



Environment and
Climate Change Canada

APPENDICES

HAZARDOUS MATERIALS SURVEY

OF

**PRAIRIE & NORTHERN WILDLIFE RESEARCH CENTRE
115 Perimeter Road
University of Saskatchewan
Saskatoon, Saskatchewan
S7N3H5**

PREPARED FOR:

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1.0 EXECUTIVE SUMMARY

Barry O'Regan, Senior Operations Technologist for Environment Canada's Pacific Environmental Science Centre (PESC), located in North Vancouver, conducted a Hazardous Materials Survey (HAZMAT) at the Prairie and Northern Wildlife Research Centre (PNWRC) located at 115 Perimeter Road, Saskatoon, Saskatchewan. The survey included all interior and exterior areas of the PNWRC.

The PNWRC facility was constructed in 1965 and therefore falls under the following asbestos regulation below:

Saskatchewan Guidelines for Managing Asbestos in Buildings 2014

The PNWRC facility falls under Saskatchewan's *Occupational Health and Safety Regulations, 1996*.

The PNWRC facility has undergone various renovations since 1965.

The objective of this assessment was to identify the types, condition and extent of hazardous materials in the PNWRC facility as part of an environmental audit, in compliance with the Building Owners and Managers Association (BOMA)'s Facility Environmental Standards (BEST) sustainability certification project. Photographs taken during the survey can be found in Appendix C of this report.

The assessment was conducted using both visual and physical assessment techniques. Representative samples of materials suspected of containing asbestos and lead containing materials were collected. Analysis was conducted by a third party laboratory in accordance with the Occupational Health and Safety Regulations and Guidelines and/or National Institute of Occupational Health and Safety (NIOSH) analytical methods. All samples collected, were then submitted under chain of custody to ALS Laboratories, in Edmonton, Alberta. Suspect Asbestos and Lead paint sample results are included in Appendix A.

Suspected asbestos containing materials were observed and samples collected within the facility. Window Putty, Cove Base moulding, Floor Tile, Mechanical equipment insulation, and pipe insulation and elbows were confirmed through analysis and previous surveys as asbestos containing. Within the context of the report, areas have been detailed as to the locations and content of the sampled areas. Please refer to Appendix C.

It should be mentioned the any "Yellow" Chemical (Acid) cabinets found in the labs may contain asbestos gasketing around the interior frame of the double door channels. Please refer to the photograph in Appendix C.

The Lead content in the six (6) paint samples collected were found to range between <10 milligrams per kilogram (mg/kg) to 1920 mg/kg. These levels translate to range approximately from <0.001% to 0.1% lead content.

Paints with lead levels above 600 milligrams per kilogram (or 0.06%) are considered lead containing paints.

Any work that may disturb the lead containing paints must only be conducted by a trained and competent lead abatement contractor. As well, a leachability test of the lead painted materials will be required if the materials are to be disposed of in a landfill. e.g.: It is also suspected the red (impregnated) painted steel structural supports in the building are lead containing.

A cursory inspection of light fixtures did not contain PCB (Polychlorinated Biphenyls) containing ballasts, nor were any PCB containing capacitors observed within the facility during the survey.

Disturbance of Crystalline Silica containing products (e.g. concrete foundation) may require respiratory protection and/or mechanical ventilation during drilling, coring or saw-cutting activities.

The Building Manager for PNWRC will document all Refrigerants found in the facility by referring to the ODS documentation. The ODS report is to be attached to this report and included into Appendix B of this report.

HCFC and CFC containing refrigerants must be properly documented, and the refrigerant during decommissioning must be captured by a licensed refrigeration mechanic in accordance with applicable regulations.

All hazardous materials such as left over paint cans, chemicals, propane tanks, oil containers, mercury control switches, batteries, etc, once slated for disposal must be separated and the waste disposed of in accordance with applicable provincial regulations.

All hazardous materials in their current state do not pose a risk to occupants or workers in the facility as long as the materials remain undisturbed.

The hazardous materials survey was conducted using semi-destructive testing methods. The facility was occupied during the survey. Areas within walls and above fixed ceilings were inspected, wherever possible.

The roof was not sampled, nor the exterior masonry walls; as the building was occupied. The integrity of the facility must be maintained, thus sampling can be conducted before a re-roofing project or masonry work is to be performed.

Please review Section 4 – Results and Discussion, and Section 5 – Recommendations, for more detailed information.

Lead paint sample results are included in Appendix B of this report. The PNWRC facility was also inspected for possible PCB containing ballasts, mercury containing switches, refrigerants, and other potentially hazardous materials. In summary, the findings from the assessment and laboratory analysis concluded the following:

Lead containing paint does exist within the building materials.

Asbestos containing building materials do exist within the facility.

2.0 INTRODUCTION

Barry O'Regan, Senior Operations Technologist for Environment Canada's Pacific Environmental Science Centre (PESC), located in North Vancouver, conducted a Hazardous Materials Survey (HAZMAT) at the Prairie and Northern Wildlife Research Centre (PNWRC) located at 115 Perimeter Road, Saskatoon, Saskatchewan. The survey included all interior and exterior areas of the PNWRC.

The survey was conducted over four days from June 23, to 26, 2014. A total of Eighteen (18) representative bulk samples of materials suspected of containing asbestos were collected during the survey and are included in Appendix A of this report.

Six (6) representative paint samples were collected from the PNWRC facility.

All samples were submitted under chain of custody to ALS Laboratories in Edmonton, Alberta for analysis. Asbestos and Lead paint sample results are included in Appendix A and Halocarbon inventory in Appendix B of this report.

Photographs taken during the survey are included in Appendix C.

3.0 METHODOLOGY

The hazardous materials survey was conducted using both visual and physical assessment techniques. Areas within walls and above fixed ceilings were inspected wherever possible. There is a possibility of lead containing materials existing within wall and ceiling cavities, and under sub-floors, as not all areas were accessed during the inspections. Possible lead-containing materials existing in these areas include, painted steel structural supports, but are not limited to, cast iron spigots, and bells.

The U.S. Environmental Protection Agency (USEPA) Guidance Document for Controlling Asbestos-Containing Materials in facilities was selected for use in this study (1). The document identifies factors associated with the "condition" and "potential for disturbance or erosion" of asbestos containing materials. These factors help to define the fibre release potential of suspect asbestos containing materials and were used in a qualitative evaluation of materials found in the surveyed areas. Recommendations have been substantiated by additional information utilized from other documentation cited in the Reference Section of this report.

Samples of materials suspected of containing asbestos were collected and analyzed in ALS's laboratory in accordance with the Occupational Health and Safety Regulations and Guidelines and/or National Institute of Occupational Health and Safety (NIOSH) or US Environmental Protection Agency (USEPA) analytical methods.

The OSHA 29 CFR 1926.62 Lead Standard, and the Saskatchewan Environment Department's Environmental Protection Branch were selected for use in this study. This standard applies to any work involving demolition, removal, encapsulation, installation, alteration, maintenance, transportation, storage, or disposal of Lead Containing Materials (LCMs).

Samples of paint suspected of containing lead were sent to ALS Laboratories for analysis of lead content. The samples were digested with acids and analyzed using Inductively Coupled Plasma Spectroscopy–Atomic Emission Spectroscopy.

4.0 RESULTS & DISCUSSION

Laboratory analysis has determined that there is asbestos in various building materials samples collected. Please refer to photo in Appendix C.

The insulation wrapped around duct work, and HVAC equipment was sampled, and analysis has confirmed the insulation contains asbestos. The insulation on the heating and cooling piping also contain asbestos, including the plaster elbows. While not all insulation was sampled, it is deemed likely through laboratory analysis that all insulation materials for the heating and cooling equipment and associated piping contain asbestos. Previous material sampling confirms that asbestos insulation is throughout the building. Red dots on piping and or signage on equipment stating "Asbestos" are in place in some areas, but not all areas. If any building material not identified as asbestos containing is suspected of containing asbestos; sampling and analysis must be conducted to determine if the material is asbestos containing before work on the equipment can commence. Work performed on asbestos containing equipment must be handled only by a trained asbestos abatement company. Additional documentation, such as a written Risk Assessment and Engineering Controls, are to be included with a written Notice of Project to be submitted by the asbestos abatement contractor to the regulatory government agency.

The following materials sampled were found to contain asbestos. Below is their location, though these materials may be found elsewhere. Please refer to the photographs in Appendix C.

Location / Description	Asbestos Chrysotile	Concentration (%)
Sample ID L1482236-20 #1 Room 114 Mechanical Room - HVAC Insulation under Canvas	Yes	10 -25
Sample ID L1482236-28 # 2 Room 263 – Window Putty	Yes	5 -10
Sample ID L1482236-35 # 3 Room 205 - Cream Coloured - Mottled Vinyl Floor Tile & Floor Tile Mastic Adhesive	Yes	5 -10
Sample ID L1482236-34 # 4 North West Stairwell- Black Cove Base and Adhesive along Floor	Yes	0.10
Sample ID L1482236-29 # 5 Room 267 – Window Putty	Yes	5 -10
Sample ID L1482236-30 # 6 South Stairwell – Window Putty	Yes	5 -10
# 7 Loading Dock Area – Overhead heating pipe insulation and insulated elbows (Red Dots- signify Asbestos Containing) Not Sampled by EC.	Yes	10 -25
Sample ID L1482236-37 #8 Drywall Taping Compound Room 205	No	
Sample ID L1482236-38 #9 Ceiling Tile Room 200	No	
Sample ID L1482236-39 #10 Drywall Taping Compound Room 216	No	
Sample ID L1482236-22 #11 Drywall Taping Compound Room 116	No	
Sample ID L1482236-26 #12 Drywall Taping Compound Room 267	No	
Sample ID L1482236-24 #13 Ceiling Tile Room 263	No	

Sample ID L1482236-25 #14 Black Cove Base Moulding Room 261	No	
Sample ID L1482236-27 # 15 South East Stairwell – Wall Plaster	No	
Sample ID L1482236-20 #16 White Vinyl Sheet Flooring Room 167	No	
Sample ID L1482236-16 #17 Room 116 - Cream Coloured - Mottled Vinyl Floor Tile & Floor Tile Mastic Adhesive	No	
Sample ID L1482236-19 #18 Red Firestop Putty Caulk Room 114	No	

4.1 POLYCHLORINATED BIPHENYLS (PCBS)

A cursory inspection of fluorescent lighting and electrical transformers did not reveal any PCB containing ballasts or capacitors within the facility.

4.2 LEAD CONTAINING MATERIALS

Six (6) samples of representative paints were collected from the painted walls in the building. The locations and sample results are as follows on the following page:

Location / Description	Lead Concentration (mg/kg)	Lead Concentration (%)
Sample ID L1482236-17 #1 East Hall - Walls - White Paint	581	0.05
Sample ID L1482236-21 # 2 Room 114 - Walls and Metal Ductwork - White Paint	1920	0.1
Sample ID L1482236-31 # 3 South Stairwell - White Paint	359	0.03
Sample ID L1482236-32 # 4 South Stairwell – Door Frame - Brown Paint	<10	<0.001
Sample ID L1482236-33 # 5 Room 267 – Door Frame - Brown Paint	1580	0.1
Sample ID L1482236-40 # 6 Room 200 – Hand Rail- Brown Paint	<10	<0.001

Paints with lead levels above 600 milligrams per kilogram (or 0.06%) are considered lead containing paints.

The lead content in the paint samples below 600 mg/kg are classified as non-lead containing painted materials (LPM).

It is suspected the red paint on the structural steel is lead containing in the facility. This is coated at the factory to inhibit rust and is not a concern unless impacted upon. If any building material has been found to be lead containing, a risk assessment must be performed for any renovation work that may disturb the lead paints (e.g. grinding, sanding, scraping, welding etc.). Site specific work procedures based on that risk assessment will be required once all work requirements are identified. These work procedures, must comply with Saskatchewan Environment Department's Environmental Protection Branch. As a minimum, occupational air sampling must be conducted on the first shift of work.

Special lead precautions, such as personal protective equipment for workers and/or dust suppression methods, are warranted for *any* work that may disturb the lead containing paints. This includes *hand* demolishing or cutting any materials painted with the lead containing paints, welding, and sanding, grinding, or scraping the lead containing paints. Lead removal procedures based upon a risk assessment will be required once all work requirements are identified. Any work that may disturb the lead containing paints must be conducted by a competent and trained lead abatement contractor.

A leachability test of the lead painted structural steel materials will be required if the lead painted materials are to be disposed of in a landfill.

4.3 MERCURY CONTAINING MATERIALS

Mercury Containing Materials discovered were limited to light tubes and the mechanical room where heating equipment housed mercury control switches.

Disposal of mercury containing materials are considered hazardous materials and must be disposed of according to provincial Ministry of the Environment regulations.

4.4 OTHER POTENTIALLY HAZARDOUS MATERIALS

Disturbance of Crystalline Silica containing products (e.g. concrete) may require respiratory protection and/or mechanical ventilation during demolition activities.

Refrigerants can be found under the Halocarbon inventory list in Appendix B.

5.0 RECOMMENDATIONS

The hazardous materials in their current state do not pose a hazard to workers within the facility. Immediate removal of the materials is not required if the materials are left undisturbed.

1.) It should be noted all window putty, mechanical insulation on equipment and piping, including elbows are to be considered asbestos containing, unless additional sampling and laboratory analysis proves otherwise.

Before removing tile flooring, sheet flooring, or flooring mastic adhesive, these materials should be sampled and analyzed to determine if these materials are asbestos containing.

Before working on any building material that is suspected of containing asbestos, it is advisable to collect a sample of the material to always wear the appropriate Personal Protective Equipment. Once collected, submit the material for analysis.

Room 200 has a textured ceiling, and as it was too high to collect a sample, it is assumed the textured ceiling is comprised of asbestos. If work is to be done on the ceiling in the future, the ceiling texture must be sampled first, and analyzed to determine if it is asbestos containing.

It should be noted that laboratories may contain "Yellow" acid cabinets. These "Yellow Acid, or Chemical Cabinets" may contain asbestos gasketing around the interior double door channels. This painted gasket in its present state in good condition would not pose any danger to persons who use it. Please refer to photo in Appendix C.

It is advisable to inspect the condition of the Chemical cabinets monthly to determine if the painted gaskets are damaged. If found damaged, lock the cabinet and do not use the Chemical Cabinet until a suitable non-asbestos gasket alternative can be found.

2.) Any hazardous materials identified in this report, if removed, must be disposed of in accordance with applicable regulations. If lead containing materials are to be impacted upon, a risk assessment will be required prior to any abatement/removal of any lead containing painted materials. The abatement of any lead containing materials identified in this report, and encountered during renovation or demolition, will require a Notice of Project (NOP) with site-specific work procedures (based on risk assessment). The hazardous materials abatement/removal must be done by a competent, trained abatement contractor.

3.) Red lead paint is a likely coating on all structural steel and steel components.

4.) Mercury containing lights, when burnt out are to be disposed of in accordance with applicable provincial regulations and procedures.

Mercury control switches on heating systems found in heating equipment located in the basement mechanical room. Mercury switches should be replaced with alternative control switches.

5.) Disturbance of Crystalline Silica containing products (e.g. concrete) may require respiratory protection and/or mechanical ventilation during any refit or demolition activities.

6.) Refrigerants must be captured and disposed of by a licensed refrigeration mechanic in accordance with applicable regulations.

7.) All hazardous materials such as left over paint cans, chemicals, propane tanks, oil containers, batteries, etc. encountered and slated for waste removal, will each require an individual waste stream, and proper disposal and recycling methods in accordance with applicable provincial regulations.

8.) It was observed that asbestos containing materials are located in the crawlspace in the building. This crawlspace is a confined space and confined space signage should be posted in this area.

6.0 STATEMENT OF LIMITATIONS

This report is intended to identify potential sources of environmental contamination. The findings and conclusions regarding contamination of the property are based solely on the extent of observations and information gathered during the hazardous materials survey.

In respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

This report is not intended to be used as contract specifications or site specific procedures.

Environment Canada - Pacific Environmental Science Centre



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7.0 REFERENCES

- 1) USEPA. 1985. U.S. Environmental Protection Agency. "Guidance for Controlling Asbestos-Containing Materials in Facilities". Washington, DC: Retail of Toxic Substances, USEPA.
- 2) Lory EE, Coin DC. 1981. "Management Procedure for Assessment of Friable Asbestos Insulating Material". Port Hueneme, CA: Civil Engineering Laboratory, Naval Construction Battalion Center.
- 3) OSHA 29 CFR 1926.62, Lead Standard. Occupational Safety & Health Administration, 200 Constitution Avenue, NW Washington, DC 20210
- 4) 2014 Saskatchewan Occupational Health and Safety Regulations. including all current amendments and guidelines.
- 5) 2014 Saskatchewan Guidelines for Managing Asbestos in Buildings
- 6) 2014 Edition – Government of Saskatchewan, Department of Labour. Abrasive Blasting – Health and Safety Requirements. (Lead Containing Materials)

APPENDIX A

Asbestos and Lead Paint Bulk Sample Results



ENVIRONMENT CANADA
ATTN: BARRY O'REGAN
2645 DOLLARTON HIGHWAY
Vancouver BC N/A

Date Received: 07-JUL-14
Report Date: 14-JUL-14 16:07 (MT)
Version: FINAL

Client Phone: 604-653-6003

Certificate of Analysis

Lab Work Order #: L1482236
Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers:
Legal Site Desc:

Brian Morgan
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1482236-16	L1482236-17	L1482236-18	L1482236-19	L1482236-20
		Description	SOLID	SOLID	SOLID	SOLID	SOLID
		Sampled Date	26-JUN-14	26-JUN-14	26-JUN-14	26-JUN-14	26-JUN-14
		Sampled Time					
		Client ID	1-VSF VINYL SHEET FLOORING- WHITE(VSF) RM 167	5-LP WHITE LEAD PAINT(LP) EAST HALL	1-VFT VINYL FLOOR TILE- CREAM MOTTLED(VFT) RM 116	1-FIRESTOP RED FIRESTOP (PUTTY-CAULK) RM 114	1-INSULATION- HVAC INSULATION UNDER CANVAS RM 114
Grouping	Analyte						
BULK							
Asbestos/Quartz/ Other Fibres	Acicular Crystals (%)						
	Asbestos By Point Count (%)		<0.10		<0.10	<0.10	
	Other Fibres: Cellulose (%)		10-25				
	Asbestos: Chrysotile (%)						10-25
	Other Fibres: MMVF (%)		1-5			10-25	
	Mica (%)						
		Other Fibres: Synthetic (%)					
Metals	Lead (Pb) (mg/kg)			581			

ALS ENVIRONMENTAL ANALYTICAL REPORT

L1482236 CONTD....
 PAGE 6 of 10
 14-JUL-14 16:07 (MT)
 Version: FINAL

		Sample ID Description Sampled Date Sampled Time Client ID	L1482236-21 SOLID 26-JUN-14 6-LP-LEAD PAINT (LP) WHITE PAINT IN MECHANICAL RM 114	L1482236-22 SOLID 26-JUN-14 2-DTC DRYWALL TAPING COMPOUND (DTC) RM 116	L1482236-24 SOLID 26-JUN-14 2-CT-CEILING TILE WHITE(CT) RM 263	L1482236-25 SOLID 26-JUN-14 1-CB-COVE BASE ROOM 261	L1482236-26 SOLID 26-JUN-14 5-DTC DRYWALL TAPING COMPOUND (DTC) ROOM 267
Grouping	Analyte						
BULK							
Asbestos/Quartz/ Other Fibres	Acicular Crystals (%)						
	Asbestos By Point Count (%)			<0.10	<0.10	<0.10	<0.10
	Other Fibres: Cellulose (%)			5-10	10-25		
	Asbestos: Chrysotile (%)						
	Other Fibres: MMVF (%)				1-5		
	Mica (%)						
	Other Fibres: Synthetic (%)					Trace <1	
Metals	Lead (Pb) (mg/kg)	1920					

ALS ENVIRONMENTAL ANALYTICAL REPORT

L1482236 CONTD....
 PAGE 7 of 10
 14-JUL-14 16:07 (MT)
 Version: FINAL

Sample ID Description Sampled Date Sampled Time Client ID		L1482236-27 SOLID 26-JUN-14 1-WALL PLASTER- WAL PLASTER SOUTH EAST STAIRWELL	L1482236-28 SOLID 26-JUN-14 4-WP WINDOW PUTTY (WP) ROOM 263	L1482236-29 SOLID 26-JUN-14 2-WP WINDOW PUTTY (WP) ROOM 267	L1482236-30 SOLID 26-JUN-14 1-WP WINDOW PUTTY (WP) SOUTH STAIRWELL	L1482236-31 SOLID 26-JUN-14 1-LP LEAD PAINT WHITE (LP) SOUTH STAIRWELL
Grouping	Analyte					
BULK						
Asbestos/Quartz/ Other Fibres	Acicular Crystals (%)					
	Asbestos By Point Count (%)	<0.10				
	Other Fibres: Cellulose (%)					
	Asbestos: Chrysotile (%)		5-10	5-10	5-10	
	Other Fibres: MMVF (%)					
	Mica (%)	Trace <1				
	Other Fibres: Synthetic (%)			Trace <1	Trace <1	
Metals	Lead (Pb) (mg/kg)					359

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1482236-32 SOLID 26-JUN-14 2-LP-LEAD PAINT BROWN (LP) DOOR FRAME SOUTH STAIRWELL	L1482236-33 SOLID 26-JUN-14 3-LP-LEAD PAINT BROWN (LP) DOOR FRAME RM 267	L1482236-34 SOLID 26-JUN-14 2-CB COVE BASE BLACK(CB) NW STAIRWELL	L1482236-35 SOLID 26-JUN-14 2-VFT VINYL FLOOR TILE- CREAM MOTTLED(VTF)BL K MASTIC RM 205	L1482236-36 SOLID 26-JUN-14 1-COUNTERTOP LAMINATE BLACK(COUNTER TOP) RM 208
Grouping	Analyte					
BULK						
Asbestos/Quartz/ Other Fibres	Acicular Crystals (%)					
	Asbestos By Point Count (%)					
	Other Fibres: Cellulose (%)					
	Asbestos: Chrysotile (%)			0.10	5-10	
	Other Fibres: MMVF (%)					
	Mica (%)					
	Other Fibres: Synthetic (%)					
Metals	Lead (Pb) (mg/kg)	<10	1580			

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1482236-37 SOLID 26-JUN-14 1-DTO ROOM 205	L1482236-38 SOLID 26-JUN-14 1CT ROOM 200	L1482236-39 SOLID 26-JUN-14 4-DTC-DRYWALL TAPING COMPOUND (DTC) RM 218	L1482236-40 SOLID 26-JUN-14 4-LP LEAD PAINT BROWN (LP) HAND RAIL ROOM 200	
Grouping	Analyte					
BULK						
Asbestos/Quartz/ Other Fibres	Acicular Crystals (%)					
	Asbestos By Point Count (%)	<0.10	<0.10	<0.10		
	Other Fibres: Cellulose (%)			Trace <1		
	Asbestos: Chrysotile (%)					
	Other Fibres: MMVF (%)		10-25			
	Mica (%)					
	Other Fibres: Synthetic (%)	Trace <1				
Metals	Lead (Pb) (mg/kg)				<10	

Reference Information

Additional Comments for Sample Listed:

Sample Number	Matrix	Report Remarks	Sample Comments
L1482236-14	Bulk	Note: limited sample	
L1482236-15	Bulk	Note: limited sample	
L1482236-20	Bulk	Note: limited sample	
L1482236-39	Bulk	Note: limited sample	
L1482236-5	Bulk	Note: limited sample	
L1482236-6	Bulk	Note: limited sample	
L1482236-7	Bulk	Note: limited sample	

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ASBESTOS-BULK-ED	Bulk	Bulk Asbestos Content	NIOSH 9002-Polarized Microscopy
Note: For non-friable organically bound asbestos (eg. floor tile) Polarized Light microscopy is not a definitive technique when negative results are obtained. Transmission electron microscopy is recommended to confirm the asbestos in these materials. Asbestos results reported as <1% indicates that no asbestos fibers were observed.			
ASBESTOS-PTCT-ED	Bulk	Quantitation of asbestos by point count	EPA/600/R-93/116
Bulk samples are examined under a stereoscopic microscope. Individual fibers or fiber bundles are mounted in refractive index liquids and are observed under a polarized light microscope, with a special dispersion staining objective. The dispersion staining colors are compared to reference samples of known asbestiforms. Polarized microscopy is not a definitive technique for negative results for non-friable organically bound material (i.e. floor tiles). Transmission electron microscopy is recommended to confirm the asbestos in these materials. Asbestos results reported as <0.10% indicates that no asbestos fibers were observed.			
PB-200.2-ICP-ED	Bulk	Lead in Paint by ICPOES	EPA 200.2/6010B

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



L1482236-COCF

Toll Free: 1 800 666 9878

Analytical

Affix ALS barcode label here
(lab use only)

COC Number: 14 -

Page 3 of 6

Report To Company: Environment Canada (PESC) Contact: Barry O'Regan Address: 2645 Dollarton Highway Vancouver, BC Phone: 604-653-6003		Report Format / Distribution Select Report Format: <input type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (ORIGINAL) Quality Control (QC) Report with Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Barry.O'Regan@ec.gc.ca Email 2:		
Invoice To Same as Report To <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Copy of Invoice with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Company: Environment Canada (PESC) Contact: Barry O'Regan		Invoice Distribution Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Barry.O'Regan@ec.gc.ca Email 2:		
Project Information ALS Quote #: Job #: PO / A/E: LSD:		Oil and Gas Required Fields (client use) Approver ID: GL Account: Routing Code: Activity Code: Location:		
ALS Lab Work Order # (lab use only)		ALS Contact: Brian Morgan Sampler: Barry O'Regan		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type
1-VSF Vinyl Sheet Flooring - White (VSF) Room 107		26/06/2014		Solid
5-LP White Lead Paint (LP) East Hall		26/06/2014		Solid
1-VFT Vinyl Floor Tile - Cream mottled (VFT) Room 116		26/06/2014		Solid
1-Firestop Rod Firestop (Pony-Caulk) Room 114		26/06/2014		Solid
1-Insulation - HVAC Insulation under canvas Room 114		26/06/2014		Solid
6-LP Lead Paint (LP) White Paint in Mechanical Room 114		26/06/2014		Solid
2-DTC Drywall Taping Compound (DTC) Room 116		26/06/2014		Solid
Drinking Water (DW) Samples (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Are samples for human drinking water use? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Special Instructions / Specify Criteria to add on report (client use) Please ensure the report for Page 3 is titled "PWVRC East Wing 1st Floor" No. 14				
SHIPMENT RELEASE (client use) Released by: Date: Time:		INITIAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time:		
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white "Report copy." 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.		WHITE - LABORATORY COPY YELLOW - CLIENT COPY Received by: <i>AK</i> Date: <i>26/6/14</i> Time: <i>3:05</i>		
SAMPLE CONDITION AS RECEIVED (lab use only) Frozen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ice packs <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooling in transit <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> INITIAL COOLER TEMPERATURES °C: FINAL COOLER TEMPERATURES °C:				
ANALYSIS REQUEST Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below Number of Containers				



**Trustody (COC) / Analytical
Request Form**

Affix ALS barcode label here
(lab use only)

COC Number: 14 -

Page 4 of 6

Report To Company: Environment Canada (PESC) Contact: Barry O'Regan		Report Format / Distribution Select Report Format: <input type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> DOC (DIRT.M) Quality Control (QC) Report with Report <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Barry.O'Regan@ec.gc.ca Email 2		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tasks) R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3 pm - business days) P <input type="checkbox"/> Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT E <input type="checkbox"/> Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 <input type="checkbox"/> Same day or weekend emergency - contact ALS to confirm TAT and surcharge Specify Date Required for E2, E or P.	
Invoice To Same as Report To <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Copy of Invoice with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Company: Environment Canada (PESC) Contact: Barry O'Regan		Invoice Distribution Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Barry.O'Regan@ec.gc.ca Email 2		Analysis Request Indicate Filament (F), Preserved (P) or Filament and Preserved (FP) below	
ALS Quote #:		Project Information Oil and Gas Required Fields (client use) Approver ID: GL Account: Activity Code: LSD:			
ALS Lab Work Order # (lab use only)		ALS Contact: Brian Morgan		Sampler: Barry O'Regan	
ALS Sample # (lab use only)		Date (dd-mm-yy)		Time (hh:mm)	
Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)	
5 LP-White Lead Paint (LP) East Hall		26/06/2014		Solid	
2 CT-Ceiling Tile White (CT) ROOM 263		26/06/2014		Solid	
1 CB - Cove Base Room 261		26/06/2014		Solid	
5 DTC Drywall Taping Compound (DTC) Room 267		26/06/2014		Solid	
1-Wall Plaster -Wall Plaster South East Stairwell		26/06/2014		Solid	
4-WP Window Putty (WP) Room 263		26/06/2014		Solid	
2-WP Window Putty (WP) Room 267		26/06/2014		Solid	
1-WP Window Putty (WP) South Stairwell		26/06/2014		Solid	
1-LP Lead Paint White (LP) South Stairwell		26/06/2014		Solid	
2-LP Lead Paint Brown (LP) Door Frame South Stairwell		26/06/2014		Solid	
3-LP Lead Paint Brown (LP) Door Frame Room 267		26/06/2014		Solid	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report (client use)			
Are samples taken from a Regulated DW System? <input type="checkbox"/> Yes <input type="checkbox"/> No		Please ensure the report for Page 4 is titled "PNWGC East Wing 2nd Floor"			
Are samples for human drinking water use? <input type="checkbox"/> Yes <input type="checkbox"/> No					
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		INITIAL SHIPMENT RECEPTION (lab use only)	
Released by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____	
WHITE - LABORATORY COPY		YELLOW - CLIENT COPY		GREEN - CLIENT COPY	
SAMPLE CONDITION AS RECEIVED (lab use only) Frozen <input type="checkbox"/> Yes <input type="checkbox"/> No Ice packs Yes <input type="checkbox"/> No Custody seal intact Yes <input type="checkbox"/> No Cooling Initiated <input type="checkbox"/> Yes <input type="checkbox"/> No INITIAL COOLER TEMPERATURE: C _____ FINAL COOLER TEMPERATURE: C _____		Number of Containers _____ Date: 27/6/14 Time: 3:30			

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Revised: 04-03-2016 and February January 2016

Testing for asbestos: What is asbestos point counting?

Within the realm of asbestos sampling there are several analytical techniques. The most general way test for asbestos containing material is through Phase Contrast Microscopy (PCM), Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM). The first two methods, PCM and TEM are used to analyze air samples.

The third method: PLM, is used to detect asbestos in a "bulk" sample such as a piece of floor tile, wall texture, hard plaster, pipe insulation, etc. This discussion will be limited to bulk analysis using the PLM method.

Why Use Point Counting When Testing for Asbestos?

When a bulk sample of material is found to contain 10% asbestos or less, the sample may be presumed to contain greater than 1% asbestos and treated as such or the sample can be further analyzed via Point Counting.

This additional step can be employed to more accurately determine the percent of asbestos that is in the material being sampled. Additionally, samples analyzed via PLM frequently are determined to contain "trace" amounts of asbestos usually written as <1% asbestos. Any sample determined to contain <1% asbestos must be point counted to prove it contains less than 1%. Otherwise it is assumed to be positive regardless of the PLM results. Non-friable materials such as floor tile, roofing materials and their associated mastic binders are not good candidates for point count analysis, they are better analyzed by gravimetric methods.

Typical materials that are candidates for point count analysis include drywall-joint compound, ceiling or wall texture, hard plaster, etc. The main purpose to point count a material is to find out if it contains less than 1% asbestos since anything 1% or less is legally considered "non-asbestos containing". If point counting is not used, many materials could be mistakenly considered to contain more than 1% asbestos. This mistaken assumption could lead to an expensive asbestos remediation project that could otherwise be avoided.

Using the Point Counting procedure.

For each layer of material to be point counted, eight mounts are made by dispersing 8 pinches of sample in a suitable fluid. A reticule is placed on the eyepiece of the microscope that superimposes a grid of points over the field of view. Fifty non-empty points are examined for each mount, yielding 400 points, some of which would be identified as asbestos and the rest as non-asbestos material. A simple calculation gives the percentage asbestos; 4 points in 400 would be 1.0%.

APPENDIX B

Site Plan and Photographs



Site Location: **Prairie and Northern Wildlife Research Centre**
115 Perimeter Road
University of Saskatchewan
Saskatoon, Saskatchewan
S7N3H5



Chemical Cabinet (Typical)



**Asbestos containing piping (Red Dots)
inside the crawlspace. (Confined Space)**



Asbestos containing Window Putty

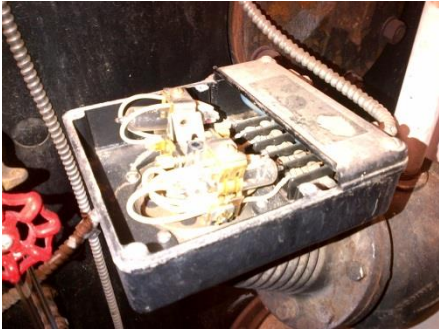


Insulation contains Asbestos

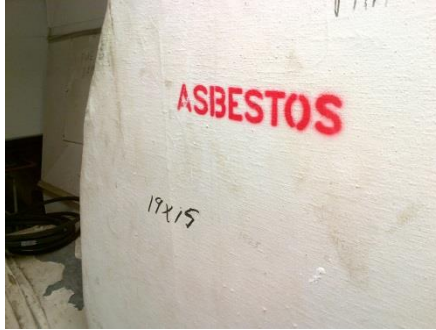


Mercury Switches on heating systems mechanical room





Mercury Switches Boiler



Asbestos Insulation Jackets



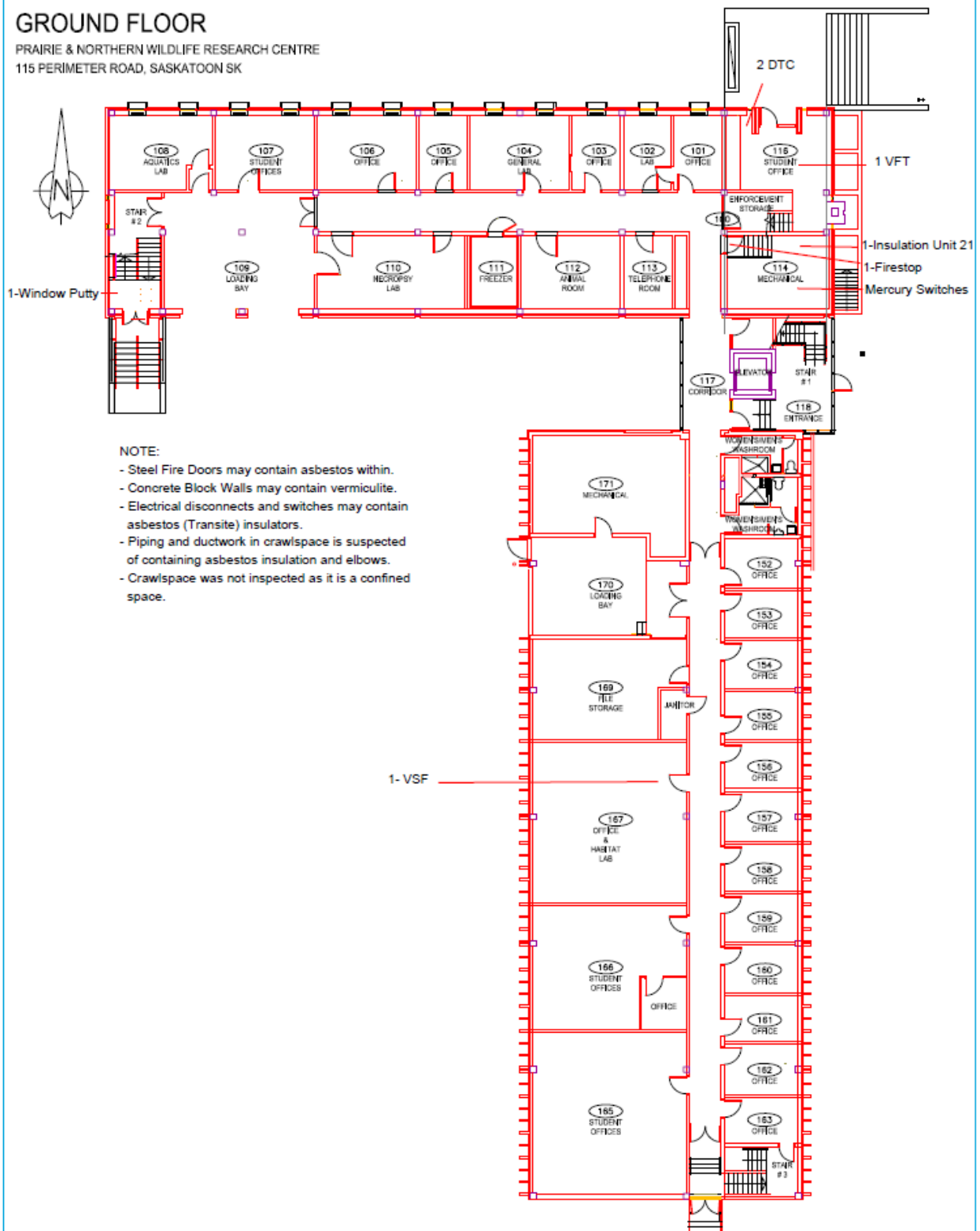
Asbestos Pipe Insulation

APPENDIX C

Survey Notes

GROUND FLOOR

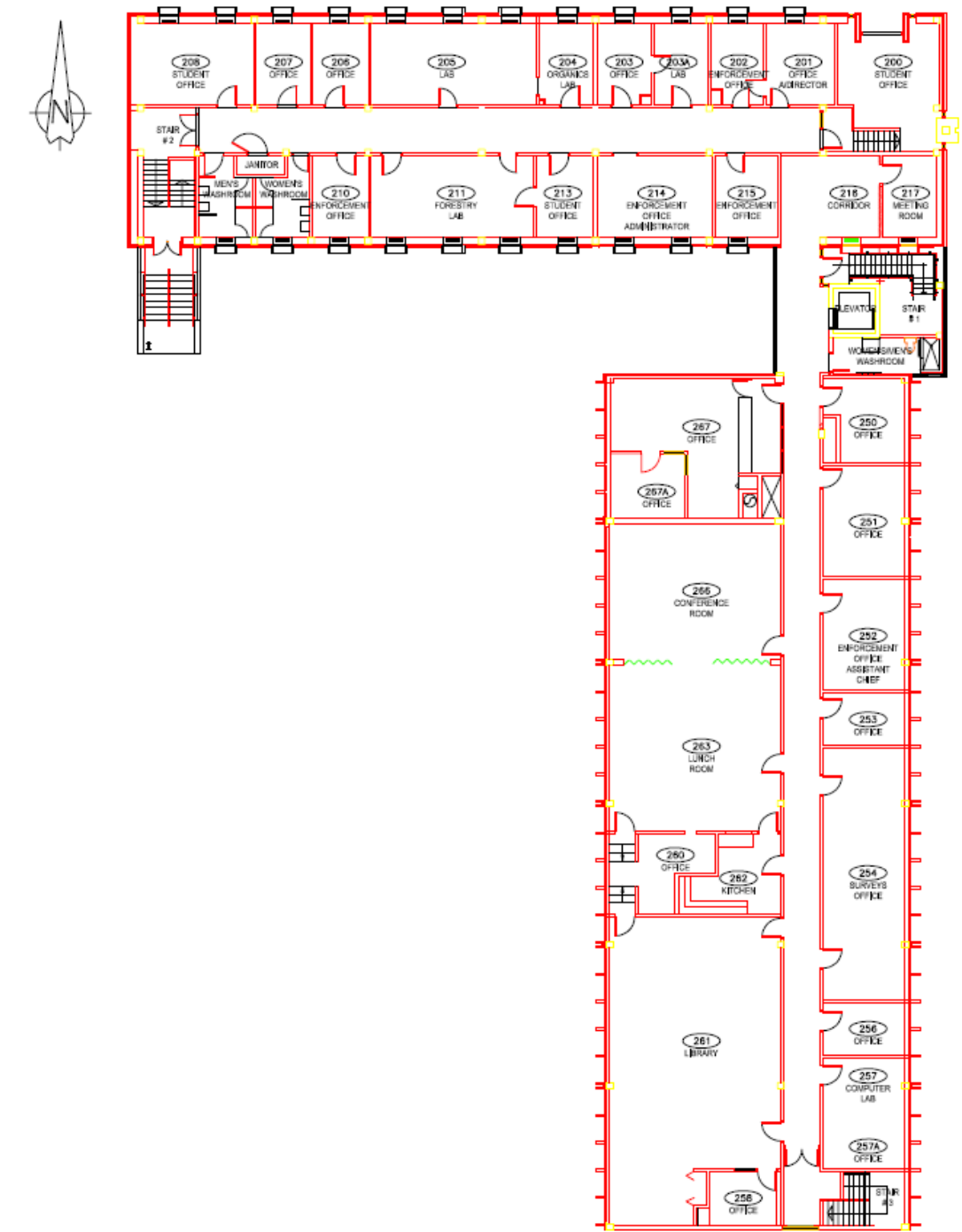
PRAIRIE & NORTHERN WILDLIFE RESEARCH CENTRE
115 PERIMETER ROAD, SASKATOON SK



SCALE 1:250

SECOND FLOOR PLAN

PRAIRIE & NORTHERN WILDLIFE RESEARCH CENTRE
115 PERIMETER ROAD, SASKATOON SK



SCALE 1:250

Hazardous Materials Survey

Materials Roster – PNWRC Building

Building Name:	Prairie Northern Wildlife Research Centre	Survey Date:	June 24-2014
Location Address:	115 Perimeter Road, Saskatoon, Sask	Surveyor:	Barry O'Regan
Building Description:	Laboratory-Office mixed use two storey structure	Job Number:	
		Sq. Ft.:	ft ²
Structure Type:	Concrete <input checked="" type="checkbox"/> Masonry <input type="checkbox"/> Structural <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Wood <input type="checkbox"/>	Construction Date:	1964
Heating System:	Electric <input type="checkbox"/> Forced Air <input type="checkbox"/> Hot Water <input checked="" type="checkbox"/> Steam <input checked="" type="checkbox"/> None <input type="checkbox"/>	Renovation Date(s):	

Asbestos-Lead-Mercury

Materials		Sampled From	EAST WING 1st Floor						
Access (1-3) 1-All Access 2-Heights >6 feet 3-Limited			Sample ID Number						
Condition (1-3) 1-Excellent 2-Fair 3-Bad									
1.	Description Vinyl Sheet Flooring –White. (VSF)	Rm #'s Room 167	1-VSF						
Access (1-3)		1							
Condition (1-3)		1							
2.	Description White Lead Paint (LP)	Rm #'s East Hall	5-LP						
Access (1-3)									
Condition (1-3)									
3.	Description Ceiling Tile White (CT)	Rm #'s Room 263	2 CT						
Access (1-3)		Access (1-3)	2						
Condition (1-3)		Condition (1-3)	1						
4.	Description Cove Base	Rm #'s ROOM 261	1-CB						
Access (1-3)		1							
Condition (1-3)		1							
5.	Description Drywall Taping Compound (DTC)	Rm #'s Room 267	5-DTC						
Access (1-3)		1							
Condition (1-3)		1							
6.	Description Wall Plaster	Rm #'s South East Stairwell	1-Wall Plaster						
Access (1-3)		1							
Condition (1-3)		2							
7.	Description Window Putty (WP)	Rm # Room 263	4-WP						
Access (1-3)		1							
Condition (1-3)		1							
8.	Description Window Putty (WP)	Rm # Room 267	2-WP						
Access (1-3)		1							
Condition (1-3)		1							
9.	Description Window Putty (WP)	Rm # South Stairwell	1-WP						
Access (1-3)		1							
Condition (1-3)		1							



Environment
Canada

Environnement
Canada

Hazardous Materials Survey

Materials Roster – PNWRC Building

10.	Description Lead Paint White (LP)	Rm # South Stairwell	1-LP							
Access (1-3)			1							
Condition (1-3)			1							
11.	Description Lead Paint Brown (LP) Door Frame	Rm # South Stairwell	2-LP							
Access (1-3)			1							
Condition (1-3)			1							
12	Description Lead Paint Brown (LP) Door Frame-Window Frame	Rm # Room 267	3-LP							
Access (1-3)			1							
Condition (1-3)			1							



Environment
Canada

Environnement
Canada

Hazardous Materials Survey Materials Roster – PNWRC Building

Building Name: Prairie Northern Wildlife Research Centre Survey Date: June 24-2014
 Location Address: 115 Perimeter Road, Saskatoon, Sask Surveyor: Barry O'Regan
 Building Description: Laboratory-Office mixed use two storey structure Job Number: _____
 Structure Type: Concrete ☒ Masonry ☐ Structural ☐ Steel ☐ Wood ☐ Sq. Ft.: ft²
 Heating System: Electric ☐ Forced Air ☐ Hot Water ☒ Steam ☐ None ☐ Construction Date: 1964
 Renovation Date(s): _____

Asbestos-Lead-Mercury

Materials		Sampled From	NORTH WING 1 st Floor						
Access (1-3) 1-All Access 2-Heights >6 feet 3-Limited			Sample ID Number						
Condition (1-3) 1-Excellent 2-Fair 3-Bad									
1.	Description Vinyl Sheet Flooring –White. (VSF)	Rm #'s Room 167	1-VSF						
Access (1-3)		1							
Condition (1-3)		1							
2.	Description Vinyl Floor Tile - Cream mottled. (VFT)	Rm #'s Room 116	1-VFT						
Access (1-3)		1							
Condition (1-3)		1							
3.	Description Red Firestop (Putty-Caulk) HVAC Insulation under canvas Lead Paint (LP) White Paint in Mechanical Room	Rm #'s Room 114	1-Firestop	1-Insulation on HVAC Unit-21	6-LP				
Access (1-3)		1							
Condition (1-3)		1		2	3				
4.	Description Drywall Taping Compound (DTC)	Rm #'s Room 116	2-DTC						
Access (1-3)		1							
Condition (1-3)		1							
5.	Description	Rm #'s							
Access (1-3)									
Condition (1-3)									
6.	Description	Rm #'s							
Access (1-3)									
Condition (1-3)									
7.	Description	Rm #'s							
Access (1-3)									
Condition (1-3)									
8.	Description	Rm #'s							
Access (1-3)									
Condition (1-3)									
9.	Description	Rm #'s							
Access (1-3)									

**CANADIAN WILDLIFE SERVICE
PRAIRIE & NORTHERN REGION
ASBESTOS SURVEY REPORT**

MAY 2001

PRIORITY ONE EXCERPTS JANUARY 2004

**Prepared for: Environment Canada
Prairie & Northern Canadian Wildlife Research Centre
Prepared by: Bersch & Associates Ltd.
Project No.: S01.04**

3.0 EXECUTIVE SUMMARY: RECOMMENDATIONS

A. Canadian Wildlife Service, 1965 Building

1. MAIN FLOOR, BOILER ROOM 114

a.) Pipe Fitting Compound - The pipe fittings located adjacent Glycol Circulating Pumps #1 & #2 at floor level are severely deteriorated. Removal of seven (7) medium pipe fittings is recommended. In addition, a thorough High Efficiency Particulate Air (HEPA) filter vacuuming of the floor area to a distance six (6) feet from the West wall is recommended to thoroughly clean the area of any asbestos debris.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE, CLEANUP & Re-insulate

b.) Above Water Softener Salt Holding Tank – The canvas jacket located on two (2) pipe fittings adjacent the softener salt holding tank were observed in a damaged state. Repair of the canvas jacket is recommended to prevent the material from becoming dislodged and falling to the Boiler Room floor below.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REPAIR

c.) Southeast Corner Adjacent Boiler - The canvas jacket covering the fittings located in the Southeast corner adjacent the Boiler have received previous damage due their close proximity to the floor level. Further disturbance of the ACM may cause the material to become dislodged and generate airborne asbestos fibres. Removal of five (5) medium fittings in this area is recommended to prevent any future disturbance of the ACM.

PRIORITY:	HIGH
CONDITION:	MODERATE
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE & Re-insulate

d.) Boiler Breeching - The boiler breeching insulation was identified as containing asbestos insulation. Previous repair work has resulted in sections of the ACM being patched with fibreglass insulation. The breeching insulation was observed with damaged sections of canvas jacket covering the ACM. Repair of the canvas jacket on the top and East side of the piping is recommended to prevent further disturbance of the material.

PRIORITY:	HIGH
CONDITION:	MODERATE
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REPAIR

e.) Block Wall Above Air Compressor F2730 – Asbestos containing mud compound remnants were located on the block wall above Air Compressor F2730 as a result of previous pipe fitting removal. A thorough HEPA vacuuming of all asbestos remnants on the block wall is recommended.

PRIORITY:	HIGH
CONDITION:	MODERATE
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	HEPA VACUUM

f.) Northwest Corner of Boiler Room – Two (2) damaged pipe elbows were located along the West wall in the Northwest corner of the Boiler Room. The damaged ACM is located behind the mechanical system ducting which extends into the crawlspace. Removal of the pipe fittings as well as a thorough HEPA vacuuming of the duct surface below is recommended to remove all traces of asbestos and debris.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REMOVE/HEPA VACUUM & Re-insulate

g.) South Side of Fan Unit #21 - The damaged section of fibreglass insulation identified as LP15 located on the South side of Fan Unit #21 houses asbestos pipe fitting remnants. Removal of the fibreglass insulation and pipe fitting remnants is recommended.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE & Re-insulate

An additional six (6) pipe fittings located at floor level are highly susceptible to future disturbance as a result of water damage and regular maintenance. Removal of these six fittings is recommended.

PRIORITY:	MODERATE
CONDITION:	MODERATE
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE & Re-insulate

h.) South Side of Fan Unit #21 - The pipe fittings located on the South side of Fan Unit #21 were observed in moderate condition. Previous pipe elbow repair was conducted, however, the pipe fittings are located in the passage way between Fan Units #21 and #22. The limited access space creates a high potential for future disturbance of the ACM. Removal of three (3) pipe fittings in this area is recommended to prevent accidental contact and disturbance of the ACM.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REMOVE & Re-insulate

i.) DCWS Adjacent Hot Water Heater – The damaged section of fibreglass pipe insulation located on the DCWS line adjacent the Hot Water Heater houses ACM. Removal of the damaged section of pipe insulation and asbestos containing pipe fitting as well as the exposed ACM at Valve #50 is recommended. Removal of an additional two (2) pipe fittings adjacent Recirculating Pump 1.8A is also recommended to avoid future disturbance of the ACM.

PRIORITY:	HIGH
CONDITION:	POOR/MODERATE
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE & Re-insulate

j.) Above Boiler Room 114 Access Door - Exposed ACM was located on the pipe end cleanout fitting at the top of the stairwell adjacent the Boiler Room access door. Removal of the ACM is recommended to prevent disturbance during maintenance activity.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE & Re-insulate

1.) Boiler Room Duct Insulation - The mechanical ducting within the Boiler Room is insulated with fibreglass insulation. However, a “Chrysotile” asbestos mud compound (parging) was applied to the insulation pin retaining clips, insulation corners and various other protrusions in the ducting. Exposed ACM was located above Fan Unit #21 where previous mechanical system upgrades resulted in tying into the ducting system. A thorough HEPA vacuuming of all asbestos parging debris and repairing of the canvas jacket in this area is recommended. Due to the sporadic locations of the mud compound, the mechanical duct insulation is considered as asbestos or contaminated with asbestos. The material was labeled with red ‘Asbestos’ stencil markings.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	HEPA VACUUM &ENCLOSE w/CANVAS

2. MAIN FLOOR, VARIOUS AREAS

a.) Corridor 118 Adjacent Boiler Room 114, Duct parging Compound - The mechanical duct insulation located on the three ducts above the ceiling tile and extending down into the duct cavity contains asbestos parging compound. Exposed duct parging compound was observed on the large mechanical ducting. Enclosing the exposed ACM with canvas is recommended in order to isolate the ACM from the occupied building environment.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REPAIR

b.) Telephone Room 113, Pipe Fitting Compound - Asbestos containing pipe fittings were identified within Telephone Room 113. Three (3) damaged pipe fittings were observed within the ceiling space along the South wall. Removal of these three fittings is recommended to prevent any further deterioration of the ACM.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REMOVE & Re-insulate

c.) **Corridor 118 Adjacent Room 112, Pipe Fitting Compound** - Asbestos containing pipe fitting remnants were identified on top of the ceiling tiles in Corridor 118 adjacent Room 112. Disposal of the asbestos debris and a thorough HEPA vacuuming of approximately a 4' x 4' area of the ceiling tile grid is recommended.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	CLEANUP

d.) **Room 106, Pipe Fitting Compound** – The pipe fittings located in the ceiling space of Room 106 contain asbestos. Accumulations of asbestos pipe fitting compound was located on top of the ceiling tile in the Northeast corner of the room. Cleanup of the asbestos debris is recommended to prevent further disturbance of the material. Exposed asbestos mud compound was also identified on the lineal fibreglass insulation in the ceiling space. Removal of the mud compound along with approximately five (5) feet of contaminated fibreglass insulation is recommended.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE/CLEANUP & Re-insulate

e.) **Room 103, Pipe Fitting Compound** - Asbestos containing pipe fitting remnants were identified above the South fluorescent light fixture and along the North wall adjacent the light fixture. Removal of the pipe insulation remnants attached to the piping as well as disposal of the ACM as asbestos waste is recommended. A thorough HEPA vacuuming of the immediate area of asbestos debris is required to eliminate all traces of ACM.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE/CLEANUP & Re-insulate

f.) **Loading Bay 121 & 122, Pipe Fitting Compound** - The majority of asbestos containing pipe fittings identified within Loading Bays 121 & 122 were observed in good condition. Previous mechanical system upgrades within the area resulted in the installation of several PVC fittings. Remnants of asbestos pipe elbow compound were observed on the North side of the structural support column. A thorough HEPA vacuuming of the asbestos remnants from the piping is recommended.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	HEPA VACUUM

g.) Room 108, Duct Parging Compound – Exposed duct parging compound was located within the ceiling space along the North wall. Previous renovation resulted in removal of a section of duct insulation. However, the exposed ACM was sealed off with duct tape. Enclosing the exposed ACM with canvas or removal of the remaining six-foot section of duct insulation is recommended.

PRIORITY:	HIGH
CONDITION:	MODERATE
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REPAIR or REMOVE

3. SECOND FLOOR

a.) Room 209, Pipe Fitting Compound - Asbestos containing pipe fittings were identified within the Second Floor, Janitor Room 209. Five (5) pipe fittings were located within the area. Exposed ACM is located on the small pipe fitting adjacent the hand valve. Enclosing the ACM with canvas is recommended. Following repair, management of the pipe fittings in the area is recommended until renovation/maintenance activity warrants prior removal. .

PRIORITY:	HIGH
CONDITION:	MODERATE
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REPAIR/MANAGE

B. Canadian Wildlife Service, 1972 Building Addition

1. MAIN FLOOR

a.) Mechanical Room 171, Duct Insulation - The mechanical ducting within mechanical Room 171 is insulated with fibreglass insulation. However, a “Chrysotile” asbestos mud compound (parging) was applied to the insulation pin retaining clips, insulation corners and various other protrusions in the ducting. Due to the sporadic locations of the mud compound, the mechanical duct insulation is considered as asbestos or contaminated with asbestos. The material was labeled with red ‘Asbestos’ stencil markings. Exposed ACM was located adjacent the access panel on the North Side of Fan Unit #1 and above the access panel at the West end of Fan Unit #1. In addition, exposed duct parging compound was located on the fresh air intake ducting located in the Northwest corner of the mechanical room. Repair of the exposed areas is recommended.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REPAIR

b.) Mechanical Room 171, Pipe Fitting Compound - The pipe fittings located adjacent Glycol Circulating Pumps #1 to #4 contain asbestos. Removal of five (5) severely deteriorated fittings and repair of an additional fitting in the area is recommended. A thorough HEPA vacuuming of the floor area and mechanical components below the damaged fittings is also required to eliminate the asbestos debris in the area.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE/HIGH
ACTION:	REMOVE/REPAIR & Re-insulate

c.) Mechanical Room 171, South Side of Fan Unit #1 - One (1) damaged pipe fitting was observed on the South side of Fan Unit #1. Removal of the damaged pipe fitting along with the one-foot section of pipe insulation is recommended.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	REMOVE & Re-Insulate

d.) Loading Bay 170, Pipe Fitting Compound - The pipe fitting compound remnants located on the unit heater in Loading Bay 170 contains asbestos. A thorough HEPA vacuuming of the pipe compound is required to eliminate the exposed material.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	HEPA VACUUM

2. THROUGHOUT 1972 BUILDING ADDITION

Vinyl Asbestos Tile (VAT) - The 12" x 12" beige floor tile with brown flecks located on both floors of the 1972 addition was identified as containing "Chrysotile" asbestos. The VAT was observed in good condition with a low potential for disturbance or exposure due to its cement-like state. Refer to the accompanying floor plans for areas which contain VAT. Management of the VAT until renovation/maintenance activity warrants prior removal is recommended.

Removal of approximately 9500 ft² of VAT located on the Main and Second floors is required to aid in flooring upgrade project. Refer to the accompanying floor plan for areas which house VAT.

PRIORITY:	LOW
CONDITION:	GOOD
POTENTIAL FOR DISTURBANCE:	LOW
ACTION:	REMOVAL REQUIRED FOR FLOORING UPGRADE

B. Canadian Wildlife Service, Maintenance Shop/Storage Building

1. STORAGE AREA ADJACENT WORKSHOP

Spray-applied asbestos insulation was identified within the Storage area adjacent the Maintenance Shop. Refer to Appendix II to identify the location of the ACM on the Maintenance Shop/Storage Building Floor Plan. The spray-applied insulation is applied to the ceiling in the area and is enclosed with metal liner panel. Overall, the ACM was thoroughly enclosed with the exception of the Sump Pit area. The metal patch around the suspended unit heater in this area is no longer attached to the metal liner panel thereby resulting in exposed spray-applied insulation. A thorough HEPA vacuuming of the chimney protrusion, Unit Heater surface and adjacent structural steel is recommended to thoroughly cleanup the minor amounts of asbestos insulation and over-spray.

PRIORITY:	HIGH
CONDITION:	POOR
POTENTIAL FOR DISTURBANCE:	MODERATE
ACTION:	CLEANUP

1.0 GENERAL

.1 SCOPE

Environment Canada, Prairie and Northern Wildlife Research Centre intends and this specification covers the removal/re-insulation, repair and cleanup of the various asbestos containing materials within the Canadian Wildlife Service, Prairie and Northern Region office building and the Maintenance Shop/Storage Building located at 115 Perimeter Road in Saskatoon, Saskatchewan. The project will entail the removal/re-insulation, repair and cleanup of all Priority One items as well as removal of the 12" x 12" vinyl asbestos floor tile (1972 Wing only) as specified in the attached Appendix I, Asbestos Hazard Assessment Survey Excerpts.

The asbestos abatement in general involves the following:

- A.** Wetting and removal of asbestos containing mud compound pipe fittings located on runs of fibreglass insulation located within various areas on the facility. Removal will be conducted with the implementation of the Glove-bag Removal Method. Refer to Appendix II for Bersch & Associates Ltd. Glove Bag Removal Procedure. Pipe fittings and insulation will be re-insulated to match existing thickness. Pipe elbows will be insulated with fibreglass insulation enclosed in PVC fittings. Canvas and lagging required for all lineal sections of fiberglass pipe insulation.
- B.** Cleanup and encapsulation of various damaged areas of asbestos mechanical duct and pipe insulation.
- C.** Removal of all asbestos containing 12" x 12" vinyl asbestos floor tiles (VAT) located within the 1972 addition as specified on the enclosed floor plans (Approximately 9500 ft². Removal of the floor tile will be conducted as per the attached Bersch & Associates Ltd, Vinyl Asbestos Floor Tile Removal Procedure located in Appendix II.
- D.** All work in public and staff areas will be conducted after regular office working hours unless prior arrangements are made with building supervisor. Access to the building after hours must be arranged with the building supervisor.

All work areas must be properly cleaned after each work session. It will be the tenderer's responsibility to perform all take-offs and inspections to fully acquaint themselves with the quantities and site conditions involved in the removal project.

.2 DESCRIPTION OF WORK

The work shall include, but not be limited to, the provision of all supervision, labour, goods, plant, services and facilities specified and/or required to perform the following:

- a) Isolation or shut down ventilation equipment within the various asbestos abatement areas or cap all return air vents with 6 mil polyethylene sheeting and duct tape.
- b) The pre-cleaning, isolation, and enclosure of all equipment that does not require removal.
- c) Wetting and removal of asbestos containing pipe fittings using the Glove Bag Method of removal as specified in Appendix II.

- d) Decontamination of contaminated areas following asbestos removal. Decontamination shall include:
 - thorough pick up and HEPA vacuum cleaning of all debris.
 - cleaning of visible debris from all surfaces.
 - sealing of all surfaces.
 - removal and disposal of all hoarding or Glove Bags.
- e) Encapsulation of all surfaces with an approved sealant following asbestos abatement activities.
- f) Transportation of contaminated materials to the approved disposal site along with all permits and arrangements for disposal.
- g) Supply and operation of decontamination facilities.
- h) Supply and maintenance of respirator equipment.
- i) Dismantling and removal from site of hoarding, scaffolding and asbestos removal equipment/materials.
- j) Site Cleanup.

All work will be subject to frequent inspection and air monitoring by Bersch & Associates Ltd.

.3 INTENT OF SPECIFICATION

These specifications describe and specify the scope of work in broad terms only. It shall be the Contractor's responsibility, from his experience and standard practices, to detail and complete the work so as to satisfy Environment Canada with respect to design, performance, durability, operation and safety. By submitting a proposal on this Contract the tenderers shall certify that he performed all takeoffs and inspections to fully acquaint themselves with quantities and site conditions involved.

.4 INSPECTIONS

Bersch & Associates Ltd. will conduct the follow-up site inspections for the asbestos abatement activities. It will be the contractor's responsibility to notify the designated representative when they are prepared for the inspections under .1 and .3.

- .1 Pre-construction Inspection - Site visit to ensure that the contractor has fully prepared the site, personnel are trained and equipment-materials are on hand as per specifications prior to the start of asbestos abatement activity.
- .2 Site Inspections - Site visits and air monitoring during removal to ensure work procedures are being followed, proper equipment is being used, and to ensure site security. Prepare written report to identify concerns that require corrective action and document the findings of the visit.
- .3 Visual Inspection - Site visit for substantial completion to ensure that the ACM has been properly removed or repaired as stated in the Appendix I, Survey Report Excerpts.

1.1 TERMINOLOGY (Definitions)

- .1 Building owner – Environment Canada or their authorized representative.
- .2 Authorized Visitor - The Building Owner, or a representative of any regulatory or other agency having jurisdiction over the project.
- .3 Abatement - Procedures to control fiber release from asbestos-containing material. Includes encapsulation, enclosure, and removal.
- .4 Removal - All herein specified procedures necessary to strip all asbestos-containing materials from the designated areas and to dispose of these materials at an acceptable site.
- .5 Encapsulation - All herein specified procedures necessary to coat all asbestos-containing materials with an encapsulant to control the possible release of asbestos fibers into the ambient air.
- .6 Enclosure - All herein specified procedures necessary to complete enclosure of all asbestos-containing materials behind airtight, impermeable, permanent barriers.
- .7 Air Monitoring - The process of measuring the fiber content of a specific volume of air in a stated period of time.
- .8 HEPA Vacuum Equipment - High Efficiency Particulate Air filtered vacuuming equipment with a filter system capable of collecting and retaining asbestos fibers. Filters will be rated at 99.97% efficiency for retaining fibers of 0.3 microns or larger.
- .9 Surfactant - A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- .10 Amended water - A water to which a surfactant has been added. (See 3.2.2 Asbestos Removal)
- .11 Airlock - A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 1.8 meters (6 feet) apart.
- .12 Fixed Object - A unit of equipment or furniture in the work area which cannot be removed from the work area.
- .13 Movable Object - A unit of equipment or furniture in the work area which can be removed from the work area.
- .14 HEPA filter - A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.
- .15 Encapsulant (Sealant) - A liquid material which can be applied to asbestos-containing material and which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

- .16 Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.
- .17 Venting System - When asbestos debris is disturbed, proper ventilating equipment must be used to exhaust air to the outside environment.
- .18 Negative Pressure - Air pressure within a work area resulting from air movement equipment, installed in the work area capable of maintaining a minimum pressure differential of 0.5mm (0.02 in) of water column relative to adjacent unsealed areas.
- .19 Certification - The testing of air movement equipment in accordance with the Province of Saskatchewan's Occupational Health & Safety Regulations Part XXIII Asbestos, section 339.
- .20 ACM - Asbestos Containing Material.

1.2 APPLICABLE REFERENCE DOCUMENTS

- .1 The current issue of each document shall govern. Where conflict among requirements or with these specifications exist, the more stringent requirements shall apply.
 - A. Regulations: Comply with applicable Federal, Provincial, municipal, and local regulations. Province of Saskatchewan, Occupational Health and Safety Act 1993 and The Occupational Health and Safety Regulations December, 1996.

Transportation of Dangerous Goods Act Regulations and/or Waste Management Act Regulations. Province of Saskatchewan Dept. of Environment Regulations.
 - B. U.S. Federal Standard 209B "Clean Room and Work Station Requirements, Controlled Environment"
 - C. National Sanitation Foundation Standard NSF 49, Class II (Laminar Flow) Biohazard Cabinetry.

.2 Codes and Standards

A. CSA-Canadian Standards Association.

- .1) CSA Standard Z94.4-M1982 Selection, Care and Use of Respirators
- .2) CSA Standard Z180.1-M85 Compressed Breathing Air And Systems
- .3) ANSI Z88.2 - 1980 Practices for Respiratory Protection

B. Province of Saskatchewan

- .1) Occupational Health & Safety Act, 1993
- .2) Occupational Health & Safety Regulations, 1996 Part XXIII - Asbestos

C. United States Environmental Protection Agency

- 1) EPA 560/5-85-024 Guidance for Controlling Asbestos Containing Material in Buildings

1.3 SUBMITTALS AND NOTICES

.1 Prior to Commencement of Work Contractor shall:

- .1 Submit proof, satisfactory to the Building Owner or his authorized representative, that all required permits and arrangements for transport and disposal of asbestos-containing or contaminated materials have been obtained.
- .2 Submit to the Building Owner or his authorized representative a copy of Pollution Insurance policy regarding hazardous materials.
- .3 Submit documentation to the Building Owner or his authorized representative indicating employee instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures.
- .4 Post warning signs where access to the work area is possible. Such signs shall be located on the Clean Room and on the Holding area of the Equipment Decontamination Enclosure System and shall delineate entry and protective equipment requirements and provide warning of the potential health consequences of exposure to asbestos.
- .5 Submit names of supervisory personnel who will be responsible for work on each site. One of these supervisors must remain on site at all times asbestos related work is occurring. Contractor shall submit proof that supervisory personnel have attended a training course on asbestos removal and have performed supervisory functions on at least two comparable projects. Substitution of these supervisors will only be allowed with written permission of the Building Owner or his authorized representative.
- .6 Submit to the Building Owner, documentation, including test results, of sealant materials proposed for use.
- .7 Submit certification that vacuums and other equipment required to contain airborne fibres conform to the Province of Saskatchewan Occupational Health & Safety Regulations Part XXIII Asbestos Section 339. Certification must prove that the High Efficiency Particulate Absolute Vacuums do not exceed a D.O.P. (di-2-ethyl hexyl phthalate) penetration of 0.01 percent at any point. Where exterior ventilation is not possible, in-place D.O.P. filter testing is required for initial use.
- .8 The Contractor and the Owner shall agree in writing on the condition of the building and fixtures, prior to commencement of the work.

1.4 TEST RESULTS

- .1 Results of tests of asbestos-containing materials taken from the Environment Canada, Prairie and Northern Wildlife Research Centre are available for review at district office or Bersch & Associates Ltd. The material to be removed/repaired was identified as containing "Chrysotile" Asbestos.

1.5 PERSONNEL PROTECTION

- .1 Prior to commencement of work, the workers shall be instructed, and shall be knowledgeable, in the areas described in Section 1.3. Submittals And Notices .1.5.
- .2 Provide workers with personally issued and marked respiratory equipment approved by the Province of Saskatchewan Occupational Health and Safety Branch. Workers conducting Glove Bag Removal, repair and cleanup activity will wear NIOSH approved Category III Half Face Piece respirators equipped with approved HEPA filter cartridges. An additional respirator must be available for every three workers during the removal in the event of damage or failure of one of the three respirators. A review of respiratory requirements may be necessary, as dictated by air monitoring results obtained by the consultant. The provisions of CSA Standard Z94.4-M1982 regarding the care, use and selection of respirators shall apply. A current list of persons utilizing respiratory equipment shall be displayed in the clean room. Filters shall be replaced every twelve hours of work or more frequently as indicated by on site manufacturers approved filter and flow testing equipment. No supervisors, workers or authorized visitors shall wear facial hair which affects respirator to face seal. Contractor shall provide sanitizing tablets or equivalent sanitizing agent.
- .3 Provide authorized visitors with suitable respirators with new filters or cartridges whenever they are required to enter the work area, to a maximum of one (1) per day.
- .4 Provide workers with sufficient sets of disposable protective full body impervious clothing. Such clothing shall consist of full body coveralls and headgear.
- .5 Provide and post, in the Equipment Room and the Clean Room, the decontamination and work procedures to be followed by workers, as described in Section 1.5.7 of these specifications.

.6 Protection Procedures

- .1 Workers shall not eat, drink, smoke, chew gum or tobacco at the work site except in designated areas.
- .2 Workers shall be fully protected with respirators and protective clothing immediately prior to the first disturbance of asbestos-containing or contaminated materials and until final cleanup is complete.
- .3 Workers performing duties at risk of causing elevated airborne asbestos fibre levels shall be fully protected with respirators and protective clothing prior to the commencement of work.

1.6 BUILDING PROTECTION

- .1 The Work Areas must be isolated from the rest of the building with posted warning signs identifying asbestos abatement in progress.
- .2 Maintain building security by ensuring all doors used for building access are secured during evening and weekend work to prevent unauthorized entrance.

1.7 SCHEDULE

- .1 The contractor shall provide Environment Canada, Prairie & Northern Wildlife Research Centre with a Schedule which clearly indicates major proposed sectors of work and describes manpower loadings for the entire project.

2.0 MATERIALS AND EQUIPMENT

.1 MATERIALS

- .1 Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.
- .2 Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.
- .3 Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.
- .4 Plastic sheet - Of 0.15mm (6 mil) thick polyethylene, unless otherwise specified, sized to minimize frequency of joints.
- .5 Tape - Capable of sealing joints of adjacent plastic sheets and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under dry and wet conditions, including use of amended water.
- .6 Surfactant (wetting agent) - Shall consist of 50% polyoxyethylene ether and 50% of polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of 1.25 kg/cubic meter, (one ounce of surfactant to five gallons of water).
- .7 Impermeable containers - Suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site. Two separate polyethylene bags of 0.15mm (6 mil) thickness or one bag used to line uncontaminated metal or fibre drums shall be used as appropriate. Containers must be air and watertight and individually labeled.
- .8 Warning labels and signs - Delineating entry and protective equipment requirements and providing warning of the potential health effects of exposure to airborne asbestos fibres.
- .9 Encapsulants - Bridging type, slow drying, approved by the authority having jurisdiction and meeting the requirements of CGSB 1-GP-205M Type 2. TowerThon 20-300 Elastomeric Coating is required.
- .10 Other Materials - Provide all other materials, such as lumber, nails and hardware, which may be required to construct barriers that isolate the work area.

2.2 TOOLS AND EQUIPMENT

- .1 Provide all suitable tools for asbestos removal and encapsulation. Submit a list of the equipment that will be provided to execute this contract.
- .2 Air movement equipment - High Efficiency Particulate Absolute Filtration Systems shall be equipped with filtration equipment in compliance with ANSI Z9.2, Local Exhaust Ventilation. No air movement system or air equipment shall discharge asbestos fibers outside the work area.
- .3 Breathing air equipment - Shall meet the following requirements;
 - 1) Approved by the Province of Saskatchewan Occupational Health and Safety Branch.

3.0 EXECUTION

.1 PREPARATION

- .1 Separate Asbestos Removal Work Areas from Occupied Areas which will remain in use during the asbestos removal by means of asbestos hazard tape and/or polyethylene barriers.
- .2 Asbestos abatement work shall not commence until:
 - .1 Arrangements have been made for disposal of waste at an acceptable site.
 - .2 Work areas and parts of the building required to remain in use are effectively segregated.
 - .4 Tools, equipment and material waste receptors are on hand.
 - .5 Arrangements have been made for building security.
 - .6 All other preparatory steps have been taken as required by consultant and applicable notices posted and permits obtained.

3.2 ASBESTOS REMOVAL

- .1 The primary method removal of the asbestos containing materials shall be by manual handling and packaging. Low Risk Asbestos Abatement procedures will be used to conduct the asbestos removal activity within the Prairie & Northern Wildlife Research Centre.
- .2 Spray asbestos material with amended water, using spray equipment capable of providing a "mist" application to reduce the release of fibres. Saturate the material sufficiently to wet it to the substrate without causing excess dripping or delamination of the material. Spray the asbestos material repeatedly during work process to maintain it in a wet condition and to minimize asbestos fibre dispersion.

- .3 Remove the saturated asbestos material in small sections. Remove contaminated portions of adjacent materials to the satisfaction of the owner or his representative. As it is removed pack material in sealable yellow plastic bags of 0.15mm (6 mil) minimum thickness and place in labeled containers for transport. Material shall not be allowed to accumulate or dry out prior to the insertion into the waste receptacle.
- .4 Seal filled containers. Clean external surfaces of containers thoroughly by wet wiping. Bags or containers must have caution labels in accordance with applicable regulations governing the transport and disposal of asbestos wastes. Black bags (6 mil) may be used for the initial bagging of the material, but the factory labeled (yellow) asbestos bags must be used for double bagging to identify the bags that have been double bagged. Ensure that containers are removed from the holding area by workers dressed in disposable coveralls and equipped with a Category III Respirator. Asbestos waste will be removed from the work area once a day at the end of each shift.

3.3 CLEAN UP

- .1 Following the removal of the asbestos containing materials, remove all visible accumulations of asbestos material and debris with HEPA vacuum.
- .2 If the consultant finds visible accumulations of asbestos debris in the work area, the Contractor shall repeat the cleaning process at the Contractor's expense until the work area is, in the opinion of the consultant in an acceptably clean condition.
- .3 Work area clearance shall be based largely on a visual inspection of the work area by the building owner or his authorized representative.
- .4 A final check shall be carried out to ensure that no dust or debris remains on surfaces as a result of dismantling operations.

3.4 DISPOSAL

- .1 As the work progresses, the contractor will not exceed available enclosed storage capacity on site, will remove asbestos waste to disposal in an enclosed transport unit and dispose of same at an authorized disposal site in accordance with the requirements of the disposal authority. Obtain, complete and submit appropriate manifest documentation regarding disposal to the building owner. The personnel assigned to transport will be fully informed and equipped to handle a broken container in transport or disposal.
- .2 Ensure landfill operator is fully aware of hazardous material being disposed of and that all equipment operators are informed of appropriate disposal procedures.
- .3 Cooperate and comply with Federal, Provincial and Municipal authorities regarding the transport and disposal of asbestos waste materials.
- .4 Ensure that all transport and disposal activities are supervised by a representative of the contractor to ensure compliance with all applicable regulations.

3.5 CIRCUMSTANCES RESULTING IN AN IMMEDIATE SHUTDOWN

- .1 High Fibre Concentration - The fibre level must be maintained at a level below the Occupational Health and Safety's acceptable level of 0.01 f/cc in both the Clean Room and the areas surrounding the removal area
- .2 Water Leakage - Any leakage of water from the removal area will not be tolerated.
- .3 Faulty Equipment - All equipment involved in the asbestos abatement activities must be maintained in good working order.
- .4 Inadequate Supply of Materials - An adequate supply of materials must be available on site at all times (eg. disposable coveralls, respirators, HEPA filters, towels).
- .5 Unsafe Activities - Any other circumstances which the site inspector feels are unsafe to the workers or occupants of the building.



Real Property Management, Technical Services

January 2016

335 River Rd.
Ottawa, ON
K1V 1C7

NOTICE TO CONTRACTORS AND SUBCONTRACTORS

This information sheet is a non-exhaustive list of contractor responsibilities under the *Federal Halocarbon Regulations, 2003* (FHR 2003) pursuant to the *Canadian Environmental Protection Act, 1999*. By signing this agreement, the contractor acknowledges and understands these responsibilities when work is carried out on Environment & Climate Change Canada (ECCC) owned and/or managed halocarbon-containing equipment. Deviation from these responsibilities should be brought to the attention of the ECCC contract authority immediately, and may result in termination of the contract.

- Only a certified and licensed technician may install, service, leak test or charge a halocarbon containing equipment that is owned and/or managed by ECCC.
- Any work done on a halocarbon air conditioning or refrigeration system that is owned and/or managed by ECCC must be done in accordance with the Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems, 2014.
- If a leak test is conducted on a piece of air conditioning or refrigeration equipment, the contractor will affix a notice containing ALL of the information as required in Schedule 2, item 2 of the FHR 2003: a) name and address of owner of the system, b) name of operator of the system, c) specific location of the system d) description of the system e) name of certified person, f) certificate number g) name of employer of certified person h) type of halocarbon in the system i) charging capacity of the system j) date of last two leak tests.
- No halocarbon shall be knowingly released from a refrigeration or air conditioning system, or from a fire extinguishing system (unless to fight a fire).
- Any work done on an air conditioning, refrigeration, or fire extinguishing system that may result in a release of a halocarbon, the halocarbon shall first be recovered into a container designed for that purpose.
- In the event that a halocarbon containing system must be charged, a leak test will first be performed.

- If a leak is detected for a halocarbon containing system, the owner of the equipment (and contract authority) must be informed of the leak as soon as possible.
 - In the case of a leak resulting in a **release of greater than 100kg**, or of unknown weight from a unit with a capacity equal to or greater than 100kg, the **contractor** must report the release within 24 hours to Environment & Climate Change Canada at **1-800-667-7525** and immediately inform your ECCC contact. A verbal or written report must be submitted within 24 hours followed by a written report within 14 days of detecting the release.
 - The contractor must report all halocarbon releases over 10 kg. If a leak is **greater than 10kg and less than 100kg** a written report must be filed. Written reports for releases of this size must be sent to the owner of the equipment within 14 days of detecting the release.
- Upon servicing a halocarbon-containing system, the service log book for the unit shall be completed by the contractor.
- Before dismantling, decommissioning or destroying any halocarbon containing system; the halocarbon(s) will be recovered and a notice shall be affix to the system. The notice will meet the requirements listed in Schedule 2, Item 3 of the FHR 2003. Copy of notice to be provided to ECCC Representative.
- The contractor is familiar with the definitions, and prohibitions outlined in the Federal Halocarbon Regulations, 2003. (SOR/2003-289)

Signature of contractor: _____

Contract number: _____

Vendor / Contractor Firm Name and Address:

Please return this document to the following email address:
nikolas.fehr@canada.ca or fax to (604) 903-4408.

Resources: *Canadian Environmental Protection Act, 1999*
<http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=D44ED61E-1>

2003 Federal Halocarbon Regulations:
<http://laws-lois.justice.gc.ca/eng/regulations/sor-2003-289/index.html>

*Environmental Code of Practice for Elimination of Fluorocarbon Emissions
from Refrigeration and Air Conditioning Systems:*
<https://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=D918C063-1>



CANADA

CONSOLIDATION

CODIFICATION

Federal Halocarbon Regulations, 2003

Règlement fédéral sur les halocarbures (2003)

SOR/2003-289

DORS/2003-289

Current to January 6, 2016

À jour au 6 janvier 2016

Last amended on July 30, 2009

Dernière modification le 30 juillet 2009

OFFICIAL STATUS OF CONSOLIDATIONS

Subsections 31(1) and (3) of the *Legislation Revision and Consolidation Act*, in force on June 1, 2009, provide as follows:

Published consolidation is evidence

31 (1) Every copy of a consolidated statute or consolidated regulation published by the Minister under this Act in either print or electronic form is evidence of that statute or regulation and of its contents and every copy purporting to be published by the Minister is deemed to be so published, unless the contrary is shown.

...

Inconsistencies in regulations

(3) In the event of an inconsistency between a consolidated regulation published by the Minister under this Act and the original regulation or a subsequent amendment as registered by the Clerk of the Privy Council under the *Statutory Instruments Act*, the original regulation or amendment prevails to the extent of the inconsistency.

NOTE

This consolidation is current to January 6, 2016. The last amendments came into force on July 30, 2009. Any amendments that were not in force as of January 6, 2016 are set out at the end of this document under the heading “Amendments Not in Force”.

CARACTÈRE OFFICIEL DES CODIFICATIONS

Les paragraphes 31(1) et (3) de la *Loi sur la révision et la codification des textes législatifs*, en vigueur le 1^{er} juin 2009, prévoient ce qui suit :

Codifications comme élément de preuve

31 (1) Tout exemplaire d'une loi codifiée ou d'un règlement codifié, publié par le ministre en vertu de la présente loi sur support papier ou sur support électronique, fait foi de cette loi ou de ce règlement et de son contenu. Tout exemplaire donné comme publié par le ministre est réputé avoir été ainsi publié, sauf preuve contraire.

[...]

Incompatibilité — règlements

(3) Les dispositions du règlement d'origine avec ses modifications subséquentes enregistrées par le greffier du Conseil privé en vertu de la *Loi sur les textes réglementaires* l'emportent sur les dispositions incompatibles du règlement codifié publié par le ministre en vertu de la présente loi.

NOTE

Cette codification est à jour au 6 janvier 2016. Les dernières modifications sont entrées en vigueur le 30 juillet 2009. Toutes modifications qui n'étaient pas en vigueur au 6 janvier 2016 sont énoncées à la fin de ce document sous le titre « Modifications non en vigueur ».

TABLE OF PROVISIONS**Federal Halocarbon Regulations, 2003**

1	Interpretation
2	Application
3	Prohibitions
7	Recovery
9	Installation, Servicing, Leak Testing and Charging
9	Refrigeration Systems and Air-Conditioning Systems
22	Fire-Extinguishing Systems
31	Service Logs
32	Release Reports
34	Permits
36	Logs, Notices, Records and Reports
37	Repeal
38	Coming into Force

SCHEDULE 1**SCHEDULE 2****TABLE ANALYTIQUE****Règlement fédéral sur les halocarbures (2003)**

1	Définitions
2	Champ d'application
3	Interdictions
7	Récupération
9	Installation, entretien, détection des fuites et charge
9	Systèmes de réfrigération et de climatisation
22	Système d'extinction d'incendie
31	Registre d'entretien
32	Rapport sur le rejet
34	Permis
36	Avis, comptes rendus, documents, rapports et registres
37	Abrogation
38	Entrée en vigueur

ANNEXE 1**ANNEXE 2**

Registration
SOR/2003-289 August 13, 2003

CANADIAN ENVIRONMENTAL PROTECTION ACT,
1999

Federal Halocarbon Regulations, 2003

P.C. 2003-1203 August 13, 2003

Whereas, pursuant to subsection 332(1) of the *Canadian Environmental Protection Act, 1999*^a, the Minister of the Environment published in the *Canada Gazette*, Part I, on December 7, 2002, a copy of the proposed Regulations under the title *Federal Halocarbon Regulations, 2002*, substantially in the form set out in the annexed Regulations, and persons were given an opportunity to file comments with respect to the Regulations or a notice of objection requesting that a board of review be established and stating the reasons for the objection;

Therefore, Her Excellency the Governor General in Council, on the recommendation of the Minister of the Environment, pursuant to subsection 209(1) of the *Canadian Environmental Protection Act, 1999*^a, hereby makes the annexed *Federal Halocarbon Regulations, 2003*.

Enregistrement
DORS/2003-289 Le 13 août 2003

LOI CANADIENNE SUR LA PROTECTION DE
L'ENVIRONNEMENT (1999)

Règlement fédéral sur les halocarbures (2003)

C.P. 2003-1203 Le 13 août 2003

Attendu que, conformément au paragraphe 332(1) de la *Loi canadienne sur la protection de l'environnement (1999)*^a, le ministre de l'Environnement a fait publier dans la *Gazette du Canada* Partie I, le 7 décembre 2002, le projet de règlement intitulé *Règlement fédéral sur les halocarbures (2002)*, conforme en substance au texte ci-après, et que les intéressés ont ainsi eu la possibilité de présenter leurs observations à cet égard ou un avis d'opposition motivé demandant la constitution d'une commission de révision,

À ces causes, sur recommandation du ministre de l'Environnement et en vertu du paragraphe 209(1) de la *Loi canadienne sur la protection de l'environnement (1999)*^a, Son Excellence la Gouverneure générale en conseil prend le *Règlement fédéral sur les halocarbures (2003)*, ci-après.

^a S.C. 1999, c. 33

^a L.C. 1999, ch. 33

Federal Halocarbon Regulations, 2003

Interpretation

1 The definitions in this section apply in these Regulations.

Act means the *Canadian Environmental Protection Act, 1999*. (*Loi*)

air-conditioning system means an air-conditioning system, including any associated equipment, that contains or is designed to contain a halocarbon refrigerant. (*système de climatisation*)

bromofluorocarbon means a fully halogenated bromofluorocarbon each molecule of which contains one, two or three carbon atoms and at least one atom of bromine and one atom of fluorine. (*bromofluorocarbure*)

certificate means a certificate recognized by three or more provinces, or by the province in which the work of the service technician who holds the certificate is being done, indicating successful completion of an environmental awareness course in recycling, recovery and handling procedures in respect of halocarbon refrigerants as outlined in the Refrigerant Code of Practice. (*certificat*)

certified person, in respect of a refrigeration system or an air-conditioning system, means a service technician who holds a certificate. (*personne accréditée*)

charging means to add a halocarbon to a system. (*charger*)

chiller means an air-conditioning system or refrigeration system that has a compressor, an evaporator and a secondary refrigerant. (*refroidisseur*)

chlorofluorocarbon means a fully halogenated chlorofluorocarbon each molecule of which contains one, two or three carbon atoms and at least one atom of chlorine and one atom of fluorine. (*chlorofluorocarbure*)

fire-extinguishing system means fire-extinguishing equipment, including portable or fixed equipment and any associated equipment, that contains or is designed to contain a halocarbon fire-extinguishing agent. (*système d'extinction d'incendie*)

Règlement fédéral sur les halocarbures (2003)

Définitions

1 Les définitions qui suivent s'appliquent au présent règlement.

bromofluorocarbure Bromofluorocarbure entièrement halogéné dont chaque molécule contient un, deux ou trois atomes de carbone et au moins un atome de brome et un atome de fluor. (*bromofluorocarbon*)

certificat Certificat, reconnu par au moins trois provinces, ou par la province dans laquelle le technicien d'entretien qui en est le titulaire effectue un travail, qui indique que le titulaire a terminé avec succès un cours de sensibilisation environnementale portant sur le recyclage, la récupération et la manutention de frigorigènes aux halocarbures comme le prévoit le Code de pratique en réfrigération. (*certificate*)

charger Ajouter un halocarbure à un système. (*charging*)

chlorofluorocarbure Chlorofluorocarbure entièrement halogéné dont chaque molécule contient un, deux ou trois atomes de carbone et au moins un atome de chlore et un atome de fluor. (*chlorofluorocarbon*)

Code de pratique en réfrigération Le *Code de pratiques environnementales pour l'élimination des rejets dans l'atmosphère de fluorocarbures provenant des systèmes de réfrigération et de conditionnement d'air*, publié par le ministère de l'Environnement en mars 1996, avec ses modifications successives. (*Refrigerant Code of Practice*)

entretien S'entend notamment de la maintenance, de la modification, de la charge, de la réparation, du déménagement, de la destruction, de la mise hors service, du désassemblage, de la mise en service et de l'essai d'un système. Ne sont pas visés par la présente définition les essais relatifs à la fabrication et à la production du système. (*service*)

extincteur portatif Bonbonne ou cartouche contenant un halocarbure qui est utilisée pour éteindre les incendies, a une capacité de charge d'au plus 25 kg et peut être portée ou roulée sur le lieu de l'incendie. (*portable fire extinguisher*)

halocarbon means a substance set out in Schedule 1, whether existing alone or in a mixture, and includes isomers of any such substance. (*halocarbure*)

hydrobromofluorocarbon means a hydrobromofluorocarbon each molecule of which contains one, two or three carbon atoms and at least one atom of hydrogen, one atom of bromine and one atom of fluorine. (*hydrobromofluorocarbure*)

hydrochlorofluorocarbon means a hydrochlorofluorocarbon each molecule of which contains one, two or three carbon atoms and at least one atom of hydrogen, one atom of chlorine and one atom of fluorine. (*hydrochlorofluorocarbure*)

hydrofluorocarbon means a hydrofluorocarbon each molecule of which contains only carbon, hydrogen and fluorine atoms. (*hydrofluorocarbure*)

installation does not include the reactivation of a system by the same owner at the same site. (*installation*)

leak means a release of a halocarbon from a system. (*fuite*)

military vehicle means a vehicle that is designed to be used in combat, or in a combat support role, but does not include an administrative vehicle. (*véhicule militaire*)

owner means to hold a right in or to have possession, control or custody of, to be responsible for the maintenance, operation or management of, or to have the power to dispose of, a system. (*propriétaire*)

perfluorocarbon means a fully fluorinated fluorocarbon each molecule of which contains only carbon and fluorine atoms. (*perfluorocarbure*)

portable fire extinguisher means a cylinder or cartridge containing a halocarbon that is used for extinguishing fires, that has a charging capacity of 25 kg or less and that can be carried or wheeled to the site of a fire. (*extincteur portatif*)

purge system means a purge unit on a refrigeration system or an air-conditioning system, including any associated recovery equipment. (*système à vidange*)

reclamation, in respect of a halocarbon, means the recovery, re-processing and upgrading through processes such as filtering, drying, distilling and treating chemically in order to restore the halocarbon to industry-accepted reuse standards. (*régénération*)

recovery, in respect of a halocarbon, means

fuite Rejet d'un halocarbure d'un système. (*leak*)

halocarbure Substance visée à l'annexe 1, y compris ses isomères, qui se présente seule ou dans un mélange. (*halocarbon*)

hydrobromofluorocarbure Hydrobromofluorocarbure dont chaque molécule contient un, deux ou trois atomes de carbone et au moins un atome d'hydrogène, un atome de brome et un atome de fluor. (*hydrobromofluorocarbon*)

hydrochlorofluorocarbure Hydrochlorofluorocarbure dont chaque molécule contient un, deux ou trois atomes de carbone et au moins un atome d'hydrogène, un atome de chlore et un atome de fluor. (*hydrochlorofluorocarbon*)

hydrofluorocarbure Hydrofluorocarbure dont chaque molécule ne contient que des atomes de carbone, d'hydrogène et de fluor. (*hydrofluorocarbon*)

installation N'est pas comprise dans l'installation la remise en état de fonctionnement d'un système dans les mêmes lieux et par le même propriétaire. (*installation*)

Loi La Loi canadienne sur la protection de l'environnement (1999). (*Act*)

navire S'entend au sens du paragraphe 122(1) de la Loi. (*ship*)

perfluorocarbure Fluorocarbure entièrement fluoré dont chaque molécule ne contient que des atomes de carbone et de fluor. (*perfluorocarbon*)

personne accréditée Dans le cas d'un système de réfrigération ou de climatisation, technicien d'entretien titulaire d'un certificat. (*certified person*)

petit système de climatisation Système de climatisation qui n'est pas contenu dans un véhicule automobile et qui, selon le fabricant, a une puissance frigorifique de moins de 19 kW. (*small air-conditioning system*)

petit système de réfrigération Système de réfrigération — autre que celui qui est installé dans un moyen de transport, est fixé à celui-ci ou est normalement utilisé avec lui — qui a une puissance frigorifique nominale de moins de 19 kW. (*small refrigeration system*)

propriétaire Quiconque détient un droit sur un système, en a la possession, la responsabilité ou la garde, est chargé de son entretien, son exploitation ou sa gestion, ou a le pouvoir de l'aliéner. (*owner*)

(a) collection after it has been used; or

(b) collection from machinery, equipment, a system or a container during servicing or before dismantling, decommissioning or destruction of the machinery, equipment, system or container. (*récupération*)

recycling, in respect of a halocarbon, means recovery and, if needed, cleaning by a process such as filtering or drying, and re-using to charge a system. (*recyclage*)

Refrigerant Code of Practice means the *Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air-Conditioning Systems*, published by the Department of the Environment in March, 1996, as amended from time to time. (*Code de pratique en réfrigération*)

refrigeration system means a refrigeration system, including any associated equipment, that contains or is designed to contain a halocarbon refrigerant. (*système de réfrigération*)

service includes any modification, charging, maintenance, repair, moving, dismantling, decommissioning, destruction, start-up and testing of a system, but does not include testing related to the manufacture and production of the system. (*entretien*)

ship has the same meaning as in subsection 122(1) of the Act. (*navire*)

small air-conditioning system means an air-conditioning system that is not contained in a motor vehicle and that has a refrigeration capacity of less than 19 kW as rated by the manufacturer. (*petit système de climatisation*)

small refrigeration system means a refrigeration system, other than one that is installed in, that is attached to or that normally operates in conjunction with a means of transportation, that has a refrigeration capacity of less than 19 kW as rated by the manufacturer. (*petit système de réfrigération*)

solvent system means an application or system that uses halocarbons as solvents, including cleaning applications and associated equipment containing or designed to contain a halocarbon solvent. It does not include those applications or systems that use halocarbons as laboratory analytical standards or laboratory reagents or in a process in which they are converted to another substance or are generated but ultimately converted to a different substance. (*système de solvants*)

récupération Selon le cas, le fait :

a) de recueillir un halocarbure après son utilisation;

b) d'extraire un halocarbure de machines, d'équipements, de systèmes ou de contenants pendant leur entretien ou avant leur destruction, désassemblage ou mise hors service. (*recovery*)

recyclage La récupération et, au besoin, le nettoyage d'un halocarbure au moyen d'opérations telles que le filtrage ou le séchage, et sa réutilisation pour charger des systèmes. (*recycling*)

refroidisseur Système de climatisation ou système de réfrigération qui comporte un compresseur, un évaporateur et un frigorigène secondaire. (*chiller*)

régénération La récupération, le retraitement et l'amélioration d'un halocarbure au moyen d'opérations telles que le filtrage, le séchage, la distillation et le traitement chimique afin qu'il corresponde aux normes de réutilisation acceptées dans l'industrie. (*reclamation*)

système Sauf indication contraire du contexte, s'entend du système de climatisation, du système d'extinction d'incendie, du système de réfrigération ou du système de solvants. (*system*)

système à vidange Unité de vidange d'un système de réfrigération ou de climatisation, y compris tout matériel de récupération complémentaire. (*purge system*)

système de climatisation Système de climatisation, y compris le matériel complémentaire, contenant ou conçu pour contenir un frigorigène aux halocarbures. (*air-conditioning system*)

système de réfrigération Système de réfrigération, y compris le matériel complémentaire, contenant ou conçu pour contenir un frigorigène aux halocarbures. (*refrigeration system*)

système de solvants Application ou système utilisant des halocarbures comme solvants, y compris les applications de nettoyage et le matériel complémentaire contenant ou conçu pour contenir des solvants aux halocarbures. Ne sont pas visés par la présente définition les applications ou systèmes qui utilisent des halocarbures comme étalons d'analyse ou réactifs de laboratoire ni ceux qui utilisent des halocarbures dans un procédé par lequel ces derniers sont convertis en une autre substance ou sont générés mais sont en fin de compte convertis en une substance différente. (*solvent system*)

system, unless the context requires otherwise, means an air-conditioning system, a fire-extinguishing system, a refrigeration system or a solvent system. (*système*)

SOR/2009-221, s. 1.

Application

2 (1) These Regulations apply in respect of systems located in Canada that are

(a) owned by Her Majesty in right of Canada, a board or an agency of the Government of Canada, a Crown corporation, as defined in subsection 83(1) of the *Financial Administration Act*, or a federal work or undertaking; or

(b) located on aboriginal lands or federal lands.

(2) These Regulations do not apply to foam products.

Prohibitions

3 No person shall release, or allow or cause the release of, a halocarbon that is contained in

(a) a refrigeration system or an air-conditioning system, or any associated container or device, unless the release results from a purge system that emits less than 0.1 kg of halocarbons per kilogram of air purged to the environment;

(b) a fire-extinguishing system or any associated container or device, except to fight a fire that is not set for training purposes, or unless the release occurs during the recovery of halocarbons under section 7; or

(c) a container or equipment used in the reuse, recycling, reclamation or storage of a halocarbon.

4 (1) No person shall install a system that operates or is intended to operate with a halocarbon listed in any of items 1 to 9 of Schedule 1 unless authorized to do so by a permit issued under these Regulations.

système d'extinction d'incendie Matériel pour l'extinction d'incendie, y compris le matériel portatif ou fixe et tout autre matériel complémentaire, contenant ou conçu pour contenir un agent extincteur aux halocarbures. (*fire-extinguishing system*)

véhicule militaire Tout véhicule conçu en vue d'être utilisé pour le combat ou d'apporter un soutien lors des combats. La présente définition ne vise pas les véhicules administratifs. (*military vehicle*)

DORS/2009-221, art. 1.

Champ d'application

2 (1) Le présent règlement s'applique aux systèmes qui sont situés au Canada et, selon le cas :

a) dont sont propriétaires Sa Majesté du chef du Canada, une commission ou un organisme fédéraux, une société d'État au sens du paragraphe 83(1) de la *Loi sur la gestion des finances publiques* ou une entreprise fédérale;

b) qui se trouvent sur une terre autochtone ou sur le territoire domanial.

(2) Le présent règlement ne s'applique pas aux produits de mousse.

Interdictions

3 Il est interdit de rejeter un halocarbure — ou d'en permettre ou d'en causer le rejet — contenu, selon le cas :

a) dans un système de réfrigération ou de climatisation, ou dans tout contenant ou dispositif complémentaire, sauf si le rejet se fait à partir d'un système à vidange qui émet moins de 0,1 kg d'halocarbure par kilogramme d'air vidangé dans l'environnement;

b) dans un système d'extinction d'incendie ou dans tout contenant ou dispositif complémentaire, sauf pour lutter contre un incendie qui n'est pas allumé à des fins de formation ou si le rejet a lieu durant la récupération des halocarbures aux termes de l'article 7;

c) dans un contenant ou du matériel servant à la réutilisation, au recyclage, à la régénération ou à l'entreposage d'un halocarbure.

4 (1) Il est interdit d'installer un système fonctionnant ou conçu pour fonctionner avec un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 à moins d'y être autorisé par un permis délivré au titre du présent règlement.

(2) Effective January 1, 2005, no person shall install a solvent system that operates or is intended to operate with a halocarbon listed in item 11 or 12 of Schedule 1 unless authorized to do so by a permit issued under these Regulations.

5 (1) No person shall use a halocarbon listed in any of items 1 to 9 of Schedule 1 as a solvent in a solvent system.

(2) Effective January 1, 2005, no person shall use a halocarbon listed in item 11 or 12 of Schedule 1 as a solvent in a solvent system unless authorized to do so by a permit issued under these Regulations.

6 (1) No person shall store, transport or purchase a halocarbon unless it is in a container designed and manufactured to be refilled and to contain that specific type of halocarbon.

(2) Subsection (1) does not apply in respect of halocarbons used as laboratory analytical standards or laboratory reagents.

SOR/2009-221, s. 2(F).

Recovery

7 (1) Subject to subsection (2), a person who installs, services, leak tests or charges a refrigeration system, an air-conditioning system or a fire-extinguishing system, or who does any other work on any of those systems that may result in the release of a halocarbon, shall recover, into a container designed and manufactured to be refilled and to contain that specific type of halocarbon, any halocarbon that would otherwise be released during those procedures.

(2) A person who recovers halocarbons from a fire-extinguishing system shall use recovery equipment with a transfer efficiency of at least 99% as referred to in the publication ULC/ORD-C1058.5-2004, of the Underwriters' Laboratories of Canada, entitled *Halon and Halocarbon Clean Agent Recovery and Reconditioning Equipment*.

(3) The reference to the publication in subsection (2) shall be read as excluding its preface.

SOR/2009-221, s. 3.

8 (1) Before dismantling, decommissioning or destroying any system, a person shall recover all halocarbons contained in the system into a container designed and manufactured to be refilled and to contain that specific type of halocarbon.

(2) À compter du 1^{er} janvier 2005, il est interdit d'installer un système de solvants fonctionnant ou conçu pour fonctionner avec un halocarbure figurant aux articles 11 ou 12 de l'annexe 1 à moins d'y être autorisé par un permis délivré au titre du présent règlement.

5 (1) Il est interdit d'utiliser un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 comme solvant dans un système de solvants.

(2) À compter du 1^{er} janvier 2005, il est interdit d'utiliser un halocarbure figurant aux articles 11 ou 12 de l'annexe 1 comme solvant dans un système de solvants à moins d'y être autorisé par un permis délivré aux termes du présent règlement.

6 (1) Il est interdit d'entreposer, de transporter ou d'acheter un halocarbure qui n'est pas dans un contenant conçu et fabriqué pour être réutilisé et pour contenir le type d'halocarbure en cause.

(2) Le paragraphe (1) ne s'applique pas aux halocarbures utilisés comme étalons d'analyse ou réactifs de laboratoire.

DORS/2009-221, art. 2(F).

Récupération

7 (1) Sous réserve du paragraphe (2), toute personne qui installe, entretient ou charge un système de réfrigération, de climatisation ou d'extinction d'incendie, ou effectue sur lui les essais de détection des fuites ou tout autre travail pouvant entraîner le rejet d'un halocarbure, doit récupérer tout halocarbure qui serait par ailleurs rejeté durant ces opérations dans un contenant conçu et fabriqué pour être réutilisé et pour contenir le type d'halocarbure en cause.

(2) Le matériel de récupération à utiliser, pour la récupération d'un halocarbure d'un système d'extinction d'incendie, doit avoir une efficacité de transfert d'au moins 99 % selon la publication ULC/ADR-C1058.5-2004 des Laboratoires des assureurs du Canada intitulée *Matériel de récupération et de remise en état des agents propres à l'halocarbure et au halon*.

(3) La publication visée au paragraphe (2) doit être interprétée sans tenir compte de sa préface.

DORS/2009-221, art. 3.

8 (1) Toute personne qui se propose de détruire, de désassembler ou de mettre hors service un système doit, au préalable, en récupérer les halocarbures dans un contenant conçu et fabriqué pour être réutilisé et pour contenir le type d'halocarbure en cause.

(2) Before dismantling, decommissioning or destroying a system, a person shall affix a notice to the system containing the information set out in column 3 item 1 of Schedule 2.

(3) No person shall remove a notice referred to in subsection (2) except to replace it with another such notice.

(4) In case of the dismantling, decommissioning or destruction of any system, the owner shall keep a record of the information contained in the notice referred to in subsection (2).

Installation, Servicing, Leak Testing and Charging

Refrigeration Systems and Air-Conditioning Systems

9 (1) Only a certified person may install, service, leak test or charge a refrigeration system or an air-conditioning system or do any other work on the system that may result in the release of a halocarbon.

(2) A person who does any of the work referred to in subsection (1) shall do so in accordance with the Refrigerant Code of Practice.

(3) No person shall charge a refrigeration system or an air-conditioning system with a halocarbon listed in any of items 1 to 9 of Schedule 1 for the purpose of leak testing the system, except when recommended in the Refrigerant Code of Practice.

10 (1) A certified person who conducts a leak test on a refrigeration system or an air-conditioning system shall affix a notice to the system containing the information set out in column 3 of item 2 of Schedule 2.

(2) No person shall remove a notice referred to in subsection (1) except to replace it with another such notice.

(3) The owner shall keep a record of the information contained in the notice referred to in subsection (1).

11 (1) The owner shall conduct a leak test, at least once every 12 months, of all of the components of a refrigeration system or an air-conditioning system that come into contact with a halocarbon.

(2) Toute personne qui se propose de détruire, de désassembler ou de mettre hors service un système doit, au préalable, y apposer un avis comportant les renseignements prévus à la colonne 3 de l'article 1 de l'annexe 2.

(3) Il est interdit d'enlever l'avis à moins de le remplacer par un autre comportant les renseignements visés au paragraphe (2).

(4) En cas de destruction, de désassemblage ou de mise hors service d'un système, le propriétaire conserve un document des renseignements contenus dans l'avis.

Installation, entretien, détection des fuites et charge

Systèmes de réfrigération et de climatisation

9 (1) Seule une personne accréditée peut installer ou entretenir un système de réfrigération ou de climatisation, le charger ou effectuer sur lui des essais de détection des fuites ou tout autre travail pouvant entraîner le rejet d'un halocarbure.

(2) La personne qui exécute une opération mentionnée au paragraphe (1) doit se conformer au Code de pratique en réfrigération.

(3) Il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un système de réfrigération ou de climatisation dans le but d'effectuer des essais de détection des fuites, à moins que le Code de pratique en réfrigération ne le recommande.

10 (1) La personne accréditée qui effectue des essais de détection des fuites sur un système de réfrigération ou de climatisation y appose un avis comportant les renseignements prévus à la colonne 3 de l'article 2 de l'annexe 2.

(2) Il est interdit d'enlever l'avis à moins de le remplacer par un autre comportant les renseignements visés au paragraphe (1).

(3) Le propriétaire conserve un document des renseignements contenus dans l'avis.

11 (1) Le propriétaire effectue, au moins une fois tous les douze mois, un essai de détection des fuites de tout composant du système de réfrigération ou de climatisation qui entre en contact avec un halocarbure.

(2) Subsection (1) does not apply to small refrigeration systems or small air-conditioning systems, or to air-conditioning systems that are designed for occupants in motor vehicles.

12 Subject to section 14, no person shall charge a refrigeration system or an air-conditioning system unless, before charging it,

- (a)** a certified person leak-tests the system; and
- (b)** if a leak is detected, the certified person notifies the owner and the owner repairs the leak.

13 As soon as possible after a leak from a refrigeration system or an air-conditioning system is detected, and in any case within seven days after the day on which the leak is detected, the owner of the system shall

- (a)** repair the leak;
- (b)** isolate the leaking portion of the system and recover the halocarbon from that portion; or
- (c)** recover the halocarbon from the system.

14 (1) If a leak is detected from a refrigeration system or an air-conditioning system and it is necessary to charge the system to prevent an immediate danger to human life or health, section 12 does not apply to the system during the period in which the danger persists, up to a maximum of seven days after the day on which the leak is detected.

(2) If a refrigeration system or an air-conditioning system is charged under the circumstances described in subsection (1),

- (a)** the person who charged the system shall immediately notify its owner of the charge; and
- (b)** the owner shall, within seven days after receiving notice under paragraph (a), submit a written record to the Minister describing
 - (i)** the nature of the immediate danger to human life or health and the circumstances that justify charging the system in order to prevent the danger,
 - (ii)** the amount of halocarbon charged to the system, and
 - (iii)** the date of repair of the leak or recovery of the remaining halocarbon from the system.

(2) Le paragraphe (1) ne s'applique pas aux petits systèmes de réfrigération ou de climatisation, ni aux systèmes de climatisation conçus pour les occupants d'un véhicule automobile.

12 Sous réserve de l'article 14, il est interdit de charger un système de réfrigération ou de climatisation à moins que :

- a)** la personne accréditée n'ait préalablement soumis le système à un essai de détection des fuites;
- b)** s'il existe une fuite, elle n'en avise le propriétaire et que celui-ci ne la répare.

13 Le propriétaire d'un système de réfrigération ou de climatisation doit, dès que possible après la détection d'une fuite, mais au plus tard sept jours suivant la date de détection :

- a)** soit réparer la fuite;
- b)** soit isoler la partie du système qui fuit et récupérer l'halocarbure qui en provient;
- c)** soit récupérer l'halocarbure provenant du système.

14 (1) Si un système de réfrigération ou de climatisation présente une fuite et qu'il apparaît nécessaire de le charger afin de prévenir un danger immédiat pour la vie ou la santé humaines, l'application de l'article 12 est suspendue tant que le danger persiste, jusqu'à concurrence de sept jours suivant la date de détection de la fuite.

(2) Si le système est chargé dans la situation visée au paragraphe (1), les règles suivantes s'appliquent :

- a)** la personne qui l'a chargé en avise le propriétaire sans délai;
- b)** dans les sept jours suivant la réception de l'avis, le propriétaire présente au ministre un compte rendu écrit indiquant :
 - (i)** la nature du danger immédiat pour la vie ou la santé humaines et les circonstances qui justifient le chargement pour prévenir le danger,
 - (ii)** la quantité d'halocarbure chargée dans le système,
 - (iii)** la date de la réparation de la fuite ou de la récupération de l'halocarbure restant dans le système.

15 No person shall charge an air-conditioning system that is designed for occupants in motor vehicles with a halocarbon listed in any of items 1 to 9 of Schedule 1.

16 Effective 90 days after the day on which these Regulations come into force, no person shall charge a refrigeration system that is installed in, that is attached to, or that normally operates in conjunction with a means of transportation, other than a refrigeration system for use on a military ship or a chiller, with a halocarbon listed in any of items 1 to 9 of Schedule 1.

SOR/2009-221, s. 4.

17 Effective January 1, 2005, no person shall charge a system listed below with a halocarbon listed in any of items 1 to 9 of Schedule 1:

- (a)** a refrigeration system, other than a chiller, a small refrigeration system or a refrigeration system for use on a military ship; and
- (b)** an air-conditioning system, other than a chiller, a small air-conditioning system or an air-conditioning system for use on a military ship.

18 (1) Subject to subsection (2), effective January 1, 2005, no person shall charge a chiller, other than one for use on a military ship, that has undergone an overhaul that includes the following procedure or repair with a halocarbon listed in any of items 1 to 9 of Schedule 1:

- (a)** the replacement or modification of an internal sealing device;
- (b)** the replacement or modification of an internal mechanical part other than
 - (i)** an oil heater,
 - (ii)** an oil pump,
 - (iii)** a float assembly, and
 - (iv)** a vane assembly, in the case of a chiller with a single-stage compressor; or
- (c)** any procedure or repair that resulted from the failure of an evaporator or a condenser heat-exchanger tube.

15 Il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un système de climatisation conçu pour les occupants d'un véhicule automobile.

16 À compter du quatre-vingt-dixième jour suivant l'entrée en vigueur du présent règlement, il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un système de réfrigération qui est installé dans un moyen de transport, est fixé à celui-ci ou est normalement utilisé avec lui, exception faite du système de réfrigération utilisé dans un navire militaire et d'un refroidisseur.

DORS/2009-221, art. 4.

17 À compter du 1^{er} janvier 2005, il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans les systèmes suivant :

- a)** un système de réfrigération, exception faite de celui utilisé dans un navire militaire, d'un petit système de réfrigération et d'un refroidisseur;
- b)** un système de climatisation, exception faite de celui utilisé dans un navire militaire, d'un petit système de climatisation et d'un refroidisseur;

18 (1) Sous réserve du paragraphe (2), à compter du 1^{er} janvier 2005, il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un refroidisseur, exception faite de celui utilisé dans un navire militaire, qui a fait l'objet d'une révision générale exigeant l'une ou l'autre des opérations ou réparations suivantes :

- a)** le remplacement ou la modification d'un dispositif d'étanchéité interne;
- b)** le remplacement ou la modification d'une pièce mécanique interne quelconque, sauf une des pièces suivantes :
 - (i)** le réchauffeur d'huile,
 - (ii)** la pompe à huile,
 - (iii)** l'ensemble de flotte,
 - (iv)** l'ensemble d'aubages pour les refroidisseurs munis de compresseurs à un étage;
- c)** la correction d'une défectuosité d'un tube de l'échangeur de chaleur dans l'évaporateur ou le condenseur.

(2) From January 1, 2005 to December 31, 2009, an owner of a chiller referred to in subsection (1) may charge the chiller with a halocarbon listed in any of items 1 to 9 of Schedule 1 but no person shall operate that chiller later than one year after the day on which it was charged, unless it no longer contains any halocarbon listed in any of those items.

(3) The owner of a chiller charged under subsection (2) shall provide written notice to the Minister within 14 days after the chiller is charged, which notice shall contain the information set out in column 3 of item 3 of Schedule 2.

19 Effective January 1, 2010, no person shall charge a refrigeration or an air-conditioning system for use on a military ship with a halocarbon listed in any of items 1 to 9 of Schedule 1

20 Effective January 1, 2015, no person shall operate or permit the operation of any chiller that contains a halocarbon listed in any of items 1 to 9 of Schedule 1.

21 No person shall install or operate or permit the operation of a purge system unless it emits less than 0.1 kg of halocarbons per kilogram of air purged to the environment.

Fire-Extinguishing Systems

22 (1) Except in accordance with the standards set out in the publication ULC/ORD-C1058.18-2004, of the Underwriters' Laboratories of Canada, entitled *The Servicing of Halon and Clean Agent Extinguishing Systems*, no person shall install, service, leak-test or charge a fire-extinguishing system, or do any other work on the system that may result in the release of a halocarbon.

(2) The reference to the publication in subsection (1) shall be read as excluding its preface.

SOR/2009-221, s. 5.

23 No person shall charge a fire-extinguishing system with a halocarbon listed in any of items 1 to 9 of Schedule 1 for the purpose of leak-testing the system.

24 (1) Every owner of a fire-extinguishing system shall leak-test the system at least once every 12 months in accordance with the standards set out in the publication referred to in subsection 22(1).

(2) Du 1^{er} janvier 2005 au 31 décembre 2009, le propriétaire d'un refroidisseur visé au paragraphe (1) peut y charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1, auquel cas il est interdit de faire fonctionner le refroidisseur après un an suivant le jour de son chargement à moins qu'il ne contienne plus cet halocarbure.

(3) Le propriétaire d'un refroidisseur chargé en vertu du paragraphe (2) fournit au ministre un avis écrit comportant les renseignements prévus à la colonne 3 de l'article 3 de l'annexe 2 dans les quatorze jours suivant le chargement.

19 À compter du 1^{er} janvier 2010, il est interdit de charger d'un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 un système de réfrigération ou de climatisation utilisé dans un navire militaire.

20 À compter du 1^{er} janvier 2015, il est interdit de faire fonctionner un refroidisseur qui contient un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 ou d'en permettre le fonctionnement.

21 Il est interdit d'installer ou de faire fonctionner un système à vidange, ou d'en permettre le fonctionnement, à moins qu'il émette moins de 0,1 kg d'halocarbure par kilogramme d'air vidangé dans l'environnement.

Système d'extinction d'incendie

22 (1) Il est interdit d'installer, d'entretenir ou de charger un système d'extinction d'incendie, d'effectuer des essais de détection des fuites ou d'exécuter tout autre travail sur lui pouvant entraîner le rejet d'un halocarbure, sauf en conformité avec les normes énoncées dans la publication ULC/ADR-C1058.18-2004 des Laboratoires des assureurs du Canada intitulée *Entretien des systèmes d'extinction au halon et aux agents propres*.

(2) La publication visée au paragraphe (1) doit être interprétée sans tenir compte de sa préface.

DORS/2009-221, art. 5.

23 Il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un système d'extinction d'incendie pour effectuer des essais de détection des fuites.

24 (1) Le propriétaire d'un système d'extinction d'incendie effectue, au moins une fois tous les douze mois, un essai de détection des fuites sur le système conformément aux normes énoncées dans le document mentionné à l'article 22.

(2) Subsection (1) does not apply to fire-extinguishing systems whose cylinder or cartridge has a charging capacity of 10 kg or less and that are located in military vehicles, military ships or military aircraft, or to portable fire extinguishers.

25 Subject to section 28, no person shall charge a fire-extinguishing system unless, before charging it,

- (a)** the system is leak-tested; and
- (b)** if a leak is detected, the person who conducts the test notifies the owner and the owner repairs the leak.

26 (1) Subject to subsection (2) and section 28, no person shall service a fire-extinguishing system without first

- (a)** notifying the owner of the intended service; and
- (b)** affixing a notice to the control panel of the system to indicate that it is out of operation during the period of service.

(2) Paragraph (1)(b) does not apply to portable fire extinguishers.

27 As soon as possible after a leak from a fire-extinguishing system is detected, and in any case within seven days after the day on which the leak is detected, the owner of the system shall

- (a)** repair the leak;
- (b)** isolate the leaking portion of the system and recover the halocarbon from that portion; or
- (c)** recover the halocarbon from the system.

28 (1) If a leak is detected from a fire-extinguishing system and it is necessary to charge the system to prevent an immediate danger to human life or health, sections 25 and 26 do not apply to the system during the period in which the danger persists, up to a maximum of seven days after the day on which the leak is detected.

(2) If a fire-extinguishing system is charged under the circumstances described in subsection (1),

- (a)** the person who charged the system shall immediately notify its owner of the charge; and

(2) Le paragraphe (1) ne s'applique pas aux systèmes dont la bonbonne ou la cartouche a une capacité de charge d'au plus 10 kg et qui sont installés dans les navires, les véhicules ou les aéronefs militaires, ni aux extincteurs portatifs.

25 Sous réserve de l'article 28, il est interdit de charger un système d'extinction d'incendie à moins que, préalablement :

- a)** le système n'ait été soumis à un essai de détection des fuites;
- b)** s'il existe une fuite, la personne qui a effectué l'essai n'en ait avisé le propriétaire et que celui-ci ne l'ait réparé.

26 (1) Sous réserve du paragraphe (2) et de l'article 28, il est interdit d'entretenir un système d'extinction d'incendie sans avoir au préalable :

- a)** avisé le propriétaire de l'entretien prévu;
- b)** apposé un avis sur le panneau de commande du système pour indiquer qu'il sera hors service pendant la période d'entretien.

(2) L'alinéa (1)b) ne s'applique pas aux extincteurs portatifs.

27 Le propriétaire d'un système d'extinction d'incendie doit, dès que possible après la détection de la fuite, mais au plus tard sept jours suivant la date de détection :

- a)** soit réparer la fuite;
- b)** soit isoler la partie du système qui fuit et récupérer l'halocarbure qui en provient;
- c)** soit récupérer l'halocarbure provenant du système.

28 (1) Si un système d'extinction d'incendie présente une fuite et qu'il apparaît nécessaire de le charger pour prévenir un danger immédiat pour la vie ou la santé humaines, l'application des articles 25 et 26 est suspendue tant que le danger persiste, jusqu'à concurrence de sept jours suivant la date de détection de la fuite.

(2) Si le système est chargé dans la situation visée au paragraphe (1), les règles suivantes s'appliquent :

- a)** la personne qui l'a chargé en avise le propriétaire sans délai;

(b) the owner shall, within seven days after receiving notice under paragraph (a), submit a written record to the Minister describing

(i) the nature of the immediate danger to human life or health and the circumstances that justify charging the system in order to prevent the danger,

(ii) the amount of halocarbon charged to the system, and

(iii) the date of repair of the leak or recovery of the remaining halocarbon from the system.

29 No person shall charge a portable fire extinguisher, other than one for use on an aircraft, a military vehicle or a military ship, with a halocarbon listed in any of items 1 to 9 of Schedule 1, unless authorized to do so by a permit issued under these Regulations.

30 (1) Subject to subsection (2), effective January 1, 2005, no person shall charge a fire-extinguishing system, other than a portable fire extinguisher or a fire-extinguishing system for use on an aircraft, a military vehicle or a military ship, with a halocarbon listed in any of items 1 to 9 of Schedule 1, unless authorized to do so by a permit issued under these Regulations.

(2) From January 1, 2005 to December 31, 2009, an owner of a system referred to in subsection (1) may charge the system with a halocarbon listed in any of items 1 to 9 of Schedule 1 but no person shall operate that system later than one year after the day on which the system is charged, unless it no longer contains any halocarbon listed in any of those items.

(3) The owner of a system charged under subsection (2) shall provide written notice to the Minister within 14 days after the system is charged, which notice shall contain the information set out in column 3 of item 4 of Schedule 2.

SOR/2009-221, s. 6(F).

Service Logs

31 (1) The owner of a refrigeration system, an air-conditioning system or a fire-extinguishing system shall maintain a written record, or a record in an electronic format compatible with that used by the Minister, in which the information set out in column 3 of item 5 or 6, as the case may be, of Schedule 2 is entered whenever the system is installed, serviced, leak-tested or charged or if

b) dans les sept jours suivant la réception de l'avis, le propriétaire présente au ministre un compte rendu écrit indiquant :

(i) la nature du danger immédiat pour la vie ou la santé humaines et les circonstances qui justifient le chargement pour prévenir le danger,

(ii) la quantité d'halocarbure chargée dans le système,

(iii) la date de la réparation de la fuite ou de la récupération de l'halocarbure restant dans le système.

29 Il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un extincteur portatif — exception faite de celui utilisé dans un navire ou un véhicule militaires ou dans un aéronef — à moins d'y être autorisé par un permis délivré au titre du présent règlement.

30 (1) Sous réserve du paragraphe (2), à compter du 1^{er} janvier 2005, il est interdit de charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un système d'extinction d'incendie — exception faite de celui utilisé dans un navire ou un véhicule militaires ou dans un aéronef, et d'un extincteur portatif — à moins d'y être autorisé par un permis délivré au titre du présent règlement.

(2) Du 1^{er} janvier 2005 au 31 décembre 2009, le propriétaire d'un système visé au paragraphe (1) peut y charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1, auquel cas il est interdit de faire fonctionner le système après un an suivant le jour de son chargement à moins qu'il ne contienne plus un tel halocarbure.

(3) Le propriétaire d'un système visé au paragraphe (2) fournit au ministre un avis écrit comportant les renseignements prévus à la colonne 3 de l'article 4 de l'annexe 2 dans les quatorze jours suivant le chargement.

DORS/2009-221, art. 6(F).

Registre d'entretien

31 (1) Le propriétaire d'un système de réfrigération, de climatisation ou d'extinction d'incendie enregistre, sur un support papier — ou sur un support électronique compatible avec celui utilisé par le ministre — les renseignements prévus à la colonne 3 des articles 5 ou 6 de l'annexe 2, selon le cas, au moment de l'installation du système et chaque fois qu'il est entretenu ou chargé ou que sont effectués sur lui des essais de détection des fuites ou

any other work is done on it that may result in the release of a halocarbon.

(2) The owner of a solvent system shall maintain a written record, or a record in an electronic format compatible with that used by the Minister, in which the information set out in column 3 of item 7 of Schedule 2 is entered whenever the system is charged with more than 10 kg of a halocarbon.

Release Reports

32 In the event of a release of 100 kg or more of a halocarbon from a system, or from a container or equipment used in the reuse, recycling, reclamation or storage of a halocarbon, the owner of the system, container or equipment shall submit the following reports to the Minister, within the periods indicated:

(a) within 24 hours after the release is detected, a verbal or written report, or a report in an electronic format compatible with that used by the Minister, that indicates the name of the owner, the type of halocarbon released and the type of system, container or equipment from which it was released; and

(b) within 14 days after the release is detected, a written report, or a report in an electronic format compatible with that used by the Minister, containing the information set out in column 3 of item 8 of Schedule 2.

33 (1) In the event of a release of more than 10 kg but less than 100 kg of a halocarbon from a system, or from a container or equipment used in the reuse, recycling, reclamation or storage of a halocarbon, the owner of the system, container or equipment shall submit to the Minister a report in written format, or in an electronic format compatible with that used by the Minister, that contains the information set out in column 3 of item 8 of Schedule 2.

(2) The owner shall submit the release report required by subsection (1) twice annually, not later than 30 days after January 1 and July 1.

Permits

34 (1) If no technically and financially feasible alternative to the use of a halocarbon listed in any of items 1 to 9, 11 or 12 of Schedule I, as the case may be, exists that could have a less harmful impact on the environment and on health, an owner shall submit to the Minister an application for a permit on a form that the Minister provides, and that contains the information set out in col-

tout autre travail pouvant entraîner le rejet d'un halocarbure.

(2) Le propriétaire d'un système de solvants enregistre, sur un support papier — ou sur un support électronique compatible avec celui utilisé par le ministre — les renseignements prévus à la colonne 3 de l'article 7 de l'annexe 2 chaque fois que plus de 10 kg d'halocarbure est chargé dans le système.

Rapport sur le rejet

32 En cas de rejet de 100 kg ou plus d'halocarbure d'un système ou d'un contenant ou matériel servant à la réutilisation, au recyclage, à la régénération ou à l'entreposage d'un halocarbure, le propriétaire du système, du contenant ou du matériel présente au ministre, dans les délais indiqués, les rapports suivants :

a) dans les vingt-quatre heures suivant la détection du rejet, un rapport verbal ou écrit — ou un rapport sur un support électronique compatible avec celui utilisé par le ministre — indiquant le nom du propriétaire, le type d'halocarbure rejeté ainsi que le type de système, de contenant ou de matériel en cause;

b) dans les quatorze jours suivant la détection du rejet, un rapport écrit — ou un rapport sur un support électronique compatible avec celui utilisé par le ministre — qui comporte les renseignements prévus à la colonne 3 de l'article 8 de l'annexe 2.

33 (1) En cas de rejet de plus de 10 kg mais de moins de 100 kg d'halocarbure d'un système ou d'un contenant ou matériel servant à la réutilisation, au recyclage, à la régénération ou à l'entreposage d'un halocarbure, le propriétaire du système, du contenant ou du matériel présente au ministre un rapport écrit — ou un rapport sur un support électronique compatible avec celui utilisé par le ministre — qui comporte les renseignements prévus à la colonne 3 de l'article 8 de l'annexe 2.

(2) Le rapport est présenté deux fois par année dans les trente jours suivant le 1^{er} janvier et le 1^{er} juillet.

Permis

34 (1) S'il n'existe aucune autre solution réalisable sur les plans technique et financier qui pourrait avoir, sur l'environnement et la santé, un impact moins nocif que l'utilisation d'un halocarbure figurant à l'un des articles 1 à 9 ou 11 et 12 de l'annexe 1, selon le cas, le propriétaire présente au ministre, sur un formulaire fourni par celui-ci, une demande de permis comportant les renseigne-

umn 3 of item 9 or 10, as the case may be, of Schedule 2, if the owner proposes to

(a) install a fire-extinguishing system that operates or is intended to operate with a halocarbon listed in any of items 1 to 9 of Schedule 1 as a fire-extinguishing agent;

(b) charge a portable fire extinguisher that is not to be used on an aircraft, military ship or military vehicle with a halocarbon listed in any of items 1 to 9 of Schedule 1; or

(c) effective January 1, 2005

(i) charge a fire-extinguishing system, other than a portable fire-extinguishing system, that is not to be used on an aircraft, military ship or military vehicle with a halocarbon listed in any of items 1 to 9 of Schedule 1,

(ii) install a solvent system that operates or is intended to operate with a halocarbon listed in item 11 or 12 of Schedule 1, or

(iii) use a halocarbon listed in item 11 or 12 of Schedule 1 as a solvent in a solvent system.

(2) Unless the Minister has received notice under subsection 30(3) in respect of the same system, the Minister shall issue the permit in respect of the system, valid for one year beginning on the date of issuance, if the owner, on the form,

(a) declares that no technically and financially feasible alternative to the use of a halocarbon listed in any of items 1 to 9, 11 or 12 of Schedule 1, as the case may be, exists that could have a less harmful impact on the environment and on health; and

(b) provides information in support of the declaration.

35 (1) The Minister may refuse to issue a permit under subsection 34(2) or may cancel a permit issued under that subsection if any false or misleading information has been submitted in support of the application for the permit.

(2) The Minister shall not cancel a permit unless the Minister

(a) has provided the permit holder with written reasons for the cancellation; and

ments prévus à la colonne 3 des articles 9 ou 10 de l'annexe 2, selon le cas, s'il prévoit :

a) installer un système d'extinction d'incendie fonctionnant ou conçu pour fonctionner avec un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 comme agent extincteur;

b) charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un extincteur portatif, à l'exception de celui qui est utilisé dans un navire ou un véhicule militaires ou dans un aéronef;

c) le 1^{er} janvier 2005 ou après cette date :

(i) charger un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un système d'extinction d'incendie, exception faite de celui qui est utilisé dans un navire ou un véhicule militaires ou dans un aéronef, et d'un extincteur portatif,

(ii) installer un système de solvants fonctionnant ou conçu pour fonctionner avec un halocarbure figurant aux articles 11 ou 12 de l'annexe 1;

(iii) utiliser un halocarbure figurant aux articles 11 ou 12 de l'annexe 1 comme solvant dans un système de solvants.

(2) À moins que le ministre ait déjà reçu l'avis visé au paragraphe 30(3) pour le même système, le ministre délivre le permis à l'égard de celui-ci, pour une durée d'un an à compter de la date de sa délivrance, si le propriétaire, sur le formulaire :

a) déclare qu'il n'existe aucune autre solution réalisable sur les plans technique et financier qui pourrait avoir, sur l'environnement et la santé, un impact moins nocif que l'utilisation d'un halocarbure figurant à l'un des articles 1 à 9 ou 11 ou 12 de l'annexe 1, selon le cas;

b) fournit des renseignements à l'appui de sa déclaration.

35 (1) Le ministre peut refuser de délivrer un permis en vertu du paragraphe 34(2) ou peut annuler un permis délivré en vertu de ce paragraphe si des renseignements faux ou trompeurs ont été donnés à l'appui de la demande de permis.

(2) Le ministre ne peut annuler le permis que s'il :

a) a avisé par écrit le titulaire du permis des motifs de l'annulation;

(b) has given the permit holder an opportunity to make representations, either verbally or in writing, in respect of the cancellation.

Logs, Notices, Records and Reports

36 (1) Owners shall keep all logs, notices, records and reports required by these Regulations in Canada for a period of at least five years after the date that they are prepared or submitted, respectively.

(2) Subject to subsections (3) and (4), owners shall keep a copy of all logs, notices, records and reports required by these Regulations with respect to a system at the premises or site at which the system is located.

(3) In the case of a system located on a means of transportation, the owner shall keep a copy of all logs, notices, records and reports required by these Regulations with respect to that system at a single location occupied by the owner.

(4) In the case of a system located on unoccupied premises or an unoccupied site, the owner shall

(a) keep a copy of all logs, notices, records and reports required by these Regulations in respect of that system at a single location that is occupied by the owner;

(b) submit a report containing the information set out in column 3 of item 11 of Schedule 2 to the Minister no later than January 1, 2004; and

(c) submit any change in the information required under paragraph (b) to the Minister within 30 days after the change.

SOR/2009-221, s. 7(F).

Repeal

37 [Repeal]

Coming into Force

38 These Regulations come into force on the day on which they are registered.

b) lui a donné la possibilité de formuler, oralement ou par écrit, ses observations à cet égard.

Avis, comptes rendus, documents, rapports et registres

36 (1) Le propriétaire conserve les avis, comptes rendus, documents, rapports et registres exigés par le présent règlement au Canada pendant au moins cinq ans suivant la date de leur établissement ou de leur présentation, selon le cas.

(2) Sous réserve des paragraphes (3) et (4), un exemplaire des avis, comptes rendus, documents, rapports et registres est conservé dans le lieu où se trouve le système visé.

(3) Un exemplaire des avis, comptes rendus, documents, rapports et registres afférents à tout système se trouvant dans un moyen de transport est conservé dans un même et unique lieu occupé par le propriétaire.

(4) Dans le cas d'un système situé dans un lieu inoccupé, le propriétaire :

a) conserve, dans un même et unique lieu occupé par lui, une copie des avis, comptes rendus, documents, rapports et registres afférents au système et exigés par le présent règlement;

b) présente au ministre un rapport comportant les renseignements prévus à la colonne 3 de l'article 11 de l'annexe 2 au plus tard le 1^{er} janvier 2004;

c) présente au ministre tout changement aux renseignements visés à l'alinéa b) dans les trente jours du changement.

DORS/2009-221, art. 7(F).

Abrogation

37 [Abrogation]

Entrée en vigueur

38 Le présent règlement entre en vigueur à la date de son enregistrement.

SCHEDULE 1

(Sections 1, 4 and 5, subsection 9(3) and sections 15 to 20, 23, 29, 30 and 34)

LIST OF HALOCARBONS

Item	Halocarbon
1.	Tetrachloromethane (carbon tetrachloride)
2.	1,1,1-trichloroethane (methyl chloroform), not including 1,1,2-trichloroethane
3.	Chlorofluorocarbons (CFC)
4.	Bromochlorodifluoromethane (Halon 1211)
5.	Bromotrifluoromethane (Halon 1301)
6.	Dibromotetrafluoroethane (Halon 2402)
7.	Bromofluorocarbons other than those set out in items 4 to 6
8.	Bromochloromethane (Halon 1011)
9.	Hydrobromofluorocarbons (HBFC)
10.	Hydrochlorofluorocarbons (HCFC)
11.	Hydrofluorocarbons (HFC)
12.	Perfluorocarbons (PFC)

ANNEXE 1

(articles 1, 4 et 5, paragraphe 9(3) et articles 15 à 20, 23, 29, 30 et 34)

LISTE DES HALOCARBURES

Article	Halocarbure
1.	Tétrachlorométhane (tétrachlorure de carbone)
2.	1,1,1-trichloroéthane (méthylchloroforme), sauf le 1,1,2-trichloroéthane
3.	Chlorofluorocarbures (CFC)
4.	Bromochlorodifluorométhane (Halon 1211)
5.	Bromotrifluorométhane (Halon 1301)
6.	Dibromotétrafluoroéthane (Halon 2402)
7.	Bromofluorocarbures autres que ceux prévus aux articles 4 à 6
8.	Bromochlorométhane (Halon 1011)
9.	Hydrobromofluorocarbures (HBFC)
10.	Hydrochlorofluorocarbures (HCFC)
11.	Hydrofluorocarbures (HFC)
12.	Perfluorocarbures (PFC)

SCHEDULE 2

(Subsections 8(2), 10(1), 18(3), 30(3), section 31, paragraph 32(b), subsections 33(1) and 34(1) and paragraph 36(4)(b))

INFORMATION TO BE CONTAINED IN DOCUMENT

Item	Column 1 Provision of Regulation s	Column 2 Type of Document	Column 3 Information to be Contained on Form
1.	8(2)	Dismantling, Decommissioning or Destruction Notice for a System	<p>(a) name and address of owner of system</p> <p>(b) name of operator of system</p> <p>(c) specific location of system before its Dismantling, Decommissioning or Destruction</p> <p>(d) description of system</p> <p>(e) name of service technician who recovered halocarbons</p> <p>(f) certificate number of service technician (if applicable)</p> <p>(g) name of employer of service technician (if applicable)</p> <p>(h) type and quantity of halocarbon and date recovered</p> <p>(i) type and charging capacity of system</p> <p>(j) final destination of system</p>
2.	10(1)	Leak Test Notice for Refrigeration System and Air-Conditioning System	<p>(a) name and address of owner of system</p> <p>(b) name of operator of system</p> <p>(c) specific location of system</p> <p>(d) description of system</p> <p>(e) name of certified person</p> <p>(f) certificate number</p> <p>(g) name of employer of certified person (if applicable)</p> <p>(h) type of halocarbon contained in system</p> <p>(i) charging capacity of system</p> <p>(j) date of last two leak tests performed on system</p>

ANNEXE 2

(paragraphe 8(2), 10(1), 18(3) et 30(3), article 31, alinéa 32b), paragraphes 33(1) et 34(1) et alinéa 36(4)b))

RENSEIGNEMENTS DEVANT FIGURER SUR LES FORMULAIRES

Article	Colonne 1 Disposition du règlement	Colonne 2 Nature du document	Colonne 3 Renseignements à fournir
1.	8(2)	Avis de destruction, de désassemblage ou de mise hors service d'un système	<p>a) nom et adresse du propriétaire du système</p> <p>b) nom de l'opérateur du système</p> <p>c) emplacement précis du système avant la destruction, le désassemblage ou la mise hors service</p> <p>d) description du système</p> <p>e) nom du technicien d'entretien qui a récupéré les halocarbures</p> <p>f) numéro de certificat du technicien (s'il y a lieu)</p> <p>g) nom de l'employeur du technicien (s'il y a lieu)</p> <p>h) type et quantité d'halocarbure récupéré, et date de la récupération</p> <p>i) type de système et capacité de charge</p> <p>j) destination finale du système</p>

Item	Column 1 Provision of Regulation s	Column 2 Type of Document	Column 3 Information to be Contained on Form
3.	18(3)	Notice of Charging of a Chiller that has Undergone an Overhaul with a Halocarbon Listed in any of items 1 to 9 of Schedule 1	(a) name and address of owner of system (b) name of operator of system (c) specific location of system (d) description of system (e) type and quantity of halocarbon charged (f) date of charge (g) charging capacity of system
4.	30(3)	Notice of Charging of a Fire-Extinguishing System with a Halocarbon Listed in Items 1-9 of Schedule 1	(a) name and address of owner of system (b) name of operator of system (c) specific location of system (d) description of system (e) type and quantity of halocarbon charged (f) date of charge (g) charging capacity of system
5.	31(1)	Refrigeration System or Air-Conditioning System Service Log	(a) name and address of owner of system (b) name of operator of system (c) specific location of system (d) description of system (e) name of certified person (f) certificate number (g) name of employer of certified person (if applicable) (h) dated list of leak tests, leaks detected and leak repairs (i) type and quantity of halocarbon and date recovered (j) charging capacity of system

Article	Colonne 1 Disposition du règlement	Colonne 2 Nature du document	Colonne 3 Renseignements à fournir
2.	10(1)	Avis d'essais de détection des fuites pour les systèmes de réfrigération et de climatisation	a) nom et adresse du propriétaire du système b) nom de l'opérateur du système c) emplacement précis du système d) description du système e) nom de la personne accréditée f) numéro de certificat g) nom de l'employeur de la personne accréditée (s'il y a lieu) h) type d'halocarbure contenu dans le système i) capacité de charge du système j) date des deux derniers essais de détection des fuites
3.	18(3)	Avis de chargement d'un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un refroidisseur à la suite d'une révision générale	a) nom et adresse du propriétaire du système b) nom de l'opérateur du système c) emplacement précis du système d) description du système e) type et quantité d'halocarbure chargé f) date du chargement g) capacité de charge du système
4.	30(3)	Avis de chargement d'un halocarbure figurant à l'un des articles 1 à 9 de l'annexe 1 dans un système d'extinction d'incendie	a) nom et adresse du propriétaire du système b) nom de l'opérateur du système c) emplacement précis du système d) description du système e) type et quantité d'halocarbure chargé f) date du chargement g) capacité de charge du système

Item	Column 1 Provision of Regulation s	Column 2 Type of Document	Column 3 Information to be Contained on Form
6.	31(1)	Fire-Extinguishing System Service Log	(a) name and address of owner of system (b) name of operator of system (c) specific location of system (d) description of system (e) name of service technician (f) certificate number of service technician (if applicable) (g) name of employer of service technician (if applicable) (h) dated list of leak tests, leaks detected and leak repairs (i) type and quantity of halocarbon and date recovered (j) charging capacity of system
7.	31(2)	Solvent System Service Log	(a) name and address of owner of system (b) name of operator of system (c) specific location of system (d) description of system (e) name of service technician (f) certificate number of service technician (if applicable) (g) name of employer of service technician (if applicable) (h) type and quantity of halocarbon and date charged to system (i) charging capacity of system

Article	Colonne 1 Disposition du règlement	Colonne 2 Nature du document	Colonne 3 Renseignements à fournir
5.	31(1)	Registre d'entretien d'un système de réfrigération ou de climatisation	a) nom et adresse du propriétaire du système b) nom de l'opérateur du système c) emplacement précis du système d) description du système e) nom de la personne accréditée f) numéro de certificat g) nom de l'employeur de la personne accréditée (s'il y a lieu) h) liste datée des essais de détection, des fuites détectées et de leur réparation i) type et quantité d'halocarbure récupéré, et date de la récupération j) capacité de charge du système
6.	31(1)	Registre d'entretien d'un système d'extinction d'incendie	a) nom et adresse du propriétaire du système b) nom de l'opérateur du système c) emplacement précis du système d) description du système e) nom du technicien d'entretien f) numéro de certificat du technicien (s'il y a lieu) g) nom de l'employeur du technicien (s'il y a lieu) h) liste datée des essais de détection, des fuites détectées et de leur réparation i) type et quantité d'halocarbure récupéré, et date de la récupération j) capacité de charge du système

Item	Column 1 Provision of Regulation s	Column 2 Type of Document	Column 3 Information to be Contained on Form
8.	32(b) and 33(1)	Halocarbon Release Report	(a) name and address of owner of system (b) type and quantity of halocarbon released (c) date of release (d) type and description of system (e) circumstances lead- ing to the release, correc- tive action and actions to prevent subsequent re- leases
9.	34(1)	Request for a Permit to Install a Fire-Extinguishing System or Solvent System	(a) name and address of applicant (b) type and quantity of halocarbon (c) charging capacity of system (d) request for confiden- tiality under subsec- tion 313(1) of Act (e) declaration referred to in subsection 34(2) and supporting information
10.	34(1)	Request for a Permit to Charge a Fire-Extinguishing System or Solvent System with a Halocarbon Listed in items 1 to 9, 11 or 12, as the case may be, of Schedule I	(a) name and address of applicant (b) type and quantity of halocarbon (c) charging capacity of system (d) request for confiden- tiality under subsec- tion 313(1) of Act (e) declaration referred to in subsection 34(2) and supporting information
11.	36(4)(b)	Report for Systems at Unoccupied Premises or an Unoccupied Site	(a) name and address of owner of system (b) street address of un- occupied premises or un- occupied site (c) street address of lo- cation of records, reports and notices referred to in paragraph 36(4)(a)

Article	Colonne 1 Disposition du règlement	Colonne 2 Nature du document	Colonne 3 Renseignements à fournir
7.	31(2)	Registre d'entretien d'un système de solvants	a) nom et adresse du propriétaire du système b) nom de l'opérateur du système c) emplacement précis du système d) description du sys- tème e) nom du technicien d'entretien f) numéro de certificat du technicien (s'il y a lieu) g) nom de l'employeur du technicien (s'il y a lieu) h) type et quantité d'halocarbure chargé, et date du chargement i) capacité de charge du système
8.	32b) et 33(1)	Rapport sur les rejets d'halocarbures	a) nom et adresse du propriétaire du système b) type et quantité d'halocarbure rejeté c) date du rejet d) type et description du système e) circonstances ayant mené au rejet et me- sures correctives et préventives qui seront prises
9.	34(1)	Demande de permis pour installer un système d'extinction d'incendie ou un système de solvants	a) nom et adresse du demandeur b) type d'halocarbure et quantité c) capacité de charge du système d) demande de confi- dentialité prévue au pa- ragraphe 313(1) de la Loi e) déclaration visée au paragraphe 34(2) et renseignements à l'ap- pui

	Colonne 1	Colonne 2	Colonne 3
	Disposition du Article règlement	Nature du document	Renseignements à fournir
10.	34(1)	Demande de permis pour charger un halocarbure figurant à l'un des articles 1 à 9 ou 11 ou 12 de l'annexe 1, selon le cas, dans un système d'extinction d'incendie ou un système de solvants	a) nom et adresse du demandeur b) type d'halocarbure et quantité c) capacité de charge du système d) demande de confidentialité prévue au paragraphe 313(1) de la Loi e) déclaration visée au paragraphe 34(2) et renseignements à l'appui
11.	36(4)b)	Rapport pour un système situé dans un lieu inoccupé	a) nom et adresse du propriétaire b) adresse municipale du lieu inoccupé c) adresse municipale du lieu où se trouvent les documents visés à l'alinéa 36(4)a)

SOR/2009-221, ss. 8(F), 9(F).

DORS/2009-221, art. 8(F) et 9(F).