

Environmental Guideline for Waste Lead and Lead Paint



Department of Environment
Government of Nunavut

GUIDELINE: WASTE LEAD AND LEAD PAINT

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This Guideline has been prepared by the Department of Environment's Environmental Protection Division and approved by the Minister of Environment under the authority of Section 2.2 of the *Environmental Protection Act*.

This Guideline is not an official statement of the law and is provided for guidance only. Its intent is to increase the awareness and understanding of the risks, hazards and best management practices associated with waste lead and lead paint. This Guideline does not replace the need for the owner or person in charge, management or control of waste lead and lead paint to comply with all applicable legislation and to consult with Nunavut's Department of Environment, other regulatory authorities and qualified persons with expertise in the management of lead and lead products.

Copies of this Guideline are available upon request from:

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Electronic version of the Guideline is available at <http://env.gov.nu.ca/programareas/environmentprotection>

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Introduction

Lead is a heavy, soft bluish-grey metal that occurs naturally in the earth's crust. Lead can be found everywhere in the environment, not only because it occurs naturally, but because it has been widely used in the manufacture of many different consumer products. Although regulatory and non-regulatory initiatives were introduced in Canada starting in the 1970s to reduce Canadians' exposure to lead, it can still be found in many older products such as pipes, sheeting, body filler used in the automotive repair industry, solder, ammunition, fishing weights and in cathode-ray tube television and computer screens. Today, lead-acid batteries account for the largest proportion of global lead consumption.

In the past lead pigment was added to paint to speed drying, increase durability and resist moisture that causes corrosion. Although modern regulations prohibit the manufacture and use of lead paint in Canada, it can still be found on structures painted prior to the introduction of these controls. These structures commonly include metal bridges, water tanks and oil storage tanks. The likelihood of houses and other buildings containing lead paint depends on when they were built and painted. There is a high likelihood that buildings constructed before 1960 contain lead paint. If the building was constructed after 1980, it is unlikely that lead paint was used on interior walls, but there may be lead in paint used on the outside. Buildings constructed after 1992 likely do not contain lead paint because all consumer paints produced in Canada by that time were lead-free. Paint with significant lead content is still used by some companies for painting roadways, parking lot lines and traffic signs and by the military.

The *Environmental Guideline for Waste Lead and Lead Paint* (the Guideline) provides information on the characteristics and possible effects of waste lead and lead paint on the environment and human health and guidance on its proper containment and removal, storage, transportation and disposal. The Guideline is not an official statement of the law. For further information and guidance, the owner or person in charge, management or control of waste lead and lead paint is encouraged to review all applicable legislation and consult the Department of Environment, other regulatory agencies or qualified persons with expertise in the management of lead and lead products.

The *Environmental Protection Act* enables the Government of Nunavut to implement measures to preserve, protect and enhance the quality of the natural environment. Section 2.2 of the *Act* provides the Minister with authority to develop, coordinate, and administer the Guideline.

1.1 Definitions

<i>Commissioner's Land</i>	Lands that have been transferred by Order-in-Council to the Government of Nunavut. This includes roadways and land subject to block land transfers. Most Commissioner's Land is located within communities.
<i>Contaminant</i>	Any noise, heat, vibration or substance and includes such other substance as the Minister may prescribe that, where discharged into the environment, (a) endangers the health, safety or welfare of persons, (b) interferes or is likely to interfere with normal enjoyment of life or property, (c) endangers the health of animal life, or (d) causes or is likely to cause damage to plant life or to property.

<i>Dangerous Good</i>	Any product, substance or organism included by its nature or by the <i>Transportation of Dangerous Goods Regulations</i> in any of the classes listed in the schedule provided in the <i>Transportation of Dangerous Goods Act</i> .
<i>Environment</i>	The components of the Earth and includes (a) air, land and water, (b) all layers of the atmosphere, (c) all organic and inorganic matter and living organisms, and (d) the interacting natural systems that include components referred to in paragraphs (a) to (c) above.
<i>Lead Paint</i>	A paint or other similar structural coating material that contains lead and is used as an anti-corrosive or anti-weathering coating on the interior or exterior surfaces of any building; as an anti-corrosive or anti-weathering coating on equipment used for commercial, industrial, institutional or public purposes; as touch-up paint for metal surfaces or on traffic signs.
<i>Overcoating</i>	Removing loose paint and spot cleaning degraded painted surfaces, priming cleaned areas and applying a new coating over the primed surface.
<i>Minister</i>	The Minister of Environment of the Government of Nunavut.
<i>Qualified Person</i>	A person who has an appropriate level of knowledge and experience in all relevant aspects of waste management.
<i>Transport Authority</i>	The statute and regulations controlling the management of hazardous waste under that mode of transport. These include (a) Road and Rail - <i>Transportation of Dangerous Goods Act (Canada)</i> and <i>Regulations; Interprovincial Movement of Hazardous Waste Regulations</i> and <i>Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations</i> . (b) Air - <i>International Air Transport Association (IATA) Dangerous Goods Regulations</i> and <i>International Civil Aviation Organization (ICAO) Technical Instructions</i> ; and (c) Marine - <i>International Maritime Dangerous Goods Code (IMDG)</i> .
<i>Waste Lead</i>	Metallic lead, or a material comprised primarily of metallic lead, that is no longer wanted or is unusable for its intended purpose and is intended for storage, recycling, treatment or disposal. Examples include ammunition, lead-acid electrical storage batteries, lead solder, pipes, radiation shields and sheaths for electrical cable.

1.2 Roles and Responsibilities

1.2.1 Generators of Waste Lead and Lead Paint

Waste lead and lead paint must be safely managed at all time – or in other words from cradle-to-grave. The owner or person in charge, management or control of waste lead and lead paint is known as the responsible party. The responsible party must determine the nature of the waste, including whether it is hazardous or non-hazardous, before the waste can be disposed of. If the waste lead and lead paint exceed the criteria established in the Guideline, it must be managed as a hazardous waste. Further information on the management of hazardous waste in Nunavut, including generator, carrier and receiver responsibilities, can be obtained by referring to the *Environmental Guideline for the General Management of Hazardous Waste*.

Contractors may manage waste lead and lead paint on behalf of the responsible party. However, the responsible party remains liable for ensuring the method of management complies with all applicable statutes, regulations, standards, guidelines and community by-laws. If the contractor does not comply with the requirements of the *Environmental Protection Act* and is charged with a violation while managing the waste, the responsible party may also be charged.

1.2.2 Government of Nunavut

Department of Environment

The Environmental Protection Division is the key environmental agency responsible for ensuring parties properly manage waste lead and lead paint and will provide advice and guidance on its management. Authority is obtained from the *Environmental Protection Act*, which prohibits the discharge of contaminants to the environment and enables the Minister to undertake actions to ensure appropriate management measures are in place. Although programs and services are applied primarily to activities taking place on Commissioner's and community lands and to Government of Nunavut undertakings, the *Environmental Protection Act* may be applied to the whole of the territory where other controlling legislation, standards and guidelines do not exist. A complete listing of relevant legislation and guidelines can be obtained by contacting the Department of Environment or by visiting the web site at <http://env.gov.nu.ca/programareas/environmentprotection>.

Workers' Safety and Compensation Commission

The Workers' Safety and Compensation Commission is responsible for promoting and regulating worker and workplace health and safety in Nunavut. The Commission obtains its authority from the *Workers' Compensation Act* and *Safety Act* which require an employer to maintain a safe workplace and ensure the safety and well being of workers. The Workplace Hazardous Materials Information System, or WHMIS, requires information be provided to workers on the safe use of any hazardous material used in the workplace.

Department of Community and Government Services

The Department of Community and Government Services is responsible under the *Commissioner's Lands Act* for issuing land leases, reserves, licenses and permits on Commissioner's Lands. The Department, in cooperation with community governments, is also responsible for planning and funding solid waste and

sewage disposal facilities in most Nunavut communities. The Department's emergency planning responsibilities under the *Emergency Measures Act* include developing territorial emergency response plans, coordinating emergency operations at the territorial and regional levels and supporting community emergency response operations.

The Office of the Fire Marshal is responsible for ensuring the safe storage, handling and use of flammable and combustible liquids and materials and obtains its authority from the *Fire Prevention Act*, *National Fire Code* and *National Building Code*.

Department of Health and Social Services

Activities related to the management of waste lead and lead paint may have an impact on public health. The Office of the Chief Medical Officer of Health and Regional Environmental Health Officers should be consulted regarding legislated requirements under the *Public Health Act*.

Department of Economic Development and Transportation

The Motor Vehicles Division is responsible for ensuring the safe transport of hazardous waste and other dangerous goods by road through administration of the *Transportation of Dangerous Goods Act*. The Department is also responsible under the *Motor Vehicles Act* for driver licensing and various other vehicle and road safety matters.

1.2.3 Government of Canada

Environment Canada

Environment Canada and Health Canada are responsible for administering the *Canadian Environmental Protection Act*. Lead was one of the first substances to be added to the List of Toxic Substances in Schedule I of the *Act* and since then many regulations, codes of practice and guidelines have been adopted¹. Environment Canada is also responsible for regulating international and interprovincial movement of waste lead and lead paint through the *Interprovincial Movement of Hazardous Waste Regulations* and *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*. It is also responsible for administering the pollution prevention provisions of the federal *Fisheries Act*.

Aboriginal Affairs and Northern Development Canada

Aboriginal Affairs and Northern Development Canada is responsible under the *Territorial Lands Act* and *Nunavut Waters and Nunavut Surface Rights Tribunal Act* for the management of federal lands and waters in Nunavut, including the impact waste lead and lead paint may have on the quality of these lands and waters.

¹ In Canada, the concentration of lead present in paint applied to common consumer products is controlled by Health Canada through the *Surface Coating Materials Regulations* that have been adopted under the *Hazardous Products Act*.

1.2.4 Local communities and Co-management Boards

Local Community Governments

The role of community governments is important in the proper local management of waste lead and lead paint. Under the Nunavut Land Claims Agreement, communities are entitled to control their own solid waste and sewage treatment facilities. Unwanted waste may be deposited into community waste facilities only with the consent of the local government. The local fire department may also be called upon if a fire or other public safety issue is identified.

Co-management Boards and Agencies

Co-management boards and agencies established under the Nunavut Land Claims Agreement have broad authority for land use planning, impact assessment and the administration of land and water. Activities involving the management and disposal of waste lead and lead paint may be controlled through setting terms and conditions in plans, permits and licenses issued by the Nunavut Water Board, Designated Inuit Organizations responsible for land administration and other co-management boards and agencies.

Characteristics and Potential Effects of Lead and Lead Paint

2.1 Characteristics

Lead occurs naturally in the earth's crust. Although it is normally present only in trace amounts, significant concentrations have been found in the air, soil and water adjacent to lead mines, smelters, facilities that use lead in the manufacture of products and along highways.

Metallic lead is bright and silvery when freshly cut but the surface rapidly tarnishes in air to produce the commonly observed dull luster normally associated with lead. It is a dense, very soft and highly malleable bluish-grey metal that has poor electrical conductivity when compared to most other metals. Lead is resistant to corrosion, although it will slowly dissolve in water and other solutions if exposed for long periods of time. Because of these properties, lead was widely used in the manufacture of many consumer products such as pipes, sheeting, automobile parts, electronic equipment and pigments until regulatory controls designed to reduce Canadians' exposure to the metal were introduced starting in the 1970s. Lead is still used today in some products including lead-acid batteries and radiation shielding.

2.2 Potential Effects on Environment and Human Health

Lead is a particularly dangerous and toxic metal. It can enter water through runoff of lead-contaminated soils and from sewage and industrial waste streams. In the past, significant amounts of lead entered the environment through the use of leaded gasoline. Elevated levels of lead in water can damage the reproductive systems of aquatic organisms and cause blood and neurological changes in fish. Wildlife can ingest lead while grazing on plants or by consuming other animals that have been exposed to lead. Wildlife that has been exposed to lead can experience the same kinds of effects as humans. Low concentrations of lead in the soil can also slow down plant growth.

Short-term exposure to high concentrations of lead by humans can cause vomiting, diarrhea, convulsions, coma and even death. Although severe cases of lead poisoning are rare in Canada, ongoing exposure to small amounts of lead has been documented. This long-term exposure can result in anaemia and damage to the brain and nervous system. Other symptoms of lead exposure include loss of appetite, abdominal pain, constipation, fatigue, sleeplessness, irritability and headaches. Kidney function can be affected through continual exposure to high levels of lead, such as in an industrial setting. Unborn fetuses, infants and young children are especially sensitive to even low levels of lead and exposure can result in learning disabilities and lowered intelligence.

Waste Management

Minimizing or avoiding the creation of pollutants and wastes can be more effective in protecting the environment than treating or cleaning them up after they have been created.²

The following sections provide guidance on the removal and containment of lead paint debris and the storage, transportation and disposal of waste lead. Refer to the *Environmental Guideline for Waste Batteries* for guidance on the management of unwanted lead-acid batteries.

3.1 Pollution Prevention

The term 'pollution prevention' is used to describe methods and practices that minimize or eliminate the generation of waste. Pollution prevention opportunities for waste lead and lead paint include:

- Reduce*
- Replace lead-containing products with *EcoLogo*[®] certified products. The *EcoLogo*[®] Program is a third party environmental leadership standard setting and certification program. Founded by the Government of Canada and being part of the Underwriters' Laboratories (UL) Global Network, *EcoLogo*[®] is North America's largest and most respected environmental leadership certification mark. It helps consumers to identify products that can help minimize the use of environmentally hazardous substances, maximize the use of recycled or recyclable materials and increase energy efficiency. A complete listing of *EcoLogo*[®]-certified products is available for downloading at <http://www.ul.com/global/eng/pages/offerings/businesses/environment/services/certification/spc/index.jsp>.
 - Check the label before use to confirm old, stockpiled paint does not contain lead.
 - Encapsulate existing painted walls by overcoating with non-lead paint or by covering the surface with vinyl wallpaper, wallboard or paneling. Lead paint coated surfaces that are flaking or peeling must be repaired without delay to prevent further deterioration of the paint and release of paint chips. The Workers' Safety and Compensation Commission, Chief Medical Officer of Health and your Regional Environmental Health Officer must be consulted prior to encapsulating or removing lead paint.



Lead paint is no longer available for purchase in Canada as governments have regulated its sale and industry advances have resulted in the development of paints and coatings that provide superior drying, durability and corrosion resistance. Before painting, always prepare the surface to be painted in accordance with manufacturers' instructions. This will extend the life of the new product and reduce replacement costs.

The Steel Structures Painting Council has developed a series of guidance documents on surface preparation, coating application and other materials, technologies, and practices. A complete listing of these documents can be obtained through the Council's web site at <http://www.sspc.org/standards>.

² Source – Canadian Council of Ministers of the Environment.

3.2 Characterization and Regulatory Limit for Lead Paint

If lead paint is suspected of being present, laboratory testing must be undertaken prior to the commencement of work in order to confirm the presence or absence of lead. A one square inch sample of tightly adhered paint should be collected by scraping down to the metal surface. The sample should include all layers of the paint while being careful not to include any metal substrate.

The recommended leachate testing procedure is the United States Environmental Protection Agency Toxicity Characteristic Leaching Procedure (TCLP) Test Method 1311³. The procedure is designed to assess the mobility of organic and inorganic analytes by simulating material residing inside a landfill containing unsegregated waste. Any leachate collected from the test must then be analyzed for lead using methods contained in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*. Analysis must be conducted by a laboratory that has been formally recognized by the Canadian Association of Environmental Analytical Laboratories⁴ (CAEAL) as being competent to perform the specified tests.

Paint having a leachate value for lead of 5.0 milligrams per liter (mg/l) or more is a hazardous waste and must be managed in accordance with this Guideline and the *Environmental Guideline for the General Management of Hazardous Waste*⁵.

The TCLP procedure may be avoided where the lead concentration in paint is at such low level that the regulatory limit of 5 mg/l would not be exceeded. In this case the 'Rule of 20' can be applied: that is where the total lead concentration divided by twenty is less than or equal to the regulatory limit, the waste paint is considered non-hazardous⁶. Using the regulatory limit of 5 mg/l, the trigger value for total lead in paint is 100 mg/kg or 0.01%. Where the total concentration of lead is greater than 100 mg/kg or 0.01%, the waste is considered hazardous and must be managed in accordance with this Guideline and the *Environmental Guideline for the General Management of Hazardous Waste*. Alternatively, the owner or person in charge, management or control of the lead paint may carry out a TCLP on the material. If the resulting leachate value is less than or equal to 5 mg/l, the waste is considered non-hazardous.

3.3 Removal and Containment of Lead Paint

Proper surface preparation, including the removal of peeling or chipping paint, will ensure good coating adherence and long service life. In some cases, the removal of paint from the entire surface may be more beneficial over the long term than spot cleaning or overcoating. The owner of the facility should consider all relevant factors including age and operational life of the facility, condition of the existing paint and overall cost when deciding whether, and how, to repaint a major painted structure.

A number of lead paint removal and containment techniques are acceptable for use in Nunavut. Each method ensures abrasives and paint debris are not released to the environment. Table 1 describes some

³ Refer to US EPA Regulation 40CFR261.

⁴ CAEAL is a non-profit organization dedicated to raising the level of competency, consistency, capability and communication within environmental testing laboratories in Canada. Members of CAEAL voluntarily participate in programs of proficiency testing and accreditation.

⁵ 5 mg/l is consistent with the federal *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* and is recommended for use in Nunavut landfills by the Royal Military College Environmental Sciences Group (refer to p.14 for reference document).

⁶ Section 1.2 of the TCLP allows for a total constituent analysis in lieu of the TCLP extraction. If a waste is 100% solid, as defined by the TCLP method, the results of the total analysis may be divided by twenty to convert the total results into the maximum leachable concentration. This factor is derived from the 20:1 liquid-to-solid ratio employed in the TCLP.

of these techniques. The containment system must comply with the *Steel Structures Painting Council Guide 6(95): Guide for Containing Debris Generated during Paint Removal Operations*. A copy of the Guide can be obtained through the Council’s web site at <http://www.sspc.org/standards>.

Table 1.

Removal and Containment Technique	Description
Dry Adhesive Blast Cleaning, within Full Containment with Negative Pressure	Sand (silica) or recyclable metallic abrasives remove the existing paint while a sealed enclosure prevents abrasives and paint debris from escaping. An airlock or resealable entrance enables workers to enter and exit the enclosure without the escape of blasting residue. Filtration equipment is used to ensure exhaust air is free of dust and other airborne residue.
Vacuum Blast Cleaning, within Containment	A vacuum is attached to the abrasive blasting equipment to provide a closed-loop containment system during paint removal. The system is capable of separating the removed coating and returning clean abrasive to the working surface. Additional containment sheets are attached around and under the work area to contain abrasives and paint debris in the event of an accidental release from the vacuum shroud.
Vacuum-shrouded Power Tool Cleaning, within Containment	Power tools equipped with vacuums and High Efficiency Particulate Air (HEPA) filters are used to remove the existing paint. Similar to ‘Vacuum Blast Cleaning within Containment’, a secondary containment structure is placed under and around the work area to contain any residue materials that may not be captured by the vacuum shroud.
Power Tool Cleaning without Vacuum, within Containment	Power tools are used to remove the existing paint, but unlike “Vacuum-shrouded Power Tool Cleaning”, a completely sealed enclosure similar to ‘Dry Adhesive Blast Cleaning within Full Containment with Negative Pressure’ prevents the escape of residue materials.
Water Jetting or Wet Abrasives Blast Cleaning, within Containment	Water jetting, or wet adhesive blasting, removes the existing paint while an impermeable containment system captures all water wastes. The collected water is filtered to ensure lead concentrations do not exceed 5 milligrams per liter (5 parts per million) in accordance with the <i>Guideline for Industrial Waste Discharges into Community Solid Waste and Sewage Treatment Facilities</i> , or as specified in the applicable permit or license. Laboratory analysis results must be submitted to Nunavut’s Department of Environment and notification provided to the local community government prior to the water being discharged to a community sewage lagoon. Recycling the filtered water reduces the volume of waste generated.

The removal and containment of lead paint and lead paint debris should only be undertaken by trained and qualified persons. The names of qualified lead paint removal companies can be obtained by contacting the Workers’ Safety and Compensation Commission or the waste management exchanges and associations listed in Appendix 10 of the *Environmental Guideline for the General Management of Hazardous Waste*. The Workers’ Safety and Compensation Commission, Chief Medical Officer of Health and your Regional Environmental Health Officer must also be consulted during the planning phase to ensure all necessary worker and public health and safety measures are in place.

3.4 Storage

Storage refers to keeping waste lead and lead paint debris while awaiting its transport and disposal. Except under extraordinary circumstances, storage is not acceptable for the long-term management of waste and should be considered as a temporary measure only.

Waste lead and lead paint debris should be stored in the following manner:

- Store in plastic drums, 16 gauge or heavier steel drums or containers manufactured for this purpose. The containers should be sound, sealable, not damaged or leaking and placed on strong wooden pallets to make relocation with a forklift easier.
- Containers should be tightly sealed when not in use to avoid spills.
- Clearly label each container to identify its contents. If waste lead or lead paint debris is being stored in an institutional, commercial or industrial location or if the waste is being stored for transport, the containers must be labeled in accordance with the *Workplace Hazardous Materials Information System* and relevant Transport Authority.
- Place all labeled containers in a clearly marked and designated area located so as to be protected from the weather and any physical damage.
- Train workers in the safe storage and shipping procedures for waste lead and lead paint. Only trained personnel should have access to the storage area.

If the facility is used for commercial purposes to store hazardous waste for periods of 180 days or more or the quantity of waste lead or lead paint debris stored on-site exceeds the criteria set out in the *Environmental Guideline for the General Management of Hazardous Waste*⁷, the facility must be registered with the Department of Environment as a hazardous waste management facility. Copies of registration forms are available at <http://env.gov.nu.ca/programareas/environmentprotection/forms-applications> or by contacting Nunavut's Department of Environment. Refer to the *Environmental Guideline for the General Management of Hazardous Waste* for additional information on the registration process.

3.5 Transportation

Metallic lead is not classified as a dangerous good and is exempt from the requirements of the *Transportation of Dangerous Goods Act*. It must still however, be transported in a safe and secure manner (i.e. in sealable metal or plastic drums, securely tied to the bed of the truck or trailer) to prevent its release into the environment.

Lead paint is classified as a Class 9 Miscellaneous Waste under the *Transportation of Dangerous Goods Act* and its classification, packaging, labeling and placarding must conform to specific requirements while being transported. Schedule I of the *Regulations* classify lead paint debris as follows:

Shipping Name:	WASTE Environmentally Hazardous Substance, Solid, N.O.S.
	Classification: 9
	Product Identification Number: UN3077
	Packing Group: III
	Special Provision: 16

⁷ The criterion for UN3077 wastes, or for the aggregate quantity of all hazardous waste, is 5000 kilograms or liters.

The transport of lead paint debris by air must conform to the *International Air Transport Association (IATA) Dangerous Goods Regulations* and *International Civil Aviation Organization (ICAO) Technical Instructions*, while transport by marine must conform to the *International Marine Dangerous Goods Code*. Further information on transporting this waste can be obtained by contacting Transport Canada or referring to the appropriate Transport Authority.

Chemical stripping of lead paint produces both a lead leachable waste and a corrosive waste. While the disposal options are the same as for dry lead paint debris, the classification, packaging, labeling and placarding for transport must also reflect the corrosive nature of the waste. Consultation with Transport Canada or referral to the appropriate Transport Authority is encouraged.

Under the federal *Interprovincial Movement of Hazardous Waste Regulations* and *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*, no person may transport hazardous waste for the purpose of disposal or recycling in a quantity greater than five kilograms or five liters unless it is accompanied by a completed manifest. Manifest forms are available from Nunavut's Department of Environment and completion instructions are included on the reverse side of each manifest. Further information on manifesting can be obtained by referring to the *Environmental Guideline for the General Management of Hazardous Waste* or Environment Canada's *User's Guide for the Hazardous Waste Manifest*.

Hazardous waste generators, carriers and receivers operating in Nunavut must be registered with the Nunavut Department of Environment. A unique registration number is assigned to each registrant through the registration process, which enables completion of the manifest document. Copies of registration forms are available at <http://env.gov.nu.ca/programareas/environmentprotection/forms-applications> or by contacting Nunavut's Department of Environment. Refer to the *Environmental Guideline for the General Management of Hazardous Waste* for additional information on the registration process.

A listing of hazardous waste carriers, receivers and management facilities registered to operate in Nunavut is available by contacting Nunavut's Department of Environment.

3.6 Disposal

Waste lead and lead paint debris must never be thrown in the garbage or disposed of in a community landfill because of the toxic nature of the metal.

Some communities in Nunavut are implementing programs aimed at collecting and safely storing household hazardous wastes as part of their garbage collection programs. Homeowners wishing to dispose of lead products should contact their community government for local disposal options.

Any unwanted or end-of-life products containing lead that are generated by government, commercial, industrial and institutional facilities should be safely stored until they can be transported to a metals foundry, smelter or registered hazardous waste receiver that is licensed to accept waste lead and lead paint. Names of Canadian metal foundries, smelters and disposal companies are available by contacting the waste management exchanges and associations listed in Appendix 10 of the *Environmental Guideline for the General Management of Hazardous Waste*.

Advances in the stabilization and solidification of leachable lead waste are being made by industry. These chemical processes convert leachable lead waste (i.e. lead paint debris, soil contaminated with lead) to a non-leachable form by converting or binding the lead into a stable form. Proposals that can demonstrate the stabilization of leachable lead waste into a form that reduces Toxicity Characteristic Leaching Procedure (TCLP) lead levels to below the leachate value of 5.0 mg/l would be considered by the Department of Environment.

Conclusion

Lead is a particularly dangerous and toxic metal. While its low cost, malleability and poor electrical conductivity resulted in its use in a wide range of consumer and industrial products in the past, regulatory and non-regulatory initiatives began to be introduced in Canada in the 1970s that were intended to reduce Canadians exposure to the metal. Today, lead can still be found in many older products as well as lead-acid batteries and x-ray shielding equipment. Lead can also be found in older paints used to protect large steel structures such as bridges, water tanks and oil storage tanks from corrosion. The *Environmental Guideline for Waste Lead and Lead Paint* is an introduction to the management of waste lead and lead paint. It provides information on the characteristics of lead and lead paint, its possible effects on the environment and guidance on its proper containment and removal, storage, transportation and disposal.

Familiarity with the Guideline does not replace the need for the owner or person in charge, management or control of waste lead and lead paint to comply with all applicable federal and territorial legislation and community by-laws. The management of these materials may also be controlled through permits and licenses issued by Nunavut's co-management boards, Indian and Northern Affairs Canada and other regulatory agencies. These permits and licenses must be complied with at all times.

For additional information on the management of waste lead and lead paint, or to obtain a complete listing of guidelines, go to the Department of Environment web site or contact the Department at:

Environmental Protection Division
Department of Environment
Government of Nunavut
Inuksugait Plaza, P.O. Box 1000, Station 1360
Iqaluit, Nunavut X0A 0H0

Telephone: (867) 975-7729

Fax: (867) 975-7739

Email: EnvironmentalProtection@gov.nu.ca

Website: <http://env.gov.nu.ca/programareas/environmentprotection>

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<http://www.dot.state.il.us/bridges/gbsp26.pdf>

Steel Structures Painting Council Website.

<http://www.sspc.org>

United States Environmental Protection Agency. Method 1311 – Toxicity Characteristic Leaching Procedure.

<http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/1311.pdf>

APPENDICES

APPENDIX 1 - ENVIRONMENTAL PROTECTION ACT

The following are excerpts from the *Environmental Protection Act*

1. "Contaminant" means any noise, heat, vibration or substance and includes such other substance as the Minister may prescribe that, where discharged into the environment,
 - (a) endangers the health, safety or welfare of persons,
 - (b) interferes or is likely to interfere with normal enjoyment of life or property,
 - (c) endangers the health of animal life, or
 - (d) causes or is likely to cause damage to plant life or to property;

"Discharge" includes, but not so as to limit the meaning, any pumping, pouring, throwing, dumping, emitting, burning, spraying, spreading, leaking, spilling, or escaping;

"Environment" means the components of the Earth and includes

- (a) air, land and water,
- (b) all layers of the atmosphere,
- (c) all organic and inorganic matter and living organisms, and
- (d) the interacting natural systems that include components referred to in paragraphs (a) to (c).

"Inspector" means a person appointed under subsection 3(2) and includes the Chief Environmental Protection Officer.

- 2.2 The Minister may
 - (a) establish, operate and maintain stations to monitor the quality of the environment in the Territories;
 - (b) conduct research studies, conferences and training programs relating to contaminants and to the preservation, protection or enhancement of the environment;
 - (c) develop, co-ordinate and administer policies, standards, guidelines and codes of practice relating to the preservation, protection or enhancement of the environment;
 - (d) collect, publish and distribute information relating to contaminants and to the preservation, protection or enhancement of the environment:
3.
 - (1) The Minister shall appoint a Chief Environmental Protection Officer who shall administer and enforce this Act and the regulations.
 - (2) The Chief Environmental Protection Officer may appoint inspectors and shall specify in the appointment the powers that may be exercised and the duties that may be performed by the inspector under this Act and regulations.
5.
 - (1) Subject to subsection (3), no person shall discharge or permit the discharge of a contaminant into the environment.
 - (3) Subsection (1) does not apply where the person who discharged the contaminant or permitted the discharge of the contaminant establishes that
 - (a) the discharge is authorized by this Act or the regulations or by an order issued under this Act or the regulations;
 - (b) the contaminant has been used solely for domestic purposes and was discharged from within a dwelling house;
 - (c) the contaminant was discharged from the exhaust system of a vehicle;

- (d) the discharge of the contaminant resulted from the burning of leaves, foliage, wood, crops or stubble for domestic or agricultural purposes;
- (e) the discharge of the contaminant resulted from burning for land clearing or land grading;
- (f) the discharge of the contaminant resulted from a fire set by a public official for habitat management of silviculture purposes;
- (g) the contaminant was discharged for the purposes of combating a forest fire;
- (h) the contaminant is a soil particle or grit discharged in the course of agriculture or horticulture; or
- (i) the contaminant is a pesticide classified and labelled as "domestic" under the *Pest Control Products Regulations* (Canada).

(4) The exceptions set out in subsection (3) do not apply where a person discharges a contaminant that the inspector has reasonable grounds to believe is not usually associated with a discharge from the excepted activity.

- 5.1. Where a discharge of a contaminant into the environment in contravention of this Act or the regulations or the provisions of a permit or license issued under this Act or the regulations occurs or a reasonable likelihood of such a discharge exists, every person causing or contributing to the discharge or increasing the likelihood of such a discharge, and the owner or the person in charge, management or control of the contaminant before its discharge or likely discharge, shall immediately:
- (a) subject to any regulations, report the discharge or likely discharge to the person or office designated by the regulations;
 - (b) take all reasonable measures consistent with public safety to stop the discharge, repair any damage caused by the discharge and prevent or eliminate any danger to life, health, property or the environment that results or may be reasonably expected to result from the discharge or likely discharge; and
 - (c) make a reasonable effort to notify every member of the public who may be adversely affected by the discharge or likely discharge.
6. (1) Where an inspector believes on reasonable grounds that a discharge of a contaminant in contravention of this Act or the regulations or a provision of a permit or license issued under this Act or the regulations has occurred or is occurring, the inspector may issue an order requiring any person causing or contributing to the discharge or the owner or the person in charge, management or control of the contaminant to stop the discharge by the date named in the order.
7. (1) Notwithstanding section 6, where a person discharges or permits the discharge of a contaminant into the environment, an inspector may order that person to repair or remedy any injury or damage to the environment that results from the discharge.
- (2) Where a person fails or neglects to repair or remedy any injury or damage to the environment in accordance with an order made under subsection (1) or where immediate remedial measures are required to protect the environment, the Chief Environmental Protection Officer may cause to be carried out the measures that he or she considers necessary to repair or remedy an injury or damage to the environment that results from any discharge.

APPENDIX 2 – GOVERNMENT AND INDUSTRY CONTACTS

Government of Nunavut

Environmental Protection Division
Department of Environment
Inuksugait Plaza
P.O. Box 1000, Station 1360
Iqaluit, Nunavut X0A 0H0
Telephone: (867) 975-7729 Fax: (867) 975-7739

Motor Vehicles Division
Department of Economic Development and
Transportation
P.O. Box 10, NCC Building
Gjoa Haven, Nunavut X0B 1J0
Telephone: (867) 360-4615 Fax: (867) 360-4619

Workers' Safety and Compensation Commission
Qamutiq building, 2nd Floor
611 Queen Elizabeth Way
P.O. Box 669
Iqaluit, Nunavut X0A 0H0
Telephone: 1-877-404-4407 Fax: 1-866-979-8501

Department of Community and Government
Services (all Divisions)
P.O. Box 1000, Station 700
4th Floor, W.G. Brown Building
Iqaluit, Nunavut X0A 0H0
Telephone: (867) 975-5400 Fax: (867) 975-5305

Office of Chief Medical Officer of Health
Department of Health and Social Services
P.O. Box 1000, Station 1000
Iqaluit, Nunavut X0A 0H0
Telephone: (867) 975-5743

Government of Canada

Aboriginal Affairs and Northern Development
Canada
P.O. Box 2200
Iqaluit, Nunavut X0A 0H0
Telephone: (867) 975-4500
Fax: (867) 975-4560

Environment Canada (NWT and Nunavut)
5019 52nd Street
P.O. Box 2310
Yellowknife, Northwest Territories X1A 2P7
Telephone: (867) 669-4730
Fax: (867) 669-6831

Department of Transport – Road, Rail, Marine, Air
P.O. Box 8550
344 Edmonton Street
Winnipeg, Manitoba R3C 1P6
Telephone: 1-888-463-0521

Health Canada
Regional Product Safety Office
2301 Midland Avenue
Toronto, Ontario M1P 4R7
Telephone: 1-866-662-0666 (toll free)

Industry

Canadian Association for Environmental Analytical
Laboratories
300-265 Carling Avenue
Ottawa, Ontario K1S 2E1
Telephone: (613) 233-5300 Fax: (613) 233-5500

Steel Structures Painting Council
40 24th Street, 6th Floor · Pittsburgh PA 15222-
4656 USA
Telephone: 1-877-281-7772 (toll free)
Fax: (412) 281-9992