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## **A.8 HEALTH AND SAFETY INCLUDING DESIGNATED SUBSTANCES**

### **A.8.1 General Requirements**

A.8.1.1 The project shall comply with City requirements with respect to Health & Safety and Designated Substances Management.

A.8.1.2 Consultants who enter water and wastewater facilities or construction sites are likely to be exposed to chemical, biological and physical hazards.

A.8.1.3 The consultant is responsible for meeting the requirements of the Occupational Health & Safety Act and City Health & Safety Manual and the consultant is to review their safe work procedures with the City prior to undertaking any field work onsite.

A.8.1.4 The consultant's staff on-site during any phase of the project must be knowledgeable of the governing safety regulations including, but not limited to, Industrial Regulations, Construction Regulations, Regulation Respecting Asbestos on Construction Projects and in Building Repair Operations, Diving Operations, Designated Substances, WHMIS, Workplace Safety & Insurance Act, Transportation of Dangerous Goods Act, Technical Standards & Safety Act, Highway Traffic Act, Fire Protection & Prevention Act, X-Ray Safety, Ministry of Labour, Regulations including but not limited to "Working at Heights" stands and "Confined Spaces" guidelines.

A.8.1.5 The consultant's staff on-site during any phase of the project must possess written proof of competency such as appropriate training and experience in health and safety related activities applicable to the project (i.e. confined space entry, fall arrest, First Aid & CPR, Ladder & scaffolding training documentation, WHMIS training documentation, designated substances awareness and any other appropriate certificate required to be onsite).

A.8.1.6 WHMIS training, Ministry of Labour Health and Safety Awareness training, and any other mandated training, is mandatory for all consultant's staff present on-site during any phase of the project. The City may request proof of training at any time.

A.8.1.7 For facilities where specific site orientation and security protocol exist, the consultant's staff onsite during any phase of the project must complete a mandatory health and safety orientation specific to the facility before undertaking any work onsite. Orientation must be updated on an annual basis. Staff must adhere to site security and emergency procedures at all times.

A.8.1.8 The Consultant is responsible for providing all necessary health & safety equipment for the protection of their staff, including all Personal Protection Equipment (PPE), gas detection, safety retrieval devices, and any ancillary equipment for confined space entries (CSEs) required for inspection purposes. Certification in CSE is a pre-requisite and experience in the use of self-contained breathing apparatus is also a requirement. The City will not provide equipment for use by the Consultant, including but not limited to ladders, fall arrest equipment, and gas detection equipment.

A.8.1.9 Note health and safety obligations with respect to geotechnical work, SUE Investigations and any other activity falling within the definition of "construction" in the Occupational Health and Safety Act (OHSA) in Appendix A.7 and A.8.

A.8.1.10 Prior to initiating any work onsite, the consultant must submit a letter on company letterhead, identifying that all personnel engaged in the assignment have had appropriate training in accordance with this appendix.

### **A.8.2 Designated Substances (including Asbestos) Management**

A.8.2.1 Designated Substances & Asbestos Surveys (DSL) – General

1. Comply with Ontario Regulation O. Reg. 490/09.
2. In accordance with Part IV of the Ontario Occupational Health and Safety Act and Regulations, the City requires investigations and recommendations on the management of designated substances as defined under the Ontario Occupational Health & Safety Act. This includes the following Designated Substances:

Acrylonitrile	Coke Oven Emissions	Mercury
Arsenic	Ethylene Oxide	Silica
Asbestos	Isocyanates	Vinyl Chloride
Benzene	Lead	
3. In addition to the designated substances listed above the following materials are also to be included:
  - a) Polychlorinated biphenyls (PCBs);
  - b) Ozone-Depleting Substances;
  - c) Urea Formaldehyde Foam Insulation;
  - d) Man-made mineral fibres; and
  - e) Mould.
4. Where the scope of work refers to “Designated Substances”, this includes all of the items noted above.

#### A.8.2.2 Designated Substances Management – Scope of Services

1. Unless specifically instructed in the Request for Proposal, the Consultant shall be responsible to hire a qualified environmental sub-consultant as part of the design team to perform Designated Substances assessments, reports, and management for the project.
2. Unless specifically instructed in the Request for Proposal that a Designated Substances Survey and Report is not required, complete the Survey and Report in accordance with the requirements of the latest Ontario Occupational Health and Safety Act (OHSA) and Regulations.
3. The Consultant and sub-consultant shall review project requirements with the City, anticipate all areas that will be impacted by the project, and make all efforts to conduct destructive and non-destructive testing at the assessment stage so that, where possible, costs for Designated Substances, whether visible or hidden, can be factored into estimated project costs;
4. Inspect and sample areas indicated in the Designated Substances Survey and Report and related equipment and services that are suspected of containing Designated Substances to establish whether any suspect material that is likely to be disturbed, handled or removed during demolition and/or new construction work, contains Designated Substances. Destructive testing shall be performed only on equipment that is to be demolished and is not currently in service or can be temporarily taken out of service in coordination with the City. Obtain approval from the City prior to any destructive testing.
5. Carry out laboratory analysis of samples to determine type and percentage of Designated Substances.

6. All sampled locations are to be labelled as to whether they contain or do not contain Designated Substances. They shall be labelled accordingly through the use of durable, high visibility labels at least three inches by one and a half inches in size and which properly and fully adhere to the surface (spray painting of locations is acceptable, and may be substituted for adhesive labels. High visibility paint in a distinctive colour is to be used). The labelling shall be performed during a separate site visit after the results of analysis have been received and the report has been reviewed at the 95% detailed design stage.
7. Prepare drawings and photographic documentation for all testing performed indicating type, location and extent of Designated Substances. Ensure that photographs of all sample locations are taken and that the inspector can trace the photograph back to the sample results and locations through use and coordination of labels, references, and site drawings.
8. Drawings prepared for the Designated Substances assessment shall be based on the design drawings for the project as prepared by the Consultant.
9. A Report shall be prepared that states whether Designated Substances-containing material is likely to be disturbed, handled or removed during construction. If a material does contain Designated Substances, the Report shall state the type of Designated Substances, the approximate quantity present, and the recommended removal method. The Report shall be in full compliance with the requirements of Section 10 of Regulation 278/05 and shall include all noted Designated Substances.
10. The Report must include recommendations regarding remediation prior to tendering of the project construction contract.
11. The Report must include estimated costs for removal of Designated Substances based on estimated quantities, including requirements to meet OHSA.
12. The Report will be updated at various stages of the project as detailed below.
13. The Report shall be submitted to the City in accordance with standard submission requirements as defined in this RFP.

#### A.8.2.3 Designated Substances Management Work Scope Activities

##### 1. Preliminary Design Phase

- i. The environmental sub-consultant shall review previous Designated Substances Surveys or Designated Substances Reports available at the site to identify any gaps in the information required based on the preliminary scope of the project.
- ii. A preliminary list of identified Designated Substances within the scope area shall be prepared for review by the City.

##### 2. 50% Detailed Design Phase – Draft Report

- i. Provide an updated detailed drawing set and work scope to the environmental sub-consultant.
- ii. Carry out a detailed site survey as defined herein, including sampling and testing of all suspected Designated Substances.
- iii. Prepare the Report in accordance with A.2.2.2 including a site survey, sampling and analysis, and report generation.
- iv. The Consultant responsible for design who is fully conversant with the scope of work must walk the site with the environmental sub-consultant to identify project boundaries, specific items and equipment that will be impacted by the work.

3. 95% Detailed Design Phase – Updated Draft Report

- i. Re-confirm, in writing, that the scope of work matches the Designated Substances Report conducted at the 50% detailed design phase. Confirmation that the scope of work matches the Designated Substances assessment as detailed in the Report must be signed by the Consultant who is knowledgeable as to the scope of work.
- ii. Where the scope of work has changed relative to the Report, carry out additional testing, and update the Survey and Report as required to ensure that the scope of work matches the Designated Substances Report.
- iii. Label confirmed Designated Substances containing materials identified during the survey. Also label in the same manner all materials that are identified as not containing Designated Substances.
- iv. Prepare the Designated Substances Report for inclusion in the Tender Documents. The intent is to ensure that a comprehensive source of information is provided to the Contractor that covers all potential locations and materials impacted by the project.
- v. Provide tender site drawings and a technical specification that will include detailed protocol for:
  1. Removal of Designated Substances required under the contract (if any).
  2. Quantities of materials identified.
  3. A strategy for dealing with any suspected Designated Substances (i.e. could not be tested for during design stage) or unanticipated Designated Substances found during construction.

4. Management in-place, as appropriate.

5. Provide technical support during the tendering process.

vi If abatement or remediation through a separate contract prior to construction is feasible, provide a detailed scope of work and site drawings for Designated Substances abatement and/or in-situ management, as well as technical support during tendering of abatement work.

vii If abatement and/or management is carried out through a separate contract prior to construction, the environmental sub-consultant shall provide monitoring and supervision of the work and shall provide a signed clearance certificate upon completion.

4. Construction Phase – Final Report

- i. If abatement and/or management is carried out through the construction phase, the environmental sub-consultant shall provide monitoring and supervision of the work and shall provide a signed clearance certificate upon completion.
- ii. As scope changes occur throughout construction, provide updates as required to Designated Substances assessment, including testing, analysis, and updates to the Report.
- iii. At the completion of construction, update the Designated Substances Report to identify and detail all remaining Designated Substances within the scope of work area. Issue to the City as a Final Report.

**A.8.3 Mandatory Qualifications for Consultants Undertaking Designated Substances Surveys**

A.8.3.1 Consultants or sub-consultants completing designated substances and asbestos surveys for projects at Toronto Water facilities must fulfill the following mandatory requirements. Proof that the requirements are met must be provided to the City's Project Manager, prior to any associated work proceeding:

- a) The firm must have a minimum five years' experience working on similar projects.
- b) Principal or Senior Environmental Sub-Consultant must be a Certified Industrial Hygienist or Professional Engineer with mandatory ten years of directly related experience assessing and managing Designated Substances. All reports must be reviewed and signed by this individual.

#### A.8.3.2 Mandatory Qualifications for Laboratories being used for Designated Substances

- 1. The proposed laboratory must meet the following criteria:
  - a) Accredited under the Canadian Association for Laboratory Accreditation (CALA). Submit sample lab report with the proposal. Submit the name and NVLAP number of the accredited Bulk Analysis Laboratory that is to be used for sample analysis.
  - b) For asbestos note the following:
    - 1. Individuals performing air sample analysis should be personnel registered in a Proficiency Analytical Testing (PAT) program such as the following:
      - a) Asbestos Analyst Registry (AAR) of the American Industrial Hygiene Association (AIHA)
      - b) Canadian Analytical Laboratory Accreditation (CALA) PCM
      - c) IIRST
    - 2. Samples must be analysed using appropriate method for determination in accordance with the requirements detailed in O.Reg. 278/05

**END OF APPENDIX A.8**