FISHERIES AND OCEANS CANADA

ASBESTOS MANAGEMENT PLAN

For:

Office Trailer
Cartwright Field Office
Cartwright, Newfoundland and Labrador
(DFRP# 56215)

March 2019

ASBESTOS MANAGEMENT PLAN

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ASBESTOS MANAGEMENT PLAN

1 PREFACE

The Asbestos Management Plan is required to ensure that asbestos-containing material is managed and controlled in Fisheries and Oceans Canada (DFO) custodial buildings and assets, both Crown-owned and leased (including lease-purchase, and sale leaseback), to reduce the risk of damaging asbestos-containing material, and potential occupant exposure to airborne asbestos fibres. The Asbestos Management Plan is to be reviewed and updated to reflect changes in policy and regulations at a minimum every 5 years, or more frequently if required.

The Asbestos Management Plan is also required in order to comply with Part II of the *Canada Labour Code* – Occupational Health and Safety Regulations, the National Joint Council Occupational Health and Safety Directive, Part XI – Hazardous Substances, PSPC *Asbestos Management Directive, PSPC Asbestos Management Standard;* the PSPC Standard on Hazardous Substances, and Standard on Occupational Health and Safety Training, which are part of the Occupational Health and Safety Policy Suite; as well as the following provincial regulations governing the safe work environment for employees, public and contractors visiting or working in a building containing asbestos:

- NL Occupational Health and Safety Act (RSNL1990 Chapter O-3; Amended: 1992 c29 s24; 1992 c42; 1996 cP-41.01 s37; 1997 c13 s49; 1998 c19 s20; 1999 c28; 2001 c10; 2004 c36 s27; 2004 c47 s27; 2004 c52; 2006 c16; 2009 c19; 2012 c38 s11; 2013 c16 s25)
    - Occupational Health and Safety Regulations (5/12)
    - Asbestos Abatement Regulations (111/98)

The Asbestos Management Plan (AMP) will perform several functions:

- To act as a common term of reference for the safe operation and management of a facility with asbestos-containing materials.
- To be a central depository of information for each facility.
- To act as a control mechanism to ensure compliance.
- To communicate roles and responsibilities of those required to work with or around asbestos-containing materials.
- To communicate the accepted departmental procedures for working with asbestos-containing materials.

This document provides information, procedures, and work practices necessary for the Asbestos Management Plan (AMP) to be functional. The AMP sets guidelines for all facility maintenance, alteration, repair or other activities that may disturb asbestos; and provides ongoing re-assessment of friable asbestos materials. If continuing disturbance or severe deterioration of friable asbestos is indicated, the material will be removed. Major renovations will be preceded by total removal of asbestos-containing materials in the project area if practical.

The AMP describes general work practices for minor disturbance of asbestos-containing materials (*Low and Intermediate risk*). This document is divided so that specific sections can be copied and provided to the worker or contractor performing the work. The AMP includes policies for inspection of work, air monitoring, and worker training.

ASBESTOS MANAGEMENT PLAN

This AMP does not describe work procedures for major asbestos removal. Such removals are classified as *High risk*. These procedures generally require an experienced contractor to execute and therefore are not detailed within this AMP document. This type of work usually requires "project specific approach" and therefore should be coordinated and monitored by the Asset Manager, or Property and Facility Manager with the assistance of the Regional Asbestos Coordinator.

2 DEFINITIONS

Abatement - control or attend to.

Amended water - water which has been treated with a chemical agent to enhance the wetting of asbestos material prior to removal.

Area by area survey - survey of large areas where each plane within the area is sampled visually and scientifically tested for the presence of asbestos containing materials, i.e., corridors, assembly areas, total basement, boiler rooms, etc.

Asbestos - a generic name given to a number of naturally occurring hydrated mineral silicates. These silicates are incombustible, separate into fibres and have a unique crystalline structure. Specific types of fibrous silicates: Actinolite, Amosite, Anthophylite, Chrysotile, Crocidolite, Tremolite.

Asbestos-Containing Material (ACM) 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.

Asbestos work area: area where work is being performed which will or may disturb asbestos-containing material, including overspray and fallen material or settled dust that may contain asbestos.

Contractor: a person or entity who performs work for and/or supplies services to the owner for monetary compensation, either by undertaking the work alone, by employing one or more workers, or by contracting the services of one or more workers.

Employer representative: a person who acts on behalf of the employer department, as designated by the department. This means that each department located in a building has a representative who communicates with his departments Workplace Health and Safety Committee in compliance with the Canada Labour Code, Part II.

Encapsulation: application of a liquid sealant to asbestos-containing material; the sealant may penetrate and harden the material, or cover the surface with a protective coating (bridging sealants). Also called encasement.

Enclosure: a structure made of polyethylene or other suitable material to prevent the spread of asbestos containing material from the work area.

Friable material - can be crushed, crumbled, or reduced to a powder by hand pressure when dry.

Glove bag removal: a method of removing friable insulation from a piping system using a prefabricated bag which isolates the section of insulation being removed.

Phase Contract Microscopy (PCM) - Phase contrast microscopy approved method for measurement of airborne particulate matter.

Polarized Light microscopy (PLM) - Polarized light microscopy method of detection for asbestos in bulk samples.

Qualified person: a person who:

- has the required knowledge, training and experience to organize the work and its performance;
- is familiar with all legislation and regulations that apply to the work;
- has knowledge of any potential or actual danger to health or safety in the workplace.

Room by room survey - survey of individual rooms where each plane within the room is sampled visually and scientifically tested for the presence of asbestos containing material.

Transmission Electron microscopy (TEM) - method of detection used for positive identification of asbestos fibres via the use of an electron microscope.

Workplace: any place where an employee is engaged in work for the department.

Workplace Health and Safety Committee: as defined in the Canada Labour Code, Part II, Regulations Respecting Occupational Health and Safety, Sections 134.1, 135 and 136

Vermiculite: silicate mineral with a layered (mica-like) morphology which may range in colour from silvery-blond to dark grey-brown. For the purposes of this document, vermiculite with any concentration of asbestos measured in a composite sample taken in accordance with provincial/territorial sampling and analysis standards will be considered an asbestos-containing material.

3 CONTACT LIST

Cartwright Field Office		
Name	**Address**	**Number**
DFO, Asset Manager, Property and Facility Manager		Phone ( ) Cell ( ) e-mail
Employer representative		Phone ( ) Cell ( ) e-mail
Property Manager		Phone ( ) Cell ( ) e-mail
DFO, Regional Asbestos Coordinator		Phone ( ) Cell ( ) e-mail
DFO, Health and Safety Coordinator		Phone ( ) Cell ( ) e-mail
Building System Technician		Phone ( ) Cell ( ) e-mail
Asbestos Consultant		Phone ( ) Cell ( ) e-mail
Asbestos Contractor		Phone ( ) Cell ( ) e-mail
Asbestos Contractor		Phone ( ) Cell ( ) e-mail
Additional contact name		Phone ( ) Cell ( ) e-mail

Note: Contact information to be provided by DFO.

4 EMERGENCY - GENERAL INFORMATION

The main goal is to limit contamination; decontaminate and/or enclose problem areas with polyethylene.

Examples of possible emergencies: an asbestos clad pipe breaks; heating main breaks, damage to plaster, and floods that deteriorate asbestos containing-material (ACM).

Most asbestos emergencies are unique, but basic procedures apply in all cases. Handle emergencies as quickly as possible; follow procedures as outlined in the Asbestos Management Plan, Asbestos Management Standard and Asbestos Management Directive.

The emergency situation is under control when the asbestos-containing material is enclosed or removed and the potential release of airborne asbestos fibres has been eliminated.

VACATE the area of unnecessary personnel.

CONTACT the Asset Manager, or Property and Facility Manager, the Regional Asbestos Coordinator may be contacted for guidance on contamination; or, in the absence of same, the standing offer asbestos consultant or the standing offer asbestos contractor.

CONFIRM that suspect material is asbestos containing, the Asset Manager, or Property and Facility Manager should refer to the inventory in the AMP, an asbestos consultant can be engaged for expert opinion or to sample suspect material and send for analysis. The material may be assumed to contain asbestos and use asbestos clean-up procedures with confirmation of asbestos content once sample analysis is completed.

LIMIT the asbestos contamination:
- Isolate the area by locking doors if this can be done without blocking emergency routes.
- Place enclosure around area if time permits.
- Post warning signs.
- Shut down ventilation system serving area.
- Perform repair and cleaning with minimum disturbance of asbestos.

INFORM the following (refer to Contact list) of the emergency based on the severity of the incident:
- Asset Manager, or Property and Facility Manager
- Regional Asbestos Coordinator
- Employer Representatives
- Asbestos Consultant
- Asbestos Abatement Contractor
- Joint Occupational Health and Safety Committee
- Workers Compensation Board (when private sector Clients/contractors present)
- Provincial ministry of Labour
- Employment and Social Development Canada (concerns labour issues)

ASBESTOS MATERIAL REMOVAL shall only be performed by persons trained in the handling and removal of asbestos containing material, refer to **Appendix F** – *Procedures for Emergency Asbestos Work.*

POST CLEAN-UP inspect the work area and monitor the air to confirm acceptable levels and document readings. The Regional Asbestos Coordinator may be contacted concerning air monitoring requirements. A qualified asbestos consultant should be hired to perform air monitoring. (Use the standing offer consultant, if available.)

DOCUMENT the disposal of the asbestos and the procedures used.

5 BUILDING SPECIFIC INFORMATION

ASBESTOS MANAGEMENT PLAN

Building Specific Information

DFRP number: 56215
Construction Date: 1983
Address: 5 Point Road, Cartwright, NL
Configuration: 1 Storey
Occupancy: Fully Occupied
Primary Use: Equipment Storage
Gross Area: 38 m^2
Rentable Area: N/A
Structural System: Wooden Frame
Exterior Cladding: Vinyl Siding

6 SUMMARY OF ASBESTOS IN THE BUILDING

6.1 Previous surveys prepared for this facility:

- Hazardous Building Materials Assessment, Cartwright Field Office, DFRP# 56215, 5 Point Road, Cartwright, Newfoundland and Labrador, prepared by Wood, March 2019.

6.2 Summary of materials present in this facility:

- Building materials containing greater than 1% asbestos by dry weight, which are considered to be ACMs, are present in the form of vinyl sheet flooring inside the Office Trailer.
- Sample CA-AS-7 was collected from the floor of the Bathroom (Room 4) and contains chrysotile asbestos (19.7%). The vinyl sheet flooring is beige in colour and has a pebble type pattern.
- Sample CA-AS-9 was collected from the floor of the Side Room (Room 3) and contains chrysotile asbestos (17.3%). The vinyl sheet flooring is beige in colour and has a pebble type pattern. It is present underneath green floor tiles that have a square-border type pattern.
- Sample CA-AS-10 was collected from the floor of the Main Room (Room 2) and contains chrysotile asbestos (30.8%). The vinyl sheet flooring is beige in colour. It is present underneath green floor tiles that have a square-border pattern with flowers.

7 ASBESTOS INVENTORY

Asbestos Inventory - Initial Assessment

Cartwright Field Office (DFRP# 56215) - Office Trailer

March 2019

Location	Room	Material	Description	Accessibility	Friability	Sample #	Date	% Asbestos	Type of Asbestos	Condition	Quantity	Units	Comments
Floor	Bathroom	Vinyl Sheet Flooring	Beige Pebble Pattern	A	Non-friable	CA-AS-7-Vinyl Sheet Flooring	30-Sep-18	19.7	Chrysotile	Fair	3	m^2	-
Floor	Side Room	Vinyl Sheet Flooring	Beige Pebble Pattern (present underneath green square pattern flooring)	D	Non-friable	CA-AS-9-Vinyl Sheet Flooring	30-Sep-18	17.3	Chrysotile	-	11	m^2	ACM covered with non-ACM floor tiles
Floor	Main Room	Vinyl Sheet Flooring	Beige Colour (present underneath green square flooring with flower pattern)	D	Non-friable	CA-AS-10-Vinyl Sheet Flooring	30-Sep-18	30.8	Chrysotile	-	22	m^2	ACM covered with non-ACM floor tiles

Notes:

1) Asbestos disturbance, abatement, transportation, and disposal shall be performed in accordance with the requirements of NL Asbestos Abatement Regulation 111/98, NL Waste Material Disposal Act and TDGA

2) Quantity of material estimated if material observed to be in poor/fair condition and if known or potential ACM

3) This table should be read in conjuction with Asbestos Management Plan

Accessibility

A = Accessible to all building occupants (no ladder)

B = Accessible to maintenance/operations staff only (no ladder, e.g. locked area)

C = Accessible to maintenance/operations staff only (ladder)

D = Not accessible or enclosed

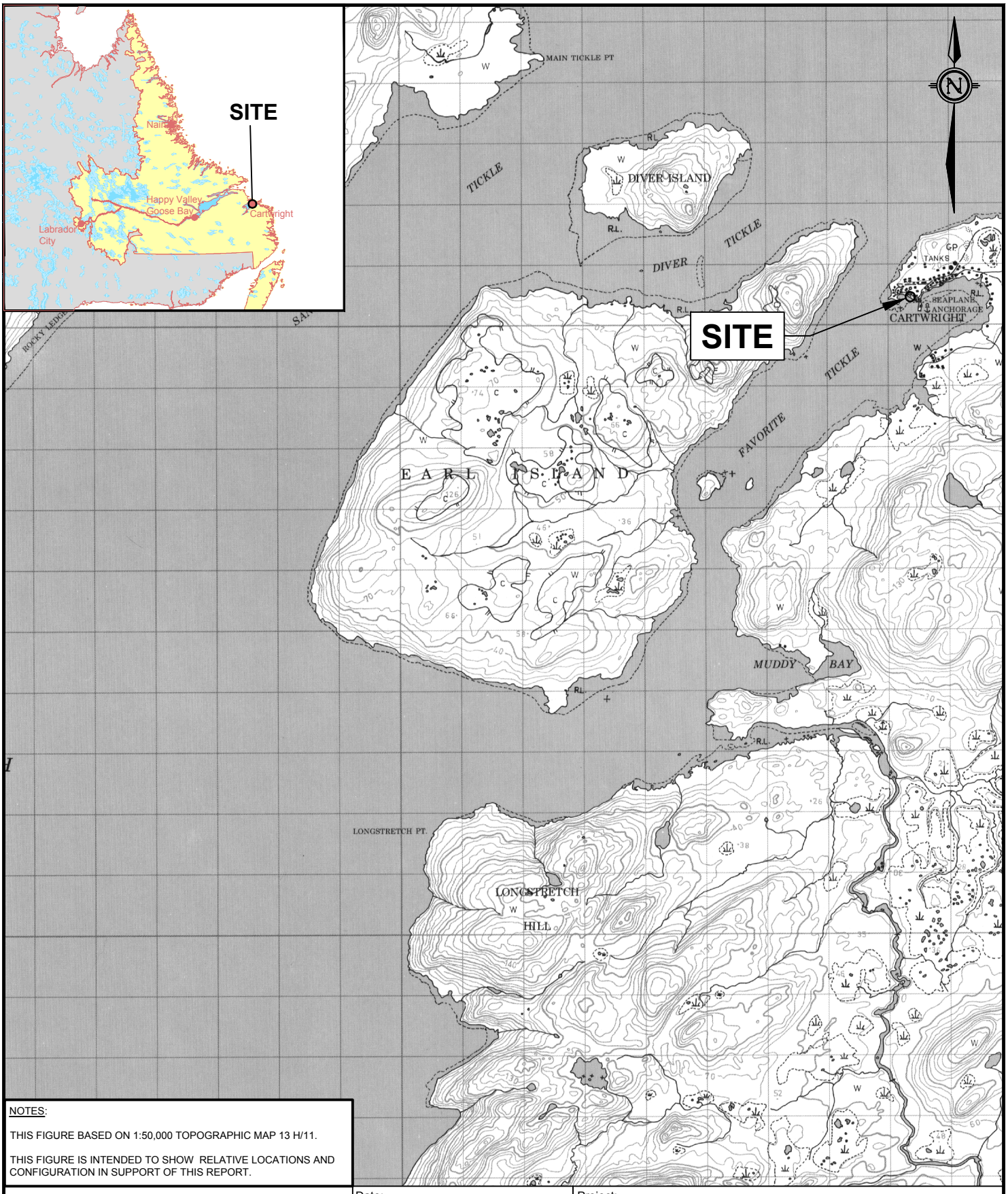
FRIABLE VERSUS NON-FRIABLE:

Friable material refers to an ACM that can be readily crumbled using hand pressure, separating asbestos fibres from the binding materials with which they are associated. Typical friable materials include acoustical or decorative spray applications, fireproofing, refractory and thermal insulation.

Non-friable material refers to an ACM that is associated with a binding agent (such as tar or cement) that prevents the ready release of airborne fibres. Typical non-friable materials include floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding. These materials are generally considered to pose a low hazard provided they remain intact and are not cut or shaped with power tools that are not equipped with a HEPA filtered dust collection system.

***Special considerations** Some ACMs, such as plaster, joint/filler compound, and compressed fibre ceiling tiles act as non-friable materials when in-place and in good condition as the associated binding agent prevents the release of airborne fibres. Therefore, these materials can be handled as a non-friable if in good condition and undisturbed. However, the binding agent is relatively weak, and if disturbed or damaged in any way, the material may act as a friable material with an increased risk of asbestos fibre release. These materials should be considered as friable materials in the event of any disturbance or damage. It is generally recommended that a competent asbestos professional be consulted and a site specific program be developed prior to any major disturbance.

8 PLANS AND DRAWINGS



NOTES:

THIS FIGURE BASED ON 1:50,000 TOPOGRAPHIC MAP 13 H/11.

THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION IN SUPPORT OF THIS REPORT.

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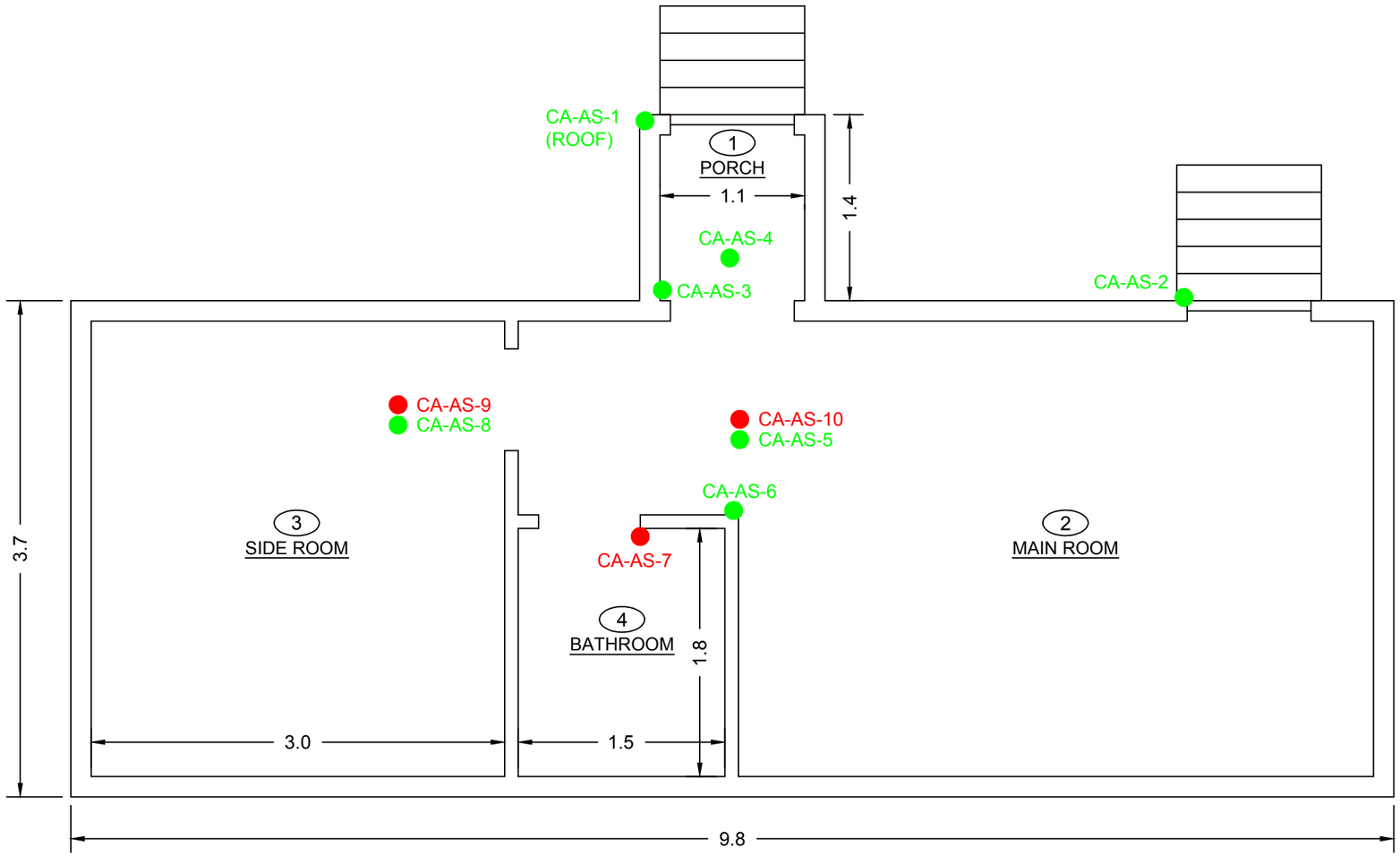
Client:

Public Services and Procurement Canada / Services publics et Approvisionnement Canada

Date: April 2019	Project: Asbestos Management Plan, Cartwright, NL		
Drawn by: T. Rideout	Title: Site Location Plan		
Approved by: A. Parsons	Scale: NTS	Project No.: TF18076811.1000	Figure No.: 1



LEGEND:

- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED
- ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS
- (1) ASSIGNED ROOM NUMBER

Scale

0m 1m 2m 3m

NOTES:

1. DO NOT SCALE FROM FIGURE.
2. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
3. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
4. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
5. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC SERVICES AND PROCUREMENT CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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wood.

Drawn by: T. Rideout

Approved by: A. Parsons

Scale: As Shown

Project: Asbestos Management Plan, Cartwright, NL

Title: Sample Location Plan - Cartwright Field Office

Date: April 2019

Project No. TF18076811.1000

Rev. No. 0

Figure No. 2

9 VARIOUS REPORTS

10 INTRODUCTION TO THE PROGRAM

10.1 Objectives

This Asbestos Management Plan has been formulated to meet the following objectives:

- To identify all friable and non-friable asbestos-containing materials.
- To be a central repository at the building level, of all information related to the management of asbestos for each facility.
- To describe work classification for disturbances of asbestos-containing materials.
- To act as a common terms of reference for the safe operation and management of a building or engineering asset with asbestos-containing materials.
- To maintain asbestos-containing materials in good condition.
- To prevent unintended asbestos exposures to client staff and visitors, contractors, and DFO staff.
- To manage all construction and maintenance activities that might disturb asbestos materials.
- To comply with all federal, provincial, territorial, and municipal requirements for occupational health and safety, and environmental control.

10.2 Response to Policy Directives

The Asbestos Management Plan has been developed to meet Federal and Provincial regulatory requirements; as well as the requirements for employee health protection set in Treasury Board Manual, Human Resources Management, Occupational Safety and Health Directive, Part XI – Hazardous Substances, and the PSPC Asbestos Management Directive, and Asbestos Management Standard.

10.3 Regional Asbestos Coordinator

A position of Regional Asbestos Coordinator exists to provide services for asbestos control. The Project Manager, or Asset Manager, Property and Facility Manager may ask the Regional Asbestos coordinator for assistance with: annual reassessments, suspect material verification, project specifications, inspection and air monitoring. Name and telephone number of the Regional Asbestos Coordinator can be found in the Contact List.

11 REGULATORY REQUIREMENTS

DFO has responsibilities as building owner, tenant, landlord, and employer, under the following regulations and statutes:

- Canada Labour Code, Part II
- Canadian Environmental Protection Act
- Transportation of Dangerous Goods Act (TDGA, 1992), S.C, 1992, c.34 including Transportation of Dangerous Goods Regulation SOR/85/77 and subsequent amendments.
- Provincial and territorial occupational health and safety legislation (NL Occupational Health and Safety Act (RSNL1990 Chapter O-3; Amended: 1992 c29 s24; 1992 c42; 1996 cP-41.01 s37; 1997 c13 s49; 1998 c19 s20; 1999 c28; 2001 c10; 2004 c36 s27; 2004 c47 s27; 2004 c52; 2006 c16; 2009 c19; 2012 c38 s11; 2013 c16 s25 and Occupational Health and Safety Regulations (5/12)).
- Provincial and territorial environmental protection legislation (Asbestos Abatement Regulations (111/98).

12 ROLES AND RESPONSIBILITIES

12.1 Asset Managers, or Property and Facility Managers

- Developing and updating Asbestos Management Plans, including the inventory and assessment, as well as annual asbestos inventory reassessment reports, when necessary collaborating with the Regional Asbestos Coordinator, and ensuring that copies of this information are maintained and available as specified in the Asbestos Management Standard;
- Providing a copy of the Asbestos Management Plan, including the inventory and assessment, as well as annual asbestos reassessment reports, or if applicable the professional certificate of no known asbestos, to the Regional Asbestos Coordinator and Employer representatives and recording when and to whom the reports were presented;
- Providing contractors access to the Asbestos Management Plan;
- Providing written notification to the Employer representatives of potential disturbance (including work processes, duration, hours of work, and possible disruption) of asbestos-containing materials during repair, maintenance and construction projects and recording when and to whom the reports were presented;
- Reviewing all maintenance and project work requirements against survey information to determine the possibility of asbestos being disturbed, and classifying the work based on the approved criteria;
- For leased facilities, obtaining from the lessor a copy of the Asbestos Management Plan, including inventory and the most recent asbestos-containing material reassessment, and asbestos-related work notifications, or professional certification confirming that the building does not include any known asbestos-containing materials, and ensuring these items are provided to the Employer representatives and Regional Asbestos Coordinator;
- Assisting in the identification of real or potential accidental exposure to asbestos of occupants or visitors, and notifying the Regional/Area Manager Occupational Health and

Safety, Asset Managers, Property and Facility Managers, and Project Manager accordingly; and
- Ensuring hazardous occurrence investigation conform with the PSPC Standard on Hazardous Occurrence Investigation and Reporting.

12.2 Regional Asbestos Coordinators

- Collaborating with Asset Manager or Property and Facility Managers to ensure the asbestos management plan, and annual reassessment, including the inventory, is updated as required;
- Providing guidance during the selection of qualified person;
- Collaborating with Project Managers to ensure work is properly classified, proper specifications are provided, and all applicable legislation are respected;
- Reviewing the project documentation of high-risk (in terms of project risk and complexity) projects, at the request of the Technical Authority, as provided by the Project Manager; and
- Maintaining a copy of the Asbestos Management Plan, inventory, and reassessments as provided by the Asset Managers, or Property and Facility Managers.

12.3 Employer representatives

- Providing the workplace Occupational Health and Safety Committee documentation related to the asbestos management plan, construction, and hazardous occurrence; and
- Responding to employee requests for information concerning asbestos-containing materials in the workplace.

12.4 Project Managers/Supervisors

- Ensuring that employees on site have received notification that asbestos-containing material are present in work area;
- Ensuring that employees on site have received proper asbestos training based on the responsibilities and duties to be undertaken in relation to asbestos;
- Ensuring that documentation has been received by contractor performing asbestos work;
- Ensuring that in the case of a hazardous occurrence, comply with all requirements of the departmental Standard on Hazardous Occurrence Investigation and Reporting;
- Ensuring contractor hired to perform asbestos work according to applicable legislation are in possession of valid certification to perform asbestos work;
- Ensuring employees required to perform work classified as low risk have received proper training;
- Ensuring DFO employees do not perform asbestos-related work classified as intermediate or high risk; and
- Ensuring that all procedures for inspection and air monitoring are implemented based on the classification of the work and the specified requirements.

12.5 Contractors

- Review the asbestos survey reports provided prior to all renovation and construction work for the possible impact on asbestos;
- Complete the Contractor Notification and Acknowledgement form;
- Ensuring not to disturb asbestos-containing materials without prior notification to the Project Manager or Asset Manager, or Property and Facility Manager; and
- Ensuring that they complete all the required documentation and provide proof of training required by the DFO Asbestos Management Plan

12.6 Building Systems Technicians

- Ensuring that they have taken required training;
- Wearing, using, and maintaining the required personal protective equipment, clothing, and tools; and
- Only performing low risk asbestos related work within the scope of their training as directed in the PSPC Asbestos Management Directive and Asbestos Management Standard.

13 ASBESTOS CONTAINING MATERIALS

13.1 Non-Friable and Friable Asbestos Products

For the purposes of the AMP, an asbestos containing material (ACM) is any material found to contain asbestos that is at or above the limit defined by provincial standards where it is located, as determined by the standard Polarized Light Microscopy (PLM) or Transmission Electron Microscopy (TEM) methods for the analysis of bulk samples.

A friable asbestos material is an asbestos containing material that when dry can be crumbled, pulverized or powdered by hand pressure, and includes dust or debris arising from non-friable materials that is or will become crumbled, pulverized or powdered (such as asbestos-containing plaster disturbed by demolition).

13.2 Types of Non-Friable Asbestos Products

Non-friable asbestos products include, but are not limited to:

- Asbestos cement products: piping, decorative panelling, fireproofing, thermal insulation.
- Gaskets and packing: asbestos woven and mixed with rubber or synthetic compounds.
- Coatings and sealants: used in roof coating.
- Paper products: roofing felt, gaskets, pipe wrap.
- Floor tiles.
- Friction materials: brake pads.
- Drywall joint compound (undisturbed in good condition).
- Plaster (undisturbed in good condition).

13.3 Types of Friable Asbestos Products

Friable asbestos products include, but are not limited to:

- Sprayed insulation products (fireproofing, thermal insulation, acoustic insulation, or decorative products).
- Acoustic or texture plaster.
- Mechanical insulation, whether or not jacketed.
- Compressed mineral fibre ceiling tiles.
- Drywall joint compound (disturbed during removal or in poor condition).
- Plaster (disturbed during removal or in poor condition).
- Vermiculite (needs to be confirmed through laboratory analysis).

14 DETECTION LIMITS OF BULK ANALYSIS

Asbestos-containing material (ACM) is defined as any material found to contain asbestos at or above the detection limit of asbestos fibres set provincially, as determined by the standard Polarized Light Microscopy method for the analysis of bulk samples. The provincial detection limits are as follows:

ACM is defined as any material found to contain asbestos at or above the limit defined by provincial/territorial standards for an asbestos-containing material, as determined by the allowable analytical method for the analysis of bulk samples. Except in the case of vermiculite, the provincially/territorially-regulated limits or generally-accepted guidelines to consider a material as an asbestos-containing material, subject to asbestos in buildings regulation, are provided as follows:

MINIMUM CONCENTRATION TO CONSIDER AS AN ASBESTOS-CONTAINING MATERIAL (BY PROVINCE)	
QUEBEC (includes part of National Capital Area)	0.1%
MANITOBA, SASKATCHEWAN (for friable material)	0.1%
ONTARIO (includes part of National Capital Area) BRITISH COLUMBIA	0.5%
NOVA SCOTIA	0.5%
All other provinces and territories, (non-friable material in Manitoba, Saskatchewan)	1.0%

Note that these concentrations may change with regulatory amendments, therefore applicable legislation should be consulted to confirm that they are still valid.

Vermiculite is considered an asbestos-containing material in the presence of any concentration of asbestos measured in a composite sample taken in accordance with provincial/territorial sampling standards.

15 ASBESTOS INVENTORY AND ASSESSMENT

The Asset Manager or Property and Facility Manager with the assistance of the Regional Asbestos Coordinator if required, has arranged for a complete survey and assessment of ACM in the facility.

This survey to provide the Asbestos Inventory and Assessment has been performed on a room-by-room basis. The inventory information is provided in Section 7 Asbestos Inventory of this document.

The survey addresses all of the friable and non-friable asbestos-containing materials, as defined in the Asbestos Management Plan definitions.

The evaluation of friable and non-friable asbestos materials and assessment of condition follows the criteria given in Appendix A. The *Asbestos Inventory* template (provided by Asset Manager or

Property and Facility Manager Regional or Regional Asbestos Coordinator) was used to document the ACM.

The analysis of bulk samples was performed by a laboratory accredited by either the National Voluntary Laboratory Accreditation Program (NVLAP), American Industrial Hygiene association (AIHA), or the Canadian Association for Laboratory Accreditation (CALA), or using a method noted in provincial regulations where the sample was taken, to the detection limits specified in Section 15. Frequency of sample collection meet federal/provincial/territorial regulations, but could have been more frequent at the discretion of the surveyor.

Analysis of bulk samples was performed, where possible, using the United States Environmental Protection Agency method EPA/600/R-93/116 for Polarized Light Microscopy (PLM). In some instances, analysis may have been performed using Transmission Electron Microscopy (TEM) (an example of this would be analysis of vinyl floor tile).

The Asset Manager, or Property and Facility Manager will arrange for copies of the completed Asbestos Inventory and Assessment reports and annual re-assessments to be held by the following persons and locations:

- Regional Asbestos Coordinator.
- Employer representatives.
- Workplace Occupational Health and Safety Committee.
- A location in the building, accessible to maintenance staff and contractors.

The Asset Manager, or Property and Facility Manager may decide to utilize the services of the Regional Asbestos Coordinator to arrange for a contractor qualified in asbestos abatement to removal or repair damaged or deteriorated ACM identified by the Asbestos Inventory and Assessment.

16 RE-ASSESSMENT

The Asset Manager, or Property and Facility Manager, with the assistance of the Regional Asbestos Coordinator if required, will arrange for a yearly re-assessment of all friable and non-friable ACM in exposed accessible locations.

The existing *Asbestos Inventory* table will be used as a reference during the re-assessment and updated and included in the re-assessment report to reflect any changes in condition and quantity of ACM.

Copies of the re-assessment report will be distributed to holders of the Asbestos Management Plan. Copies will be inserted into Section 9, Various Reports, of this document.

The Asset Manager, or Property and Facility Manager may utilize the services of the Regional Asbestos Coordinator to arrange for removal or repair of damaged or deteriorated asbestos-containing materials identified by the yearly re-assessments.

Once recommendations are completed as required by the re-assessment report, the *Asbestos Inventory* table must be modified to reflect any changes in condition and quantity.

17 NOTIFICATION

17.1 Notification to Employers

Under the Canada Labour Code, all building occupants' have to be informed of any asbestos in facilities they work in. To this end, the Asset Manager, or Property and Facility Manager will provide a written notice of the presence of asbestos-containing materials, as known at the time the Asbestos Management Plan (AMP) comes into effect, ensuring written notice is provided to the Employer representatives who will provide copies to the Health and Safety Committee. Notification will also occur for the annual reassessment and asbestos related work in the building. Notification will be provided prior to any asbestos abatement work being performed. At the completion of the work notification will be provided outlining the results and any further actions required.

17.2 Notification to Contractors

All contractors who perform work at the facility must be notified of the presence of ACM if their work may bring them into contact or close proximity to ACM and they may disturb it. Signed copies of the notification form will be kept in Appendix I.

17.3 Notification to PSPC Building System Technicians

The Asset Manager, or Property and Facility Manager will provide a written notice of the presence of ACM, and ensure they have access to the Asbestos Management Plan. Notification will also be made of the annual reassessment.

17.4 Notification of Asbestos Abatement

Project Managers must inform the Asset Manager, or Property and Facility Manager if material is suspected of being ACM, the suspect material must be treated as ACM until proven otherwise. Ensure that provincial /territorial authorities are notified as required per applicable regulations.

18 TRAINING

18.1 Asbestos Awareness Training

Training for departmental employees is subject to, and must be compliant with, the PSPC *Standard on the Hazard Prevention Program, Standard on Occupational Health and Safety Training, Standard on Hazardous Substances, Standard on Personal Protective Equipment and Clothing for Employees*, and *Standard on Occupational Health Evaluations*, which are part of the departmental occupational health and safety policy suite.

Training by way of the required PSPC course *Asbestos Work Practices Awareness* shall be provided to RPB Asset Managers, Property and Facility Managers, building systems technicians, building operator maintainers, and all employees who may disturb asbestos-containing material through the activities of their work, or persons who may enter a work area. This same training course is also required for those departmental employees who supervise workers, contractors who may work near, and may disturb asbestos-containing material.

18.2 Asbestos Procedure Training

In addition to the *Asbestos Work Practices Awareness* course, any employees who will perform low risk work will receive additional appropriate training, from a qualified service provider, that conforms to the regulations, codes and guidelines related to asbestos abatement of the province or territory where the work will be performed as no such requirements exist federally. Copies of certificates of training for asbestos related work are to be placed in Appendix H.

Respirator training will be provided upon request to all those DFO employees who will perform Low risk work and request a respirator. The training will cover limitations of use, facial hair, fitting, and maintenance of respirators. Persons provided with a respirator will be fit-tested with the assigned respirator, using the CSA irritant smoke method. Appendix E gives notes on respirator fitting and maintenance. Persons who will wear tight-fitting respirators will be required to be clean-shaven where the respirator seals to the face. Depending on the extent of asbestos work to be undertaken and case-by-case evaluation, DFO may provide workers with facial hair alternate respirators which do not require a facial seal. Reference should be made to the CSA Z94.4-02, Selection, Care and Use of Respirators.

19 CLASSIFICATION OF ASBESTOS WORK

Asbestos work will be classified as Low, Intermediate, and high risk according to the following criteria listed below.

If there is a conflict related to asbestos work classification between the PSPC *Asbestos Management Standard*, Part II of the *Canada Labour Code – Occupational Health and Safety Regulations*, or provincial regulations where the work will be performed, the most stringent requirements will be applied.

19.1 Low risk work:

- Non-destructive (i.e. without breaking, cutting, drilling, abrading) removal of non-friable asbestos-containing material;
- Non-destructive (i.e. without breaking, cutting, drilling, abrading) removal of non-friable asbestos-containing material;
- Destructive work (i.e. breaking, cutting, drilling, abrading) on wetted non-friable asbestos-containing material with non-powered hand-held tools;
- Removal of one square meter or less of drywall in which joint compounds contain asbestos-containing materials;
- Removal or replacement of 7.5 square metres or less of asbestos-containing compressed-mineral-fibre-type ceiling tiles; and
- Collecting samples of materials suspected of containing friable asbestos.

19.2 Intermediate risk work:

- Entry into ceiling spaces, crawlspaces, pipe tunnels, etc., where friable asbestos debris is or may be present;
- Removing more than 7.5 square meters of asbestos-containing suspended ceiling tiles;
- Removal of more than one square metre of drywall where asbestos-containing joint compound materials has been used;
- Destructive work (i.e. breaking, cutting, drilling, abrading) on non-wetted, non-friable asbestos-containing material with non-powered hand held tools;
- Destructive work (i.e. breaking, cutting, drilling, abrading) on non-friable asbestos-containing material if the work is done by means of power tools that are attached to dust collecting devices equipped with a high efficiency particulate air (HEPA) filters;
- Minor removal or disturbance of friable asbestos-containing material. Minor is defined as follows:
    - in British Columbia: up to 0.1 m^2 surface area, or 3 linear metres of pipe insulation.
    - in Quebec: up to 0.03 m^3 of debris.
    - all others: up to 1 m^2 of surface area.
- Enclosing friable asbestos-containing material;
- Applying tape or cover to asbestos-containing insulation;

- Glove bag removal of asbestos-containing material from a pipe, duct or similar structure;
- Removing filters in an air handling unit in a building that has sprayed-on asbestos-containing fireproofing; and
- Work not otherwise classified as either low or high risk.

19.3 High risk work:

- Major removal or disturbance of friable asbestos-containing material (greater than quantities defined under intermediate work);
- Destructive work (i.e. breaking, cutting, drilling, abrading) of non-friable asbestos-containing material using power tools not attached to dust-collecting devices equipped with HEPA filters;
- Encapsulating friable asbestos-containing material by spray application of an encapsulant or sealant;
- Cleaning or removal of ductwork and air handling equipment serving or passing through areas of buildings with sprayed, friable asbestos-containing material; and
- Repair, alteration or demolition of a boiler, furnace, kiln, or similar equipment made of asbestos-containing refractory materials.

20 CONTROL OF ASBESTOS-RELATED WORK

20.1 Maintenance Work

The Asset Manager, Property and Facility Manager is responsible to review all maintenance work for the possibility of disturbance of asbestos-containing materials.

DFO employees will only perform low risk work, the Project Manager or Asset Manager, Property and Facility Manager must insure that the workers have received appropriate training for the tasks to be performed.

The Asset Manager, Property and Facility Manager will inform the Employer representatives prior to the commencement of work. The Employer representative will inform the Occupational Health and Safety Committee.

If there are asbestos-containing materials in the area of maintenance, but the Project Manager, or Asset Manager, Property and Facility Manager judges that the friable materials will not likely be disturbed by the maintenance work, the Project Manager, or Asset Manager, Property and Facility Manager must caution the maintenance staff or the contractor of the presence of asbestos-containing materials. Signed copies of the notification form will be kept in Appendix I.

The Asset Manager, Property and Facility Manager will ensue written processes for performing asbestos remediation work are to be developed by a qualified person for the work to be undertaken. These processes shall be developed in accordance with the Canadian National Master Construction Specification (NMS), Sections 02 82 00.01 (Asbestos Abatement - Minimum Precautions), or 02 82 00.02 (Asbestos Abatement - Intermediate Precautions).

Before asbestos abatement work is started:

The following documentation must be provided by the contractor as proof of competency as per provincial/territorial regulations:

- Third-party liability insurance
- Fit test certificate
- Contractors provider's site-specific safety plan
- Notice of Project
- Copy of Workplace Safety and Insurance Board / Ministry of Labour clearance
- Copy of trade certificates / competency cards
- Other certificates where required (fall protection, confined space, man lift, etc.)

20.2 Asbestos-Related Work Record

Only maintenance work classified as low risk can be performed by DFO employees, and they must have taken training as outlined Section 18, and may be required to undertake a medical evaluation as per the requirements of the Standard on Occupational Health Evaluations.

The supervisors of DFO staff performing low risk work will be responsible to ensure that a record is completed for each period of work.

These records shall be copied to the employee's employment file and a copy placed in Appendix G *Asbestos-Related Work Record*.

20.3 Renovations and Construction Work

The Asset Manager, Property and Facility Manager will review the asbestos survey reports prior to all renovation and construction work for the possible impact on asbestos materials.

Prior to commencement of projects that include the demolition of material suspected of containing asbestos which has not yet been tested (such as material not accessible in the original survey), testing of this material for asbestos shall be undertaken, unless previous comprehensive testing in the building has shown this material to be free of asbestos. Along with the asbestos surveys of the building, records of test results shall be included in the Asbestos Inventory as part of the Asbestos Management Plan.

If there are asbestos-containing materials in the renovation area, but the Project Manager, or Asset Manager, Property and Facility Manager judges that the friable materials will not likely be

disturbed by the work, the Project Manager, or Asset Manager, Property and Facility Manager must caution the contractor of the presence of asbestos-containing materials.

When there are friable or non-friable asbestos-containing materials in the work area and this material will be disturbed by the work, then the work shall be determined as asbestos-related work and the risk level classified by a qualified person in accordance with the work to be performed.

The Project Manager, or Asset Manager, Property and Facility Manager will make arrangements for specifications to be prepared for the asbestos work by a qualified person. These processes shall be developed in accordance with the Canadian National Master Construction Specification (NMS), Sections 02 82 00.01 (Asbestos Abatement - Minimum Precautions), 02 82 00.02 (Asbestos Abatement - Intermediate Precautions), or 02 82 00.03 (Asbestos Abatement - Maximum Precautions). Alterations to specifications, in order to accommodate specific federal and provincial requirements, shall be determined based on work requirements.

Before asbestos abatement work is started, documentation must be provided by the contractor as proof of competency as per provincial/territorial regulation as outlined in Section 20.1.

In a timely fashion a summary report, written in plain language, concerning the asbestos work must be provided to the Employer representatives. The Employer representative will inform the Occupational Health and Safety Committee. A record must be kept reflecting when and to whom the report was presented.

Upon completion of any project work which alters the amount or condition of asbestos-containing material in the building, a report will be prepared that indicates the work that has been completed and included in Section G Asbestos Related work Records and the Section 7 Asbestos Inventory Table shall be updated as well as Section 8 Plans and Drawings in as required.

21 LOW RISK, INTERMEDIATE RISK, and GLOVE BAG PROCEDURES

Appendices B, C, and D, give standard practices for performing Low risk, Intermediate risk, and glove bag asbestos work, respectively. The work procedures for intermediate and glove bag are for information purposes only since these procedures will be performed by a qualified contractor.

22 PROJECT INSPECTION AND AIR MONITORING

22.1 Visual inspection

The primary method of ensuring compliance with work procedures is visual inspection of the site and work practices by a qualified person. It is the responsibility of the Project manager or Asset Manager, Property and Facility Manager to insure that work inspection is performed by a qualified person

22.2 Low risk work

Low risk work will be subject to the normal maintenance or project inspection provided to non-asbestos work by DFO. Air monitoring or inspection will not be mandatory but may be performed at the discretion of the Project manager or the Asset Manager, Property and Facility Manager.

22.3 Intermediate risk and Glove Bag work

A qualified person such as an asbestos consultant will inspect the work during and upon completion, as well perform air sampling before the enclosure can be dismantled. Daily inspection and air monitoring are required during Intermediate risk and Glove Bag work.

The air samples will be analyzed by phase contrast microscopy (PCM) as determined by NIOSH Method 7400 or an equivalent under provincial regulations. Analysis of samples shall be performed by organizations participating in a recognized external quality control program. A stop-work order will be issued when phase contrast microscopy measurements of the air samples exceed 0.05 fibres/cm3. This order is in effect until work processes are corrected and subsequent tests are less than 0.05 fibres/cm^3.

NOTE: If there is a conflict related to air monitoring between this document, the PSPC *Asbestos Management Standard*, Part II of the *Canada Labour Code – Occupational Health and Safety Regulations*, or provincial regulations where the work will be performed, the most stringent requirements will be applied.

22.4 High risk work

The Project Manager, or Asset Manager, Property and Facility Manager will make arrangements for inspection and air monitoring of high-risk asbestos projects. In an occupied building or a building in use, inspection and air monitoring will be provided on a daily basis. If the building is not occupied, inspection shall be at critical stages of the work unless provincial standards require daily inspection (Quebec and British Columbia).

The air samples are to be analyzed by phase contrast microscopy (PCM) as determined by NIOSH, Method 7400 or an equivalent under provincial regulations. Analysis of samples shall be performed by organizations participating in a recognized external quality control program. A stop-work order will be issued when phase contrast microscopy measurements of the air samples exceed 0.05 fibres/cm^3. This order is in effect until work processes are corrected and subsequent tests are less than 0.05 fibres/cm^3.

All high-risk removal projects shall be subject to final clearance air testing. The clearance criterion shall be a concentration of less than 0.01 fibres per cubic centimetre (fibres/cm3) of air, as determined by NIOSH, Method 7400 or an equivalent under provincial regulations. If any sample does not pass the phase contrast microscopy test, samples shall be further analyzed via transmission electron microscopy (TEM) following NIOSH Method 7402.

23 AIR MONITORING FOR HAZARD ASSESSMENT

Air monitoring will not be used as the primary resource for the assessment of hazard from asbestos-containing materials. For guidelines concerning hazardous occurrence investigation airborne threshold limits, refer to PSPC Asbestos Management Directive.

If the Regional Asbestos Coordinator is requested to perform air monitoring under normal conditions of building use (i.e., away from asbestos work) the measurements will be made by the Phase Contrast Microscope (PCM) following NIOSH Method 7400 , if the analyse results of a test sample are greater than the acceptable airborne threshold limit as determined by a qualified person such as the Regional Asbestos Coordinator or asbestos consultant, then the test sample will be reanalyzed by the Transmission Electron Microscopy (TEM) analytical method following NIOSH Method 7402.

24 LABORATORY MATERIAL ANALYSIS

24.1 Laboratory Analysis

During the annual reassessment or investigation prior to renovation projects, material may be discovered that could contain asbestos. The only way to confirm the presence of asbestos is by means of laboratory testing. In order to establish whether there are any asbestos-containing materials, and to identify the type and concentration of asbestos, bulk material samples must be collected by a qualified person from a homogeneous surface, area or insulation. The information gathered is essential in ensuring proper identification of asbestos materials by microscope analysis

The analysis of bulk samples shall be performed by a laboratory accredited by either the National Voluntary Laboratory Accreditation Program (NVLAP), American Industrial Hygiene association (AIHA), or the Canadian Association for Laboratory Accreditation (CALA), or using a method noted in provincial regulations where the sample was taken, to the detection limits specified in Section 15. Frequency of sample collection must meet federal/provincial/territorial regulations, but can be more frequent at the discretion of the surveyor.

Analysis of bulk samples are to be performed, where possible, using the United States Environmental Protection Agency method EPA/600/R-93/116 for Polarized Light Microscopy (PLM). In some instances, analysis must be performed using Transmission Electron Microscopy (TEM) (an example of this would be analysis of vinyl floor tile).

24.2 Bulk sample collection

The procedures for collection and labelling of bulk samples for asbestos analysis are conducted as follows:

1. The material must be sampled when the area is not in use where feasible. Only those persons needed for sampling should be present in the immediate area.
2. The use of a National Institute for Occupational Safety and Health (NIOSH) approved respirator is recommended for all sampling. Depending on the condition and location of the material, airborne fibres can be generated during sampling.

3. Under the work area, polyethylene drop sheet must be placed over flooring that absorbs dust (such as carpeting) and over flooring in the asbestos work area where dust and contamination cannot otherwise be safely contained. Drop sheets are not to be reused.
4. The material is to be sprayed with a light mist of water to prevent asbestos fibre release during sampling, if possible. The material must not be disturbed any more than necessary.
5. Materials of different appearance should be sampled separately. Mechanical insulation must be sampled separately on all systems, tanks, vessels, etc. Both the straight sections of pre-formed insulation, and the insulating cement typically present at elbows, fittings, etc. (unless visually identified as fibreglass). Frequency of sampling must meet federal/ provincial/territorial regulations.
6. For asbestos insulation, the sample is collected 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.
7. If pieces of material break off during sampling, the contaminated area must be cleaned up by wet cleaning. Any debris generated must be placed in plastic bags, labelled, sealed and disposed of as asbestos waste in accordance with requirements of the provincial/territorial and/or federal authority having jurisdiction.
8. Samples must be placed in labeled plastic bags with a zip-lock closure or in sealed plastic vials. Samples shall be identified with the following information:
   - sample number
   - location (e.g. building name, room number)
   - date of sampling
   - name of sampler
   - source of sample, e.g. cold water pipe, cold water fitting, etc.
9. Any openings created to collect the sample must be sealed (e.g. self-adhesive tape, paint or metal-foil tape to be wrapped completely around the pipe, duct or structure).
10. Bulk sample analysis shall be done by an accredited laboratory (refer to Section 24.1, Laboratory material analysis).
11. The minimum number of bulk material samples to be collected for each type of test material is 3. When sampling homogeneous materials such as plaster, or materials applied by troweling, 5 samples are required when the area is greater than 90 square meters, 7 samples are required when the area exceeds 450 square meters.

25 FACILITIES AND WASTE DISPOSAL

25.1 Waste Disposal

Where DFO staff will perform Low risk asbestos work, ACM waste will be packaged and disposed of in accordance with applicable provincial/territorial and municipal regulations. The waste will be held at a secure location in the building. The Asset Manager, Property and Facility Manager or Project Manager will arrange for periodic collection.

APPENDIX A

EVALUATION AND RECOMMENDATION CRITERIA FOR CONTROL OF ASBESTOS CONTAINING MATERIALS (ACM)

ASBESTOS MANAGEMENT PLAN

1. ASSESSMENT OF CONDITION

1.1 Spray Applied Fireproofing, Insulation and Texture Finishes

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

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

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

In observation areas where damage exists in isolated locations, both **GOOD** and **POOR** condition may be reported. The extent or percentage of each condition will be recorded on the survey or re-assessment form.

NOTE: **FAIR** condition is not utilized in the evaluation of the sprayed fireproofing, sprayed insulation, or texture coat finishes.

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

1.2 Mechanical Insulation

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

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

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

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

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

1.3 Non-friable and Potentially Friable Materials

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

2. EVALUATION OF ACCESSIBILITY

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

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

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

ACCESS (C) EXPOSED
Areas of the building above 2.4 metres where use of a ladder is required to reach the ACM. Only refers to ACM that is exposed to view, from the floor or ladder, without the removal or opening of other building components such as ceiling tiles, or service access door or hatch. Does not include infrequently accessed service areas of the building.

ACCESS (C) CONCEALED
Areas of the building 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 will be limited to the extent visible from the access points.

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

3. ACM DEBRIS

3.1 **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**.

3.2 **DEBRIS** from Damaged Non-Friable ACM

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

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

4. ACTION MATRIX AND ACTION DESCRIPTIONS

The Asbestos Management Plan requires the following responses:

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

The following factors shall be considered in making site-specific recommendations for compliance with the existing applicable regulations or codes and the practical implementation of the Asbestos Management Plan:

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, e.g. where removal is difficult or costly and the asbestos-containing material can be thoroughly enclosed).

2. Mechanical insulation in **FAIR** condition will be repaired or removed based on the following general recommendations, applied on a case-by-case basis:
   - ACM insulation found in **FAIR** condition in ACCESS (B) or ACCESS (C) EXPOSED areas is to be repaired.
   - 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, is to be removed.

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, and 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. All asbestos-containing material from a particular area is to be removed where small quantities of asbestos are present, and removal will negate the need for the use of an Asbestos Management Program in that area.

ASBESTOS MANAGEMENT PLAN

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

4.1 Action Matrix Tables

FRIABLE ACM

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

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

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

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

4.2 Action Descriptions

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

Access that is likely to cause a disturbance of the ACM **DEBRIS** is to be restricted and **clean up ACM DEBRIS is to be done immediately**. Use correct asbestos procedures. This action is required for compliance with regulatory requirements and good practice. The assessor should immediately notify the Asset or Property and Facility Manager, or Regional/Area Asbestos Management Coordinator of this condition.

ACTION 2 - Intermediate risk precautions for Entry into Areas with ACM DEBRIS

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

ACTION 3 - ACM Removal Required for Compliance

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

ACTION 4 - Access into areas where asbestos-containing material is present and likely to be disturbed by access requires intermediate risk precautions.

Intermediate risk asbestos precautions are to be used 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). Intermediate risk or high risk precautions should be used for removal (depending on extent of removal).

ACTION 5 - Proactive ACM Removal

Removal of ACM in lieu of repair may be considered, even if it is in **GOOD** condition at locations, where ACM is easily accessible, limited in quantity, and removal would be cost-effective.

ACTION 6 - ACM Repair

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

ACTION 7 - Routine Surveillance

Institute routine surveillance of the ACM. Trained workers or contractors must use appropriate asbestos precautions (low, intermediate or high) during disturbance of the remaining ACM.

APPENDIX B

LOW RISK WORK PROCEDURES

ASBESTOS MANAGEMENT PLAN

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

NOTE: These low risk 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 Asset Manager, or Property and Facility Manager with the assistance of the Regional Asbestos Coordinator will determine which procedures are appropriate.

1. EQUIPMENT

All equipment must be on site before proceeding.

1.1 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 intermediate procedures, or in a laboratory exhaust hood. The vacuum exterior should be carefully wet cleaned after emptying.

1.2 Respirators

Use of a respirator is optional. However, a respirator is strongly advised for work on sheet flooring, any type of ceiling tile, any other work performed overhead. DFO will supply, at the workers request, a half face respirator with HEPA filters, with training on use and qualitative fit-testing. Respirator must be used according to written use procedures provided to worker as per training procedures. Filters must be changed after 24 hours of wear or sooner if breathing resistance increases. No person using respirator shall wear facial hair which affects the seal between respirator and face.

1.3 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 to be disposed of as asbestos waste.

1.4 Other Equipment

- Plastic sheet (6 mil polyethylene) - to serve as a drop sheet.
- Pump sprayer with mister nozzle or alternative method to wet material.
- Labelled yellow asbestos waste bags (6 mil) - for all asbestos waste, disposable equipment, plastic, etc.
- Small tools and cleaning supplies - e.g., scouring pads, sponges, brushes, buckets, etc.

2. OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

On leaving work area, proceed to washroom and wash all exposed skin on hands and face.

3. PREPARATION

Before disturbing non-friable asbestos materials, wherever practical cover floor and surfaces below work with polyethylene sheeting to catch debris.

Wherever dust on a surface is likely to be disturbed remove with HEPA vacuum or damp cloth.

4. EXECUTION

4.1 Removal of Vinyl Asbestos Floor Tile

Do not use electric powered scrapers.

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.

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 25^0 to 30^0 angle to floor. When even this technique cannot loosen tile, removal can be simplified by heating tile thoroughly with a hot air gun until heat penetrates through tile and softens the adhesive.

When tiles are removed, place into asbestos waste receptor. Do not break into smaller pieces.

After removal of 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 of adhering pieces of tile. Do not use powered electric scrapers.

On completion of area, vacuum clean floor with HEPA vacuum or wet mop. Dispose of the mop head as contaminated waste.

4.2 Removal of Asbestos-containing Sheet Flooring

Remove binding strips or other restrictive mouldings. Workers shall wear air purifying respirator fitted with high efficiency filter, and coveralls at all times.

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.

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.

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.

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.

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.

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.

Thoroughly clean tools and equipment with a damp cloth before being put back into regular service. Dispose of cloth as contaminated waste.

4.3 Installing, Cutting or Drilling Non-friable Asbestos Materials

Work using power tools not fitted with a HEPA filter dust collector, must not be performed as Low risk work.

Where possible wet all materials to be disturbed.

Immediately place waste in asbestos waste receptor. Clean area frequently during work with HEPA vacuum or by wet methods.

At completion of work, clean drop sheets to be reused with HEPA vacuum or by wet methods.

Drop sheets shall be disposed of as asbestos waste.

4.4 Removal of Other Non-friable Asbestos Materials

The Low risk 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.

Where possible wet all material to be disturbed.

Undo fasteners necessary to remove material. Whenever possible remove asbestos cement panels intact. Break only if unavoidable. If broken, wet freshly exposed edges.

Where sections are adhered to the substrate, wet material and use hand scraping to remove adhering material.

Place removed material into asbestos waste receptor. Clean surrounding surfaces and asbestos work area frequently with HEPA vacuum or with wet methods. Damp cloth disposed of as asbestos waste after cleaning.

Drop sheets shall be disposed of as asbestos waste.

5.0 WASTE TRANSPORT AND DISPOSAL

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.

Provide storage area for holding minor amounts of asbestos waste in sealed containers. Garbage containers shall be labelled and assigned exclusively for asbestos waste.

Dispose of the waste in compliance with provincial regulations. The Asset Manager, or Property and Facility Manager or Project Manager will arrange for disposal.

APPENDIX C

INTERMEDIATE WORK PROCEDURES

ASBESTOS MANAGEMENT PLAN

INTERMEDIATE WORK PROCEDURES

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

1 EQUIPMENT

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

1.1 Vacuum

An asbestos-approved vacuum (HEPA filtered), equipped with brushes, fittings, etc. Vacuum must not be opened except by a fully protected worker within an enclosure.

1.2 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-face piece respirator with high efficiency filters. Respirators must be kept in position throughout the entire time the worker is in the area of the work from first disturbance of the 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. No person using respirator shall wear facial hair which affects seal between respirator and face.

1.3 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 re-use, 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.

1.4 Other Equipment

- Plastic sheet (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; 3/4" double-sided tape recommended for attaching polyethylene to T-bar ceiling
- Labelled asbestos waste bag (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 2 oz per gallon of water
- 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

1. OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

On completing clean-up of work area, use vacuum or wet cloth to clean hands, face, respirator and boots. Remove protective equipment and proceed to nearest washroom to wash exposed skin on hands and face.

2. SCHEDULING OF WORK

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

If work above ceiling is required on an emergency basis when area is occupied, the Employer representative must be advised and ensure that occupants vacate the area until work is complete and clearance is given to return.

3. PREPARATION

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

Where practical, clear areas of movable furnishings or equipment. This should include anything which occupants may wish to use during work period. Any furnishings or equipment not removed shall be adequately covered and sealed using 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.

Post signs or barrier tape to indicate asbestos hazard and requirement for protective clothing for anyone entering the space.

For small rooms, cover walls with plastic such that the complete room becomes the work area. For larger rooms, erect enclosure of 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 including the provision of a double overlapping flap at the entrance. The floor of the work area shall be a layer of 6 mil polyethylene sealed to the plastic walls of the enclosure.

Don protective clothing and respirator prior to removing ceiling tile or disturbing pipe jacketing or sprayed fireproofing.

4. EXECUTION

To remove fireproofing or texture plaster, saturate using amended water solution, by use of a pump sprayer. Do not remove the asbestos-containing material until the material is thoroughly wetted to the substrate. **Do not use water where electrical hazard exists.**

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.

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.

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.

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.

When asbestos-containing material is removed, all pieces should be placed directly into 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.

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.

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-containing material was removed.

At completion of work, decontaminate equipment, tools and materials used in the work area by wet cleaning or HEPA vacuum.

Dispose of drop sheets and enclosures by wetting the polyethylene, then folding into disposal bags. Do not reuse drop sheets or enclosures.

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.

5. WASTE TRANSPORT AND DISPOSAL

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.

Provide storage area for holding minor amounts of asbestos waste in sealed containers. Containers shall be labelled and assigned exclusively for asbestos waste.

Dispose of waste in compliance with provincial regulations. The Asset Manager, or Property and Facility Manager or Project Manager will arrange for disposal.

APPENDIX D

GLOVE BAG WORK PROCEDURES

ASBESTOS MANAGEMENT PLAN

1. EQUIPMENT

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. If the single use polyethylene glove bag permitted in some jurisdictions are used, it should be understood that they are for use at one location only, and cannot be moved or used elsewhere.

1.1 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 re-use elsewhere.

Prefabricated polyethylene glove bag, single use, not movable.

Provide size and configuration appropriate for insulation to be removed. Once filled bag must be disposed of. Bag shall not be emptied and reused.

1.2 Securing Straps

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

1.3 Water Sprayer

Garden reservoir type, low velocity, capable of producing mist or fine spray with water containing wetting agent. Wetting agent shall be diluted 2 oz. per gallon of water.

1.4 Respirators

Workers using glove bag must wear approved respiratory protection. Respiratory protection must be equal to or exceed protection of half-face respirator with high efficiency filters. Respirators must be kept in position from the time the worker attaches the glove bag to the 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. No person using respirator shall wear facial hair which affects the seal between respirator and face.

1.5 Other Equipment

- Labelled asbestos waste bags (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

1.6 Protective Clothing

Workers shall wear disposable suit with attached head cover. Suit and head cover shall remain in place until worker completes cleaning of pipe. Suit may be cleaned for re-use or disposed of as asbestos waste.

2. OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

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. SCHEDULING OF WORK

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

4. PREPARATION

Where practical, clear area below pipe of moveable furnishing or equipment. Provide scaffold as required to reach pipe.

Post an asbestos warning sign at all entrances to room in which the procedure is being used. Use rope or tape barriers to separate work area.

Segregate the area of asbestos work from other parts of the building required to remain in use using polyethylene walls or barrier tape.

Shut off and seal all diffusers, vents and other openings to ventilation and exhaust systems in the room with polyethylene secured with tape.

Cover all items or equipment located in the designated work area with polyethylene if the 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 12 feet, where required.

Seal all openings or voids in the vicinity of the glove bag operation with one layer of polyethylene secured with tape.

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. (See Intermediate risk Procedures.)

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, intermediate risk procedures may be required for clean-up. (See Intermediate risk Procedures.)

Place necessary tools in bottom of glove bag.

5. EXECUTION

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.

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 jacketing carefully to minimize the possibility of ripping or puncturing the bag.

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.

Prior to removing the bag from the pipe, wash the top section of the bag and tools thoroughly. Insert nozzle of HEPA filtered vacuum into bag through 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.

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.

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.

To remove tools after completion of insulation removal, thoroughly wash top section of bag and tools. 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.

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.

Prior to disposal of bag, evacuate the bag with a HEPA vacuum. Pull a 6 mil polyethylene bag over glove bag before removing from pipe. Remove securing straps. Unfasten zipper. Seal glove bag and seal 6 mil polyethylene bag.

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.

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.

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, respirator and hair (after removing hood) and proceed to nearest washroom to wash hands and face.

6. WASTE TRANSPORT AND DISPOSAL

Provide storage area for holding minor amounts of asbestos waste in sealed containers. Containers shall be labelled and assigned exclusively for asbestos waste.

Dispose of waste in compliance with provincial regulations. The Asset Manager, or Property and Facility Manager or project Manager will arrange for disposal.

APPENDIX E

RESPIRATOR FITTING, INSPECTION, CLEANING AND DISINFECTION

ASBESTOS MANAGEMENT PLAN

NOTES FOR AIR PURIFYING HALF FACEPIECE RESPIRATORS

WARNING: This respirator does not supply oxygen. It must not be used in oxygen deficient atmospheres (less than 19.5%); in poorly ventilated areas or enclosed spaces such as tanks or small rooms; for 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. Please refer to the new CSA Z94.4-02, Selection, Care and Use of Respirators. Federal employees must comply with Z94.4.

RESPIRATOR FITTING

1. Persons required to wear respirators must first pass a qualitative fit-test administered according to the current version of CSA standard Z-94.4-02. The fit-test should be repeated yearly.

2. The respirator wearer must be clean-shaven along all the seal points for proper protection. Even stubble growth may be sufficient to reduce the seal of the face piece, and therefore the protection. The respirator approval is voided for users with facial hair which interferes with the seal.

INSPECTION ITEMS PRIOR TO EACH USE:

1. Examine face piece for:
   - Dirt
   - Cracks, tears or holes
   - Distortion and inflexibility
   - Crack 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 10 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)

RESPIRATOR CLEANING AND DISINFECTION

1. Remove filters and disassemble face piece. Discard or repair defective parts.

2. Wash components in warm water (50oC - 60oC) 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.

FILTER CARTRIDGE HANDLING AND REPLACEMENT

1. Filter cartridges should be sealed on the inlet side with tape once used.

2. Filters can be re-used until an increase in breathing resistance is noted. Under typical intermediate risk conditions, filter cartridges should last a minimum of 24 hours.

APPENDIX F

PROCEDURES FOR EMERGENCY ASBESTOS WORK

ASBESTOS MANAGEMENT PLAN

In the case where intermediate risk abatement procedures cannot be strictly observed due to the urgency, some judgement will be required of the person responsible for the work, and other staff or contractors responding to the emergency. The general principle of emergency response work is to minimize the exposure to airborne asbestos and to protect the workers performing the repair. The procedures given below should be followed to the extent possible in the circumstances of the emergency.

1. Clear area of all occupants.

2. Shut down the ventilation system serving the area.

3. Isolate the area by locking doors, if this can be done without blocking emergency exits.

4. Construct enclosure around area if time permits. Do not obstruct emergency exits.

5. Only trained workers or abatement contractors will be allowed to perform the work.

6. Worker performing repair shall wear protective respirator and disposable suit.

7. Use drop sheet under work to minimize clean-up if possible

8. Remove all debris of the disturbance using HEPA filtered vacuum or wet cleaning.

9. Dispose of all cleaning supplies, disposable clothing and footwear as contaminated waste.

10. Proceed to washroom and wash face and hands.

11. Remove barriers from the area only after inspection has been performed by a qualified asbestos consultant or the Regional Asbestos Coordinator.

APPENDIX G

ASBESTOS-RELATED WORK RECORD

APPENDIX H

CERTIFICATE OF TRAINING FOR ASBESTOS-RELATED WORK

APPENDIX I

CONTRACTOR NOTIFICATION AND ACKNOWLEDGEMENT

APPENDIX J

LOG BOOK

ASBESTOS MANAGEMENT PLAN

Asbestos Work Log

BUILDING NAME & ADDRESS			
Location / Item Worked On	**Performed By**	**Type of Operation**	**Date**
Example: Floor 2 – Mechanical Room – ceiling tile	*Example: Joe Dude*	*Example: low risk*	*Example: Jan. 1, 2017*

ASBESTOS MANAGEMENT PLAN