

DESIGNATED SUBSTANCE REPORT

PART 1 – GENERAL

1.1 Regulatory Requirements

- .1 An investigation into the presence of designated substances at the Des Joachims Bridge was performed in order to meet the requirements of the Canada Labour Code under Part II, section 124 which stipulates that every employer shall ensure that the health and safety at work of every person employed by the employer is protected and those employees are made aware of every “known or foreseeable health or safety hazard” in the work environment. Also, it was performed to meet the requirements of Section 30 of the *Ontario Occupational Health and Safety Act, Revised Statutes of Ontario, 1990, Chapter 0.1*. By having a Designated Substances Report (DSR) conducted, the Departmental Representative will be able to inform his or her employees, contractors, and tenants of any designated substances that may be present and possibly disturbed throughout the duration of the project. The informed Departmental Representative will then be able to impose appropriate health and safety precautions for all applicable personnel as required. The *Guide to Green Government* sets out the policy requirements for the federal government to meet or exceed federal environmental statutes and regulations, and the emulation of best practices from the public and private sector. Within the *Guide to Green Government*, pollution prevention efforts are required in federal projects. Pollution prevention is defined as the use of processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and waste, and reduce overall risk to human health and environment. These policies must be adhered to throughout the duration of the Des Joachims Painting and Steel Repairs Project at the Des Joachims Bridge.
- .2 The designated substances identified in the *Occupational Health and Safety Act* and its corresponding regulations are:
 1. **Acrylonitrile:** “Designated Substance – Acrylonitrile” *O.Reg 835* (as amended by *O.Reg 490/09*)
 2. **Arsenic:** “Designated Substance – Arsenic” *O.Reg 836* (as amended by *O.Reg 490/09*)
 3. **Asbestos**
 1. “The Regulation Respecting Asbestos” *O.Reg 837* (as amended by *O.Reg 490/09*)
 2. “General – Waste Management” *O.Reg 347* (as amended by *O.Reg 337/09*)

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3. “Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations” *O.Reg 278/05* (as amended by *O.Reg 493/09*)
4. *PWGSC Departmental Policy DP 057 – “Asbestos Management”*
4. **Benzene:** “Designated Substance – Benzene” *O.Reg 839* (as amended by *O.Reg 490/09*)
5. **Coke Oven Emissions:** “Designated Substance – Coke Oven Emissions” *O.Reg 840* (as amended by *O.Reg 490/09*)
6. **Ethylene Oxide:** “Designated Substance – Ethylene Oxide” *O.Reg 841* (as amended by *O.Reg 490/09*)
7. **Isocyanates:** “Designated Substance – Isocyanates” *O.Reg 842* (as amended by *O.Reg 490/09*)
8. **Lead:**
 1. “Designated Substance – Lead” *O.Reg 843* (as amended by *O.Reg 490/09*)
 2. “General – Waste Management” *O.Reg 347* (as amended by *O.Reg 337/09*)
 3. Hazardous Products Act’s *Regulations Amending the Surface Coating Materials Regulations* SOR/2010-224
9. **Mercury:**
 1. “Designated Substance – Mercury” *O.Reg 844* (as amended by *O.Reg 490/09*)
 2. “General – Waste Management” *O.Reg 347* (as amended by *O.Reg 337/09*)
10. **Silica:** “Designated Substance – Silica” *O.Reg 845* (as amended by *O.Reg 490/09*)
11. **Vinyl Chloride:** “Designated Substance – Vinyl Chloride” *O.Reg 846* (as amended by *O.Reg 490/09*)
- .3 All contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

1.2 Validity Date

- .1 El Houcine Faouzi, Environmental Analyst of the Environmental Services Directorate of the Real Property Branch, PWGSC, conducted the on-site survey for this report on 2011/05/18.

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- .2 The work area is located at the Des Joachims Bridge located between Rolphton in Ontario and Rapides-des Joachims in Quebec. The scope of the work proposed is understood to consist of repairing selected stringers and composite floor beams; repairing paint coating on various components below the roadway deck or painting of all components below the roadway deck; repairing or replacing bottom lateral bracing; providing erosion control at the Ontario abutment, and repairing the Ontario approach guardrail flex beam.
1. The scope of work for this report involved a visual inspection of bridge materials and contents for the presence of suspected designated substances in the project areas on 2011/05/18.
 2. From the visual inspection suspect materials were sampled and analyzed, where appropriate, for the above substances. On the basis of this inspection, a total of five (5) samples of suspected lead-containing materials were collected on 2011/05/18. Samples were then submitted for analysis to the EXOVA Accutest Laboratory (an accredited CAEAL lab) located at 146 Colonnade Road, Nepean, Ontario, K2E 7Y1.
 3. The surveys were limited to those areas, which could be accessed by non-destructive means. The visual inspection and sampling was limited to readily accessible areas. Due to the nature of the structure, some inherent limitations exist as to the possible thoroughness of the designated substance survey. No confined space was accessed for the purpose of this report.
 4. No other areas outside the defined work boundaries have been assessed.
 5. Prior to beginning work, it must be confirmed with the Departmental Representative that no additional designated substances have been brought to the project area.
 6. In addition, the survey refers to PCBs and halocarbons; however, it does not refer to other substances that may be present in the day-to-day usage for specialized equipment or areas in buildings (i.e. lead shields, fume hoods, etc.).
 7. There is a possibility that materials which could not be reasonably identified within the scope of this assessment or which were not apparent during previous site visits may exist. Should any designated substance be encountered in the course of demolition, work must be stopped, preventative measures taken, and the Departmental Representative must be notified immediately. **Do not proceed until written instructions have been received.**

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PART 2 – PRODUCTS

2.1 Survey Results

- .1 **ACRYLONITRILE:** Not Identified
- .2 **ARSENIC:** Not Identified
- .3 **ASBESTOS:** Not Identified
- .4 **BENZENE:** Not Identified
- .5 **COKE OVEN EMISSIONS:** Not Identified
- .6 **ETHYLENE OXIDE:** Not Identified
- .7 **ISOCYANATES:** Not Identified
- .8 **LEAD:** Not Identified

Lead is a naturally occurring metal. It was used primarily in paint prior to the 1980's to increase the drying process. Lead in paint becomes a danger when it is old or damaged, as it creates lead dust and chips. Lead can also be found in soldered joints installed on piping up to the mid 1990s and in older cast iron bell and spigot joints.

1. According to the Hazard Products Act's *Regulations Amending the Surface Coating Materials Regulations* SOR/2010-224 allowable concentration of lead in surface coatings is 0.009 percent by weight (weight of lead to weight of paint), which is equivalent to 90 parts per million (ppm).
2. Representative paint and rust samples, taken on 2011/05/18 from the project area, have been analyzed for lead content. Analytical results indicate that paints and rust in the project area are not considered to be 'lead-based' as per the aforementioned Regulation. The results are shown in Table 1 below.

Table 2 - Lead Sample Results

Sample number	Description	Location	Lead Content (ppm)
JOAMCH-Pb-1	Green paint	On the floor beam, Quebec side	n/d
JOAMCH-Pb-2	Green paint	On the abutment beam, Quebec side	n/d
JOAMCH-Pb-3	Rust	On the bracing, Quebec side	n/d
JOAMCH-Pb-4	Green paint	On the bottom chord, downstream	n/d
JOAMCH-Pb-7	Rust	On the bottom chord, upstream, Ontario side	n/d

n/d = none detected

- .9 **MERCURY:** Not Identified
- .10 **SILICA: Identified**
 1. Free crystalline silica is presumed present in concrete and masonry throughout the project area.
- .11 **VINYL CHLORIDE MONOMER:** Not Identified
- .12 **POLYCHLORINATED BIPHENYLS (PCBs):** Not Identified
- .13 **HALOCARBONS:** Not Identified

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2.2 Recommendations

.1 Silica

1. Silica occurs as crystalline material in cement. Crystalline silica is regulated under “Designated Substance – Silica” *O.Reg 845* (as amended by *O.Reg 490/09*) of the *Occupational Health and Safety Act* as a Designated Substance.
2. Silica dust can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material. Since silica is presumed present in concrete and masonry within the project area, appropriate respiratory protection and ventilation must be donned during the demolition and modifications of these structures.
3. The Occupational Health and Safety Branch of the MOL has 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. These work procedures should be followed when performing work involving the disturbance of silica-containing materials.

.2 Contractors Duties

The contractor must review the designated substance report and take the necessary precautions to protect the health and safety of the workers and the environment. As per the *Ontario Occupational Health and Safety Act / Quebec – An Act Respecting Occupational Health and Safety*, the party hiring the contractor (i.e. Departmental Representative) shall ensure that the contractor and subcontractor (if any) for the project has received a copy of the designated substance report prior to entering a binding contract for the supply of work on the project. As per the *Ontario Occupational Health and Safety Act / Quebec- An Act Respecting Occupational Health and Safety*, while onsite, the contractor supervisor shall exercise every reasonable precaution for the protection of a worker. If you have any questions about the designated substance report, please contact the Departmental Representative.

END OF SECTION
