

## **Part 1      General**

### **1.1          SUMMARY**

- .1      As per Section 01 35 29 Health and Safety Requirements, the contractor must conduct a hazard assessment of the buildings, inspect/determine the structural integrity of the buildings, and develop safe working procedures to conduct all work including hazardous materials removal and disposal.
- .2      Comply with requirements of this Section when performing the following work during and/or prior to the demolition of Buildings 7, 10, 14, 17 and 18:
  - .1      Removing lead containing coatings from walls, ceilings, trim, doors, foundation walls, etc.
  - .2      Removal/demolition of lead containing paint coated building materials.
  - .3      Removal and disposal of lead-containing soil from the perimeter of the buildings.
- .3      Lead-containing soil to be removed from the perimeter of the buildings where samples exceed the Canadian Council of Ministers of the Environment (CCME) Commercial Soil Quality Guidelines (SQG).
  - .1      Refer to Appendix 5 - Soil Sampling Program.
  - .2      On perimeter sides that have sample exceedances of the CCME SQG, excavate and dispose of a 2 m wide, 0.150 m deep strip along the entire side of the building.
  - .3      Care must be taken to ensure that trees and roots are not disturbed during excavation.
  - .4      Dispose of at an approved waste facility.
  - .5      Backfill excavation with clean fill.
- .4      Lead based paint and lead leachate toxic paints have been identified in Buildings 7, 10, 14, 17 and 18 of the Agricultural and Agri-Food Canada (AAFC) Crops and Livestock Research Centre located at 440 University Avenue in Charlottetown, PEI. Locations of the lead based and lead leachate toxic paints identified are provided on Figures 1, 2, 3, 4 and 5B of the report *Hazardous Building Materials Survey, AAFC Crops and Livestock Research Centre, 440 University Avenue, Charlottetown, PEI, Buildings 7, 10, 14, 17 and 18*. Prepared by LVM / Maritime Testing, March 6, 2013. (Included in Appendix A).

- .5 All paint and painted materials with a total lead concentration greater than 90 mg/kg (ppm) exceed the *Surface Coating Materials Regulation* under the Hazardous Products Act and must be handled in accordance with these specifications.
- .6 Disposal options for lead based paint and lead leachate toxic paints are as follows:
  - .1 Painted materials with lead concentrations below 1,000 mg/kg may be disposed of at a Construction and Demolition (C&D) Disposal Site.
  - .2 Painted materials or paint chips with lead concentrations above 1,000 mg/kg but with a lead leachate concentration below 5 mg/L may be disposed of at the East Prince Waste Management Facility.
  - .3 Painted materials or paint chips with a lead leachate concentration above 5 mg/L must be transported out of province by a hazardous waste disposal firm to an approved facility.
- .7 Comply with requirements of this Section when performing the following Work:
  - .1 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap on walls and ceilings as indicated in **Section 1.7.3** and in reports included in Appendix A.
  - .2 Removal of lead-containing coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter on walls and ceilings as indicated in **Section 1.7.3** and in reports included in Appendix A.
  - .3 Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding on walls and ceilings as indicated in **Section 1.7.3** and in reports included in Appendix A.

## 1.2 RELATED REQUIREMENTS

- .1 01 00 10 - General Instructions.
- .2 01 14 25 - Designated Substances.
- .3 01 35 29.06 - Health and Safety Requirements.
- .4 01 35 44 - Environmental Procedures.
- .5 02 41 16 -Structure Demolition.
- .6 02 82 00.01 - Asbestos Abatement - Minimum Precautions

- .7 02 82 00.02- Asbestos Abatement - Intermediate Precautions
- .8 02 82 00.03 - Asbestos Abatement - Maximum Precautions
- .9 02 85 00.02 - Mould Remediation

### 1.3 REFERENCES

- .1 Department of Justice Canada
  - .1 Canadian Environmental Protection Act, 1999 (CEPA).
  - .2 Hazardous Products Act, 1985
    - .1 Surface Coating Materials Regulation, SOR/2005-109
- .2 Health Canada
  - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
- .3 Human Resources and Social Development Canada (HRSDC)
  - .1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .4 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .5 Prince Edward Island Department of Environment, Labour and Justice (PEIELJ)
  - .1 Policy for the Disposal of C&D Material Suspected of Lead Paint Contamination - May 2006
- .6 Prince Edward Island Occupational Health & Safety Act (OSHA).
  - .1 PEI Reg. Part 49 - Asbestos Regulations
- .7 Ontario Ministry of Labour
  - .1 Lead on Construction Products Guideline, April 2011 (rev).
- .8 U.S. Environmental Protection Agency (EPA)
  - .1 EPA 747-R-95-007-[1995], Sampling House Dust for Lead.
- .9 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)
  - .1 NIOSH 94-113 - NIOSH Manual of Analytical Methods (NMAM), 4th Edition (1994).
- .10 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances

- .1 Lead in Construction Regulation - 29 CFR 1926.62-[1993].
- .11 Underwriters' Laboratories of Canada (ULC)
- .12 LVM Maritime Testing.
  - .1 Hazardous Building Materials Survey, AAFC Crops and Livestock Research Centre, 440 University Avenue, Charlottetown, PEI, Buildings 7, 10, 14, 17 and 18, March 6, 2013.
- .13 Stantec Consulting Limited.
  - .1 Lead-Based Paint Sampling - AAFC Crops and Livestock Research Centre (Buildings #7 and #18), Charlottetown, PEI, August 9, 2013.
  - .2 Summary of Hazardous Materials- Buildings 7, 10, 14, 17, 18, August 2013.
- .14 AMEC (Available on Request).
  - .1 Soil Sampling Program, Buildings 7, 10, 14, 17, and 18 AAFC Crops and Livestock Research Centre (CLRC), 440 University Avenue, Charlottetown, Queens County, PEI, DFRP # 02024.
- .15 MGI Limited (Available on Request).
  - .1 Hazardous Building Materials Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Impact Assessment, AAFC Crops and Livestock Research Centre, Building 7 (5 Car Garage), Charlottetown, PEI, June 2004.
  - .2 Hazardous Building Materials Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Impact Assessment, AAFC Crops and Livestock Research Centre, Building 10 (Pea Viner Storage), Charlottetown, PEI, June 2004.
  - .3 Hazardous Building Materials Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Impact Assessment, AAFC Crops and Livestock Research Centre, Building 14 (Small Equipment Storage), Charlottetown, PEI, June 2004.
  - .4 Hazardous Building Materials Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Impact Assessment, AAFC Crops and Livestock Research Centre, Building 17 (Apple House), Charlottetown, PEI, January 2005.

- .5 Hazardous Building Materials Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Impact Assessment, AAFC Crops and Livestock Research Centre, Building 18 (Horticulture Building), Charlottetown, PEI, January 2005.

#### **1.4 DEFINITIONS**

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Authorized Visitors: Public Works and Government Services Canada (PWGSC), Agriculture and Agri-Food Canada (AAFC), Environmental Consultant, representatives of regulatory agencies and any visitor approved by PWGSC and/or AAFC.
- .3 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects over cuts and tears, and elsewhere as required to provide protection and isolation. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.
- .4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.
- .5 Action level: employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m<sup>3</sup>) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic meter of air for removal of lead based paint by methods noted in paragraph 1.1.
- .6 Competent person: Individual capable of identifying existing lead hazards in workplace and taking corrective measures to eliminate them.
- .7 Lead dust: wipe sampling on vertical surfaces and/or horizontal surfaces, dust and debris is considered to be lead contaminated if it contains more than 40 micrograms of lead in dust per square foot.

#### **1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit proof satisfactory to the Departmental Representative that suitable arrangements have been made to

dispose of lead based paint waste in accordance with requirements of authority having jurisdiction.

- .2 Provide proof of Contractor's General Environmental Liability Insurance.
- .3 Quality Control:
  - .1 Provide Departmental Representative necessary permits for transportation and disposal of lead leachate "toxic" paint waste and proof that lead based paint waste has been received and properly disposed (e.g. Special Waste Permit from East Prince Waste Management Facility for non-lead leachate toxic paint and with lead concentrations over 1,000 mg/kg).
  - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.

#### **1.6 QUALITY ASSURANCE**

- .1 Regulatory Requirements: comply with Federal and Provincial requirements pertaining to lead paint, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
  - .2 Safety Requirements: worker and visitor protection.
    - .1 Protective equipment and clothing to be worn by workers and visitors in work Area include:
      - .1 Respirator NIOSH approved and equipped with replaceable HEPA filter cartridges with an assigned protection factor of 50, acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure. Provide sufficient amount of filters.
      - .2 Half mask respirator: half-mask particulate respirator with P - series filter, and 99.97 % efficiency could be provided.
    - .2 Eating, drinking, chewing, and smoking are not permitted in work area.

.3 Ensure workers wash hands and face when leaving work area.

.4 Visitor Protection:

.1 Provide approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors procedures to be followed in entering and exiting work area.

## 1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.

.2 Disposal of lead containing paint and lead leachate toxic waste generated by removal activities must comply with Federal, Provincial and Municipal regulations. Dispose of lead leachate toxic waste in sealed double thickness 6 mil bags or leak proof drums. Label containers with appropriate warning labels. A summary of lead waste and subsequent disposal requirements are as follows:

.1 Building 7:

.1 Loose white paint chips on the exterior wood trims and masonry block walls exceeds the PEIELJ disposal guidelines and is lead leachate toxic. Prior to any demolition, remove "loose" white paint chips or "flaking" white paint and dispose of at an "out of province" disposal site through the services of an approved hazardous waste disposal company.

.2 White paint well adhered to wooden substrates (exterior trims, soffits, etc.) exceeds the PEIELJ disposal guidelines and must (i.e. paint and wood substrate) be disposed of at the East Prince Waste Management Facility.

.3 White paint well adhered to masonry block or concrete substrates meet the PEIELJ disposal guidelines and can be disposed of at a registered C&D Disposal Facility.

.2 Building 10:

.1 Green painted building materials on interior walls exceeds the PEIELJ disposal guidelines and must be disposed of at the East Prince Waste Management Facility.

- .2 All other painted building materials meet the PEIELJ disposal guidelines and can be disposed of at a registered C&D Disposal Facility.
- .3 Building 14:
  - .1 White and black painted building materials on exterior surfaces, and brown paint on interior 2<sup>nd</sup> floor shelving exceed the PEIELJ disposal guidelines and must be disposed of at the East Prince Waste Management Facility.
  - .2 All other painted building materials meet the PEIELJ disposal guidelines and can be disposed of at a registered C&D Disposal Facility.
- .4 Building 17:
  - .1 White painted building materials on exterior surfaces exceeds the PEIELJ disposal guidelines and must be disposed of at the East Prince Waste Management Facility.
  - .2 All other painted building materials meet the PEIELJ disposal guidelines and can be disposed of at a registered C&D Disposal Facility.
- .5 Building 18:
  - .1 White painted building materials (with wood substrate) on the exterior walls exceed the PEIELJ disposal guidelines and are lead leachate toxic. Prior to any demolition, remove white painted wooden trims, doors, soffits, canopies, siding, etc. on the exterior of the building and dispose of at an "out of province" disposal site through the services of an approved hazardous waste disposal company.
  - .2 Exterior grey paint on foundation walls, steps and exterior doors; red paint on interior stairs meet the PEIELJ disposal guidelines and can be disposed of at a registered C&D Disposal Facility.
  - .3 All other painted surfaces exceed the PEIELJ disposal guidelines and must be disposed of at the East Prince Waste Management Facility. Note: Interior plaster and gyproc walls (i.e. drywall joint compound) contain asbestos and require removal and disposal precautions as outlined in Section 02 82 00.03.



- .3 Provide manifests describing and listing waste created. Transport containers by approved means to licensed out of province disposal site.

#### **1.8 EXISTING CONDITIONS**

- .1 Reports and information pertaining to lead based paint to be handled, removed, or otherwise disturbed and disposed of during this Project are outlined in the reports listed in Sections 1.3.12, 1.3.13 and 1.3.14.
- .2 Notify Departmental Representative of lead based paint discovered during Work and not apparent from drawings, specifications, or reports pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

#### **1.9 SCHEDULING**

- .1 Not later than ten days before beginning Work on this Project notify following in writing:
  - .1 Workers Compensation Board of Prince Edward Island.
  - .2 Disposal Authorities.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.

#### **1.10 PERSONNEL TRAINING**

- .1 Provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures, and in use, cleaning, and disposal of respirators.
- .2 Instruction and training related to respirators includes, at minimum:
  - .1 Proper fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

## **Part 2      Products**

### **2.1          MATERIALS**

- .1 Polyethylene 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 FR polyethylene: 0.15 mm woven fibre reinforced fabric bonded both sides with polyethylene.
- .3 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.
- .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual lead paint residue.
- .5 Lead waste containers: metal or fibre type acceptable to dump operator with tightly fitting covers and 0.15 mm thickness sealable polyethylene liners.
  - .1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

## **Part 3      Execution**

### **3.1          SUPERVISION**

- .1 One Supervisor for every ten workers is required.
- .2 Supervisor must remain within work area during disturbance, removal, or handling of lead based paints.

### **3.2          PREPARATION**

- .1 Remove and store items to be salvaged or reused.
  - .1 Protect and wrap items and transport and store in area specified by Departmental Representative.
- .2 Work Area:
  - .1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.
  - .2 Pre-clean fixed casework and equipment within work area, using HEPA vacuum and cover and seal with polyethylene sheeting and tape.

- .3 Clean work area using HEPA vacuum. If not practicable, use wet cleaning method. Do not raise dust.
- .4 Seal off openings with polyethylene sheeting and seal with tape.
- .5 Protect floor surfaces covered from wall to wall with polyethylene sheets.
- .6 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.
- .7 Where water application is required for wetting lead containing materials, provide temporary water supply appropriately sized for application of water as required.
- .8 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.
- .3 Do not start work until:
  - .1 Arrangements have been made for disposal of waste.
  - .2 Tools, equipment, and materials waste containers are on site.
  - .3 Arrangements have been made for building security.
  - .4 Notifications have been completed and preparatory steps have been taken.

### 3.3 LEAD ABATEMENT

- .1 If lead paint or lead painted materials are to be removed prior to demolition then comply with the following:
  - .1 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap; or removal equipped with HEPA filters; or removal using wet method to be used to reduce dust generation (i.e. wetting surfaces, wet scraping, etc.).
  - .2 Remove lead based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags and place in labelled containers for transport.
  - .3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to staging area. Clean external surfaces thoroughly again by wet sponging. Wash containers thoroughly pending removal to outside. Ensure

containers are removed by workers who have entered from uncontaminated areas dressed in clean coveralls.

- .4 After completion of stripping work, wire brush and wet sponge surface from which lead based paint has been removed to remove visible material. During this work keep surfaces wet.
- .5 If lead paint is removed from a substrate material prior to disposal, all visible lead containing paint should be removed. Small amounts that cannot be easily removed may be left on substrate material upon approval from Departmental Representative.
- .2 After wire brushing and wet sponging to remove visible lead based paint, and after encapsulating lead containing material impossible to remove, wet clean entire work area, and equipment used in process. After inspection by Departmental Representative or Consultant apply continuous coat of slow drying sealer to surfaces of work area. Do not disturb work area for 8 hours no entry, activity, ventilation, or disturbance during this period.

### **3.4 INSPECTION**

- .1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Departmental Representative or Consultant will result in work stoppage, at no cost to Owner.
- .2 Departmental Representative and/or Consultant will inspect work for:
  - .1 Adherence to specific procedures and materials.
  - .2 Final cleanliness and completion.
  - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 Building materials to be disposed of at a C&D facility may require a visual assessment prior to disposal.