

**Part 1            General**

**1.1                REFERENCES**

- .1    Province of Newfoundland
  - .1        Occupational Health and Safety Act, R.S.N. 2001.

**1.2                ACRONYMS AND DEFINITIONS**

- .1    ACGIH: American Conference of Governmental Industrial Hygienist.
- .2    NIOSH: United States National Institute for Occupational Safety and Health.
- .3    HEPA: High Efficiency Particulate Aerosol.
- .4    TWA: Time weighted average as defined by ACGIH.
- .5    TLV: Threshold Limit Value as defined by ACGIH.
- .6    EPA: United States Environmental Protection Agency.
- .7    PPE: Personal Protective Equipment.
- .8    Protection Factor: The factor of protection established by NIOSH for the proper use of a respirator.
- .9    Decontamination: The removal of hazardous substances from workers, visitors and equipment to the extent necessary to preclude the occurrence of foreseeable adverse health effects and stop the transfer of contamination outside of the exclusion zone.
- .10   Emergency Response: A response effort by workers or other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in:
  - .1        an uncontrolled release of a hazardous substance or material; and,
  - .2        an injury to a worker which cannot be managed through standard first aid and CPR.
- .11   Health Hazard: A chemical, mixture of chemicals or a pathogen for which there is statistically significant evidence, based on at least one study conducted in accordance with established scientific principles, that exposure will result in acute or chronic health effects. The term “health hazard” includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, heptaotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. It also includes stress due to temperature extremes.

- .12 Immediate Danger to Life and Health (IDLH): A physical hazard or atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.
- .13 Oxygen Deficiency: A concentration, by volume, of oxygen in air where atmosphere supplying respiratory protection must be provided. It exists in atmospheres where the percentage of oxygen by volume is less than 19.5 percent oxygen or greater than 23.0 percent.
- .14 Hazardous Material or Substance: Any material or substance to which exposure will, or may, result in a health hazard to workers, visitors or any person outside of the work area.
- .15 Debris: all solid materials which are not composed of soil.
- .16 Breakthrough Time: The time required for a contaminant to penetrate through personal protective equipment.
- .17 Authorized Visitor: The Departmental Representative, the Designated Representative for the Testing Agency, any person escorted by the Departmental Representative and regulatory authorities are authorized visitors.
- .18 Exclusion Zone: As defined in Section 9 of the National Institute for Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NTIS).
- .19 Contaminant Reduction Zone: As defined in Section 9 of the National Institute for Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NTIS).

### **1.3 ACTION AND INFORMATION SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan, within 7 days after date of Acceptance of Bid and prior to mobilization to site. Address following items:
  - .1 Safety and health risk or hazard analysis for each site task and operation.
  - .2 Develop checklist for items to be inspected on a daily basis. Document actions taken.
  - .3 Personnel training requirements including:
    - .1 Names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.
    - .2 Work practices by which personnel can minimize risks from hazards, safe use of engineering controls and equipment on site, medical surveillance requirements, including recognition of symptoms and signs which might indicate overexposure to hazards, and elements of site-specific Health and Safety Plan.
  - .4 Personal protective equipment (PPE) program addressing:

- .1 Donning and doffing procedures.
  - .2 PPE selection based upon site hazards.
  - .3 PPE use and limitations of equipment.
  - .4 Work mission duration, PPE maintenance and storage.
  - .5 PPE decontamination and disposal.
  - .6 PPE inspection procedures prior to, during, and after use.
  - .7 Evaluation of effectiveness of PPE program, and limitations during temperature extremes, and other appropriate medical considerations.
  - .8 Site control measures employed at site including site map, site work zones, use of 'buddy system', site communications including site security, alerting means for emergencies, standard operating procedures or safe work practices, and identification of nearest medical assistance.
  - .9 Decontamination procedures for both personnel and equipment.
  - .10 Emergency response requirements addressing: pre-emergency planning, personnel roles, lines of authority and communication, emergency recognition and prevention, safe distances and places of refuge, site security and control, evacuation routes and procedures, decontamination procedures not covered under decontamination section, emergency medical treatment and first aid, emergency alerting and response procedures, critique of response and follow-up, PPE and emergency equipment, site topography, layout, prevailing weather conditions, and procedures for reporting incidents to local, Provincial, or Federal agencies.
  - .11 Written respiratory protection program for project activities.
  - .12 Procedures dealing with heat and/or cold stress.
  - .13 Confined space entry procedures.
  - .14 Spill containment program if drummed waste material is generated, excavated, stored, or managed on site.
- .3 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 10 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 10 days after receipt of comments from Departmental Representative.
- .4 Off-site Contingency and Emergency Response Plan:
- .1 Prior to commencing Work involving handling of hazardous materials, develop off-site Contingency and Emergency Response Plan.
  - .2 Plan must provide immediate response to serious site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from site.

#### **1.4 CONSTRUCTION SAFETY MEASURES**

- .1 The Contractor will administer the project in a manner that will ensure, at all times, full compliance with Federal and Provincial Acts, Regulations and applicable safety codes.

- .2 Observe and enforce construction safety measures required by Canadian Construction Safety Code (latest version) Provincial Government, Occupation Health and Safety, and municipal statutes and authorities.
- .3 In event of conflict between any provisions of above authorities, the most stringent provision governs.
- .4 The Contractor shall assume the role of the principle contractor to ensure all requirements of the Provincial legislation are met.
- .5 Work Practices and Procedures: The Contractor shall employ all necessary measures, work practices and procedures (engineering controls, hygiene practices, etc.) to reduce the concentration of airborne hazardous material to the lowest reasonable and practical level.
- .6 The safety policies, protocols and directions from the Occupational Health and Safety Branch, Department of Government Services of the Province of Newfoundland and Labrador shall be strictly adhered to.
- .7 In any case of conflict or discrepancy, the more stringent requirement shall apply.

## **1.5 REGULATORY REQUIREMENTS**

- .1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

## **1.6 MEETINGS**

- .1 Attend pre-construction health and safety meeting conducted by Departmental Representative. The Contractor shall have the Site Superintendent in attendance. Departmental Representative will advise of date, time and location.
- .2 Provide site safety orientation to all workers and other authorized persons prior to granting them access to the site.
- .3 Conduct site specific occupational health and safety meetings during the Work as follows:
  - .1 Formal meetings on a minimum monthly basis.
  - .2 Informal tool box meetings on a regular basis.
- .4 Keep workers informed of anticipated hazards, safety practices and procedures to be followed and other pertinent safety information related to:
  - .1 Progress of Work.
  - .2 New sub-trades arriving on site.
  - .3 Change in site and project conditions.
- .5 Record and post minutes of meetings. Make copies available to Departmental Representative upon request.

## **1.7 PROJECT SITE CONDITIONS**

- .1 The following are known or potential project related safety hazards at the site and must be properly managed when encountered during course of Work:
  - .1 Contaminated soil.
  - .2 Operation of heavy construction equipment.
  - .3 Inclement weather and fog conditions.
  - .4 Remote access and location of site.
  - .5 Buried wastes and debris.
  - .6 Property structures and adjacent communication towers.
  - .7 Active and abandoned underground services.
  - .8 Steep slopes.

## **1.8 GENERAL REQUIREMENTS**

- .1 Develop written site-specific Health and Safety Plan prior to commencing site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Ensure Health and Safety guidelines provide for safe and minimal risk working environment for site personnel and minimize impact of activities involving contact with hazardous materials or hazardous wastes on general public and surrounding environment.
- .3 Relief from or substitution for portion or provision of minimum Health and Safety Guidelines specified or reviewed site-specific Health and Safety Plan must be submitted to Departmental Representative in writing. Departmental Representative will respond in writing, either accepting or requesting improvements.

## **1.9 RESPONSIBILITY**

- .1 Contractor is responsible for safety of persons and property on site and for protection of persons off site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by all employees, sub-contractors and other persons granted access to the work site with safety requirements of Contract Documents, applicable Federal, Provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

## **1.10 HAZARD COMMUNICATION REQUIREMENTS**

- .1 Comply with Workplace Hazardous Materials Information System (WHMIS) Regulations, C. Nfld. Reg.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations, Part X - Hazardous Substances.

- .3 Provide Departmental Representative with Material Safety Data Sheets (MSDS) and documentation on any "hazardous" chemical that Contractor or Contractor Representatives plan to bring onto site.

#### **1.11 WORK STOPPAGE**

- .1 Contractor to give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- .2 Contractor to assign responsibility and obligation to Health and Safety Officer where required to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

#### **1.12 UNFORESEEN HAZARDS**

- .1 Should unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, stop work and immediately advise Departmental Representative verbally and in writing.

#### **1.13 HEALTH AND SAFETY OFFICER**

- .1 Employ and assign to Work competent and authorized representative as Health and Safety Adviser. Health and Safety Adviser shall:
  - .1 Have site-related working experience specific to activities associated with PCB contaminant removal.
  - .2 Have basic working knowledge of specified occupational safety and health regulations.
  - .3 Be responsible for completing Health and Safety Training Session and ensuring that personnel not successfully completing the required training are not permitted to enter site to perform Work in Exclusion Zone or Contaminant Reduction Zone.
  - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Health and Safety Plan.
  - .5 Be on site during execution of Work.

#### **1.14 EXCAVATIONS**

- .1 Pre-Excavation Requirements:
  - .1 Before commencing excavation work in an area likely to have underground conduits, cables or pipelines, the Contractor shall contact utility companies to accurately determine the location of underground pipes, cables, utilities or conduits and mark the area where the work is to be performed. All cost associated with this work shall be the responsibility of the Contractor.
  - .2 Powered equipment shall not be used in such a manner as to expose workers to harmful effects resulting from the damage to service facilities, release of

- equipment exhaust, or the creation of unstable excavation walls and wall material.
- .3 Trees, boulders, or other matter located within 1800 mm of the area shall be removed prior to commencing excavation work.
- .2 No worker shall be permitted or required to enter any excavation over 1200 mm in depth unless:
  - .1 the sides of the excavation are sloped to a safe angle, or
  - .2 the sides have been secured by the use of sheet piling, shoring, or bracing, or
  - .3 the workers are protected by other effective means suitable to the Departmental Representative.
- .3 If equipment or other heavy objects are located or operated close to the edge of excavations, or a hazard is created by vibration from nearby equipment or from passing vehicular traffic, the added loads shall be considered in the design of the support system.
- .4 Access:
  - .1 Secure all work areas from unauthorized access of public.
- .5 Removal of Material:
  - .1 No worker shall allow excavated material to remain within 1200 mm of the edge of any trench-type excavation, nor within 3000 mm of any pit-type excavation.
  - .2 Where skips or buckets are used to remove material from excavations, horizontal shoring members shall be protected against dislodgement by the installation of vertical planking.
- .6 Faces and Slopes:
  - .1 Where work is being carried on in excavations, the slopes shall be scaled and rimmed, or otherwise stabilized, to prevent slides of materials or falls of rock.
  - .2 Scaling and similar work shall be undertaken from the top down and no workers or equipment shall be permitted into areas where material may fall.
  - .3 Excavations shall be guarded by substantial railings or barriers to prevent workers falling into excavations.
  - .4 Effective means shall be provided to prevent the accumulation of water in excavations.

## **1.15 WHMIS**

- .1 Comply with requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, labelling, storage and disposal of hazardous materials.
- .2 The Contractor shall ensure that all controlled products used in the performance of the Work are classified and labelled according to WHMIS.
- .3 The Contractor shall submit for approval the Material Safety Data Sheets (MSDS) to the Departmental Representative. The MSDS must be acceptable to Labour Canada and

Health and Welfare Canada, for all controlled products that will be used in the performance of this work.

- .4 No controlled products are to be brought on-site without prior approval from the Departmental Representative.
- .5 The MSDS are to remain on site at all times.

#### **1.16 TRANSPORTATION OF DANGEROUS GOODS**

- .1 Comply with the requirements of the Federal and Provincial Transportation of Dangerous Goods (TDG) Act and Regulations.

#### **1.17 HAZARDOUS ENVIRONMENT**

- .1 The Contractor shall as a minimum perform a hazard survey of the work area on a daily basis.
- .2 The hazard survey shall be completed prior to commencement of work each day and shall identify all actual and potential physical and chemical hazards at the site.
- .3 Hazard survey results shall be used to:
  - .1 Confirm that personal protective equipment is sufficient to protect workers and visitors from physical and chemical hazards. Changes to personal protective equipment shall be made if found to be insufficient before beginning Work.
  - .2 Confirm that adequate emergency controls are put in place. Changes to emergency controls shall be made by the Contractor if the hazardous environment/contaminants change and may adversely impact workers or visitors at the site prior to commencement of Work.

#### **1.18 PERSONAL PROTECTIVE EQUIPMENT**

- .1 Personal protective equipment (PPE) shall be selected and used to protect workers and visitors from actual and potential hazards that are identified by hazard surveys and air quality monitoring.
- .2 PPE selection shall be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, task-specific conditions, duration, and hazards and potential hazards identified at the site.
- .3 Workers at risk of having direct skin contact with impacted soil must wear CSA-approved personal protective equipment (PPE) to reduce potential skin exposure, including:
  - .1 Protective work clothing, specifically chemical-resistant coveralls (e.g., Tyvek).
  - .2 Leather or chemical resistant work gloves and steel-toe boots.
  - .3 Safety glasses or goggles.

- .4 Note: Workers must decontaminate work clothing as described in Section 1.19 before leaving site.
- .4 The Contractor shall provide all workers and visitors to the site with proper PPE.
- .5 Dermal Protection shall be sufficient to act as a protective barrier between the skin and an airborne contaminant or hazardous material. Dermal Protection shall also be provided for all physical hazards.
- .6 The Contractor shall provide all workers and visitors to the site with proper hearing protection.
- .7 Workers and visitors shall not be exposed to noise levels greater than 85 dB (A) without proper hearing protection.
- .8 Hearing protection noise reduction ratios (NRR) shall be sufficient to reduce audible noise levels below 85 dB (A).
- .9 The Contractor shall provide and maintain a supply of disposable ear plugs for use by workers and visitors.
- .10 The Contractor shall provide all workers and visitors to the site with proper eye protection.
- .11 Eye protection shall be sufficient to act as a protective barrier between the eye and an airborne contaminant, hazardous material and physical hazard.

#### **1.19 DECONTAMINATION**

- .1 Exposure to impacted soil through ingestion and skin contact and/or skin absorption can be controlled through the implementation of appropriate decontamination procedures. Residues of soil, including dust, from skin, work clothes and equipment must be removed each time the worker leaves the work site. This includes work breaks or leaving at the end of the work day. Cross-contamination is also prevented by effective decontamination techniques.
- .2 Do not ingest soil or groundwater from work areas.
- .3 No smoking, eating or drinking is permitted in work areas.
- .4 Provide adequate wash facilities to minimize skin contact with impacted soil. This also prevents inadvertent ingestion of chemical contaminants.
- .5 Decontaminate work clothing and tools prior to leaving the site to ensure impacted soil is not taken off site. This includes washing, damp cloth wipe-down or HEPA vacuuming.

#### **1.20 HEALTH & SAFETY MONITORING**

- .1 Periodic inspection of the Contractor's work may be carried out by the Departmental Representative. Inspections will include visual inspections as well as testing and

sampling as required. To ensure the highest possible level of health and safety at the site, the Departmental Representative shall have the right to:

- .1 Demand a higher level of safety if, in the opinion of the Departmental Representative, it is deemed necessary.
- .2 Issue a stop work order immediately for any work which is considered, in the opinion of the Departmental Representative to be an IDLH or of imminent risk to the environment.
- .2 For any work which is considered, in the opinion of the Departmental Representative, to be in violation of Federal and Provincial Acts, Regulations, Codes and the project health and safety program, but is not deemed to be an IDLH or imminent risk to the environment, the following actions will be taken:
  - .1 1st Violation - Written notification to Contractor identifying the person(s) and/or nature of the violation, requiring follow-up written confirmation from the Contractor detailing actions implemented to rectify the situation.
  - .2 2nd Violation - Stop any activity/ work at the Contractor's expense, and notify the Contractor in writing identifying person(s), and nature of the violation, requiring follow-up written confirmation from the Contractor detailing actions implemented to rectify the situation. The activity or work shall not commence until written approval is received from the Departmental Representative.
  - .3 3rd Violation - Removal of the person(s) and/ or Contractor from the project site as approved by the Departmental Representative.
- .3 The Contractor shall be responsible for any and all costs associated with delays in completing the Contract as a result of the Contractor's failure to comply with requirements outlined in this section.

## **1.21 CONTRACTOR'S SITE SUPERVISOR**

- .1 The Contractor's Site Supervisor will be solely responsible for the implementation and monitoring of the Health and Safety program and will have the authority to implement health and safety changes as approved by the Departmental Representative. The Site Supervisor must have as a minimum:
  - .1 First Aid training.
  - .2 CPR training.
  - .3 Workplace Hazardous Materials Information System (WHMIS).
  - .4 Hazardous Waste Operations and Emergency Response (HAZWOPER), or equivalent certification as approved by the Departmental Representative.
- .2 The Site Supervisor shall:
  - .1 Monitor all activities being completed at the site(s) for compliance with Federal and Provincial compliance through each work day.
  - .2 Implement all necessary engineering and administration controls to address activities which are in non-compliance with legislation.

- .3 Report immediately to the Departmental Representative all activities which are found to be in non-compliance with legislation.
- .4 Ensure personal protective equipment and decontamination facilities are in place, operational. Ensure all persons are using PPE correctly.

#### **1.22 HEALTH AND SAFETY PLAN**

- .1 The Contractor is responsible to develop a project-specific Health and Safety Plan prior to commencement of the Work. Contractor to implement and maintain plan throughout Work.
- .2 The Contractor is responsible to develop a project-specific Health and Safety Plan for its own activities prior to commencement of the Work.
- .3 The Contractor's Health and Safety Plan will be submitted to the Departmental Representative for review and acceptance.
- .4 The Contractor will maintain a copy of the approved Health and Safety Plan at the work site.

#### **1.23 FIRE SAFETY REQUIREMENTS**

- .1 The Contractors and their personnel shall be familiar with this section and its requirements.
- .2 Fires and burning of rubbish will not be permitted.

#### **1.24 REPORTING FIRES**

- .1 Know the location of the nearest telephone, including the emergency phone number.
- .2 Report immediately all fire incidents to an Emergency Call Line 911. All environmental emergencies to be reported to: Canadian Coast Guard Emergency Report Centre (1-800-563-9089)
- .3 When reporting a fire by telephone, give location of fire, name or number of telephone being used, and the name of the caller.

#### **1.25 FIRE EXTINGUISHERS**

- .1 The Contractor shall supply and maintain portable fire extinguishers in conformance with the most current version of the National Fire Code, as necessary to protect, in an emergency, the work in progress and the Contractor's on-site equipment. The Contractor shall also instruct workers on the proper use of the fire extinguishers.

#### **1.26 BLOCKAGE OF ROADWAYS**

- .1 The Contractor shall coordinate remediation activities to permit emergency access to all areas included in the scope of work throughout the project.

### **1.27 RUBBISH AND WASTE MATERIALS**

- .1 Removal:
  - .1 All rubbish shall be removed off-site to disposal areas authorized by the Departmental Representative. The Contractor shall clean up non-hazardous rubbish generated by site activities at the end of each working day or shift, or as approved by the Departmental Representative.
- .2 Storage:
  - .1 Extreme care is required where it is necessary to store oily waste in work areas to ensure maximum possible cleanliness and safety.
  - .2 Greasy or oily rags or materials subject to spontaneous combustion shall be deposited and kept in an approved receptacle and removed as specified.
  - .3 Combustible wood waste may not be burned at the site.

### **1.28 FLAMMABLE LIQUIDS**

- .1 The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.
- .2 Flammable liquids having a flash point below 38°C such as naphtha or gasoline shall not be used as solvents or cleaning agents.
- .3 Flammable waste liquids, for disposal, shall be stored in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum. Liquids are to be stored until sufficient volumes allow for pickup by a disposal firm specialized in handling hazardous wastes. The firm should have a demonstrated proficiency in completing this type of work.
- .4 The transfer of any flammable liquids is to be carried out following the instructions outlined in the appropriate MSDS.

### **1.29 OVERLOADING**

- .1 Ensure no part of Work is subjected to a load which will endanger its safety or will cause permanent deformation.

### **1.30 CONTINGENCY AND EMERGENCY RESPONSE**

- .1 Meet specified requirements as outlined in this section and regulatory requirements:
  - .1 Newfoundland and Labrador Occupational Health and Safety Act.
  - .2 Canada Labour Code, Canada Occupational Safety and Health Regulations.
  - .3 Workplace Hazardous Materials Information System (WHMIS).
  - .4 Federal and Provincial Transportation of Dangerous Goods (TDG) Act and Regulations.

**1.31 SITE CONTROL**

- .1 Prior to commencing work involving handling of drums and other containers, submit procedures for safe handling of drums and other containers. Implement and enforce drum handling program during activities involving drummed waste characterization including but not limited to handling, opening, sampling, staging, and consolidating.
- .2 Confined Space Entry Program: meet requirements of:
  - .1 Occupational Health and Safety Act, Occupational Health and Safety Regulations, C. Nfld. Reg.
  - .2 Canada Labour Code, Canada Occupational Safety and Health Regulations, Part XI - Confined Spaces.

**1.32 METHOD OF PAYMENT**

- .1 No separate or direct payment will be made for work specified in this section. Costs of all work specified in this section are deemed to be included in the lump sum and unit prices quoted in the Schedule of Quantities and Prices.
- .2 The Contractor is responsible for all costs associated with implementing Health and Safety requirements.
- .3 The Contractor is responsible for all costs associated with safety training.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**