 reassessment form.

FAIR condition is not utilized or considered as a valid criterion in the evaluation of 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 that obstruct the above ceiling observations. Persons entering the ceiling area 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

In evaluating the condition of mechanical insulation (on boilers, breeching, ductwork, piping, tanks, equipment etc.) the following criteria are used:

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.

Minor penetration 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.

- P** 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. In these circumstances, 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 will be treated as a friable product.

2. **t o o e t y**

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

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.

Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: frequently entered pipe

chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk, i.e., tops of equipment, mezzanines.

P Areas of the building above 8'0" where use of a ladder is required to reach the ACM. Only refers to ACM materials that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently accessed service areas of the building.

Areas of the building which 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 are limited to the extent visible from the access points.

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 the materials in Access D.

3. **e r**

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 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 ceiling areas of buildings with ACM, regardless of the reported presence or absence of DEBRIS.

4. t o t r t o e r p t o

The Asbestos Management Program requires the following responses:

- Immediate clean-up of DEBRIS that is likely to be disturbed;
- The removal, repair or enclosure of friable ACM in POOR or FAIR condition where continued deterioration will result in DEBRIS that is likely to be disturbed.

The following factors shall be considered in making site-specific recommendations for compliance with the regulation, and for the practical implementation of asbestos management:

1. 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).

2. Mechanical insulation in FAIR condition will be repaired or removed based on the following general recommendations, applied on a case by case basis.

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.

3. 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. Proactive removal of the ACM in ACCESS (A) will be considered where damage is possible by ongoing occupant activity (accidental or intentional).

4. Non-friable or manufactured products are considered in the action matrix as follows:

- Non-friable and 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.

5. 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

Program in that area.

The Action Matrix provided below establishes the recommended asbestos control action. The ACTIONS are described in full following the matrix.

		P		
(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

¹If material in / condition is not removed is required.

²If material in / condition is not removed is required.

³Remove in / condition if is likely to be disturbed.

1 e t e e p o e r t e y t o e t r e

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 Regional Asbestos Coordinator of this condition.

2 t r y t o r e t e r y p e 2 P r e t o

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-work 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.

3 e o e re or o p e

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

**e to re ere Pre e t
e y to e t r e y e type 2
Pre t o**

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).

Pro t e e o

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

ep r

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.

o t e r e e

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.

5. ete t o t o y

Asbestos containing material, (ACM), is defined as any material found to contain asbestos at or above the limit for an asbestos containing material, (ACM), set provincially, as determined by the standard Polarized Light Microscopy method for the analysis of bulk samples. The provincially regulated limits, or generally accepted guidelines, to consider a material as an asbestos containing material, (ACM), subject to asbestos in buildings regulation, is provided as follows:

P

P /

NEWFOUNDLAND	1.0%
NOVA SCOTIA	
PRINCE EDWARD ISLAND	
NEW BRUNSWICK	
ALBERTA	
BRITISH COLUMBIA	
ONTARIO (includes part of National Capital Region)	0.5%
SASKATCHEWAN (no published concentration)	
QUEBEC (includes part of National Capital Region)	0.1%
MANITOBA	



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Click here to view the Adobe Acrobat (also known as PDF) version of the [Form PWGSC-TPSGC 16](#).



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or



Click here to view the Adobe Acrobat (also known as PDF) version of the [Form PWGSC-TPSGC 15](#).



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Click here to view the Adobe Acrobat (also known as PDF) version of the [Form PWGSC-TPSGC 55](#).



e ppe t o o e to e te or

The following criteria shall be utilized in determining the classification of asbestos work.

P 1

- Installation or removal of a non-friable ACM with a hand tool.
- Disturbance of a non-friable ACM with a powered tool equipped with a HEPA dust collection device.
- Removal of drywall materials where joint filling materials contain asbestos.
- Removal or replacement of ten or less asbestos-containing

compressed mineral fibre type ceiling tiles.

- Collecting samples of asbestos-suspect friable materials.
- Working close to friable sprayed asbestos, where the material may be affected by the work activities.

P 2

- Removal or replacement of more than ten asbestos-containing compressed mineral fibre type ceiling tiles.
- Entry into ceiling spaces, crawlspaces, pipe tunnels, etc., where friable asbestos debris is present.
- In British Columbia, removal of drywall installed before 1980.
- Minor removal of friable ACM. Type 2 removal is limited to a maximum per work period of:
 - In British Columbia - 0.1 m² surface area, or 3 lineal metres of pipe insulation;
 - In Quebec - 0.03 m² of Debris;
 - All Others - 1 m² of surface area.
- Repair of asbestos mechanical insulation. (No limit is imposed as to the amount of repair permitted under Type 2 conditions.)

P 3

- More than minor removal or disturbance of friable ACM.
- Use of a power tool on non-friable ACM without HEPA exhausted dust collection.
- The spray application of an encapsulant or sealer to friable asbestos surfacing materials.
- Disturbance of the ductwork and air handling equipment serving or passing through areas of buildings with sprayed asbestos fireproofing or insulation.
- Repair, alteration or demolition of a boiler, furnace, kiln, or similar equipment with asbestos-containing refractory.



e ppe or Pro e re

P 1 or Pro e re

For locations of non-friable ACM, refer to the current version of the Asbestos Inventory and Assessment Report.

These Type 1 procedures assume the non-friable material can be removed with relatively little loose dry dust released. Generation of debris is permissible as long as the debris can be well wetted before being removed. If the work will release more than a trivial amount of dry loose dust, do not proceed. The Regional Asbestos Coordinator will determine which of Type 1, 2 or 3 procedures are appropriate.

1. p e t

All equipment must be on site before proceeding.

1. Vacuum

Use of a vacuum is optional. Wet cleaning methods may be used in place of a vacuum. If a vacuum is used it must be equipped with a high efficiency particulate (HEPA) filter and all brushes, fittings, etc. The vacuum must only be opened in an enclosure, following Type 2 procedures, or in a laboratory exhaust hood. The vacuum exterior should be carefully wet cleaned after emptying. A HEPA filter is at least 99.97% efficient in collecting a 0.3 micrometre particle.

2. *Respirators*

Use of a respirator is optional for Type 1 work. However, a respirator is strongly advised for work on sheet flooring, any type of ceiling tile, any other work performed overhead. Respirators shall be supplied by the employer upon request. The type of respirator supplied shall be a half-face respirator with HEPA filter. Training in the proper use of the respirator and qualitative fit testing shall also be provided. Respirators must be NIOSH approved and acceptable to the Provincial Authorities having jurisdiction. Respirators shall be used according to the written procedures for use, provided to the worker during training sessions. Filters must be changed after 24 hours of wear, or sooner if breathing resistance increases.

Employees are required to undertake a medical evaluation as specified by [DP 059 - Health Evaluations - Safety and Health, PWGSC](#) prior to being trained in the proper use of respirators.

3. *Protective Clothing*

Reusable or disposable clothing may be used. Non-disposable clothing with visible asbestos contamination shall be cleaned with a HEPA vacuum and laundered as asbestos contaminated. Disposable clothing and respirator filters will be disposed of as asbestos waste.

4. *Other Equipment*

- plastic sheet (0.15 mm (6 mil) polyethylene) - to serve as a drop sheet;
- pump sprayer with mister nozzle, or alternate method to wet material;
- labelled, yellow asbestos waste bags, 0.15 mm (6 mil) - for all asbestos waste, disposable equipment, plastic, etc.;
- small tools and cleaning supplies - e.g., scouring pads, sponges, brushes, buckets, etc.

2. **t er Prote t e e re**

1. Do not eat, drink or smoke in the work area.
2. On leaving work area, proceed to washroom and wash all

exposed skin on hands and face.

3. **Prep r t o**

1. Before disturbing non-friable asbestos materials, (wherever practical) cover floor and surfaces below work with polyethylene sheeting to catch debris.
2. Wherever dust on a surface is likely to be disturbed, remove with HEPA vacuum or damp cloth.

4. **e t o**

1. Removal of Vinyl Asbestos Floor Tile

1. Do not use electric powered scrapers.
2. Start removal by wedging a heavy duty scraper in seam of two adjoining tiles and gradually force edge of one tile up and away from floor. Do not break off pieces of tile, but continue to force balance of tile up.
3. Continue removal of tiles using hand tools, removing tiles intact wherever possible. When adhesive is spread heavily or is quite hard, it may prove easier to force scraper through tightly adhered areas by striking scraper handle with a hammer using blows of moderate force while maintaining scraper at 25° to 30° angle to floor. When this technique does not loosen tile, removal can be simplified by heating tile thoroughly with a hot air gun until heat penetrates through tile and softens the adhesive.
4. As each tile is removed, place into asbestos waste receptor. Do not break into smaller pieces.
5. After removal of a small area, scrape up adhesive remaining on floor with a hand scraper until only a thin smooth film remains. Where deposits are heavy or difficult to scrape, a hot air gun may be used. Deposit scrapings in the asbestos waste disposal bag. Do not dry scrape surface pieces of tile that remain adhered. Do not use powered electric scrapers.
6. On completion of the area, vacuum clean floor with HEPA vacuum or wet mop. Dispose of the mop head as contaminated waste.

2. Removal of Asbestos-Containing Sheet Flooring

1. Remove binding strips or other restrictive mouldings. Workers shall wear air purifying respirator fitted with high efficiency filter, and coveralls, at all times.
2. Make series of cuts 100 mm to 200 mm (4" to 8") apart through top layers and about halfway through felt backing, parallel to wall.
3. Start at end of room furthest from door and pry up corner of strip, separating top sheet from backing layer. Pull top layer back upon itself slowly and evenly, and half backing and top layers should pull

free. After it is removed, roll up strip face out into tight roll, tape or tie securely, and place into asbestos waste receptor. Wet the asbestos felt underlay remaining on floor as soon as exposed.

4. Continue with successive strips. Avoid walking on exposed asbestos felt. Seal asbestos waste receptors when filled. Remove maximum of three strips before wet scraping exposed felt underlay.
5. Remove remaining adhered underlay by wet scraping. Soak area with water applied by sprayer. Allow water to penetrate felt. Scrape off remaining material. Maintain material wet by applying more water. Place scrapings in asbestos waste receptor.
6. Continue this procedure alternately removing top sheets and then wet scraping felt, three strips at a time. Be careful not to walk on stripped floor.
7. When whole floor has been cleaned of asbestos felt, allow it to dry and vacuum up any dirt with a HEPA vacuum or wet mop. Do *not* dry sweep. Dispose of the mop head as contaminated waste.
8. Thoroughly clean tools and equipment with a damp cloth before returning to regular service. Dispose of cloth as contaminated waste.

3. Installing, Cutting or Drilling Non-Friable Asbestos Materials

1. Work using power tools not fitted with HEPA filter dust collectors, must not be performed as Type 1 work.
2. Where possible wet all materials to be disturbed.
3. Immediately place waste in asbestos waste receptor. Clean area frequently during work with HEPA vacuum or by wet methods.
4. At completion of work, drop sheets that will be reused must be cleaned with HEPA vacuum or by wet methods.
5. Drop sheets that will not be reused must be disposed of as asbestos waste.

4. Removal of Other Non-Friable Asbestos Materials

1. Type 1 procedures apply only to materials which can be removed intact, or in sections, without producing a pulverized or powdered waste. This method is most applicable to asbestos-cement board products, acoustic ceiling tiles, gaskets, etc.
2. Where possible wet all material to be disturbed.
3. Undo fasteners necessary to remove material. Whenever possible remove asbestos cement panels intact. Break only if unavoidable. If broken, wet freshly exposed edges.
4. Where sections are adhered to the substrate, wet material and use hand scraping to remove adhering material.
5. Place removed material into asbestos waste receptor. Clean surrounding surfaces and asbestos work area frequently with HEPA vacuum or with wet methods (i.e., damp cloth that is disposed of as

asbestos waste after cleaning).

6. Drop sheets shall be disposed of as asbestos waste.

5. **te r port po**

1. Place waste into asbestos labelled disposal bag, seal with tape, clean the exterior of the bag with a clean cloth, and place into a second clean bag, also to be sealed with tape. Use a barrel, fibre drum, or cardboard or wooden box in place of the second bag when the asbestos waste material is likely to tear the inner bag. Seal the outer container.
2. Place waste containers in storage area for holding asbestos waste. Containers shall be labelled and assigned exclusively for asbestos waste.
3. Prepare waste for disposal in compliance with provincial regulations. The Property Manager will arrange for disposal.

P 2 or Pro e re

For locations of asbestos materials, refer to the current version of the Asbestos Inventory and Assessment Report.

1. **p e t**

Equipment required for the work must be on-site before proceeding.

1. *Vacuum*

An asbestos-approved vacuum (HEPA filtered), equipped with brushes, fittings, etc. Vacuum must not be opened except by a fully protected worker within a Type 2 enclosure. The vacuum exterior shall be carefully wet cleaned after emptying. A HEPA filter is at least 99.97% efficient in collecting a 0.3 micrometre particle.

2. *Respirators*

Workers within the work area shall wear approved respirator. Respirators and filters will be provided by the employer, and individually assigned to workers. Respirator shall be a half-facepiece respirator with high efficiency filters. Respirators must be NIOSH approved and acceptable to the Provincial Authorities having jurisdiction. Respirators shall be kept in position throughout the entire time the worker is in the area of the work, from first disturbance of a ceiling tile or asbestos material, until the final cleaning of the area and bagging of waste is complete. Change filters after 24 hours of wear or sooner if breathing resistance increases.

3. *Protective Clothing*

All workers shall wear disposable coveralls with attached elasticized hood. Coveralls should be worn with the hood in place at all times. Coveralls may be vacuumed or wet wiped clean for reuse, for a maximum of 8 hours cumulative wear. Suit and head cover shall remain in place until worker leaves work area or the enclosure is dismantled. Boot covers or dedicated boots are recommended.

4. *Other Equipment*

- plastic sheet (0.15 mm (6 mil) polyethylene) - to erect a total enclosure or to serve as drop sheet;
- wood framing or clips to support polyethylene sheeting, as appropriate to work area;
- tape - to fasten plastic enclosure to ceiling or to tape drop sheet to floor; ¾" double-sided tape recommended for attaching polyethylene to T-bar ceiling;
- labelled asbestos waste bag 0.15 mm (6 mil) - for all asbestos waste, disposable suit, plastic for disposal, etc.;
- pump sprayer containing water with wetting agent to wet asbestos as necessary (dilute wetting agent as per manufacturer's recommendations);
- asbestos warning signs;
- cleaning supplies - e.g., scouring pads, sponges, brushes, buckets, etc.;
- insulation repair supplies (lagging compound, cloth, PVC covers);
- encapsulating sealer, for brush or airless spray application.

2. **t er Prote t e e re**

1. Do not eat, drink or smoke in the work area.
2. On leaving work area, proceed to washroom and wash all exposed skin on hands and face.

3. **e o or**

1. Schedule work when occupants are absent. If persons are present, do not start work.
2. If work above ceiling is required on an emergency basis, and the area is occupied, ensure that client department(s) advise occupants to vacate area until work is complete and clearance is given to return.

4. **Prep r t o**

1. Shut down ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc., with plastic and tape.

2. Where practical, clear areas of movable furnishings or equipment. This should include anything that occupants may wish to use during work period. Any furnishings or equipment not removed shall be adequately covered and sealed using 0.15 mm (6 mil) polyethylene and tape. The intent of the protection is to provide an airtight envelope to protect the articles from airborne dust or splashed debris.
 3. Post signs or barrier tape, appropriate to the work area, to indicate asbestos hazard and requirement for protective clothing for anyone entering the space.
 4. For small rooms, cover walls with plastic such that the complete room becomes the work area. For larger rooms, erect enclosure of 0.15 mm (6 mil) polyethylene, of suitable dimensions to enclose the work area, and scaffolds and ladders required to gain access. If a suspended ceiling is present, the enclosure shall extend to the ceiling line. The enclosure shall be as airtight as conditions permit, and will include the provision of a double overlapping flap at the entrance. The floor of the work area shall be a layer of 0.15 mm (6 mil) polyethylene sealed to the plastic walls of the enclosure.
 5. Don protective clothing and respirator prior to removing ceiling tile or disturbing pipe jacketing or sprayed fireproofing.
5. **e t o**
1. To remove fireproofing or texture plaster, saturate with amended water solution, using a pump sprayer. Do not remove the asbestos material until the material is thoroughly wetted to the substrate. Do not use water where electrical hazard exists.
 2. To remove pipe insulation, first wet any area of damage, then carefully cut jacket. Keep insulation surface wetted by mist of water with wetting agent. Remove insulation in large sections and place immediately in disposal bag. After large pieces have been removed, saturate debris on mechanical equipment and clean all exposed surfaces with abrasive pads, sponges, cloths, etc.
 3. To repair pipe insulation, use drop sheet under area of work to aid clean-up of any dislodged material. Plastic enclosure is not required. Mist any exposed insulation to wet surface and apply lagging paint and canvas or PVC jacketing as required.
 4. For removal of suspended ceiling tiles (where asbestos debris is present on top of tiles or equipment to be accessed), remove the first tile carefully and vacuum all surfaces. Vacuum the upper surface of each subsequent tile prior to removal. Store tiles in the work area.

5. Remove dust and loose friable material likely to be disturbed in the process of doing the work, with a HEPA vacuum or by damp wiping.
6. When asbestos material is removed, all pieces should be placed directly into 0.15 mm (6 mil) polyethylene bags as they are removed. Avoid dropping material to floor wherever possible. After bulk removal is complete, wet wash the exposed surface.
7. Frequently, and at regular intervals during the work, clean up dust and waste in the work area by wet mopping, placing in disposal bags, or by HEPA vacuuming.
8. After completion of removal, seal exposed ends of fireproofing, texture plaster, or mechanical insulation with heavy layer of encapsulating sealer. Apply sealer coat to surfaces from which asbestos material was removed.
9. At completion of work, decontaminate equipment, tools and materials used in the work area by wet cleaning or HEPA vacuum.
10. Dispose of drop sheets and enclosures by wetting the polyethylene, then folding into disposal bags. Do not reuse drop sheets or enclosures.
11. Before leaving work area, decontaminate shoes and protective clothing by using HEPA vacuum or damp wiping. When protective clothing is to be disposed of, it shall be decontaminated as above and placed in labelled disposal bags. Workers shall vacuum all exposed skin, suit and respirator, and proceed to nearest washroom to wash hands and face.

6. te r port po

1. Place waste into asbestos labelled disposal bag, seal with tape, clean the bag, and place into a second clean bag, also to be sealed with tape. Use a barrel, fibre drum, or cardboard or wooden box in place of the second bag when the asbestos waste material is likely to tear the inner bag. Seal the rigid outer container.
2. Place waste containers in storage area for holding asbestos waste. Containers shall be labelled and assigned exclusively for asbestos waste.
3. Prepare for waste disposal in compliance with provincial regulations. The Property Manager will arrange for disposal.

P 3 or Pro e re

Type 3 procedures are not included in the standard work procedures

due to the requirement for the development of specific procedures for the site and for the particular circumstances.

o e or Pro e re

1. p e t

All equipment must be on site before proceeding with the work. Note that these procedures are primarily based on the use of Safe-T-Strip polyvinyl chloride movable glove bags. (Only the Safe-T-Strip glove bag is permitted for use in Ontario.) If the single use polyethylene glove bags permitted in some other jurisdictions are used, it should be understood that they are for use at one location only, and cannot be moved or used elsewhere.

If single use polyethylene glove bag is used [Section 5 - Execution](#), shall be replaced by manufacturer's recommended procedures.

1. *Glove Bag*

Prefabricated, 0.25 mm (10 mil) minimum thickness polyvinyl-chloride bag with integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elasticized port. Bag shall be equipped with reversible double-pull double throw zipper on top. Bag must incorporate internal closure strip if it is to be removed from pipe for reuse elsewhere. Provide size and configuration appropriate for insulation to be removed. The bag must be disposed of once filled. Bag shall not be emptied and reused.

2. *Securing Straps*

Reusable nylon straps at least 25 mm (1") wide with metal buckle for sealing ends of bags around pipe and/or insulation.

3. *Water Sprayer*

Garden reservoir type, low velocity, capable of producing mist or fine spray with water-containing wetting agent. Wetting agent shall be diluted as per manufacturer's recommendations.

4. *Respirators*

Workers using glove bag must wear approved respiratory protection. Respirators and filters must be provided by the employer, and individually assigned to workers. Respiratory protection must be equal to, or exceed, protection of half-face respirator with high efficiency filters. Respirators must be NIOSH approved and acceptable to the Provincial Authorities having jurisdiction. Respirators shall be kept in position from the time the worker is attaching bag to pipe until final cleaning of the pipe and bagging of waste is

completed. Filters shall be changed after 24 hours of wear or sooner if breathing resistance increases.

5. *Protective Clothing*

Workers shall wear disposable coveralls with attached elasticized hood. Coveralls and hood shall remain in place until worker completes cleaning of pipe. Suit may be cleaned for reuse or disposed of as asbestos waste.

6. *Other Equipment*

- labelled asbestos waste bags 0.15 mm (6 mil) - for all asbestos waste in glove bag, disposable suit, cleaning materials, etc.;
- asbestos warning signs;
- wire saw - saw with flexible serrated wire blade and handles to allow use inside glove bag;
- knife with fully retractable blade for use inside glove bag;
- plastic sheet (4 mil polyethylene) to cover exposed or damaged section of pipe prior to attaching glove bag;
- tape-to fasten plastic to pipe if required;
- cleaning supplies e.g., scouring pads, sponges, brushes, buckets, etc.;
- HEPA vacuum, for evacuating air from bag prior to removing bag from pipe. A HEPA filter is at least 99.97% efficient in collecting a 0.3 micrometre particle.

2. **t e r P r o t e c t e e r e**

1. Do not eat, drink or smoke in the work area.
2. On completing clean-up of work area, use HEPA vacuum or wet cloth to clean hands, face, respirator and boots. Remove protective equipment and proceed to nearest washroom to wash all exposed skin on hands and face.

3. **e o o r**

1. Schedule work when occupants are absent. If persons are present, do not start work.

4. **P r e p a r e t o**

1. Where practical, clear area below pipe of moveable furnishings or equipment. Provide scaffold as required to reach pipe.
2. Post an asbestos warning sign at all entrances to room in which the procedure is being used. If necessary use rope or tape barriers to separate work area.

3. Segregate the area of asbestos work, from other parts of the building required to remain in use by using polyethylene walls or barrier tape.
 4. Shut off and seal all diffusers, vents and other openings to ventilation and exhaust systems in the room with polyethylene secured with tape.
 5. Cover all items or equipment located in the designated work area with polyethylene when items or equipment cannot be cleaned in the case of a spill. Tape the polyethylene in place. The polyethylene should cover a width equal to the height of the pipe from the floor, with a minimum width of 3.6 m (12 feet), where required.
 6. Seal all openings and voids in the vicinity of the glove bag operation with one layer of polyethylene secured with tape.
 7. Check condition of pipe insulation where work will be performed. If the pipe insulation has minor isolated damage, mist surface and patch with tape. If damage is more extensive, wrap pipe with plastic and "candy stripe" it with duct tape first. If pipe insulation is severely damaged and cannot be simply repaired, glove bag is not appropriate. (Use Type 2 Procedures.)
 8. Pre-clean with HEPA vacuum or wet methods any loose material on surface of pipe or any material on the floor. If significant amount of material is on floor, Type 2 procedures may be required for clean-up. (See Type 2 Procedures.)
 9. Place necessary tools in bottom of glove bag.
5. **e t o**
1. Zip the bag onto the pipe and seal each end to the pipe with the securing straps. Do not pull the bag tightly to the ends - a small amount of slack allows better room to work within the bag. If a vertical bag is in use, ensure lower strap passes through plastic grommet and cloth tab on zipper.
 2. Place hands into gloves and use necessary tools (wire saw, utility knife, wire cutters) to remove insulation from pipe. Arrange insulation in bottom of bag to obtain full capacity of bag. Roll metal jacketing carefully to minimize ripping or puncturing of the bag.
 3. Insert nozzle of spray pump into bag through valve and wash pipe and interior of upper section of bag thoroughly. Use one hand to aid washing process. Wet surface of insulation in lower section of bag and any exposed ends of asbestos insulation remaining on pipe.
 4. Prior to removing bag from the pipe, wash the top section of the bag and tools thoroughly. Insert nozzle of HEPA filtered

vacuum into bag through the elasticized valve and evacuate air from bag. Seal the closure strip, remove the vacuum nozzle and straps, and remove the bag. Re-install and seal in new location before reopening closure.

5. If bag is to be moved along the same pipe, loosen securing straps, move bag, re-seal to pipe using double-pull zipper to pass hangers. Repeat insulation removal operation.
6. If during use the glove bag is ripped, cut or opened in any way, cease work and repair opening before continuing work. All spilled material must be cleaned up and removed with a HEPA vacuum or wet cleaning.
7. To remove bag after completion of insulation removal, thoroughly wash top section of bag and tools and seal internal zip-lock closure. Place tools in one glove, pull hand out inverted, twist to create a separate pouch, tape inside-out glove at two separate locations 1" apart to seal pouch. Remove inside-out glove and tools by cutting between the tape seals.
8. Place glove pouch and tools into the next clean glove bag to be used. Alternately, place the tool pouch into water bucket, open pouch underwater and clean tools, then allow to dry.
9. Prior to disposal of bag, evacuate the bag with a HEPA vacuum. Pull a 0.15 mm (6 mil) polyethylene bag over glove bag before removing from pipe. Remove securing straps. Unfasten zipper. Seal glove bag and seal 0.15 mm (6 mil) polyethylene bag.
10. After removal of bag ensure pipe is clean of all residue. If necessary, after removal of each section of asbestos, vacuum all surfaces of pipe, using HEPA filtered vacuum equipment, or wipe with wet cloth.
11. Seal all surfaces of freshly-exposed pipe with encapsulating sealer to tack-down any residual dust. Cover exposed ends of any remaining asbestos insulation with lagging cloth or tape.
12. Before leaving work area, a worker shall decontaminate shoes and protective clothing by using HEPA vacuum or damp wiping. When protective clothing is to be disposed of, it shall be decontaminated as above and placed in labelled disposal bags. Workers shall vacuum all exposed skin, suit, respirator and hair (after removing hood) and proceed to nearest washroom to wash hands and face.

6. **te r port po**

1. Place waste containers in storage area for holding asbestos waste. Containers shall be labelled and assigned exclusively for asbestos waste.

2. Prepare waste for disposal in compliance with provincial regulations. The Property Manager will arrange for disposal.

e to or Pro e re

er e y e to or Pro e re

Emergency asbestos procedures shall be implemented when required in order to protect those undertaking the work, as well as to protect all others from, or limit exposure to, airborne asbestos. Procedures indicated shall be followed as closely as possible, in the event of an emergency situation.

Procedures for asbestos work, required as an immediate response to floods, pipe breaks, ceiling collapses, or other emergencies that affect asbestos materials, are as follows:

1. Clear area of all occupants.
2. Construct enclosure around area if time permits.
3. Shut down ventilation system serving area.
4. Worker performing repair shall wear protective respirator and disposable suit. If normal work clothes are worn they must be disposed of if visibly contaminated.
5. Use drop sheet under work, if possible, to minimize clean-up.
6. Perform emergency repair with minimum disturbance of asbestos.
7. Obtain asbestos equipment and perform clean-up of visible material. Use HEPA filtered vacuum or wet cleaning. Dispose of all cleaning supplies as contaminated waste.
8. The worker should wipe off or vacuum disposable clothing and footwear. Proceed to washroom to wash face and hands.
9. Notify the Property Manager regarding the asbestos disturbance, before allowing unprotected persons to enter the area. The Property Manager will contact the Regional Asbestos Coordinator to determine if additional precautionary measures are to be implemented. The Regional Asbestos Coordinator will arrange for removal, clean-up or repair of the asbestos material.
10. The Regional Asbestos Coordinator shall investigate the extent of asbestos disturbance, will determine additional actions to be undertaken and will determine if a hazard investigation under the *Canada Occupational Safety and Health Regulation* is appropriate.

p e o e to Pro e re

1. Sample the material when the area is not in use. Only those persons needed for sampling should be present in the immediate area.
2. Spray the material with a light mist of water to prevent fibre release during sampling. Do not disturb the material any more than necessary.
3. Materials of different appearance should be sampled separately. Mechanical insulation must be sampled separately on all systems, tanks, vessels, etc. Sample both the straight sections of pre-formed insulation and the insulating cement typically present at elbows, fittings, etc. (unless visually identified as fibreglass).
4. Collect the sample by penetrating the entire depth of the material, as the insulation may have been applied in more than one layer or covered with paint or other protective coating.
5. The use of a respirator is recommended for all sampling. Depending on the condition of the material, significant amounts of airborne fibres can be generated during sampling.
6. If pieces of material break off during sampling, the contaminated area must be cleaned up with a HEPA vacuum cleaner or by wet cleaning. Any debris generated must be placed in plastic bags, labelled, sealed and disposed of as asbestos waste.
7. Place samples in labelled plastic bags with a zip-lock closure or in sealed plastic vials. Samples shall be identified with the following information:
 - Sample Number;
 - Building;
 - Room Number;
 - Date of Sampling;
 - Name of Sampler;
 - Source of sample, e.g., Cold Water Pipe, Cold Water Fitting, etc.
8. Temporarily seal any openings created to collect the sample, (for example, with tape, paint or metal foil tape wrapped completely around the pipe). Advise the Property Manager or Regional Asbestos Coordinator.
9. Analysis must be performed by the Health Canada Laboratory or by a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Contact the Regional Asbestos Coordinator for a list of acceptable laboratories.

e p r t o r t t p e t o e e t

ote or r P r y H e p e e e p r t o r

This respirator does not supply oxygen. It must not be used in or for: oxygen deficient atmospheres (less than 19.5%); poorly ventilated areas or enclosed spaces such as tanks or small rooms;

abrasive blasting or firefighting; or for protection against contaminants excluded or not covered by the applicable Approval Label.

Respirators must be approved for protection against asbestos. Check for NIOSH certification.

1. **e p r t o r t t**

Persons required to wear respirators must first pass a qualitative fit-test administered according to the current version of CSA standard Z-94.4. The fit-test should be repeated yearly.

2. **pe t o te Pr or to e**

1. Examine facepiece for:

- dirt;
- cracks, tears or holes;
- distortion and inflexibility;
- cracks or breaks in filter holders, worn threads and missing gaskets.

2. Examine head straps for:

- breaks or tears;
- loss of elasticity;
- broken or malfunctioning buckles and attachments.

3. Examine valves for:

- detergent residue, dust or other material on valves or valve seats;
- cracks, tears or distortion in the valve material;
- missing or defective valves or valve covers.

4. Examine filter for:

- proper filter for protection against asbestos (High Efficiency Particulate);
- incorrect installation, loose connections, missing or worn gaskets or cross threading;
- cracks or dents in filter housing.

5. Leak-checks:

Perform the following tests on each donning:

- *negative pressure test*: cover inlets to filters, breathe in and hold breath; respirator should be drawn to face for minimum of ten seconds (if not, check exhalation valve and fit);
- *positive pressure test*: cover exhalation valve cover and puff out slightly and hold breath; respirator should slightly pressurize and still hold seal (if not, check inhalation valves and fit).

3. e p r t o r e e t

1. Remove filters and disassemble facepiece. Discard or repair defective parts.
2. Wash components in warm water (50°C - 60°C) with mild detergent, using a brush. Cleaning and disinfectant solutions are available from respirator manufacturers.
3. Thoroughly rinse components in clean, warm water.
4. Air dry or hand dry components with a clean, lint-free cloth.
5. Reassemble respirator and test to ensure that all components are working properly (see above). Be careful to check that valves are not lost in the cleaning.

4. t e r t r e H e p e e t

1. Filters can be reused until an increase in breathing resistance is noted. Under typical Type 2 conditions, filter cartridges should last a minimum of 24 hours. Inlet side of filter cartridge to be reused shall be sealed on the inlet side with tape for storage.
2. When no longer usable, filter cartridges will be sealed on the inlet side with tape, and disposed of as contaminated waste.



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