

APPENDIX A

**SYNOPSIS OF THE INTERIM ORDER RESPECTING
CHLOROBIPHENYLS UNDER THE CANADIAN ENVIRONMENTAL
PROTECTION ACT**

NOTE: This Interim Order, with modifications, is currently in the process of being replaced by a regulation under the *Canadian Environmental Protection Act* (CEPA).

APPENDIX A - SYNOPSIS OF THE INTERIM ORDER RESPECTING CHLOROBIPHENYLS UNDER THE CANADIAN ENVIRONMENTAL PROTECTION ACT

Prohibitions

- a. Use of PCBs in the operation of any product, machinery or equipment other than electrical capacitors and electrical transformers and associated electrical equipment manufactured in or imported into Canada before July 1, 1980; heat transfer equipment, hydraulic equipment, electromagnets, and vapour diffusion pumps that were designed to use PCBs and were in use in Canada before September 1, 1977; and machinery or equipment intended to destroy the chemical structure of PCBs.
- b. Use of PCBs in the operation of electromagnets that are operated over food or animal feed or anything intended to be added to food or animal feed.
- c. Use of PCBs as a constituent of any product, machinery or equipment manufactured in or imported into Canada after September 1, 1977, except for electrical capacitors and electrical transformers and associated electrical equipment.
- d. Use of PCBs as a constituent of electrical capacitors and electrical transformers and associated electrical equipment manufactured in or imported into Canada after July 1, 1980.
- e. Use of PCBs in the servicing or maintenance of any product, machinery or equipment, other than electromagnets and electrical transformers and associated electrical equipment.
- f. Use of PCBs as new filling or as makeup fluid in the servicing or maintenance of any electromagnet, electrical transformer or associated electrical equipment.

Concentration in Products

- a. Importing, manufacturing or knowingly offering for sale any equipment listed above that contains more than 50 parts per million of PCBs by weight.

Exemptions (allowed sales and import)

- a. Sale of PCB-filled equipment as a necessary and integral part of an immovable building, plant or structure that is offered for sale.
- b. Sale of PCB-filled equipment for destruction or for storage awaiting destruction of the PCBs contained therein.
- c. Importation of PCB-filled equipment for destruction of the PCBs contained therein. (This exemption is required in order to develop a reciprocal agreement between Canada and the U.S. for use of PCB-destruction facilities in either country once PCB destruction facilities are available in Canada).

Concentrations or Quantities that may be Released

- a. Release of PCBs in excess of one gram per day for any one piece or package of equipment listed in the Interim Order in the course of the operation, servicing, maintenance, decommissioning, transportation or storage of this equipment.
- b. Release of PCBs from all other sources or activities in excess of 50 parts per million except for the application of PCBs to a road surface where the limit is five parts per million by weight.

Exemptions

- a. The PCB Interim Order does not apply in any water or place where subsection 36(3) of the *Fisheries Act* applies, i.e. waters frequented by fish or waters leading to fish-frequented waters. Places would include any industry or facility subject to regulations developed under subsection 36(3) of the *Fisheries Act*.

Subsection 36(3) of the *Fisheries Act* prohibits deposition of deleterious substances into fisheries waters except as may be permitted by regulations.

APPENDIX B

PCB WASTE TYPES

APPENDIX B - PCB WASTE TYPES

The following list of waste types and descriptions is provided to assist the reader in interpreting and applying the recommendations of this manual.

Askarels are usually a mixture of PCBs and tri- and tetrachlorobenzene. In most equipment, this was the original PCB-containing fluid used. Typical transformer askarel will contain 65% PCB but it could also be in the 40% range. It will usually be a clear liquid with a density of the order of 1.5 kg/L. This waste is usually generated by draining equipment. Handling this waste separately, rather than mixing it with other waste streams, has the advantage of keeping the total mass of PCB waste to a minimum.

Concentrated Decontamination Flushings are usually the first flushings from decontamination of a transformer or from solvent washing of solid PCB waste. The PCB content is likely to be in the 1 to 10% range in solvents such as fuel oil, kerosene, trichloroethylene, Varsol, turpentine, or trichlorobenzene. The mixture could contain suspended solids but would generally behave as a liquid. Another process generating this waste would be the concentrated waste solvent from a rinse/soak process.

Decontamination Flushings are wastes which comprise solvents similar to those described above but with PCB concentrations less than 1%. These are generated in the later stages of equipment or solid waste decontamination, particularly from operations when only a few pieces of equipment are decontaminated and countercurrent washing is not feasible. This category could also include solvent washings from lightly contaminated solids or solvent-washing extraction-liquor from the extraction of aqueous waste streams. These wastes will likely contain significant solids and may have an aqueous layer.

Contaminated Mineral Oil usually contains less than 1% PCBs. Mineral oil is used in most outdoor transformers and may have become contaminated by common industrial practices before the concern for PCBs was raised. The oil itself is generally a flammable liquid with a density somewhat below 1 kg/L; it usually does not contain significant amounts of suspended matter.

Contaminated Retrofilling Fluids: retrofilling fluids are liquids used to replace PCBs in transformer applications (Table 2). Quite often, at some time subsequent to retrofilling, the new fluid becomes contaminated with residual amounts of PCB not removed by the original decontamination process.

PCB Transformers, Hydraulic Equipment, Electromagnets, Heat Transfer Equipment, Vapour Diffusion Pumps: these large pieces of electrical/mechanical equipment may be drained and/or decontaminated hulks or complete units still containing PCBs or PCB-contaminated fluids. At some point in the waste management process they will be drained and, depending upon the degree of contamination and the intended method of disposal, decontamination may or may not be required. Drained equipment that previously contained a liquid contaminated with <500 ppm of PCBs can be scrapped for metal recovery providing all appropriate federal and provincial regulations are observed.

Large PCB Capacitors are capacitors which contain more than 0.5 kg of PCBs. The size will range from that of a small book to tall thin rectangular cans up to 1 m in height. The internals are paper and metal foil wound together, totally immersed and thoroughly

impregnated with PCBs. Free PCB liquid that can be collected from an opened PCB capacitor will typically amount to about 50% of the total quantity of PCBs contained in the unit. PCB capacitors are shreddable.

Small PCB Capacitors are capacitors which contain less than 0.5 kg of PCB. They may be associated with electronic or lighting equipment, and may be difficult (time consuming) to identify or separate from this equipment. While they will be difficult to identify individually, they may be collectable from a large number of similar units, e.g., lighting ballasts. Where possible they should be collected and treated as a PCB waste. Environment Canada has published a report on the procedures for identifying ballasts that contain PCBs (12).

Maintenance and Decommissioning Wastes will be similar to industrial waste from maintenance operations, and will include small tools, rags, plastics, paper, sorbents, and some free liquid -- usually a cleaning solvent contaminated with PCBs. The PCB concentration will be highly variable.

Waste Oil includes used lubricating oils or other oils that have become contaminated with PCBs. Generally this waste will be a liquid but sludge may also be present.

Residues may be ash from incineration, organic sludge from sodium-based oil-decontamination processes, or solids from the decontamination of solid wastes. These should be handled with care as they can be contaminated with PCBs. The disposal method will depend upon the degree of contamination of the residues.

Soils and Demolition Spoils are solid wastes resulting from a spill cleanup. These wastes could be building materials (wood, cement, paint, plastics, plaster, and metal) that have been contaminated as a result of a spill of PCBs. They could also contain sorbents, decontamination liquids, rags or paper.

Dredging Spoils are sediments from streams, urban drains, or marine dredging. Dredging spoils are similar to soil wastes except that water content is much higher and they may have to be handled as liquids. The PCB concentration can range up to thousands of parts per million, and may be largely associated with an organic component of the waste.

Aqueous Waste: Although solubility of PCBs in water is very low, aqueous waste from a variety of sources may be contaminated with PCBs that are associated with suspended matter. Some examples of aqueous waste are water from fire-fighting cleanup operations, groundwater at a spill site, and scrubber discharge from a PCB destruction incinerator.

APPENDIX C

PCB TREATMENT/DESTRUCTION REQUIREMENTS

APPENDIX C - PCB TREATMENT/DESTRUCTION REQUIREMENTS

1 U.S. Environmental Protection Agency requirements for Liquid Injection and Rotary Kiln Incinerators

1.1 Liquid Injection for PCB Liquids

An incinerator used for the destruction of PCB liquids shall satisfy the following requirements, which are intended to ensure a destruction efficiency of not less than 99.9999% on the basis of a PCB mass emission to air of 1 mg/L kg of PCB introduced into the unit.

- a) Combustion criteria shall be either:
 - i). maintenance of the introduced liquids for a 2-second dwell time at 1200°C ($\pm 100^\circ\text{C}$) and 3% excess oxygen in the stack gas; or
 - ii). maintenance of the introduced liquids for a 1.5-second dwell time at 1600°C ($\pm 100^\circ\text{C}$) and 2% excess oxygen in the stack gas.

- b) Combustion efficiency shall be at least 99.9%, as calculated by:

$$\text{Combustion efficiency} = \frac{\text{CO}_2}{\text{CO} + \text{CO}_2} \times 100\%$$

where: CO = concentration of carbon monoxide in the flue gas, and
 CO₂ = concentration of carbon dioxide in the flue gas.

- c) The rate and quantity of PCBs fed into the combustion system shall be measured and recorded at regular intervals of no longer than 15 minutes.
- d) The temperatures of the incineration process shall be continuously measured and recorded.
- e) The concentration of oxygen and carbon monoxide in the flue gas shall be continuously measured and recorded. The concentration of carbon dioxide shall be measured and recorded at a frequency to be specified by the appropriate authority.
- f) Testing of the stack emission products for oxygen, carbon monoxide, carbon dioxide, oxides of nitrogen, hydrochloric acid, total chlorinated organics, PCBs, furans, dioxins, and particulate matter shall be conducted:
 - i). when an incinerator is first used for the disposal of PCBs;

- ii). when the incinerator is first used for the disposal of PCBs after the incinerator or operating parameters have been modified in a manner which may affect the stack emissions; or
 - iii). annually thereafter.
- g) Automatic means shall be provided to prevent the burning of PCBs when the temperature or excess oxygen falls below the levels specified in Section 1a), monitoring operations fail, or the PCB feed-rate measuring and recording equipment fails.
 - h) Hydrogen chloride emissions from a PCB incinerator shall be controlled and shall meet the requirements specified by the appropriate authority.
 - i) Solid residues and liquid effluents from the incinerator should be tested on the same schedule as for stack emissions. These wastes will be disposed of according to the requirements specified by the appropriate authority.

1.2 Rotary Kiln for Non-liquid PCB Wastes

An incinerator used for the destruction of PCB wastes other than PCB liquids shall meet the following requirements:

- a) The mass air emissions from the incinerator shall contain no greater than 1 mg PCBs/1 kg of PCBs introduced into the incinerator.
- b) The incinerator shall comply with the provisions of 1 (b) through 1 (i) previously listed.

2 **Regulations Respecting Mobile Systems for the Treatment and Destruction of Chlorobiphenyls that are Operated on Federal Lands or Operated by or Under Contract with Federal Institutions (proposed)**

Short Title

1. These Regulations may be cited as the Federal Mobile PCB Treatment and Destruction Regulations.

Interpretation

2. In these Regulations:

"Act" means the *Canadian Environmental Protection Act*;

"chlorobiphenyls" or "PCBs" means chlorobiphenyls set out in the List of Toxic Substances in Schedule I to the Act;

"federal institution" means a department, board or agency of the Government of Canada or any corporation named in Schedule III to the *Financial Administration Act*;

"mobile PCB destruction system" means mobile equipment that is capable of destroying PCBs by thermal means;

"mobile PCB treatment system" means mobile equipment that is capable of destroying PCBs by chemical means;

"normal cubic metre" means the volume of a gas at 25°C and 101.3 kPa;

"2,3,7,8-substituted PCDDs" means any polychlorinated dibenzo-*p*-dioxin with the molecular formula $C_{12}H_{8-n}Cl_nO_2$, in which "n" is from 4 to 8 and chlorine atoms are located at the 2,3,7,8 positions on the molecule;

"2,3,7,8-substituted PCDFs" means any polychlorinated dibenzofuran with the molecular formula $C_{12}H_{8-n}Cl_nO$, in which "n" is from 4 to 8 and chlorine atoms are located at the 2,3,7,8 positions on the molecule.

Application

3. These regulations apply in respect of mobile PCB destruction systems and mobile PCB treatment systems that are operated:

- (a) on federal lands, as defined in Section 52 of the Act; and
- (b) anywhere in Canada by or under contract with a federal institution.

Duty of Federal Institutions

4. Where a mobile PCB destruction system or mobile PCB treatment system is operated under contract with a federal institution, the federal institution shall ensure that the person who operates the system complies with sections 5 to 17.

Standards

5. No person shall operate a mobile PCB destruction system that releases into the environment a gas that contains PCBs in excess of 1 mg/kg of PCBs put into the system.

6. No person shall operate a mobile PCB treatment system to treat oil containing PCBs unless the system is operated so as to reduce the concentration of PCBs in the oil to 2 mg/kg or less.

7.(1) No person shall operate a mobile PCB destruction system or mobile PCB treatment system that releases into the environment a gas that contains a concentration of:

- (a) particulate matter that exceeds 50 mg per normal cubic metre;
- (b) hydrogen chloride that exceeds 75 mg per normal cubic metre; or
- (c) 2,3,7,8-substituted PCDDs and 2,3,7,8-substituted PCDFs that exceeds 12 ng per normal cubic metre, when determined in accordance with section 10.

(2) The concentrations referred to in subsection (1) are corrected to 11% oxygen, on a dry basis.

8. No person shall operate a mobile PCB destruction system that releases into the environment a liquid that contains a concentration of:

- (a) PCBs that exceeds 5 µg/L ; or
- (b) 2,3,7,8-substituted PCDDs and 2,3,7,8-substituted PCDFs that exceeds 0.6 ng/L, when determined in accordance with section 10.

9. No person shall operate a mobile PCB destruction system or mobile PCB treatment system that releases into the environment a solid that contains a concentration, on a dry basis, of:

- (a) PCBs that exceeds 0.5 mg/kg; or
- (b) 2,3,7,8-substituted PCDDs and 2,3,7,8-substituted PCDFs that exceeds 1 µg/kg, when determined in accordance with section 10.

10. The concentrations referred to in paragraphs 7(1)(c), 8(b) and 9(b) are determined by multiplying the concentration of each 2,3,7,8 - substituted PCDD and 2,3,7,8 - substituted PCDF congener that is set out in an item of column I of the schedule by the corresponding toxicity factor set out in column II of that item and adding the products thereof.

Information on Design and Performance

11. No person shall operate a mobile PCB destruction system or mobile PCB treatment system unless the person provides the Minister with information on the design and performance of the system, including the results of a test that demonstrates the system meets the standards set out in sections 5 to 9 and is authorized by the Minister in writing to operate the system.

Testing

12.(1) A person may, with the written permission of the Minister and subject to such terms and conditions as the Minister may impose, conduct a test of a mobile PCB destruction system or mobile PCB treatment system for the purpose of providing to the Minister the information referred to in section 11.

(2) A person who conducts a test under subsection (1) does not contravene these Regulations if the mobile PCB destruction system or mobile PCB treatment system does not meet the standards set out in sections 5 to 9 during the test.

13.(1) Any person who operates a mobile PCB destruction system or mobile PCB treatment system shall, at the request of the Minister, conduct tests during its operation to determine if the system meets the standards set out in sections 5 to 9.

(2) Any person who operates a mobile PCB destruction system or mobile PCB treatment system shall submit to the Minister in writing the results of any test made pursuant to subsection (1) no later than sixty days after the day on in which the test was completed.

Test Methods

14. Every person who conducts a test pursuant to section 12 or 13 shall employ the methods referred to in sections 15 to 17.

15(1) For the purposes of paragraph 7(1)(a), the concentration of particulate matter in a gas shall be measured in accordance with the methods set out in the Standard Reference Methods for Source Testing: Measurement of Emissions of Particulates from Stationary Sources, Report EPS 1-AP-74-1, published by the Department of the Environment in February, 1974, as amended from time to time.

(2) For the purposes of paragraph 7(1)(b), the concentration of hydrogen chloride in a gas shall be measured in accordance with the methods set out in the Reference Method for Source Testing: Measurement of Emissions of Hydrogen Chloride from Stationary Sources, Report EPS 1/RM/1, published by the Department of the Environment in June 1989, as amended from time to time.

(3) For the purposes of section 5 and paragraph 7(1)(c), the concentration of PCBs, 2,3,7,8-substituted PCDDs and 2,3,7,8-substituted PCDFs in a gas shall be measured in accordance with:

(a) the sampling method set out in Reference Method for Source Testing: Measurement of Releases of Selected Semi-Volatile Organic Compounds from Stationary Sources, Department of the Environment, Report EPS 1/RM/2, June 1989, as amended from time to time; and

(b) the method of analysis set out in A Method for the Analysis of Polychlorinated Dibenzo-*para*-Dioxins (PCDDs), and Polychlorinated Biphenyls (PCBs) in Samples from the Incineration of PCB Waste, Department of the Environment, Report EPS 1/RM/3, June 1989, as amended from time to time.

16. For the purposes of section 8, the concentration of PCBs, 2,3,7,8-substituted PCDDs and 2,3,7,8-substituted PCDFs in liquids shall be measured by

(a) taking a representative sample of the liquids released by the system every 15 minutes while samples of the gases are being taken in accordance with the methods set out in section 15;

(b) taking a representative sample of the mixture of all the samples taken pursuant to paragraph (a); and

(c) analyzing the sample taken pursuant to paragraph (b) in accordance with the method referred to in paragraph 15(3)(b).

17. For the purposes of section 9, the concentration of PCBs, 2,3,7,8-substituted PCDDs and 2,3,7,8-substituted PCDFs in solids shall be measured by

(a) taking a representative sample of the solids released by the system every 15 minutes while samples of the gases are being taken in accordance with the methods set out in section 15;

(b) taking a representative sample of the mixture of all the samples taken pursuant to paragraph (a); and

(c) analyzing the sample taken pursuant to paragraph (b) in accordance with the method referred to in paragraph 15(3)(b).

SCHEDULE (Section 10)

TOXICITY FACTORS

Item	Column I Congener	Column II Toxicity Factor
2,3,7,8 - substituted PCDD		
1.	2,3,7,8-T4CDD	1.0
2.	1,2,3,7,8-P5CDD	0.5
3.	1,2,3,4,7,8-H6CDD	0.1
4.	1,2,3,6,7,8-H6CDD	0.1
5.	1,2,3,7,8,9-H6CDD	0.1
6.	1,2,3,4,6,7,8-H7CDD	0.01
7.	08CDD	0.001
2,3,7,8 - substituted PCDF		
8.	2,3,7,8-T4CDF	0.1
9.	1,2,3,7,8-P5CDF	0.01
10.	2,3,4,7,8-P5CDF	0.5
11.	1,2,3,4,7,8-H6CDF	0.1
12.	1,2,3,6,7,8-H6CDF	0.1
13.	1,2,3,7,8,9-H6CDF	0.1
14.	2,3,4,6,7,8-H6CDF	0.1
15.	1,2,3,4,6,7,8-H7CDF	0.01
16.	2,3,4,6,7,8,9-H7CDF	0.01
17.	08CDF	0.001

APPENDIX D

**HIGH EFFICIENCY BOILER REQUIREMENTS
U.S. EPA REQUIREMENTS**

APPENDIX D - HIGH EFFICIENCY BOILER REQUIREMENTS (U.S. EPA Requirements)

PCB liquids may be co-fired in high efficiency boilers if they contain less than 500 ppm PCBs, provided that:

- a) The boiler is rated at a minimum of 15 MJ/s.
- b) For natural gas and oil-fired boilers, the carbon monoxide concentration in the stack gas is 50 ppm or less, and the excess oxygen is at least 3% when PCBs are burned.
- c) For coal-fired boilers, the carbon monoxide concentration in the stack gas is 100 ppm or less, and the excess oxygen is at least 3% when PCBs are burned.
- d) At any given time, the mass flow rate of the PCB liquid does not exceed 10% of the mass flow rate of the fuel.
- e) PCB liquids are not fed into the boiler unless the boiler is operating at a minimum of 90% capacity.
- f) The concentration of carbon monoxide and oxygen in the stack gas are measured and recorded continuously or at intervals of not longer than one hour if the boiler will burn less than 115 000 litres per year of PCB liquids.
- g) The feed rates of the primary fuel and the PCB liquid, and the total quantity of primary fuel and PCB liquid, fed to the boiler are measured and recorded at intervals of not longer than 15 minutes.
- h) The concentration of PCBs in each batch of waste is measured and recorded.
- i) The flow of PCB liquid to the boiler shall stop automatically if the criteria noted in b) and c) are not met, or if there is a failure in the monitoring equipment.

APPENDIX E

FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs

APPENDIX E - FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs

Jurisdiction	Legislation	Description
British Columbia	<i>Waste Management Act, 1984</i>	- not specific to PCBs
	Special Waste Regulation, 1988	- regulation applies to PCBs in concentrations \geq 50 ppm and waste
		- regulation permits use of oil for road oiling if PCB concentrations are not greater than 5.0 mg/L maximum
		- regulation permits use of waste oil as fuel if PCB concentrations are not greater than 3.0 mg/L maximum
Alberta		- regulation requires permits for storage and disposal facilities and use of manifest for waste in transport
	Hazardous Chemicals Act	- controls handling, storage, and ultimate disposal of PCB wastes
	Hazardous Waste Regulation	- prohibits storing PCB waste for longer than 365 days or in an amount exceeding 10 tonnes
		- requires license to operate a stand alone PCB storage facility or if the above limits are exceeded
		- 50 ppm in maximum concentration of PCBs for landfilling at approved Class II landfill
	Hazardous Waste Storage Guidelines	- specifies design criteria for storage facilities
	Guidelines for Industrial Landfills	- specifies design criteria and other requirements for classes of industrial landfill

APPENDIX E - FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs (Cont'd)

Jurisdiction	Legislation	Description
Saskatchewan	Municipal Drinking Water Objectives	<ul style="list-style-type: none"> - not specific to PCBs - PCBs should be undetectable ($<0.02 \mu\text{g/L}$) in drinking water - maximum PCB concentration allowable for short-term (6 to 8 month maximum) release to drinking water is $3 \mu\text{g/L}$
	Environmental Spill Control Regulations	<ul style="list-style-type: none"> - accidental releases of PCBs must be reported to the Spill Response and Control Section of Saskatchewan Environment - regulations require appropriate cleanup and disposal of spill-contaminated material
	<i>Environmental Protection Act</i>	<ul style="list-style-type: none"> - Saskatchewan Environment must approve storage and disposal facilities
Manitoba	<i>Dangerous Goods Handling and Transportation Act</i> , August 1984	<ul style="list-style-type: none"> - requires licensing for handling, transport and disposal of PCBs; defines requirements for operation of a disposal facility - requires reporting of environmental accidents
	Regulation 474/88	<ul style="list-style-type: none"> - controls storage of PCB wastes

**APPENDIX E - FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs
(Cont'd)**

Jurisdiction	Legislation	Description
Ontario	<i>Environmental Protection Act</i>	- controls handling, storage and ultimate disposal of PCB wastes
	Waste Management - PCBs, Regulation 11/82 - January 1982 - Amendment 1984	- requires approvals for storage and disposal facilities; licensing includes specifications for operation, environmental controls and record keeping in storage and disposal facilities - defines PCB wastes as wastes containing all PCBs at concentrations greater than 50 ppm
	Mobile PCB Destruction Facilities Regulations O. Reg. 148/86 gazetted April, 1986	- describes siting, operation, environmental control, monitoring, and bonding requirements for three types of mobile PCB destruction technologies: mobile incineration and mobile chemical destruction facilities - includes requirements for record keeping and record retention at disposal facilities
	Ontario Drinking Water Objectives - 1983	- exempts mobile units on Crown or public lands from assessment - maximum allowable concentrations of PCBs in drinking water is 3 µg/L
	Waste Management-General O. Reg. 309, November, 1985	- controls movement, treatment and disposal of hazardous wastes, including PCBs

**APPENDIX E - FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs
(Cont'd)**

Jurisdiction	Legislation	Description
Quebec	<i>Environmental Quality Act</i>	- includes PCB requirements
	Hazardous Waste Regulations 1985 Amended - 1988	- requires certificate of approval and operating permit for storage facilities
		- details proposed siting, operational (containment, waste mixing) and maximum storage time requirements for facilities storing hazardous wastes
		- requires operating permit for transportation of hazardous wastes
New Brunswick	<i>Clean Environment Act</i> Reg. 82-126 - August 1982	- details transportation and waste handling requirements
		- no specific PCB legislation
Nova Scotia	<i>Clean Environment Act</i> Reg. 82-126 - August 1982	- requires certificate of approval for storage and disposal facilities
		- enabling legislation requiring regulations
	<i>Dangerous Goods and Hazardous Wastes Management Act</i> PCB Waste Storage Regulations - November 15, 1988	- requires storage sites with more than 1 kg PCBs, 100L PCB liquids or 100 kg PCB solids to be registered with the Department of Environment
Nova Scotia	Other	- storage site must meet specific standards
		- guideline for PCBs in drinking water is 3 ppb

APPENDIX E - FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs (Cont'd)

Jurisdiction	Legislation	Description
Prince Edward Island		- no specific PCB or hazardous waste management legislation
Newfoundland/ Labrador	The Storage of PCB Waste Regulations	- requires record keeping, regular inspections, immediate repairs, spill reporting, fire alarm and control apparatus, labelling and signs - gives minimum size for exemption - requires notification of PCB storage sites for which the owner does not have a current approval within 30 days of a site being established
	The Waste Material (Disposal) Act, 1973	- requires licensing of storage sites, disposal facilities and/or regular hazardous waste transportation services as part of a waste management system - enables bonding of owners/proponents to ensure compliance with the terms and conditions of their Certificate of Approval
Yukon Territory		- no specific PCB or hazardous waste management legislation
Northwest Territories		- no specific PCB legislation
	<i>Commissioner's Land Act</i>	- requires licensing of waste disposal facilities
	<i>Environmental Protection Act</i>	- regulates waste and spill control and disposal of contaminants
	<i>Transportation of Dangerous Goods Act</i>	- adopts some of the federal transportation regulations

APPENDIX E - FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs (Cont'd)

Jurisdiction	Legislation	Description
Canada	<i>Canadian Environmental Protection Act (CEPA)</i>	
	Note: The following Interim Order Respecting PCBs (Feb. 20/89) under CEPA is being promulgated for enactment as a regulation under CEPA.	
	Prohibition	- restricts the use and prohibits the importation, manufacture and processing of all PCBs with more than two chlorine atoms on the PCB molecule
	Concentration in Products	- prohibits importation, manufacture and sale of electric capacitors and transformers, electromagnets, heat exchangers, hydraulic equipment or vapour diffusion pumps, that contain more than "50 ppm PCB by weight"
	Releases	<ul style="list-style-type: none"> - controls the maximum concentration of PCBs that can be released to the environment in the course of a commercial, manufacturing or processing activity at: 50 ppm (general case); 5 ppm for road oiling; - controls the maximum quantity of PCBs that may be released at 1 g/day per piece or package of equipment
	Storage of PCB Wastes Interim Order (Sept 16/88) Amended (Feb 20/89) Amended (May 1/89)	- ensures that PCBs are stored in a manner and under conditions which do not pose any threat to the environment or to human life or health

APPENDIX F

**ENVIRONMENT RESOURCE CONTACTS
PCBs AND HAZARDOUS WASTES
FEDERAL AND PROVINCIAL OFFICES**

**APPENDIX E - FEDERAL AND PROVINCIAL REGULATIONS RELATING TO PCBs
(Cont'd)**

Jurisdiction	Legislation	Description
	Federal Mobile PCB Treatment and Destruction Regulations (Proposed)	- ensures that mobile systems for the treatment and destruction of PCBs, by thermal and by chemical means, that are operated on federal lands or operated by or under contract with federal institutions, do not present a threat to the environment or to human life or health
	<i>Fisheries Act</i>	- controls the release of deleterious substances to waterways frequented by fish
	Transportation of Dangerous Goods Regulations - 1985	- regulates the documentation, handling and control of dangerous goods for all interprovincial and international modes of transport; through agreements with the federal government, provinces have jurisdiction for intraprovincial transportation of dangerous goods
	<i>Transportation of Dangerous Goods Act</i> - Appendix 1, Amendments concerning the Transportation of PCBs, May, 1986	- regulates all road and rail PCB transportation activities and includes special exemptions for equipment in service and describes specific handling and packaging for PCBs
	<i>Transportation of Dangerous Goods Act</i> - Amendment Schedule 8, 18 January 1989	- clarifies requirements for labelling PCBs

Canadian Council of Ministers of the Environment (CCME) Guidelines
INTERIM ENVIRONMENTAL QUALITY OBJECTIVES FOR PCBS IN AIR, WATER AND SOIL

Medium	Condition	PCB Concentration
Ambient Air	annual average	35 ng/m ³
	24-h average	150 ng/n ³
	0.5-h average	450 ng/m ³
Ambient Water	-	1 ng/L
Soil	agricultural	0.5 ppm
	non-agricultural (residential/ public access)	5 ppm
	industrial/ commercial	50 ppm

FEDERAL ENVIRONMENT CONTACTS FOR PCBs AND HAZARDOUS WASTES

Headquarters:

Officer, TDGA Program
Waste Management Division
Conservation and Protection
Environment Canada
Place Vincent Massey, 13th Floor
351 St. Joseph Boulevard
Hull, Québec
K1A 0H3
Telephone: (819) 997-3377
Telex: 053-4567
Fax: (819) 997-3068

Compliance Officer
Chemicals Control Division
Commercial Chemicals Branch
Conservation and Protection
Environment Canada
Place Vincent Massey, 14th Floor
351 St. Joseph Boulevard
Hull, Québec
K1A 1C8
Telephone: (819) 953-1676
Telex: 053-4567

Regional Offices

Contaminants Control Officer
Conservation and Protection
Environment Canada
Kapilano 100-Park Royal
3rd Floor
West Vancouver, British Columbia
V7T 1A2
Telephone: (604) 666-6711
Telex: 04-54476

Head, Environmental Quality Branch
Conservation and Protection
Environment Canada
Twin Atria No. 2, 2nd Floor
4999-98 Avenue
Edmonton, Alberta
T6B 2X3
Telephone: (403) 468-8057
Telex: 037-2099
Fax: (403) 468-8042

Manager, Environmental Contaminants Branch
Conservation and Protection
Environment Canada
25 St. Clair Avenue East, 7th Floor
Toronto, Ontario
M4T 1M2
Telephone: (416) 973-1075
Telex: 062-3601
Fax: (416) 973-8342

Project Engineer
Emergency and Wastes
Conservation and Protection
Environment Canada
1179 Bleury St., 2nd Floor
Montréal, Québec
H3B 3H9
Téléphone: (514) 283-2349
Télex: 055-62234
Fax: (514) 283-4423

Head, Hazardous Waste Section
Contaminants and Assessments Branch
Environmental Protection Service
Environment Canada
5th Floor, Queen Square
45 Alderney Drive
Dartmouth, Nova Scotia
B2Y 2N6
Telephone: (902) 426-6670
Telex: 019-21565
Fax: (902) 426-2690

FEDERAL ENVIRONMENT CONTACTS (Continued)

District	Address	Telephone
Newfoundland	Conservation and Protection Environment Canada P.O. Box 5037, Building 310 Pleasantville St. John's, Newfoundland A1C 5V3	Office - (709)772-5488
Prince Edward Island	Conservation and Protection Environment Canada P.O. Box 1115 Charlottetown, Prince Edward Island C1A 7M8	Office - (902)566-7042
New Brunswick	Conservation and Protection Environment Canada P.O. Box 400, Queen St. Fredericton, New Brunswick E3B 4Z9	Office - (506)452-3286 Fax - (506)452-3003
Ontario	Manager, National Capital Area Environment Canada Environmental Protection 3439 River Road Ottawa, Ontario K1A 0H3	Office - (613)991-1954
Manitoba	Conservation and Protection Environment Canada 503-269 Main Street Winnipeg, Manitoba R3C 1B2	Office - (204)983-4811 Fax - (204)983-4506
Saskatchewan	Conservation and Protection Environment Canada 2nd Floor 1901 Victoria Avenue Regina, Saskatchewan S4P 3R4	Office - (306)780-6464 Fax - (306)780-6466
Northwest Territories	Conservation and Protection Environment Canada P.O. Box 370 9th Floor, Bellanca Building Yellowknife, Northwest Territories X1A 2N3	Office - (403)873-3456 Fax - (403)873-8185

Yukon
Territory

Conservation and Protection
Environment Canada
Room 225, Federal Building
Whitehorse, Yukon Territory
Y1A 2B5

Office - (403)667-3400

PROVINCIAL ENVIRONMENT CONTACTS

Ministry of the Environment
Parliament Buildings
810 Blanshard Street
Victoria, **British Columbia**
V8V 1X5
Telephone: (604) 387-9955
Fax: (604) 356-7197

Alberta Environment
Oxbridge Place
9820-106th Street, 5th Floor
Edmonton, **Alberta**
T5K 2J6
Telephone: (403) 427-5847
Fax: (403) 422-5120

Saskatchewan Environment & Public Safety
Walter Scott Building
3085 Albert Street
Regina, **Saskatchewan**
S4S 0B1
Telephone: (306) 787-2255
Fax: (306) 787-0197

Dangerous Goods Handling and
Transportation Information
Environmental Management Division
Department of Environment,
Workplace Safety & Health
Bldg. 2, 139 Tuxedo Avenue
P.O. Box 7
Winnipeg, **Manitoba**
R3N 0H6
Telephone: (204) 945-7039
Fax: (204) 945-5229

Ontario Ministry of the Environment
Waste Management Branch
135 St. Clair Avenue West,
Toronto, **Ontario**
M4V 1P5
Telephone: (416) 323-5200
Fax: (416) 963-3109

Direction des Substances Dangereuses
Ministère de l'Environnement
3900, rue Marly
Ste-Foy, **Québec**
G1X 4E4
Téléphone: (418) 644-3420
Fax: (418) 646-0001

Municipal Affairs and Environment
364 Argyle Street
P.O. Box 6000
Fredericton, **New Brunswick**
E3B 5H1
Telephone: (506) 453-2861
Fax: (506) 453-2265

Department of the Environment
5151 Terminal Road
P.O. Box 2107
Halifax, **Nova Scotia**
B3J 3B7
Telephone: (902) 424-5300
Fax: (902) 424-0503

Department of Environment
11 Kent St.
Charlottetown, **Prince Edward Island**
C1A 7N8
Telephone: (902) 368-5028
Fax: (902) 892-3420

Department of Environment and Lands
Confederation Building
P.O. Box 8700
St. John's, **Newfoundland**
A1B 4J6
Telephone: (709) 576-2565
Telex: 016-4197
Fax: (709) 576-1930

Pollution Control Division
Department of Renewable Resources
Government of the Northwest
Territories
Yellowknife, **Northwest Territories**
X1A 2L9
Telephone: (403) 873-7654
Fax: (403) 873-0221

Department of Community and
Transportation Services - S7
P.O. Box 2703
Whitehorse, **Yukon**
Y1A 2C6
Telephone: (403) 667-3032
Fax: (403) 668-7864

APPENDIX G
TRANSPORTATION RESOURCE CONTACTS
FEDERAL AND PROVINCIAL TRANSPORT CONTACTS

FEDERAL TRANSPORT CONTACTS

**Consignors, Manufacturers, Consignees,
Warehousemen, Freight Forwarders,
Brokers, etc.**

Transport of Dangerous Goods Directorate
Transport Canada
Canada Bldg.
Ottawa, **Ontario**
K1A 0N5
Telephone: (613) 992-4624
Fax: (613) 952-1340

Regional Manager
Transport Dangerous Goods
Transport Canada
Suite 309
549 Columbia Street
New Westminster, **British Columbia**
V3L 1B3
Telephone: (604) 666-2955

Regional Manager
Transport Dangerous Goods
Transport Canada
101-22nd Street East
Room 604, Federal Building
Saskatoon, **Saskatchewan**
S7K 0E5
Telephone: (306) 975-5105

Regional Manager
Transport Dangerous Goods
Transport Canada
391 York Avenue
Winnipeg, **Manitoba**
R3C 0P4
Telephone: (204) 949-5969

Regional Manager
Transport Dangerous Goods
Transport Canada
Canada Centre
200 Town Centre Court
Scarborough, **Ontario**
M1P 4X8
Telephone: (416) 973-4599
Fax: (416) 973-5905

Regional Manager
Transport Dangerous Goods
Transport Canada
Port of Montreal Bldg.
Wing No. 3, 3rd Floor
Cité du Havre
Montreal (Quebec)
H3C 3R5
Telephone: (514) 283-7369
Fax: (514) 283-0297

Regional Manager
Transport Dangerous Goods
Transport Canada
5670 Spring Garden Road
Halifax, **Nova Scotia**
B3J 1H6
Telephone: (902) 426-6532
Fax: (902) 436-6921

Surface Transport*

Compliance and Dangerous Goods
 Coordinator
 Operations Branch
 Transport Canada
 344 Slater St.
 14th Floor
 Canada Bldg.
 Ottawa, Ontario
 K1A 0N5
 Telephone: (613) 998-5239
 Fax: (613) 952-1340

SURFACE TRANSPORT REGIONAL OFFICES**Pacific Region**

Transport of Dangerous Goods
 Directorate
 Transport Canada
 201-549 Columbia St.
 New Westminster, British Columbia
 V3L 1B3
 Telephone: (604) 666-6740
 Fax: (604) 666-7747

Western Region

Transport of Dangerous Goods
 Directorate
 Transport Canada
 101, 22nd St. East
 Room 305, Federal Building
 Saskatoon, Saskatchewan
 S7K 0E5
 Telephone: (306) 975-5527
 Fax: (306) 975-4555

Prairies Region

Transport of Dangerous Goods
 Directorate
 Transport Canada
 305-391 York Avenue
 Winnipeg, Manitoba
 R3C 0P4
 Telephone: (204) 983-8839
 Fax: (204) 983-8992

Central Region

Transport of Dangerous Goods
 Directorate
 Transport Canada
 830-200 Town Centre Court
 Scarborough, Ontario
 M1P 4X8
 Telephone: (416) 973-4599
 Fax: (416) 973-5905

Eastern Region

Transport of Dangerous Goods
 Directorate
 Transport Canada
 Édifice du Port de Montréal
 3rd Floor, Cité du Havre
 Montréal, Québec
 H3C 3R5
 Telephone: (514) 283-0696
 Fax: (514) 283-0297

Atlantic Region

Transport of Dangerous Goods
 Directorate
 Transport Canada
 5670 Spring Garden Rd.
 7th Floor
 Halifax, Nova Scotia
 B3J 1H6
 Telephone: (902) 426-9351
 Fax: (902) 426-6921

* Transport by rail is designated as surface travel and comes under Transport Canada

PROVINCIAL TRANSPORT CONTACTS

Road Transport

Director, Administration and Safety
Motor Vehicle Department
Ministry of Solicitor General
2631 Douglas Street
Victoria, **British Columbia**
V8T 5A3
Telephone: (604) 387-3142
Fax: (604) 387-0047

Executive Director
Dangerous Goods Control
Public Safety Services
No. 144, 14315 - 118 Avenue
Edmonton, **Alberta**
T5L 2M3
Telephone: (403) 422-9600
Telex: 037-43363

(Alberta will also do Consignors,
Manufacturers, Consignees, etc.
(L'Alberta s'occupera egalement des
expediteurs, fabricants, destinataires, etc.)

Dangerous Goods Transportation Section
Saskatchewan Highways and Transportation
1855 Victoria Avenue
Regina, **Saskatchewan**
S4P 3V5
Telephone: (306) 787-5527

Dangerous Goods Handling and
Transportation Information
Environment Management Division
Department of Environment, Workplace
Safety & Health
Bldg. 2, 139 Tuxedo Avenue
P.O. Box 7
Winnipeg, **Manitoba**
R3N 0H6
Telephone: (204) 945-7094
Telex: 07-587589

Co-ordinator
Dangerous Goods Project
Ontario Ministry of Transportation
and Communications
Room 212, West Building
1201 Wilson Avenue
Downsview, **Ontario**
M3M 1J8
Telephone: (416) 235-3568
Telex: 065-24145

Direction du transport routier
des marchandises
Ministere des Transports
700, est, St-Cyrille - 22e etage
Quebec (**Quebec**)
G1R 5H1
Telephone: (418) 643-2235
Telex: 051-3733

Deputy Registrar of Motor Vehicles
Motor Vehicle Division
Department of Transportation
Kings Place, York Tower
York Street
P.O. Box 6000
Fredericton, **New Brunswick**
E3B 5H1
Telephone: (506) 453-2407
Telex: 041-46230

Supervisor or Director
Motor Vehicle Inspection Division
Road Transport Inspection Section
Department of Transportation
6061 Young Street
P.O. Box 156
Halifax, **Nova Scotia**
Telephone: (902) 424-4335
Telex: 019-2286

Manager, Transportation Regulation
Enforcement
Department of Works Services and
Transportation
P.O. Box 8700
St. John's, **Newfoundland**
A1B 4J6
Telephone: (709) 576-3454
Telex: 016-3101
Fax: (704) 576-6955

Highway Safety Division
Transportation and Public Works
17 Haviland Street
P.O. Box 2000
Charlottetown, **Prince Edward Island**
C1A 7N8
Telephone: (902) 368-5200
Telex: 014-44154

Pollution Control Division
Department of Renewable Resources
Government of the Northwest
Territories
Yellowknife, **Northwest Territories**
X1A 2L9
Telephone: (403) 873-7654
Telex: 034-45528
Tele: 034-45528

Administrator, Transport Services
Department of Community &
Transportation Services
P.O. Box 2703
Whitehorse, **Yukon**
Y1A 2C6
Telephone: (403) 667-3032
Telex: 036-8-260

APPENDIX H

**WRITTEN DIRECTIONS FOR DISTRIBUTION OF
COPIES OF TRANSPORTATION MANIFEST**

APPENDIX H - WRITTEN DIRECTIONS FOR DISTRIBUTION OF COPIES OF TRANSPORTATION MANIFEST

Each waste manifest form has six copies which are distributed as follows:

1 Interprovincial and Intraprovincial Shipments

Copy 1 - mailed by consignor to provincial authority within two days of goods being received by carrier:

- the original Copy 1 is sent to province of destination;
- a photocopy of Copy 1 is sent to the province of origin.

Copy 2 - retained by the consignor for a period of two years after the goods have reached their destination.

Copy 3 - mailed by consignee to provincial authority within two days of receiving goods from the carrier:

- the original Copy 3 is sent to province of destination;
- a photocopy of Copy 3 is sent to the province of origin.

Copy 4 - retained by the carrier for a period of two years after the goods have reached their destination.

Copy 5 - retained by the consignee for a period of two years after the goods have reached their destination.

Copy 6 - mailed by the consignee to the consignor.

2 Shipments Destined for Canada from Other Countries:

Copy 1 - mailed by consignor to provincial authority within two days of goods being received by carrier:

- the original Copy 1 is sent to provinces of destination;
- a photocopy of Copy 1 is sent to Environment Canada.

Copy 2 - retained by the consignor for a period of two years after the goods have reached their destination.

Copy 3 - mailed by consignee to provincial authority within two days of receiving goods from the carrier:

- the original Copy 3 is sent to province of destination;
- a photocopy of Copy 3 is sent to Environment Canada.

Copy 4 - retained by the carrier for a period of two years after the goods have reached their destination.

Copy 5 - retained by the consignee for a period of two years after the goods have reached their destination.

Copy 6 - mailed by the consignee to the consignor.

3 Shipments Destined Out of Canada:

Copy 1 - mailed by consignor to provincial authority within two days of goods being received by carrier:

- the original Copy 1 is sent to province of origin;
- a photocopy of Copy 1 is sent to Environment Canada.

Copy 2 - retained by the consignor for a period of two years after the goods have reached their destination.

Copy 3 - mailed by consignee to provincial authority within two days of receiving goods from the carrier:

- the original Copy 3 is sent to province of origin;
- a photocopy of Copy 3 is sent to Environment Canada.

Copy 4 - retained by the carrier for a period of two years after the goods have reached their destination.

Copy 5 - retained by the consignee for a period of two years after the goods have reached their destination.

Copy 6 - mailed by the consignee to the consignor.

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