

1. GENERAL

1.1 REFERENCES

1. Federal Legislation

1. *Canada Labour Code, Part II, section 124 and 125.*
 1. *Canada Occupational Health and Safety Regulations*
2. *Transportation of Dangerous Goods Act, 1992 (TDGA)*
3. *PSPC Asbestos Management Standard*
4. *Canada Consumer Product Safety Act*
 1. *Surface Coating Materials Regulations (SOR/2005-109).*
5. *Canadian Environmental Protection Act, 1999 (CEPA)*
 1. *PCB Regulations (SOR/2008-273)*
 2. *Federal Halocarbon Regulations, 2003 (SOR/2003-289)*

2. Provincial Legislation

1. *Ontario Occupational Health and Safety Act, R.S.O. 1990, 2010 edition.*
 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.R.O. 1990,*
 1. *Ontario Regulation 347/90, General – Waste Management (O.Reg. 347/90).*
 2. *Ontario Regulation 463/10, Ozone Depleting Substances and Other Halocarbons (O.Reg. 463/10).*
 3. *Ontario Dangerous Goods Transportation Act*
3. *Canadian General Standards Board (CGSB).*
 4. *Canadian Standards Association (CSA International). CAN/CSA-Z94.4-11 - Respiratory Protection*
 5. *Underwriters' Laboratories of Canada (ULC).*

1.2 DEFINITIONS

Asbestos-Containing Materials (ACMs): means material that contains 0.5 per cent or more asbestos by dry weight as per *Ontario Regulation 278/05*.

Friable Material: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.

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 *Ontario Regulation 490/09 Designated Substances*, as amended.

1.3 DESIGNATED SUBSTANCES

Confirm with the Departmental Representative that no additional designated substances have been brought to the project area prior to beginning work.

Additional designated substances and hazardous materials may exist outside the accessible survey areas but are beyond the scope of this project.

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.

1. ACRYLONITRILE: Not Identified
2. ARSENIC: Not Identified
3. ASBESTOS: **Identified**

Based on recent sampling and past DSR reports, the following materials should be considered asbestos-containing:

- Non-friable Exterior black and grey caulking around the windows. All old caulking around the windows should be treated as asbestos-containing.

Based on recent sampling, past DSR reports, and visual observations, the following materials were found not to contain asbestos:

- pipe elbow insulation in room 113 associated with the condensate tank;
- white chalky insulation on deaerator tank;
- insulation on condensate tank was visually identified as non-asbestos fiberglass;
- pipe insulation on straight runs was visually identified as non-asbestos fiberglass;
- canvas on pipe and tank insulation;
- mortar associated with ceramic tiles, bricks and concrete blocks;
- interior grey caulking around window (although due to the asbestos containing exterior grey caulking noted above, all grey caulking should be treated as asbestos-containing when removing the windows);
- exterior and interior brown caulking around window frame;
- red firestop caulking and parging around pipe penetrations;
- green gasket under condensate tank; and
- textured wall finish around chemical storage area.

4. BENZENE: Not Identified
5. COKE OVEN EMISSIONS: Not identified
6. ETHYLENE OXIDE: Not Identified
7. ISOCYANATES: Not Identified

8. LEAD: Identified

The following paints are defined as a lead-containing paint based on the threshold in the *Surface Coating Materials Regulations*:

- Black paint found on various metal objects such as tank supports, ladder, and catwalk (2,260 ppm lead);
- Brown paint on the window frames (660 ppm lead); and
- Beige paint on the concrete block walls (1,390 ppm lead).

The following materials are not defined as a lead-containing based on the threshold in the *Surface Coating Materials Regulations*:

- Red ceramic tile glaze (45.3 ppm)
- Yellow paint on pipe insulation (35 ppm); and
- Green paint on pipe insulation (42 ppm).

9. MERCURY: Identified

Mercury may be present in switches, thermometers and thermostats associated with the mechanical equipment. Mercury is suspected within fluorescent light tubes in the project area.

10. SILICA: Identified

Silica is present in ceramic tiles and various concrete materials within the project area.

11. VINYL CHLORIDE MONOMER: Not Identified

12. POLYCHLORINATED BIPHENYLS (PCBs): Not Identified

13. HALOCARBONS: Not Identified

1.4 RECOMMENDATIONS**1. ASBESTOS**

1. Refer to Section 02 82 00.01 Asbestos Minimum Precautions when disturbing asbestos-containing window caulking using non-powered hand tools. More stringent requirements will be required if powertools are used.
2. All work must be done in accordance with *Canada Occupational Health and Safety Regulations* (as amended), *PSPC Asbestos Management Standard*, and O.Reg 278/05 (as amended). In the event of conflict between the federal and provincial regulations, the most stringent procedures apply. These Regulations classifies all asbestos disturbances as Low Risk (Type 1), Moderate Risk (Type 2), or High Risk (Type 3), each of which has defined precautionary measures. All asbestos materials are subject to specific handling and disposal precautions, and must be removed prior to demolition. The Ontario Ministry of Labour (MoL) must be notified of any project

involving removal of more than a minor amount (e.g. typically 1 square metre) of friable asbestos-containing material.

3. Disposal of asbestos waste must be done in accordance with *General – Waste Management* O.Reg. 347/90 (as amended) under the *Ontario Environmental Protection Act*, the *Ontario Dangerous Goods Transportation Act*, and the federal *Transportation of Dangerous Goods Act*. The waste must be disposed at a licensed waste disposal site. Proper notification must be issued to the Departmental Representative prior to transportation of waste.

2. LEAD

1. Follow recommendations provided in the Ontario Ministry of Labour (MoL) Guideline entitled “Guideline: Lead on Construction Projects”. This guideline classifies all lead disturbances as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, and assigns different levels of respiratory protection and work procedures for each classification.
2. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne lead levels that exceed the TWAEL of 0.05 milligram per cubic metre (mg/m³) prescribed by O.Reg. 490/09.
3. Disposal of construction waste containing lead must be done in accordance with O.Reg. 347/90 – *General Waste Management, as amended*, under the *Ontario Environmental Protection Act*, the *Ontario Dangerous Good Transportation Act*, and the federal *Transportation of Dangerous Goods Act*. The classification of the waste is dependent upon the result(s) of leachate test(s). The waste can be classified as “hazardous”, “non-hazardous” or “registerable solid waste” depending on the results of the leachate test.

3. MERCURY

1. All work involving disturbance of mercury-containing equipment must be done in accordance with O.Reg. 490/09.
2. When removal of fluorescent light tubes is required, the tubes should be removed intact from the fixtures. Other sources of liquid mercury should be removed intact to prevent worker exposure.
3. Disposal of waste containing mercury must be done in accordance with “General – Waste Management” O.Reg. 347/90 (as amended) under the *Ontario Environmental Protection Act*, the *Ontario Dangerous Goods Transportation Act*, and the federal *Transportation of Dangerous Goods Act*.

4. SILICA

1. Comply with *Ontario Regulations* O.Reg. 490/09 when performing work that may disturb silica-containing materials.
2. Silica dust can be generated through such processes as demolition, sanding, grinding, drilling, crushing, and sandblasting silica-containing material. Since silica is present in

select materials within the project area, appropriate respiratory protection and ventilation must be used during work.

3. Follow recommendations provided in the MoL Guideline entitled *Guideline: Silica on Construction Projects*. This document classifies all silica disturbances 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. PRODUCTS

Not used

3. EXECUTION

Not used

END OF SECTION