

**Part 1            General**

**1.1                REFERENCES**

1.    Transportation of Dangerous Goods Act, 1992 (TDGA).
2.    Canada Consumer Product Safety Act.
  1.    Surface Coating Materials Regulations SOR/2005-109.
3.    Canadian Environmental Protection Act, 1999 (CEPA).
  1.    PCB Regulations (SOR/2008-273).
  2.    Federal Halocarbon Regulations, 2003 (SOR/2003-289).
4.    Provincial Legislation
  1.    Ontario Occupational Health and Safety Act, R.S.O. 1990
    1.    Ontario Regulation 490/09 – Designated Substances (O.Reg. 490/09).
    2.    Ontario Regulation 278/05 – Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, (O.Reg. 278/05).
    3.    Ontario Regulation 213/91 for Construction Projects (O.Reg. 213/91).
  2.    Ontario Environmental Protection Act, R.S.O. 1990
    1.    Ontario Regulation 347, General – Waste Management (R.R.O. 1990, Reg. 347)
    2.    Ontario Regulation 362 – Waste Management, PCBs (R.R.O. 1990, Reg. 362)
    3.    Ontario Regulation 463/10, Ozone Depleting Substances and Other Halocarbons (O.Reg. 463/10).
  3.    Quebec An Act Respecting Occupational Health and Safety, c. S-2.1
    1.    Quebec Regulation Respecting Occupational Health and Safety, c. S-2.1, r. 13
  4.    Quebec Environmental Quality Act, c. Q-2
    1.    Quebec Regulation Respecting Hazardous Materials, c. Q-2, r.32
  5.    Canadian General Standards Board (CGSB).
  6.    Canadian Standards Association (CSA International). CAN/CSA-Z94.4-11 Respiratory Protection.
  7.    Underwriters' Laboratories of Canada (ULC).
  8.    Designated Substance Report, Alexandra Bridge Areas Coating Project, Ottawa, Ontario, January 2016.

**1.2                DEFINITIONS**

1.    HEPA vacuum: High Efficiency Particulate Arrestor 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. Time-weighted average exposure limit (TWAEL): the time-weighted average airborne concentration of a biological or chemical agent to which a worker may be exposed in a work day or work week as prescribed by O.Reg. 490/09 Designated Substances, as amended.

### **1.3 INCLUSIONS**

1. The work under this section will not be measured and is deemed to be included in the cost for the work associated to Section 02 42 13 – Selective Site Demolition, and Section 05 12 33 – Structural Steel for Bridges. The costs associated to the management and disposal of lead containing paint shall assume that the waste material will be non-hazardous (spent material that is tested to be non-leachate toxic). In the event that the spent material is tested to be leachate toxic, payment of any costs for the disposal of the spent material as hazardous waste, that are additional to those for disposal as non-hazardous solid industrial waste, shall be paid as Extra Work after receipt of disposal weigh ticket(s).

### **1.4 DESIGNATED SUBSTANCES**

1. Refer to the following “Designated Substances Report, Alexandra Bridge Areas Coating Project, Ottawa, Ontario” dated January 15, 2016.
2. All Contractors requesting tenders from subcontractors shall furnish this report to subcontractors.
3. Confirm with the Departmental Representative that no additional designated substances have been brought to the project area prior to beginning work.
4. Additional designated substances and hazardous materials may exist outside the accessible survey area but are beyond the scope of this project.
5. Should any additional material, suspected to be a designated substance, be encountered within the project area, any disturbance of such material must be stopped, precautionary measures taken, and the Departmental Representative must be notified immediately. Do not proceed until written instructions have been received.
7. ACRYLONITRILE: Not Identified
8. ARSENIC: Not Identified
9. ASBESTOS: Not Identified
10. BENZENE: Not Identified
11. COKE OVEN EMISSIONS: Not Identified
12. ETHYLENE OXIDE: Not Identified
13. ISOCYANATES: Not Identified
14. LEAD: Identified
  1. Based on the results of the paint samples collected in 2012 from beams 13C and 15C, lead content in beams dark grey/green paints were greater than the 90 ppm threshold as outlined in the Canada Consumer Product Safety Act’s Surface Coating Materials Regulations SOR/2005-109 (as amended). These dark grey/green paints are considered lead based paints.
  2. Furthermore, all of the existing bridge surfaces have originally been covered with paint containing lead. Although the vast majority of this painting has been removed during the previous repainting projects, the contractor must consider in his bid that

the items affected by the work, particularly the structure assemblies, are likely to be covered in whole or in part, by one or more coats of paint containing high concentrations of lead or present debris accumulations containing high lead content. The Report “Designated Substances Report, Alexandra Bridge Areas Coating Project” should be consulted for lead concentrations details found in the collected samples.

15. MERCURY: Not Identified
16. SILICA: Identified
  1. Silica occurs as crystalline material in cement, and is presumed present in the concrete median on the Quebec approach and in the concrete bearing seats of piers 2 and 3. Silica dust can be generated via such processes as grinding and crushing.
17. VINYL CHLORIDE MONOMER: Not Identified
18. POLYCHLORINATED BIPHENYLS (PCBS): Not Identified
19. OZONE DEPLETING SUBSTANCES (ODS): Not Identified

## **1.5 SPECIAL HANDLING MATERIALS**

1. BIRD DROPPINGS: Identified
  - .1 In addition to the above noted designated substances, bird droppings and nest detritus have been noted on the existing structure. Health risks may arise from disease organisms that grow in nutrient rich accumulations of bird droppings.
  - .2 Although not regulated in Canada, the New Jersey Department of Health and Senior Services has issued a document entitled “Control of Health Hazards Associated with Bird and Bat Droppings” (April 2000). The document notes that the most serious health risks associated with bird and bat droppings arise from disease organisms that grow in the nutrient-rich accumulations of bird droppings, feathers and debris under a roost—particularly if roosts have been active for years. It is noted that among the potential health risks there are fungal diseases associated with bird and bat droppings with the two most common being histoplasmosis and cryptococcosis.
  - .3 The New Jersey Department of Health and Senior Services notes that to reduce the health risks associated with the removal of droppings various methods have been developed. When an accumulation of bat or bird manure is discovered in a building, removing the material is not always the next step. Simply leaving the material alone if it is in a location where no human activity is likely may be the best course of action. This is not always possible, of course, and, if the potential for human exposure exists, methods of safely controlling the risks during removal must be undertaken.

## 1.6 RECOMMENDATIONS

### 1. LEAD

- .1 While performing works that may disturb lead-containing materials, comply with:
  1. Ontario Occupational Health and Safety Act, R.S.O. 1990, 2016 edition.
  2. Ontario Regulation 490/09 – Designated Substances (O.Reg. 490/09).
  3. Quebec An Act Respecting Occupational Health and Safety, c. S-2.1
  4. Quebec Regulation Respecting Occupational Health and Safety, c. S-2.1, r. 13
- .2 Proper precautions must be implemented to ensure that workers are not exposed to airborne lead dust levels in excess of the time-weighted average limit and exposure limit for lead.
- .3 Follow recommendations provided in the Ontario Ministry of Labour (MoL) Guideline entitled “Guideline: Lead on Construction Projects”. This document classifies all disturbances of lead-containing materials as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, based on presumed airborne concentrations of lead generated during the work each of which will have defined work practices. Although this document is not a regulation, Ministry of Labour Inspectors uses it as guidance during site inspections.
- .4 Applicable criteria should be applied and the necessary protective equipment should be worn to reduce the risk of lead-dust inhalation to any workers. It should be noted that the use of mechanically powered tools or torches on lead-based materials increases the concentration of airborne lead dust or fumes and therefore require more stringent respiratory protection and controlled work procedures.
- .5 Disposal of construction waste containing lead must be done in accordance with:
  1. Ontario Environmental Protection Act, R.S.O. 1990
  2. Ontario Regulation 347, General – Waste Management (R.R.O. 1990, Reg. 347)
  3. Quebec Environmental Quality Act, c. Q-2
  4. Quebec Regulation Respecting Hazardous Materials, c. Q-2, r.32
- .6 In order to determine the means of disposal for the lead paint debris, a leachate test must be completed.
- .7 Any shipments of hazardous waste must be conducted in compliance with:
  1. Federal Transportation of Dangerous Goods Act, 1992 (TDGA).

### 2. SILICA

1. Silica dust can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material. Silica is presumed present in the concrete median on the Quebec approach and concrete bearing seats of Piers 2 and 3, and therefore, utilize appropriate respiratory protection and provide adequate ventilation during the demolition and modifications of the median.
2. Wet silica-containing areas prior to being disturbed and provide daily wet

sweeping as required to minimize generation of dust.

3. Provide workers with appropriate respiratory protection and utilize ventilation during disturbance of silica-containing materials. Refer to the Ontario Guideline – Silica on Construction Projects (September 2004) for additional recommendations.
4. The Occupational Health and Safety Branch of the Ministry of Labour have published the document entitled Guideline: Silica on Construction Projects. This document classifies the disturbance of materials containing silica as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. Follow these work procedures when performing work involving the disturbance of silica-containing materials.

### 3. BIRD DROPPINGS

1. It is recommended that disturbance of the bird droppings be minimized to the extent possible.
2. Where removal is required mitigation measures intended to protect the health and safety of workers is identified below:
  1. Inform workers of the personal risk factors that increase an individual's chances of developing fungal diseases associated with nutrient rich accumulations of bird droppings and nest detritus that have been noted on the existing structure.
  2. If removal of bird droppings is required, implement work practices and dust control measures to reduce or eliminate dust generation. Small amounts of removal may be cleaned up with a 10% bleach-water mixture, which is not at any time permitted to enter the watercourse.
  3. Provide appropriate respiratory gear to workers to avoid inhalation of contaminated dust during the removal of bird nests. Protective clothing (coveralls, gloves, etc.) is recommended to avoid skin contact with bird droppings and other debris, which may harbour disease organisms and/or ectoparasites.
3. Best practices will include removing necessary bird droppings to the extent possible when dry, and only using the bleach solution for hand-washing.
4. For reference, Canadian Water Quality Guidelines for the Protection of Aquatic Life provide a guideline of 0.5 µg/L for reactive chlorine, and the MOE's Provincial Water Quality Objectives provide a criteria of 2 µg/L for total residual chlorine. The concentration of chlorine in the proposed wash water, exceeds the Canadian and Ontario water quality criteria, and is above concentrations associated with acute toxicity to fish and invertebrates. It is therefore required to take all necessary precautions ensuring that such a solution does not enter the Ottawa River, particularly through spills or other accidental releases.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not used.

## **Part 3 Execution**

**3.1 NOT USED**

.1 Not used.

**END OF SECTION**