

# **TENDER DOCUMENTS**

## **SUBSECTION 6.13 ENVIRONMENTAL PROTECTION**

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## **SUBSECTION 6.13 ENVIRONMENTAL PROTECTION**

### **6.13.1 GENERAL**

- 6.13.1.1 This subsection describes the environmental protection requirements to which the Contractor's work is subjected in order to minimize the impacts on the environment.
- 6.13.1.2 Under this Contract, the Contractor shall take into account that some of the work must be carried out near areas that are sensitive with regards to the environment.
- 6.13.1.3 The Contractor shall take all necessary measures to protect the environment and to avoid any form of pollution or contamination.
- 6.13.1.4 The Contractor shall transmit to its employees, representatives, suppliers and subcontractors all information relating to environmental protection, including the requirements of this Contract.
- 6.13.1.5 The impact that the Contractor's various works may have on the environment can be minimized by conscientious preventive management before, during and after the work period. The Contractor shall observe the practices described in the following articles in addition to the indications on the drawings and the requirements of the other sections and subsections of the specifications.
- 6.13.1.6 Any specific requirements pertaining to environmental protection covered by this Contract are set out on the drawings and in Section 4 *Special Technical Conditions*.
- 6.13.1.7 The requirements relating to earthworks are described in subsection 6.87 *Earthworks*.
- 6.13.1.8 The discharge into the environment of any chemical products, waste, oils, construction materials, demolition materials or any other elements from the worksite or used during the execution of the work is prohibited. The Contractor shall dispose of such wastes and contaminants in accordance with the current laws and regulations applicable and according to the nature of the material.
- 6.13.1.9 Failure by the Contractor to meet the requirements of this subsection will result in the application of Article 5.35.10 *Damages for Failure to comply with Specific Environmental Protection Requirements* of Section 5 *Standard Administrative Conditions*.

## 6.13.2 MEASUREMENT UNITS

6.13.2.1 The measurement units and respective symbols thereof used in this subsection are described as follows:

Measurement unit	Designation	Symbol
area	hectare	ha
sound intensity	decibel A	dBA
length	meter	m
length	centimeter	cm
length	millimeter	mm
length	micrometer	µm
mass	kilogram	kg
mass	milligram	mg
mass	ton	t
volume	cubic meter	m <sup>3</sup>
volume	litre	L
volume	millilitre	mL

## 6.13.3 REFERENCE STANDARDS

6.13.3.1 The **Contractor** shall carry out all work in accordance with the requirements of the following standards and documents, to which the provisions of this Contract are added:

6.13.3.1.1 (BNQ) Bureau de normalisation du Québec :

- NQ 2410-300 *Abat-poussières pour routes non asphaltées et autres surfaces similaires.*

6.13.3.1.2 (MTQ) Ministère des Transports du Québec :

- MTQ – Normes – Ouvrages routiers – Tome II Construction routière, Chapitre 9 Mesures d'atténuation environnementales temporaires;
- MTQ – Normes – Ouvrages routiers – Tome VII Matériaux
- MTQ – Norme 13101 – Géotextiles;
- MTQ – Guide terrain – Surveillance environnementale des chantiers routiers.

6.13.3.1.3 (MDDELCC) Ministère du Développement durable, Environnement et Lutte contre les changements climatiques :

- Guide d'application du Règlement sur l'enfouissement et l'incinération de matières résiduelles (REIMR) (c. Q-2, r.19).

6.13.3.1.4 (MFO) Ministry of Fisheries and Oceans Canada ;

- *Guidelines for the Design of Stream Crossings in Quebec Mont-Joli; Fish Habitat Management Division.*

#### **6.13.4 ENVIRONMENTAL REQUIREMENTS**

6.13.4.1 At least fourteen (14) days prior to the commencement of work on the worksite, the Contractor shall provide the Owner with the name and qualifications of its environmental representative. The environmental representative shall have appropriate training in this area. The Engineer reserves the right to refuse such representative if the latter does not have the skills required to occupy the position. The environmental representative is responsible for all matters relating to the environment. The environmental representative shall notably, at all times during the execution of work on the worksite, have the following duties:

6.13.4.1.1 Ensure that all work carried out by the Contractor is in compliance with the applicable environmental laws, regulations, codes, policies, directives and guidelines.

6.13.4.1.2 Obtain from the ministries, municipalities and other agencies responsible for environmental protection the approvals, certificates of authorization or permits required for all the Contractor's facilities and operations and conveying a copy thereof to the Engineer before using such facilities or commencing the operations.

6.13.4.1.3 Identify, for the performance of the work of this Contract, the potential environmental risks and impacts in accordance with the following articles of this subsection:

6.13.4.1.3.1 6.13.5 *Laws and regulations;*

6.13.4.1.3.2 6.13.6 *Protection of the Natural Environment;*

6.13.4.1.3.3 6.13.7 *Property Damage and Nuisance;*

6.13.4.1.3.4 6.13.8 *Protection of Flora and Wildlife;*

6.13.4.1.3.5 6.13.9 *Site Organization;*

6.13.4.1.3.6 6.13.10 *Emergency Measures in the Event of a Spill, a Fire or any other Environmental Incident;*

6.13.4.1.3.7 6.13.11 *Hazardous Materials;*

6.13.4.1.3.8 6.13.12 *Petroleum Products;*

6.13.4.1.3.9 6.13.13 *Non-hazardous Residual Materials;*

6.13.4.1.3.10 6.13.14 *Asbestos;*

- 6.13.4.1.3.11 6.13.15 *Hazardous Residual Materials*;
- 6.13.4.1.3.12 6.13.16 *Waste Water*;
- 6.13.4.1.3.13 6.13.17 *Contaminated Soil and Groundwater*;
- 6.13.4.1.3.14 6.13.18 *Atmospheric Emissions*;
- 6.13.4.1.4 At least fourteen (14) days prior to commencing the work on the worksite, prepare and submit to the Engineer, for review, an environmental protection action plan. In its environmental protection action plan, the **Contractor** shall demonstrate how it intends to meet and to take into consideration the objectives set out in this subsection and to apply the requirements of this subsection to avoid any damage to the environment:
  - 6.13.4.1.4.1 The choice and location of the erosion and sediment control measures shall be recorded in the environmental protection action plan and authorized by the Engineer before they are put in place;
  - 6.13.4.1.4.2 The preliminary location of the settling or filtration tanks shall be indicated in the environmental protection action plan so that the Engineer can validate the positioning thereof;
  - 6.13.4.1.4.3 The preliminary location of the interceptor ditches or dikes shall be indicated in the environmental protection action plan so that the Engineer can validate the positioning thereof;
  - 6.13.4.1.4.4 The environmental protection action plan shall cover, without however being limited to, the following:
    - 6.13.4.1.4.4.1 the identification of the environmental representative;
    - 6.13.4.1.4.4.2 the worksite communication organizational chart;
    - 6.13.4.1.4.4.3 the orientation session for the workers at the worksite and information thereto transmitted;
    - 6.13.4.1.4.4.4 the work sequences;
    - 6.13.4.1.4.4.5 the identification of the areas requiring physical delimitation (tape, fence, etc.), such as, in the areas where the plant cover must be kept as long as possible before the earthworks or deforestation limits, are carried out;
    - 6.13.4.1.4.4.6 the use and the combination of the erosion and sediment control methods prescribed in this subsection for the work, storage, stockpile and waste areas;

- 6.13.4.1.4.4.7 the planning of the areas to be sodded without delay and to be covered with wood fibers or straw mattresses;
- 6.13.4.1.4.4.8 the plans of the temporary structures (settling tanks, concrete mixer clean-up zones, access roads, etc.);
- 6.13.4.1.4.4.9 the noise and dust control measures;
- 6.13.4.1.4.4.10 the mitigation measures according to the weather conditions;
- 6.13.4.1.4.4.11 the layout plan for the worksite offices, parking areas, waste and stockpile areas or other sites required for the purposes of the work including, without limitation, the volume of projected materials, access roads, surface area used, quality of the underlying soil, location of waterways, tree protection, earthworks;
- 6.13.4.1.4.4.12 the identification of fuel depots;
- 6.13.4.1.4.4.13 the planning for the suspension of work during the winter;
- 6.13.4.1.4.4.14 the environmental emergency plan, in accordance with paragraph 6.13.10.1;
- 6.13.4.1.4.4.15 the method and frequency of cleaning and maintenance of the sediment control methods and concrete mixer clean-up zones;
- 6.13.4.1.4.4.16 the methods of site restoration to prevent erosion;
- 6.13.4.1.4.4.17 the demolition of the structures in hydrous environments and restoration thereof;
- 6.13.4.1.4.4.18 the management of surface drainage during the work;
- 6.13.4.1.4.4.19 the management of contaminated water, including the runoff water during work carried out in dry conditions;
- 6.13.4.1.4.4.20 the management and storage of contaminated soil;
- 6.13.4.1.4.4.21 the drawings of any worksite facilities related to environmental protection such as fuel depot, temporary storage sites, enclosures, as well as any other facility required by the applicable laws and regulations or by this Contract;
- 6.13.4.1.4.4.22 the method of refueling on the river;
- 6.13.4.1.4.4.23 all other related work.
- 6.13.4.1.4.5 The elements of the environmental protection action plan which are unknown prior to the commencement work on worksite shall be submitted to the Engineer for approval as work progresses;

- 6.13.4.1.4.6 The environmental protection action plan shall be presented in the form of proposed working methods, procedures, drawings and sketches of worksite facilities related to environmental protection using, among other things, reduced-size construction drawings or any other equivalent document describing their location in sufficient details to enable the Engineer to review it.
- 6.13.4.1.5 Ensure compliance with the environmental impact mitigation measures provided for in this Contract. These measures are not restrictive and others may be required based on the Contractor's working methods;
- 6.13.4.1.6 Transmit to the Engineer a copy of any correspondence relating to environmental protection between the Contractor and representatives of the ministries, municipalities and other government agencies, including incident reports;
- 6.13.4.1.7 Transmit to the Contractor's employees all the information relevant to environmental protection, including the measures required in this Contract;
- 6.13.4.1.8 Ensure that the Contractor's personnel are trained and aware of the environmental aspects of the project. In particular, the Contractor's personnel shall be familiar with the Contractor's emergency plan in the event of a spill, environmental incident or fire in accordance with Article 6.13.10 *Emergency measures in the event of a spill, a fire or any other environmental incident*;
- 6.13.4.1.9 Conduct a minimum of one worksite inspection every week or after every significant weather event such as heavy rain, snow or strong winds in order to verify the compliance of the Contractor's work with the requirements of this subsection. The environmental representative shall complete a worksite inspection form following each inspection and send a copy thereof to the Engineer;
- 6.13.4.1.10 If the Contractor does not submit its environment protection action plan, including the emergency measures, in the format and within the time limits specified in paragraph 6.13.4.1.4 to the satisfaction of the Engineer, the latter shall withhold part or all the payments relating to the work already carried out, until the environmental protection action plan and emergency measures have been submitted for review and accepted.



## 6.13.5 LAWS AND REGULATIONS

6.13.5.1 The Contractor shall comply with all applicable environmental federal, provincial, municipal and other laws and regulations and shall assume responsibility for any violation of such laws and regulations. For the purposes of this subsection, the term “Law” includes any environmental federal, provincial and municipal laws and regulations including, without limitation, those listed in the table below as well as the environmental policies, directives and guidelines, all as amended from time to time.

### 6.13.5.1.1

<b>Federal</b>	
Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33)	Federal Halocarbon Regulations, 2003, (SOR/2003-289)
	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149)
	Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (SOR /2008-197)
	Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations (SOR/2009-264)
Fisheries Act (R.S.C. (1985), c. F-14)	
Hazardous Products Act (R.S.C. (1985), c. H-3)	
Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c. 34)	Transportation of Dangerous Goods Regulations (SOR/2001-286)  Regulations Amending the Transportation of Dangerous Goods Regulations (TC 117 Tank Cars) (SOR/2015-100)
Navigation Protection Act (R.S.C. (1985), c. N-22)	
Canada Shipping 2001 Act (L.C. (2001), c. 26)	
Species at Risk Act (S.C. 2002, c. 29)	
Migratory Birds Convention Act, 1994 (S.C. 1994, c. 22)	

<b>Provincial (Quebec)</b>	
Environment Quality Act (CQLR, c. Q-2)	Clean Air Regulation (CQLR, c. Q-2, r.4.1)
	Regulation respecting the Burial of Contaminated Soils (CQLR, c. Q-2, r.18)
	Regulation respecting the Landfilling and Incineration of Residual Materials (CQLR, c. Q-2, r.19)
	Regulation respecting Halocarbons (CQLR, c. Q-2, r.29)
	Regulation respecting Hazardous Materials (CQLR, c. Q-2, r.32)
	Québec Residual Materials Management Policy (CQLR, c. Q-2, r.35.1)
	Land Protection and Rehabilitation Regulation (CQLR, c. Q-2, r.37)
	Regulation respecting Contaminated Soil Storage and Contaminated Soil Transfer Stations (CQLR, c. Q-2, r.46)
Petroleum Products Act (CQLR, c. P-30.01)	Petroleum Products Regulation (CQLR, c. P-30.01, r.1)
Act respecting Threatened or Vulnerable Species (CQLR, c. E-12.01)	Regulation respecting Threatened or Vulnerable Wildlife Species and their Habitats (CQLR, c. E-12.01, r.2)
	Regulation respecting Threatened or Vulnerable Plant Species and their Habitats (CQLR, c. E-12.01, r.3)
	Ministerial Order concerning the establishment of a list of threatened or vulnerable vascular plant species which are likely to be so designated and a list of threatened or vulnerable wildlife species which are likely to be so designated (CQLR, c. E-12.01, r.4)
Act respecting the Conservation and Development of Wildlife (CQLR, c. C-61.1)	
Act respecting Occupational Health and Safety (CQLR, c. S-2.1)	Safety Code for the Construction Industry (CQLR, c. S-2.1, r. 4)
Highway Safety Code (CQLR, c. C-24.2)	
Soil Protection and Rehabilitation of Contaminated Sites Policy (Policy) (MENV 1998, revision 2001)	
Guide for recovering inorganic non-hazardous waste materials from industrial sources as construction material (MENV, 2002)	
Guidelines for the management of concrete, brick and asphalt from construction and demolition work and dressed stone sector residues (MDDEP, 2009)	

**Municipal (Montreal Metropolitan Community (MMC))**

*Règlement N° 2008-47 sur l'assainissement des eaux (Clean Water Regulation)*

*Règlement N° 2007-42 modifying Règlement 2001-10 sur les rejets à l'atmosphère et sur la délégation de son application (Regulation No 2007-42 modifying Regulation 2001-10 on discharges in the atmosphere and on the delegation of its application)*

- 6.13.5.2 For all activities and work planned to be carried out outside the rights-of-way and that are subject to an Act within the jurisdiction of a ministry or agency, it is the Contractor's responsibility to obtain, from the concerned ministry or agency, the authorizations and permits necessary to carry out its work. The Contractor shall, in its tendered prices, provide for both the costs associated with obtaining and complying with the required authorizations and permits, and the additional delays incurred in obtaining such authorizations and permits. The Contractor shall, fourteen (14) days prior to the commencement of work, provide the Engineer with a copy of these documents.
- 6.13.5.3 The Contractor is deemed to have knowledge of, and shall apply all environmental legislation and related policies and guidelines, as well as good practices pertaining to the prevention and mitigation of nuisances including noise, dust, odours, visual aspects, traffic, storage, temporary lighting, and vibrations.

**6.13.6 PROTECTION OF THE NATURAL ENVIRONMENT**

**6.13.6.1 WATERWAYS**

- 6.13.6.1.1 The Contractor shall comply with the dates in the period or periods sensitive for the fish, as identified by the Owner, on which work in a waterway is restricted or prohibited.
- 6.13.6.1.2 The Contractor shall ensure that the waters of the Seaway Canal, the St. Lawrence River or any other waterway are not contaminated in any way as a result of the Contractor's work.
- 6.13.6.1.3 Work in a waterway or on its banks is prohibited under any circumstances without the authorization of the authorities having jurisdiction over such waterway.
- 6.13.6.1.4 The work shall be carried out in such a way that no demolition equipment, waste or any other object can fall into the waterways. The Contractor shall recover, as quickly as possible, any material or equipment that would accidentally have fallen into a waterway.
- 6.13.6.1.5 The granular materials to be placed below the two-year recurrence high water mark shall be clean and free of dirt, fine material less than 5 mm in diameter, and contaminants. Such granular materials shall be approved by the Engineer prior to placement thereof.
- 6.13.6.1.6 The Contractor, its subcontractors and suppliers, as well as all employees thereof, are forbidden from using the natural water sources (creeks, rivers and bodies of water) in the worksite area either for cleaning equipment or for other worksite operations.

- 6.13.6.1.7 The Contractor shall note that fording sites are prohibited.
- 6.13.6.1.8 Discharge into a waterway or wetland of waste, oil, chemicals products or other contaminants from a construction worksite is prohibited. The Contractor shall dispose of such wastes and contaminants in accordance with the current laws and regulations applicable in function of the nature of the contaminant.
- 6.13.6.1.9 For materials to be excavated underwater, the Contractor shall provide for the use of containment structures or any other appropriate methods, so as to prevent erosion and transportation of such materials by the waterway. The Contractor shall put in place protective devices against the dispersion of turbid waters in the environment.
- 6.13.6.1.9.1 When carrying out its work, the Contractor shall take all necessary precautions to prevent the contamination of the waterways and storm sewer collector systems by liquid releases or hazardous materials and by any other matter beyond the limits allowed by *Règlement 2008-47 sur l'assainissement des eaux (Regulation 2008-47 Clean Water Regulation)*.
- 6.13.6.1.9.2 The matters to be controlled include, without however being limited thereto: sediments, gravel, sealing residue, resins, cladding materials, lubricants, injection products, oils and greases, cleaning sludge, rinse water, pumped and runoff water. The Contractor shall comply with the effluent discharge standards defined in *Appendix 1 of CMM's Règlement 2008-47 sur l'assainissement des eaux (Regulation 2008-47 Clean Water Regulation)* for physico-chemical treatment (A) of the water.
- 6.13.6.1.9.3 For more information and, where applicable, to apply for a permit, the Contractor shall contact the City of Montreal, *Service de l'environnement, Division du contrôle des rejets industriels (Department of the Environment, Industrial Waste Control Division)*.
- 6.13.6.1.10 Any direct discharge, into the receiving environment, of contaminated water, waste water or sediment-laden water from the worksite and from the equipment is prohibited.
- 6.13.6.1.11 The Contractor shall ensure that the water generated during the work is treated prior to being discharged into the receiving environment. If a water treatment system such as a settling tank, mobile water treatment unit, filters or other such facilities must be used, such system shall prevent the contaminants and particles likely to settle out into the sewer systems to run off to sewers and waterways. The Contractor shall define the method to dispose of the collected sediments and wastewater and shall ensure compliance with the discharge standards. Where applicable, a copy of the results of the analyses of the sediments and wastewater shall be provided to the Engineer at least fourteen (14) days before disposal thereof.

## 6.13.6.2 EROSION AND SEDIMENTATION

- 6.13.6.2.1 The Contractor shall take all necessary measures to limit the erosion and sedimentation caused by its work.
- 6.13.6.2.2 The Engineer shall require the Contractor to provide a description, accompanied by sketches, of the methods that it shall use to control any erosion or sedimentation, where needed.
- 6.13.6.2.3 Any intervention that results in leaving unconsolidated soil exposed, including, without however being limited to, an excavation, disturbed or reworked soil and stockpile materials, shall be accompanied by erosion and sediment control measures so as to prevent sediment flow into waterways, wetlands and any waterfront properties located outside of the site limits. As progress is made in the completion of the work, all reworked areas shall be permanently stabilized. Should additional time is required before permanent stabilization, the temporary erosion and sediment control measures shall remain in place until the Engineer authorizes dismantling thereof. The temporary measures shall be removed or dismantled at the end of the work.
- 6.13.6.2.4 At the end of the work or during a work interruption for the winter periods or weekends, any bank that does not have a plant cover sufficient to stabilize the soil shall be the subject of temporary complementary stabilization measures. The choice of erosion and sediment control methods shall be adapted to the different situations encountered during the work. The Contractor shall use any other method that makes it possible to achieve the erosion and sediment control objectives.
- 6.13.6.2.5 In order to limit the duration of exposure of the erosion-sensitive soil, the Contractor shall proceed to the stripping immediately prior to the construction work. This work shall be limited to what is strictly necessary. Where necessary, the Contractor shall cover all exposed surfaces to prevent soil erosion and the transport of sediments to hydrous environments or surrounding urban environment by runoff water.
- 6.13.6.2.6 Any temporary stockpile of unconsolidated material, such as earth located within 20 m of a lake, waterway or wetland, for a period of more than twenty-four (24) hours, shall be protected with a sediment trap or covered with a geotextile to prevent the transport of sediments to the environment, the waterway or the wetland.
- 6.13.6.2.7 The Contractor shall ensure daily maintenance and upkeep of all environmental protection structures described in this subsection so that they are effective at all times.
- 6.13.6.2.8 The measures employed by the Contractor shall be adapted to the different situations that may be encountered or, if they are ineffective, they shall be replaced by other methods. The Contractor remains responsible for the choice and proper functioning of the methods thereby employed.

6.13.6.2.9 The Contractor shall, in its working methods, take into account, without however limiting itself to, the following requirements and use the various means and methods to control the erosion and sediment transport.

6.13.6.2.9.1 Temporary bank stabilization

6.13.6.2.9.1.1 Mulch, mechanical or hydraulic seeding, riprap (where indicated on the drawings), vegetal fiber erosion control blanket, geotextile or tarpaulin shall be used to stabilize banks that are vulnerable to erosion and likely to produce sediments. If a gully is detected on the stabilized surfaces, the Contractor shall, as soon as either the Engineer or himself observes damage, put in place additional measures.

6.13.6.2.9.1.2 The chosen method for the temporary bank stabilization shall be authorized in advance by the Engineer. The Contractor shall submit to the Engineer, for review, the technical data sheets of the products and implement the method in accordance with the manufacturer's recommendations and the site condition, the type of soil, percentage of slope, etc.

6.13.6.2.9.1.3 The mulch, consisting of straw fibers, must be chopped and blown on the surfaces to be protected, with equipment that is adequate, at an application rate of 4.5 t/ha.

6.13.6.2.9.1.4 The bank stabilization by means of riprap shall be used when a resurgence is detected in a bank. The resurgence shall immediately be stabilized and a protective measure shall be installed at the bottom of the bank.

6.13.6.2.9.1.5 The erosion control blankets placed on the temporarily exposed banks shall be made of straw, coconut or wood fibers and placed in accordance with the manufacturer's recommendations.

6.13.6.2.9.1.6 The geotextile or tarpaulin placed on the temporarily exposed banks shall be retained with staples or stakes as authorized by the Engineer.

6.13.6.2.9.2 Temporary sediment barrier

6.13.6.2.9.2.1 The Contractor shall install temporary sediment barriers in locations where eroding soil particles are likely to runoff out of the earthworks sectors, so as to prevent sediment from flowing into the municipal system, ditches, waterways and, where applicable, around temporary storage areas or waste sites located near a waterway, as well as in any other location requested by the Engineer.

6.13.6.2.9.2.2 The preliminary location of the temporary sediment barriers shall be indicated in the environmental protection action plan so that the Engineer can validate the positioning and number thereof prior to the start of work.

- 6.13.6.2.9.2.3 The temporary sediment barriers are grouped into three (3) types: the sediment barrier equipped with a geotextile, the straw bale filter and the sediment retention fiber roll.
- 6.13.6.2.9.2.4 The sediment barriers equipped with a geotextile shall be 1,000 mm high. The Contractor shall secure the fence with wooden stakes every 1,500 mm. The Contractor shall bury and completely backfill the geotextile in a 150 mm wide by 150 mm deep trench in order for it to be properly secured. The sediment barriers equipped with a geotextile shall remain in place and shall be functional until completion of the work. The geotextile shall be stretched at all times. The base thereof shall follow the topography of the terrain and be well secured to the ground.
- 6.13.6.2.9.2.5 The straw bales shall be tightly assembled and anchored in a 100 mm-deep trench, so that they are well inserted into the trench. For each bale, two (2) anchoring piles shall be installed through and into the ground. They shall be flush with the top of the bale to prevent workers from getting hurt.
- 6.13.6.2.9.2.6 The sediment retention fiber rolls shall be made of biodegradable filter materials that make it possible to intercept the sediments and slow down the water velocity while allowing the excess water to flow through. The filter material shall be contained in a sheath consisting of a photodegradable polyethylene mesh or a biodegradable jute. The Contractor shall validate the diameter and length of the fiber roll according to the actual condition of the worksite. The fiber rolls shall be placed in a trench with a depth corresponding to one-third of their diameter and be firmly anchored with stakes planted at intervals ranging from 500 to 1,000 mm.
- 6.13.6.2.9.3 Filter berm and temporary sediment trap
- 6.13.6.2.9.3.1 The filter berms and sediment traps shall be used to capture coarse materials such as, without however being limited to, gravel, sand and some silt during a gravity flow into the ditches and canals.
- 6.13.6.2.9.3.2 The filter berm shall be constructed across the ditch, at a height sufficient to allow the water to flow through. The top of the ridges shall be constructed so as to allow the flow of water in the center of the ditch and not on the side of the banks.
- 6.13.6.2.9.3.3 A unit of filter berm shall consist of three (3) temporary ridges. The first ridge, located downstream, shall be constructed with riprap material 70-20 mm in size, containing no more than 5% of fine materials passing the 80 µm sieve. The other two (2) berms shall be constructed upstream with a riprap material greater than 100 mm in size and containing no more than 10% of fine materials passing the 80 µm sieve.
- 6.13.6.2.9.3.4 The temporary sediment trap shall be a cavity dug upstream of the berms, in the ditch or canal, to slow down the flow of water and allow the deposit of sediments.

- 6.13.6.2.9.3.5 The Contractor shall construct filter berms and sediment traps as soon as the earthworks and drainage work begin.
- 6.13.6.2.9.3.6 A preliminary location shall be indicated in the environmental protection action plan so that the Engineer can validate the positioning and number thereof. Several filter berms and temporary sediment traps may be installed in the same ditch.
- 6.13.6.2.9.3.7 When the sediment traps are 50% full, the sediments retained shall be removed and, where required, the filter material shall be cleaned or replaced. In addition, a final cleaning shall be carried out during any extended temporary closure of the worksite and at the end of the work. Preventive cleaning shall also be carried out when a weather warning for heavy rain or successive days of rain is issued. The Contractor shall dispose of the clean-up residues outside the worksite. The sediments shall be managed in accordance with the applicable regulations in force. When a cleaning is required by the Engineer, the Contractor has twenty-four (24) hours to carry out the cleaning.
- 6.13.6.2.9.4 Watertight berm and sediment trap
- 6.13.6.2.9.4.1 The watertight berm and sediment trap shall be constructed in accordance with the requirements applicable to filter berms. However, each berm shall consist of 150-350 mm stones placed on a geotextile membrane. The membrane shall subsequently be folded up on the upstream face of the riprap and secured to the top thereof.
- 6.13.6.2.9.4.2 The membrane shall cover the surface of the entire berm to avoid any lateral overflow of the flow bed.
- 6.13.6.2.9.4.3 The membrane shall be a Type III non-woven geotextile compliant with MTQ standard 13101.
- 6.13.6.2.9.5 Energy-dissipator berm
- 6.13.6.2.9.5.1 The energy dissipator berm shall be used to slow down the water velocity and limit erosion in ditches. This berm is complementary to berms and traps and consists of 75-350 mm stones. A trench of a minimum depth of 150 mm shall first be excavated in the ditch; a geotextile and the riprap shall be placed in the trench.



- 6.13.6.2.9.6 Temporary settling or filter tank and natural filter
- 6.13.6.2.9.6.1 The Contractor shall adequately manage the pumped water by means of efficient filtration devices. Such devices shall be designed by a qualified professional in function of the particularities of the site. The Contractor is responsible for the efficiency of its tanks. Analytical reports for the monitoring of total suspended solids (TSS) shall be submitted to the Engineer on a monthly basis. Filters adapted to the nature of the soil shall be added if the filtration capacity of the tanks is not efficient enough. The pumped water discharged into the river shall contain less than 25 mg/L of TSS.
- 6.13.6.2.9.6.2 The Contractor shall, at the very start of the excavation and pile cleaning work, construct temporary settling or filter tanks for it to collect the pumped water from the worksite and prevent sediment flow into the municipal system, ditches and waterways.
- 6.13.6.2.9.6.3 Water from the dewatering of excavations, piles and cofferdams shall be disposed of in a settling tank, a filter tank or a natural filter, such as a vegetation zone, in accordance with, but without however being limited to, the following requirements:
- 6.13.6.2.9.6.3.1 the settling or filter tank shall be designed to settle out and/or filter the water according to the sediment particle size and the flow to be collected and discharged;
- 6.13.6.2.9.6.3.2 the settling tank shall be cleaned when it is 50% full;
- 6.13.6.2.9.6.3.3 the temporary settling tanks shall be dismantled at the end of the work, and the location thereof shall be restored to the satisfaction of the Engineer.
- 6.13.6.2.9.6.4 The temporary settling or filter tanks shall be used solely for the management of TSS and not to manage contaminated water from contaminated soil or leaching excavations. The Contractor shall adjust the filtration system to retain the contaminants other than sediments in accordance with Article 6.13.17.3.11 *Management of Pumped Water*.
- 6.13.6.2.9.6.5 The natural filter shall be located in a grassy field or forest litter, itself located more than 60 m from the top of a waterway bank. The Contractor shall obtain prior permission from the owners of the adjacent lands and, to avoid destroying the vegetation, the Contractor shall move the water outlet regularly to evenly distribute the sediment deposits.
- 6.13.6.2.9.6.6 The Contractor may add 3 m x 10 m geotextile filter bags at the output of such pumped water to increase the filtration quality of the sediments.

- 6.13.6.2.9.6.7 In addition, a final cleaning shall be carried out during any extended temporary closure of the worksite and at the end of the work. Preventive cleaning shall also be carried out when a weather warning for heavy rain or successive days of rain is issued. The sediments shall be managed in accordance with the applicable regulations in force described in Article 6.13.5 *Laws and Regulations* of this subsection.
- 6.13.6.2.9.6.8 The water from the tanks shall not cause erosion in any location from the inlet to the final outlet.
- 6.13.6.2.9.6.9 The pump shall be equipped with a strainer or be surrounded by a screen to prevent the capture and mutilation of fishes.
- 6.13.6.2.9.7 Runoff water diversion
- 6.13.6.2.9.7.1 Throughout the period during which the Contractor's work is being carried out, runoff water from outside the worksite shall be intercepted and transported off site to stabilized locations.
- 6.13.6.2.9.7.2 In order to manage worksite drainage, the Contractor shall put in place interceptor ditches, dikes or other temporary devices along the designated work area to divert water from outside the worksite towards a stable location. Such interceptor ditches or dikes shall be constructed and stabilized, through riprap or seeding, before earthworks. The Contractor shall further stabilize the ditch outlet. All temporary runoff water diversion devices shall be dismantled at the end of the work.
- 6.13.6.2.9.8 Drainage
- 6.13.6.2.9.8.1 The ditches shall not be blocked and all debris interfering with the natural flow of surface water shall be removed.
- 6.13.6.2.9.8.2 Where required, runoff and drainage water shall be controlled by the construction of ditches to prevent sediment flow from the work into the hydrous environments or municipal sewer system.
- 6.13.6.2.9.8.3 The worksite drainage water and the water that shall eventually be required during the work shall be reclaimed and processed on or outside the worksite prior to discharge into the sewer system.
- 6.13.6.2.9.9 Turbidity curtain
- 6.13.6.2.9.9.1 Before undertaking work in a waterway or on the shore, the Contractor shall install a vertical floating barrier to contain the TSS in the work area. The curtain shall be ballasted at the bottom of the body of water so as to follow the asperities of the waterway bed in order to contain the sediments. The installation method shall be submitted to the Engineer for review. The curtain height shall be sufficient enough to allow for adjustment to the fluctuations in the water level and waves.

- 6.13.6.2.9.9.2 The curtain shall be anchored to withstand current speeds and shall be marked to ensure safe navigation. The curtain shall be installed in accordance with the manufacturer's recommendations. It is forbidden to position a curtain across a waterway.
- 6.13.6.2.9.9.3 When required, the Contractor shall pump the sediment-laden water into a settling tank or natural filter in accordance with Article 6.13.6.2.9.6 *Temporary Settling or Filter Tank and Natural Filter*.
- 6.13.6.2.9.9.4 Before removing the curtain, the Contractor shall let the suspended sediments settle. The **Contractor** shall ensure that its removal method minimizes sediment re-suspension.

## 6.13.7 PROPERTY DAMAGE AND NUISANCE

### 6.13.7.1 GENERAL

- 6.13.7.1.1 The Contractor shall carry out the work using appropriate means to prevent or minimize the damage or nuisance caused by vibrations, noise, dust, subsidence and other impacts on the Owner's land, the adjoining properties and on the public.
- 6.13.7.1.2 In the event of possible impacts of the Contractor's work on people and/or property, the Contractor shall, at least fourteen (14) days before starting the work on the worksite, notify the Engineer of the nature of such impacts and of the duration of the work. The Contractor shall also provide the name, address and phone number of the person to be contacted for information or in case of complaints.
- 6.13.7.1.3 The Contractor shall provide the Engineer with the corrective measures that it will use to respond to complaints resulting from nuisances caused to neighbouring people and properties.
- 6.13.7.1.4 In the event that the Contractor's work may result in property damage as a result of vibration, subsidence, release of contaminants or otherwise, the Contractor shall, at least fourteen (14) days before starting the work, submit to the Engineer, for review, the measures that the Contractor intends to take in order to determine the condition of the properties before the work begins and to prevent or eliminate the risk of damage.
- 6.13.7.1.5 The Contractor shall comply with the applicable noise and nuisance regulations. The Contractor shall obtain all required authorizations in this regard before commencing the work.
- 6.13.7.1.6 It is prohibited in all circumstances for the Contractor to carry out any work on a heritage site or in an area intended for recreational purposes without authorization from the authorities having jurisdiction over these sites and areas.
- 6.13.7.1.7 Protective measures shall be taken to preserve the original features of the structure's architectural elements (including buildings, bridges and tunnels) which could be affected by the work to be carried out.

6.13.7.1.8 For night work, the lighting used shall be oriented towards the work areas only and means such as screens shall be used to prevent projection of light outside these areas that could otherwise represent a source of danger or an inconvenience to the public.

#### 6.13.7.2 NOISE MANAGEMENT REQUIREMENTS

6.13.7.2.1 This article outlines the noise management requirements applicable to the Contractor's work.

6.13.7.2.2 The noise is a problem that the Contractor shall consider on its worksite, particularly in the presence of sensitive areas such as dwellings, institutions and parks.

6.13.7.2.3 The Contractor shall use equipment equipped with noise reduction devices, such as mufflers, and provide for installations such as temporary noise barriers to reduce the noise from the worksite. In addition, the Contractor shall plan and carry out its work in such a way that the adverse impacts caused by the noise on the resident population are minimized.

6.13.7.2.4 When carrying out work during which noise emission levels of 75 dBA are likely to be heard in a sensitive area, the Contractor shall assess, through a noise control program, the noise emissions that will be generated and, where applicable, indicate the mitigation measures to be put in place to comply with the noise standards.

6.13.7.2.5 The noise control program shall be designed, produced and signed by an engineer who is a member of the *Ordre des ingénieurs du Québec* (OIQ) and has at least five (5) years of experience in the field of noise control during construction work.

6.13.7.2.6 At least fourteen (14) days prior to commencing work on the worksite, the Contractor shall submit its noise control program to the Engineer, for review. The program shall include, without however being limited to, the following:

6.13.7.2.6.1 the description of the sector where the work will be carried out;

6.13.7.2.6.2 the existing sound environment, prior to the work, in the identified sensitive areas;

6.13.7.2.6.3 the sound power level of each equipment with reference thereof;

6.13.7.2.6.4 the operation scenarios including the number and type of equipment, work area, period of use and schedule;

6.13.7.2.6.5 the noise thresholds to be complied with in accordance with the noise standards in force;

6.13.7.2.6.6 the noise levels anticipated during the work;

6.13.7.2.6.7 the planned mitigation measures and their efficiency rate.

- 6.13.7.2.7 Should there be a change in the methods or equipment during the progress of work, the noise control program shall be updated and resubmitted to the Engineer.
- 6.13.7.2.8 The Contractor shall conduct noise measurements prior to the commencement of work in order to evaluate the ambient sound environment. Such measurements shall include at least two (2) twenty-four (24) hour periods.
- 6.13.7.2.9 At least fourteen (14) days prior to the commencement of work, the Contractor shall submit to the Engineer, for review, an acoustic monitoring plan, which shall include, without however being limited to, the following:
- 6.13.7.2.9.1 the location and identification of the sites where noise measurements will be conducted (permanent measurement stations or temporary sites to be determined);
  - 6.13.7.2.9.2 the permitted noise thresholds in accordance with the regulations in force in the sector;
  - 6.13.7.2.9.3 the type of equipment used for the noise measurements;
  - 6.13.7.2.9.4 the measurement methods and time provided for the noise measurements;
  - 6.13.7.2.9.5 the noise complaint handling process;
  - 6.13.7.2.9.6 the procedure to be followed when measured noise levels exceed the permitted noise thresholds.
- 6.13.7.2.10 Whenever an acoustic monitoring is carried out, the Contractor shall submit to the Engineer a written report detailing the date and location of the measurements, measured noise levels, noise thresholds permitted at that time and a description of the work on worksite with photographs. This report shall also include the actions taken by the Contractor in case the sound levels have exceeded the noise thresholds and specify the date and time when the corrective measures taken were implemented.
- 6.13.7.2.11 When the noise levels from the worksite exceed the permitted noise thresholds, the Contractor shall submit to the Engineer, for review, the corrective measures that the Contractor intends to put in place to reduce the noise emitted by its work. The resumption of the activities generating the exceedances of the authorized noise levels will be permitted only when the authorized corrective measures are in place.
- 6.13.7.2.12 The Contractor shall submit to the Engineer, within two (2) months following completion of the work, an assessment of the acoustic monitoring thereby carried out. The report shall include, without however being limited to, the following:
- 6.13.7.2.12.1 the location of the sensitive areas identified;

- 6.13.7.2.12.2 the identification of the sites where noise measurements were conducted (including a map of the main sites);
  - 6.13.7.2.12.3 the type of equipment used for the noise measurements;
  - 6.13.7.2.12.4 the measurement methods;
  - 6.13.7.2.12.5 the noise measurement results;
  - 6.13.7.2.12.6 any exceedance of the noise thresholds;
  - 6.13.7.2.12.7 the corrective measures put in place or modified following the exceedances observed or complaints received;
  - 6.13.7.2.12.8 the acoustic efficiency and cost of measures put in place;
  - 6.13.7.2.12.9 the number and type of complaints received;
  - 6.13.7.2.12.10 where applicable, photographs and technical data sheets of the mitigation measures put in place.
- 6.13.7.2.13 Technical assistance
- 6.13.7.2.13.1 The Contractor shall ensure to receive worksite technical assistance from a firm specializing in acoustics with at least five (5) years of experience in the field of construction site noise control. The Engineer however reserves the right to refuse the specialized firm designated by the Contractor if, in the opinion of the Engineer, the firm does not have the required skills. The technical assistance services to be provided by that firm shall comprise, without however being limited to, the following tasks:
    - 6.13.7.2.13.1.1 the development of the noise control programs;
    - 6.13.7.2.13.1.2 the development of the acoustic monitoring plan;
    - 6.13.7.2.13.1.3 the worksite technical assistance for the assessment and implementation of the noise level mitigation measures and in-situ assessment of the acoustic performance;
    - 6.13.7.2.13.1.4 the acoustic monitoring;
    - 6.13.7.2.13.1.5 the acoustic assessment.

### 6.13.7.3 NOISE LEVEL MITIGATION MEASURES

6.13.7.3.1 The Contractor shall use various noise mitigation measures to reduce the noise generated from the work on the worksite. The following mitigation measures are mandatory and shall be put in place prior to the commencement of the work.

#### 6.13.7.3.1.1 White noise back-up alarm

6.13.7.3.1.1.1 The equipment equipped with a back-up alarm operated by the Contractor or subcontractors thereof on the work site shall be equipped with a fixed volume white-noise back-up alarm. The acoustic power of the model chosen by the Contractor shall take into account the ambient noise generated on the worksite in order to be at least 5 dBA higher than the latter. The chosen model shall be authorized in advance by the Engineer.

6.13.7.3.1.1.2 The back-up alarms shall meet the criteria specified in Article 3.10.12 of the *Code de sécurité sur les chantiers de construction*. If an equipment equipped with a back-up alarm must be replaced and is removed from the worksite, this alarm shall be reinstalled on the replacement equipment at the Contractor's expense.

#### 6.13.7.3.1.2 Mufflers or acoustic enclosures

6.13.7.3.1.2.1 The compressors and generators used on the worksite shall be surrounded by an acoustic enclosure, a noise barrier or placed in a soundproof box.

6.13.7.3.1.2.2 Motorized equipment such as trucks, loaders, bulldozers, steamrollers and backhoes, etc. shall be equipped with efficient mufflers that are in good condition, at all times.

#### 6.13.7.3.1.3 Silencer-equipped pneumatic hammers

6.13.7.3.1.3.1 The pneumatic hammers used on the worksite shall either be equipped with a silencer provided by the manufacturer of that type of equipment or be surrounded by an acoustic enclosure.

#### 6.13.7.3.1.4 Noise-reducing concrete saw blade

6.13.7.3.1.4.1 The concrete saws used on the worksite shall be equipped with noise-reducing blades whose vibrations are reduced to a minimum.

#### 6.13.7.3.1.5 Optimization of the organization of the work area

6.13.7.3.1.5.1 The fixed noise-generating equipment shall not be installed near dwellings. The organization of the work area shall be optimized by the Contractor so that the noisiest equipment is located as far away as possible from the dwellings or that an obstacle between the equipment and the dwellings, for example worksite trailers, act as a noise barrier.

- 6.13.7.3.1.6 Restrictions for heavy trucks
- 6.13.7.3.1.6.1 In order to limit noise and air pollution, the idling of an immobilized heavy vehicle diesel engine shall be limited to a maximum period of five (5) minutes. After this time, the engine shall be shut down.
- 6.13.7.3.1.7 Requirements for temporary noise reduction barriers
- 6.13.7.3.1.7.1 In general, the noise reduction barriers shall meet, without however being limited to, the following requirements:
- 6.13.7.3.1.7.1.1 the panels constituting the barrier shall be installed on the shortest distance, while respecting the geometry of the work site;
- 6.13.7.3.1.7.1.2 the **Contractor** shall submit to the Engineer, for review, the system thereby proposed to install the barrier;
- 6.13.7.3.1.7.1.3 the noise reduction barrier shall be installed before the start of the work at the worksite and maintained until the end of the work that is likely to generate exceedances of the noise thresholds of the authorized noise level.
- 6.13.7.3.1.7.2 The panels shall be constructed as follows:
- 6.13.7.3.1.7.2.1 outer side: 2 cm thick plywood;
- 6.13.7.3.1.7.2.2 inner side: 5 cm non-combustible and water-repellent mineral wool with a density of about 40 kg/m<sup>3</sup> and a wire mesh to keep the wool in place. No protective coating, such as plastic wrap, shall cover the wool.
- 6.13.7.3.1.7.3 Before undertaking the fabrication of the barrier, the Contractor shall submit to the Engineer, for review, the technical information sheet for the mineral wool. The materials constituting the barrier shall have a service life that is at least equivalent to the duration of the work on the worksite and shall be maintained in good condition. When the panels constituting the barrier are assembled, the Contractor shall ensure that they are tightly joined. The holes and cracks between the panels and between the bottom of the barrier and the ground shall be filled with a material that is dense enough to mitigate the noise.
- 6.13.7.3.1.7.4 Any temporary noise reduction barrier consisting of materials other than those mentioned above shall be authorized in advance by the Engineer and shall meet the Owner's requirements, mainly with respect to sound transmission through the walls.
- 6.13.7.3.1.8 The Contractor shall shut down unused electrical or mechanical equipment, including trucks awaiting loading, during breaks and at lunchtime.



6.13.7.3.1.9 In addition, the Contractor shall plan its worksite organization so as to perform the maximum number of trips to transport excavated materials and/or backfill materials from the side opposite to the residential sector in order to avoid the movement of heavy trucks in that sector or too close to it.

6.13.7.3.1.10 The Contractor shall raise the truckers' awareness about reducing or avoiding the sound impacts associated with the use of the dump truck tailgates.

#### 6.13.7.4 VIBRATION CONTROL

6.13.7.4.1 The Contractor shall take the necessary measures to reduce the vibrations that may be transmitted to neighboring buildings, such as residences, businesses, industries and institutions.

6.13.7.4.2 The Contractor shall enlist the services of an independent firm specializing in vibrations to assess all residential, commercial, industrial and institutional buildings located within 100 m of a vibration source, vibratory roller, pile driving, etc.

6.13.7.4.3 The vibration control expertise shall consist of a minimum of two (2) inspections. The first inspection, to be conducted before the start of the work likely to generate vibrations, shall include, without however being limited to, the following:

6.13.7.4.3.1 the detailed visual description of the buildings;

6.13.7.4.3.2 the types of materials used in the construction of the building including, if possible, the nature of the soil under the foundations from visual observations on site or according to the declaration of the resident, owner of the building;

6.13.7.4.3.3 the location of the cracks on the exterior foundation walls and location of any other breakages.

6.13.7.4.4 The first inspection shall be completed by a photographic survey. Where necessary, the Contractor shall install indicators such as seals, glass strips, markers or other, which shall be installed prior to the work to verify whether there are movements along open cracks.

6.13.7.4.5 During the first inspection, the Contractor shall note the presence of sensitive equipment such as computer systems or precision measurement equipment and the expert shall validate, with the owner or supplier of the equipment, the tolerance thereof to vibrations. The expert shall subsequently verify whether the imposed vibration limits are sufficient to ensure the system integrity. If it turns out that the imposed limits are insufficient, the expert shall propose measures that allow the work to be carried out without disrupting the operation of these systems.

- 6.13.7.4.6 One inspection per month shall be conducted when work generating vibrations is being carried out. A final inspection shall be conducted at the end of the work. The ongoing inspections of the work shall make it possible to check if breakages or new cracks have been caused by the work. The evolution of the cracks observed during the first inspection shall also be monitored. A photographic survey shall accompany each inspection.
- 6.13.7.4.7 A report from the Contractor's expert, which shall be produced following each inspection of the building condition, shall be submitted to the Engineer no later than one (1) month after each inspection.
- 6.13.7.4.8 Before undertaking any work likely to generate perceptible vibrations, the Contractor shall provide to the Engineer, for review, a vibration monitoring program. The vibration monitoring program shall be designed, produced and signed by an engineer who is a member of the OIQ and has at least five (5) years of experience in the field of vibration during construction work.
- 6.13.7.4.9 Vibration measurements shall be taken, prior to carrying out the work, near the buildings in all sectors where work likely to generate vibrations is to be carried out.
- 6.13.7.4.10 The vibration monitoring program shall contain a section dealing with the solutions considered to reduce the vibration intensity in the event that the prescribed limits are exceeded, or to minimize the number of complaints received, if any.
- 6.13.7.4.11 During the day, between 7:00 a.m. and 7:00 p.m., the permissible vibration intensity is restricted, for residential buildings, health service buildings and schools, to 2 mm/s for all types of work causing continuous or periodic vibrations, such as vibrating compactor and pile driving, and to 10 mm/s for an occasional vibration such as a detonation.
- 6.13.7.4.12 During the night, between 7:00 p.m. and 7:00 a.m., the permissible continuous and occasional vibration intensities are restricted, for all residential buildings as well as for schools and health service buildings if they are occupied during the period of work causing vibrations, to 1 mm/s.
- 6.13.7.4.13 For all other types of buildings, including the schools and health services buildings that are unoccupied during the work period, the permissible vibration intensity is restricted, at all times, to 10 mm/s.

- 6.13.7.4.14 All work likely to generate perceptible vibrations to buildings shall be subject to vibration intensity measurement. For each area located within 100 m of a source of vibrations generated by construction or dismantling equipment, at least two (2) seismographs shall be set up to assess the attenuation of intensities according to the distance. The assessment site shall be determined so that the intensity of the vibrations transmitted to the buildings located closest to the work can adequately be verified. The first seismograph shall be set up outside a building located in the area closest to the work. Where necessary, the seismograph may be moved in according to the work progress. The second seismograph shall be positioned approximately 30 m from the first, i.e. in the imaginary axis between the work area and the recording point near the building.
- 6.13.7.4.15 After having conducted a vibration monitoring, the Contractor shall submit to the Engineer a written report detailing the date and location of the measurements, the measured vibration intensity and the vibration intensity authorized at that time as well as a description of the work on worksite with photographs. This report shall also include the actions taken by the Contractor in case of exceedances and specify the date and time when the corrective measures were implemented.
- 6.13.7.4.16 When the intensity of the vibrations from the worksite exceeds the permitted vibration thresholds, the Contractor shall cease the work and have the Engineer authorize the corrective measures that the Contractor intends to put in place to reduce the vibrations generated by its work. The resumption of the work generating the exceedances of the authorized levels will be permitted only when the authorized corrective measures are in place. The Engineer may carry out vibration level checks and apply a permanent withholding as damages for every hour following the written notice from the Engineer if the work that generates the exceedances of the vibration levels is not stopped immediately.

## **6.13.8 PROTECTION OF FLORA AND WILDLIFE**

- 6.13.8.1 The work covered by this Contract may have been the subject of a permit application by the Owner from Fisheries and Oceans Canada and Transport Canada. The Owner will give a copy of the permits to the Contractor at the kick-off meeting. The Contractor shall meet any requirements contained in such permits, if need be.
- 6.13.8.2 The use of herbicides, pesticides and other poisons on the worksite is prohibited. It is further prohibited to set traps, or to poison or kill animals on the worksite.
- 6.13.8.3 PROTECTION OF FLORA
- 6.13.8.3.1 Flora shall not be removed or damaged, nor shall any vegetation be planted on the worksite. All elements forming the natural habitat shall be protected in order to preserve the ecological value thereof.
- 6.13.8.3.2 At the Engineer's request, the Contractor shall protect the trees and bushes adjacent to the worksite, at no additional cost to the Owner.

- 6.13.8.3.3 During excavation and landscaping work, the Contractor shall control the traffic in the tree root zones in order to prevent any soil compaction.
- 6.13.8.3.4 The Contractor shall not paint, damage or mark the natural elements, including rocks and trees present on the worksite and surroundings, for surveying purposes or other, without obtaining prior authorization from the Engineer.
- 6.13.8.3.5 Work to repair any damages caused by the Contractor to vegetation and natural elements located outside the designated worksite shall be carried out under the supervision of a qualified landscaping specialist hired by the Contractor.
- 6.13.8.4 PROTECTION OF WILDLIFE
- 6.13.8.4.1 The Contractor shall plan its work according to the requirements relating to wildlife, including aquatic fauna.
- 6.13.8.4.2 The Contractor shall capture, with fishing gear (seine or gillnet), all live fish trapped in the work area and transport them in open water.
- 6.13.8.4.3 The Contractor shall ensure that the equipment to be used in the water is free from invasive species. Before launching the equipment, it shall be washed and rinsed by the Contractor, to the satisfaction of the Engineer.
- 6.13.8.4.4 The Contractor shall take into account the specific constraints of the peregrine falcon nesting season, which extends from April 1 to August 1, or as directed by the Engineer, in the event that the nesting is confirmed by the Owner.
- 6.13.8.4.4.1 At least thirty (30) days before the specific mobilization on one of the Owner's structures or, if the specific mobilization is scheduled within a period of less than thirty (30) days after award of the Contract, within fourteen (14) days of award of this Contract, as well as on April 1<sup>st</sup> of every year, the Contractor shall check for the presence of peregrine falcons or peregrine falcon nests on the structure in question within 200 m of the work site. In such a case, the Contractor shall immediately inform the Engineer thereof, and the latter will determine if mitigation measures to protect the nests are necessary. The Contractor shall follow the Engineer's instructions.
- 6.13.8.4.4.2 The Contractor shall take all the measures required to protect the habitat of the peregrine falcon during the nesting season. That habitat corresponds to a territory made up of perches used for hunting, nesting, feeding or breeding the young. The measures shall be authorized in advance by the Engineer and agreed with the authorities responsible for wildlife.
- 6.13.8.4.4.3 All work is prohibited within 200 m of active nests during the nesting season. All nesting sites shall remain accessible to peregrine falcons. Outside this radius, the Contractor shall plan its work so that in the spring, the Contractor's activities are carried out as far as possible from the nest so as to approach it as little as possible and so that it is only gradually that the activities will get closer to the nest.

- 6.13.8.4.5 The Contractor shall take into account the specific constraints of the cliff swallow nesting season, which extends from April 15<sup>th</sup> to August 31<sup>st</sup>, or as directed by the Engineer, in the event that the nesting season is confirmed by the Owner.
- 6.13.8.4.5.1 At least thirty (30) days before the specific mobilization on one of the Owner's structures or, if the specific mobilization is scheduled within a period of less than thirty (30) days after award of the Contract, within fourteen (14) days of award of this Contract, the Contractor shall check for the presence of cliff swallows or cliff swallow nests within 20 m of the work site. In such a case, the Contractor shall suspend its work and immediately inform the Engineer thereof, and the latter will determine if mitigation measures to protect the nests are necessary. The Contractor shall follow the Engineer's instructions.
- 6.13.8.4.5.2 All work during the cliff swallow nesting season is prohibited. If the Contractor wishes to repair the structure or carry out earthworks during that period, the Contractor shall isolate the nesting grounds before the start of the annual nesting season, using nets or membranes. The protective device shall prevent the nesting of birds in that location.
- 6.13.8.4.5.3 The protective device shall be kept in place during the entire nesting season or until the end of the work.
- 6.13.8.4.5.4 The Contractor shall have the protective device approved by the Engineer. No work can begin prior to the installation of the device. If, despite the device, cliff swallows nesting in the structure are discovered, the work shall be interrupted until the end of the nesting season.
- 6.13.8.4.5.5 The Contractor shall document the measures put in place during the work to respect the constraints associated with avian species and nests thereof. In the event of bycatch, destruction or displacement of nests, the Contractor shall, with the authorization of the Engineer, complete the baseline sheet provided by the Owner.

## **6.13.9 SITE ORGANIZATION**

### **6.13.9.1 INSTALLATION OF THE WORKSITE AREAS**

- 6.13.9.1.1 The Contractor shall limit access in areas considered environmentally sensitive or of ecological significance. The Contractor shall ensure that at no time a person, machine, equipment or material is found in such areas or has access thereto. The limited access areas will be identified by the Engineer. The Contractor is responsible for installing fences (or any other means deemed appropriate) around these areas in order to limit access thereto.
- 6.13.9.1.2 The worksite facilities as well as the outbuildings and their parking areas, the chemical toilets and any other temporary site required for the work, including the waste areas, shall be installed or constructed at a minimum distance of 20 m from the top of the waterway bank.

6.13.9.1.3 No deforestation outside of the site limits indicated on the drawings will be allowed for the installation of the worksite areas.

#### 6.13.9.2 CONCRETE MIXER CLEAN-UP ZONES

6.13.9.2.1 The concrete mixer clean-up zones shall be set up so that the water used and debris generated remains within the perimeter delineated by an elevation of the ground relative to the natural ground level. The dimensions of the structure shall be sufficient to collect all the water used for cleaning. In addition, the clean-up zone shall be located at a minimum distance of 60 m from a waterway. The concrete mixer clean-up zone shall be authorized in advance by the Engineer and identified in the mobilization plan.

6.13.9.2.2 The Contractor shall place a waterproof membrane that covers the bottom of the concrete mixer clean-up zones. The Contractor shall have the membrane approved prior to placement thereof.

6.13.9.2.3 The Contractor is authorized to clean only the concrete mixer discharge chute in the clean-up zone. The wash water and debris generated in the watertight pond shall rest for at least one hour to allow debris and suspended solids to settle and build up at the bottom of the pond. Water can afterwards be pumped and sent to a storage tank, and as needed, to an authorized site.

6.13.9.2.4 The concrete cleaning debris shall be removed from the worksite with the other demolition/construction debris and sent to a site authorized by *the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques* (MDDELCC). The Contractor shall obtain authorization from the Engineer before disposing of the concrete debris in the landfills authorized under this Contract. As for the watertight pond, it shall be emptied when filled to 50% or when a weather warning for heavy rains is issued. Drainage shall also be carried out during both an extended temporary closure and a permanent closure of the worksite.

6.13.9.2.5 The Contractor shall not discharge any debris and/or residues of concrete, laitance or wet mortar into an aquatic environment. All debris introduced into an aquatic environment shall be removed without delay.

#### 6.13.9.3 ACCESS ROADS

6.13.9.3.1 On the worksite, the Contractor shall control the movement of its vehicles and those of its subcontractors and suppliers so that they travel on designated roads and do not cause any nuisance (noise, dust, traffic congestion, etc.).

6.13.9.3.2 During the work, the Contractor shall recover, without delay, any material that could have fallen, during transportation, on the surface or in the ditches of both the private and the public roads used for transporting its equipment.

#### 6.13.9.4 MAINTENANCE OF THE CONSTRUCTION VEHICLES AND EQUIPMENT

- 6.13.9.4.1 The maintenance of the construction vehicles and equipment on the worksite shall be carried out in a maintenance shop or in a service area dedicated for this purpose.
- 6.13.9.4.2 All equipment and motorized vehicles used by the Contractor on the worksite shall be kept clean throughout the duration of the project to minimize the risk of contaminant dispersion. The trucks shall be inspected on a regular basis to ensure that they are in good condition and clean.
- 6.13.9.4.3 At the request of the Engineer, the Contractor shall carry out the mechanical cleaning such as brushing and/or washing vehicles used on the worksite.
- 6.13.9.4.4 The Contractor shall recover the residues generated by the cleaning of its equipment and of the construction equipment.
- 6.13.9.4.5 The general maintenance, the fuel and lubricant supply operations and the clean-up and storage of the equipment shall be carried out in locations where there are no risks of contaminating the natural environment and within a minimum distance of 20 m from the top of a waterway bank, ditch or wetland. If it is physically impossible to comply with this distance, additional protective measures authorized by the Engineer shall be put in place.
- 6.13.9.4.6 The Contractor shall take all necessary precautions to prevent soil contamination at the maintenance shop or at the service area, as well as at the other locations on the worksite.
- 6.13.9.4.7 Transport vehicles and construction equipment shall be maintained in good working order to prevent leakage of oil, fuel or any other pollutants and to minimize, as much as possible, gaseous discharges and noise.
- 6.13.9.4.8 The Contractor shall prohibit access to the worksite to any equipment that has hydrocarbon, fuel, engine oil or hydraulic oil leaks. Where applicable, the equipment shall be repaired in a workshop or service area provided for this purpose before being admitted on the worksite.
- 6.13.9.4.9 The Contractor shall monitor all refueling operations that take place on the site. The Contractor shall have the Engineer authorize the refueling methods on the river and river banks. The Contractor shall also indicate and have the Engineer authorize any transportation and storage of chemical products, hydrocarbons or any other products that pose a risk of contaminating the waterway.
- 6.13.9.4.10 The Contractor shall provide for the construction of one or more refueling areas for the machinery to reduce the risks of contamination from petroleum products. These refueling areas shall be located at a minimum distance of 20 m from any ditch, grid, sewer, waterway or wetland. A drawing of the refueling area, comprising the materials and construction method, shall, prior to construction, be submitted to Engineer for review.

6.13.9.4.11 In addition, no fuel machinery or equipment shall remain on the 20 m buffer strip from the top of a waterway bank or ditch in the hours during which the worksite is closed.

#### 6.13.9.5 SITE RESTORATION

6.13.9.5.1 As work progresses, the Contractor shall clean all work areas and all site made available thereto. At the end of the works, the Contractor shall restore, to a condition acceptable to the Engineer, the grounds and the work site.

6.13.9.5.2 Following dismantling of the temporary structures on the worksite, the Contractor shall restore to their original condition the banks and bed of the waterways such as the grading, the waterway bed profile and the existing vegetation.

6.13.9.5.3 In order to show that the grounds and the work site have been restored to an acceptable condition, the Contractor shall participate to a pre-work inspection and to a post-work inspection according to the following:

##### 6.13.9.5.3.1 Pre-work inspection

6.13.9.5.3.1.1 Before starting the work, the Contractor shall, in the presence of the Engineer, conduct a systematic survey of the entire work site and nearby grounds that may be affected by the work. Such survey shall be conducted by means of a digital and/or video camera. The purpose of this survey is to provide a reference as to the original condition of the work site and grounds. An inspection report shall be produced by the Contractor and signed by both the Engineer and the Contractor. The photographic and/or video document shall be produced in three (3) copies, two (2) copies of which including the computer files, and remitted to the Owner.

##### 6.13.9.5.3.2 Post-work inspection

6.13.9.5.3.2.1 At the end of the work, the Contractor shall, in the presence of the Engineer, conduct another systematic survey of the work site and nearby grounds. Such survey shall also be conducted by means of a digital and/or video camera. The purpose of this survey is to make it possible for the Engineer to ensure that the work site and nearby grounds have, at the end of this Contract, been restored to their original condition to his satisfaction. An inspection report shall be produced by the Contractor and signed by both the Engineer and the Contractor.



## **6.13.10 EMERGENCY MEASURES IN THE EVENT OF A SPILL, A FIRE OR ANY OTHER ENVIRONMENTAL INCIDENT**

### **6.13.10.1 ENVIRONMENTAL EMERGENCY PLAN**

6.13.10.1.1 The Contractor shall prepare an environmental emergency plan in case of a spill, a fire or any other environmental incident. Such plan shall be submitted to the Engineer, for review, at least fourteen (14) days before the commencement of the work at the worksite.

6.13.10.1.2 The environmental emergency plan shall include, without however being limited to, the following:

6.13.10.1.2.1 the objectives of the environmental emergency plan and of the spill prevention program;

6.13.10.1.2.2 the analysis of the hazards of the work for the environment;

6.13.10.1.2.3 the list of situations that could endanger the environment;

6.13.10.1.2.4 the preventive measures related to hazardous situations;

6.13.10.1.2.5 the monitoring and corrective measures of both the prevention program and the emergency plan;

6.13.10.1.2.6 the different interventions and procedures provided in case of a spill or accident;

6.13.10.1.2.7 the different interventions and procedures provided during refueling on the river or river banks;

6.13.10.1.2.8 the list of individuals, companies, organizations or authorities to contact in the event of emergency or spill, and a description of the roles and responsibilities of each of them.

6.13.10.1.3 One (1) copy of the environmental emergency plan approved by the appropriate authorities shall be submitted to the Engineer.

6.13.10.2 The Contractor shall ensure that its employees are trained and aware of the procedures to be followed in the event of an accidental spill, fire or any other environmental incident, including notification to the Engineer and other relevant authorities.

- 6.13.10.3 The Contractor shall install, on every mobilization site (both on land and on water), one or more (depending on the nature of the work) environmental kits, recovery equipment (absorbent cotton and fiber rolls, watertight containers, tanks, etc.) and an extinguisher of a class compliant with the current standards for the management of any spill, environmental incident or fire. In addition, the personnel required to contain, without delay, any accidental contaminant spill shall be ready and available at all times during the work. The treatment and rehabilitation of the areas affected by a spill, environmental incident or fire shall be undertaken to the satisfaction of the Engineer at the Contractor's expense.
- 6.13.10.4 The environmental kit shall, as a minimum, contain the following items:
- 6.13.10.4.1 one (1) 171 L plastic barrel;
  - 6.13.10.4.2 one hundred (100) 381 mm x 483 mm x 360 ml absorbent sheets;
  - 6.13.10.4.3 five (5) 76 mm x 1.22 m log booms;
  - 6.13.10.4.4 two (2) 127 mm x 3.05 m log booms;
  - 6.13.10.4.5 one (1) 127 mm x 30.48 m log booms;
  - 6.13.10.4.6 one (1) patching compound;
  - 6.13.10.4.7 three (3) 1,016 mm x 1,524 mm x 152 mm disposal bags;
  - 6.13.10.4.8 two (2) pairs of nitrile gloves.
- 6.13.10.5 The Contractor shall adapt the environmental kit during work carried out on the water.
- 6.13.10.6 The Contractor shall inform MDDELCC's Urgence Environnement and/or Environment and Climate Change Canada and/or the Canadian Coast Guard of any accident or spill that may disturb the environment, regardless of the scale. The phone numbers shall be displayed in the worksite trailer.
- 6.13.10.7 In the event of a spill, a fire or any other environmental incident the Contractor shall, once the spill or other events are secured, contained and controlled, submit to the Engineer, for review, an environmental characterization plan. The characterization shall make it possible to assess the condition of the site to the satisfaction of the Engineer. If required by the Engineer, the Contractor shall submit an environmental rehabilitation plan. The plan shall provide for the recovery of the contaminant(s) and the removal of all contaminated materials. The site rehabilitation shall be carried out in accordance with the plan approved by the Engineer and to the satisfaction thereof.
- 6.13.10.8 In the event of a leak or spill on a solid surface, the Contractor shall recover the petroleum products and clean the surface to the satisfaction of the Engineer. The recovered products shall be disposed of in an authorized site and in accordance the applicable regulations in force.

- 6.13.10.9 The Contractor shall send to the Engineer, at least fourteen (14) days prior to the start of the work, the contact information of the disposal sites and of the subcontractors specializing in the recovery of oil spills or other.
- 6.13.10.10 Failure by the Contractor to meet the requirements of paragraphs 6.13.10.1 to 6.13.10.9 will result in the application of Article 5.35.10 *Damages for Failure to comply with Specific Environmental Protection Requirements* of Section 5 *Standard Administrative Conditions*.

### **6.13.11 HAZARDOUS MATERIALS**

- 6.13.11.1 Hazardous materials, as defined in the *Regulation respecting Hazardous Materials*, that are used on the worksite shall be identified and safely stored. The mode of utilization of such materials shall comply with the applicable laws and regulations in force. Safe and compliant storage areas shall be constructed to contain any leaks or spills. Prior to commencing the construction work, the Contractor shall submit to the Engineer, for review, the material safety data sheets for all products needed for the performance of this Contract, and the Contractor shall ensure the availability of such material safety data sheets on the worksite. The modes of utilization of the hazardous materials shall comply with the current laws and regulations to this effect. The emergency equipment required in the event of an accidental spill shall be available on the work site, in accordance with Article 6.13.10 *Emergency measures in the event of a spill, a fire or any other environmental incident*.
- 6.13.11.2 Prior to the commencement of the work at the worksite, the Contractor shall submit to the Engineer the storage, handling and disposal methods of the hazardous materials to be used on the site.
- 6.13.11.3 The abrasives used for stripping operations shall be free of heavy metals. The Contractor's environmental representative shall obtain either a certificate from the manufacturer or the results of the analysis of a representative sample in order to ensure that the chemical composition of the abrasive used is known.

### **6.13.12 PETROLEUM PRODUCTS**

- 6.13.12.1 Petroleum products including, without however being limited to, gasoline, diesel, lubricating oils and greases required for the Contractor's operations, shall not be stored on the worksite without the authorization of the Engineer.
- 6.13.12.2 The Contractor shall ensure that all petroleum products are stored, handled and used with precaution. Containment, protection and recovery measures shall be implemented by the Contractor to handle leaks or spills.
- 6.13.12.2.1 The tanks used to store the petroleum products shall be compliant with the applicable standards. They shall be double-walled and the technical data sheet thereof shall be provided to the Engineer. The tank openings and pumps shall be kept under lock and key at all times.
- 6.13.12.2.2 The tanks and dispensers shall be protected and located so as to minimize the risks and consequences of a collision.

- 6.13.12.2.3 The Contractor shall notify the local fire protection services of the presence of tanks on the worksite.
- 6.13.12.2.4 The fuel, oil or other petroleum product depots shall be installed in locations such that, in case of explosion, there is no danger to human life. The storage areas shall be located at a distance of 60 m from the water. These locations shall be authorized by the Engineer.
- 6.13.12.2.5 The hydrocarbon tanks shall be positioned in a waterproof containment structure on absorbent cushion to allow for the work to be carried out. The structure shall be authorized by the Engineer and have a minimum volume equivalent to 150% of the tank capacity to provide a safety margin. The containment structure shall be inspected during rainy periods to prevent it from overflowing.
- 6.13.12.2.6 In the event of a leak or spill of petroleum products, the Contractor shall immediately recover the petroleum products and remove all contaminated materials and soil, to dispose thereof in an authorized site and in accordance with the Law. The affected area may, as decided by the Engineer, have to be the subject of a characterization and environmental rehabilitation by the Contractor in accordance with paragraph 6.13.10.7.
- 6.13.12.2.7 In the case of stationary equipment such as generators, compressors and fuel tanks, the Contractor shall use a containment structure on absorbent cushion to allow for its work to be carried out. The structure shall be authorized by the Engineer and have a minimum volume equivalent to 150% of the tank capacity to provide a safety margin. The containment structure shall be inspected during rainy periods to prevent it from overflowing.
- 6.13.12.3 Failure by the Contractor to meet the requirements of paragraphs 6.13.12.1 and 6.13.12.2 will result in the application of Article 5.35.10 *Damages for Failure to comply with Specific Environmental Protection Requirements* of Section 5 *Standard Administrative Conditions*.

### **6.13.13 NON-HAZARDOUS RESIDUAL MATERIALS**

- 6.13.13.1 The **Contractor** shall dispose outside the worksite of all non-hazardous residual materials resulting from the work covered by this Contract in accordance with the Law.
- 6.13.13.2 The Contractor shall, on a daily basis, supply a sufficient quantity of containers to store household waste. Household waste shall be disposed of in an authorized site and in accordance with the Law.
- 6.13.13.3 The Contractor shall put in place an adequate management program to ensure the containment and disposal of waste such as metallic debris, used asphalt pavement and concrete debris. Such waste shall, as much as possible, be sorted at source and recycled.

- 6.13.13.4 The Contractor shall keep a register of all non-hazardous residual materials disposed of from the worksite. Such register shall contain, at a minimum, information on the type of residual materials as well as the estimated volume disposed of by the Contractor, dates of disposal, carrier, transport manifest number, disposal site and mass disposed of. The transport manifests and weigh-tickets shall accompany the register. The register shall be updated and made available to the Engineer upon request.
- 6.13.13.5 The Contractor shall manage the dismantling materials in accordance with the 3R-RD (Reduce, Reuse, Recycle, Reclaim, Dispose) principle.
- 6.13.13.6 The Contractor shall separate the brick from the concrete and remove the reinforcement from the concrete.
- 6.13.13.7 The Contractor shall reduce the concrete fragments on site to chunks of 300 mm by 300 mm or as per the requirements of the owner of the disposal site.
- 6.13.13.8 The Contractor shall store the scrap metal, brick and concrete fragments in distinct locations provided for this purpose, and in function of the respective authorized sites.
- 6.13.13.9 The Contractor shall, in order to characterize the concrete, collect a 1,000 m<sup>3</sup> sample of aggregate.
- 6.13.13.10 The Contractor shall provide for the cleaning of the metal infrastructures for the recycling of the metal, where applicable (materials soiled by mildew or bioaerosols, etc.).
- 6.13.13.11 When dismantling materials covered with lead paint, the Contractor shall, to the extent possible, limit the interventions and manipulations likely to emit lead dust. For the work likely to emit lead dust, the Contractor shall put in place prevention and control measures such as the use of a HEPA filter dust-collection device or wet cleaning.
- 6.13.13.12 The Contractor shall discard the dismantling materials covered with non-leachable paint in containers provided for this purpose in order to limit the emission of dust containing lead. The Contractor shall clean up all lead paint chips and dust on the various surfaces and discard them in containers provided for this purpose. Such containers shall be sealed to prevent the emission of dust containing lead into the surrounding environment.
- 6.13.13.13 The Contractor shall discard the sealed containers in waste containers provided for this purpose.

#### **6.13.14 ASBESTOS**

- 6.13.14.1 In the event that, in the course of performing this Contract, the Contractor suspects the presence of materials that may contain asbestos, the Contractor shall immediately inform its worksite health and safety representative, the Engineer and the CNESST of the situation.
- 6.13.14.2 Control measures shall be taken by the Contractor in accordance with the *Safety Code for the Construction Industry*.

- 6.13.14.3 Where applicable, when removing asbestos cement panels, the Contractor shall use hand tools or power tools fitted with a HEPA filter dust-collection device, as specified in the low-risk work procedure provided for in Article 3.23.14.1 of the *Safety Code for the Construction Industry*.
- 6.13.14.4 The Contractor shall remove the cementitious materials characterized as containing asbestos in accordance with the high-risk work procedure provided for in Articles 3.23.3.2 and 3.23.16 of the *Safety Code for the Construction Industry* before undertaking the demolition of these areas.
- 6.13.14.5 The Contractor shall thoroughly water the cementitious materials prior to removal thereof through surface scarification or any other methods.
- 6.13.14.6 The Contractor shall recover the smallest debris of asbestos-containing materials and dust from the ground, package them and label them for outside the worksite disposal in a site authorized for this purpose.
- 6.13.14.7 The Contractor shall discard the debris of asbestos-containing material in a container equipped with a waterproof canvas inside and previously labeled for asbestos, in accordance with the *Règlement sur la santé et sécurité du travail* et au *Guide de gestion sécuritaire de l'amiante – Prévenir l'exposition des travailleurs à l'amiante* published by the CNESST. The containerization of the debris shall be carried out by means of mechanical equipment or other method approved by the Engineer.
- 6.13.14.8 In order to limit the emissions of asbestos fibers in the air, the Contractor shall water the materials on a continuous basis during all operations, including the dismantling and containerization of the debris.
- 6.13.14.9 The Contractor shall thoroughly clean the premises using a HEPA filter vacuum cleaner and proceed with wet cleaning.
- 6.13.14.10 The final step shall consist of either vacuum cleaning or washing all surfaces of the following with water: work area containing asbestos, work decontamination enclosure and waste transfer station, all depending on the surface and the temperature.
- 6.13.14.11 Following the cleaning of all surfaces in these enclosures, a sealant authorized by the Engineer shall be applied to all surfaces of the bare walls and in the facilities, in order to capture and adhere any dust on exposed surfaces.
- 6.13.14.12 The Contractor shall proceed with the cleaning of all equipment used for asbestos removal and the dismantling of the personal protective enclosures, such as the disposable coveralls and the P-100 half-mask respirators.
- 6.13.14.13 All polyethylenes and other debris generated by the dismantling of the work area enclosures containing asbestos are considered to be contaminated with asbestos and shall be disposed of outside the worksite as asbestos waste in a site authorized for this purpose.

## **6.13.15 HAZARDOUS RESIDUAL MATERIALS**

- 6.13.15.1 The Contractor shall not store hazardous residual materials on the worksite and shall dispose thereof outside th worksite, in accordance with the Law.
- 6.13.15.2 The Contractor is the shipper of the hazardous residual materials and special waste and shall bear all costs associated with obtaining and completing, together with the carrier and the recipient, each manifest.
- 6.13.15.3 The Contractor shall hire a carrier who holds a provincial permit for the transportation of hazardous residual materials or special waste. The Contractor shall provide the Engineer with the list of the carrier(s) as well as the list of authorized sites that will receive these materials. This list shall be submitted to the Engineer at least fourteen (14) days prior to the start of the work concerned.
- 6.13.15.4 The Contractor shall submit to the Engineer, as they are produced, copies of all documents, forms and manifests regarding the hazardous residual materials and special waste.
- 6.13.15.5 The Contractor shall keep an accurate record of all materials disposed of from the work site so that the Owner is able to trace the materials from their point of origin to their final point of disposal.
- 6.13.15.6 In the case where a characterization of the residual materials is required, the Contractor's environmental representative shall ensure that certificates of analysis are obtained from a laboratory accredited by the MDDELCC.
- 6.13.15.7 The Contractor's environmental representative shall obtain a disposal certificate issued by the disposal site or transfer station for solid waste, debris or waste considered as hazardous residual materials or special waste. A copy of such certificates shall be submitted to the Engineer.
- 6.13.15.8 In order to ensure adequate management of the solid residual materials (notably debris and waste) generated during the work, the Engineer may require that an analysis of such materials be carried out, by the Contractor and at its expense, to determine the level of contamination thereof.
- 6.13.15.9 To control the contaminated abrasive, the Contractor shall periodically provide the Engineer at the worksite with a mass balance of the abrasive entering and exiting the worksite.
- 6.13.15.10 If required by the Engineer, a report specifying the nature, quantity and location of these materials shall be submitted thereto, for review, at least fourteen (14) days before the start of the demolition work. The costs for such report shall be borne by the Contractor.

## **6.13.16 WASTE WATER**

- 6.13.16.1 The Contractor shall ensure that the waste water generated during the work including, without limitation, the waters generated by worksite facilities and operations, notably the wastewater generated by concrete sawing, are contained and reclaimed. If a treatment system (portable settling tank, filters or other facilities of this kind) must be used, such system shall prevent the contaminants and particles likely to settle out into the sewer systems to run off to sewers. The Contractor shall use the means necessary to define the method to dispose of the collected sediments and wastewater and to ensure compliance with the discharge standards. Where applicable, a copy of the results of the analyses of the sediments and wastewater shall be provided to the Engineer prior to disposal thereof.
- 6.13.16.2 The surfaces and drainage network in the sector of the temporary facilities shall be set up in order to prevent any environmental contamination.

## **6.13.17 CONTAMINATED SOIL AND GROUNDWATER**

### **6.13.17.1 GENERAL**

- 6.13.17.1.1 This article outlines the requirements that shall be met by the Contractor to ensure proper management of the excavated soil and residual materials.
- 6.13.17.1.2 The soil and residual materials excavated by the Contractor shall, to the extent possible, be reused on the worksite. In the event that this is not possible, they shall be disposed of outside the worksite in accordance with MDDELCC requirements.
- 6.13.17.1.3 The Contractor shall, where required or at the request of the Engineer, carry out a characterization of the soil and groundwater that may be affected by the work at the location provided for its temporary facilities, including the equipment and material storage areas, maintenance shop, fuel depot, loading and unloading areas, vehicle washing areas, parking areas, and other.
- 6.13.17.1.4 A soil and groundwater characterization shall be carried out by the Contractor before the commencement and at the end of the work at the worksite, in order to demonstrate to the Owner that the land is returned thereto in the same condition as at it was originally. The pre-work report shall be submitted to the Engineer at least fourteen (14) days before the start of the work at the worksite. As for the post-work report, it shall be submitted to the Engineer no later than fourteen (14) days after the completion of the work at the worksite.

### **6.13.17.2 WORK SEQUENCES**

- 6.13.17.2.1 The Contractor shall consider that the soil excavation shall be carried out methodically, so as to avoid contaminating the rehabilitated areas and allow the control required for environmental monitoring, as directed by the Engineer.
- 6.13.17.2.2 The Contractor shall select the equipment and methods to achieve the objectives of the work anticipated and meet the deadlines provided for in this Contract.



### 6.13.17.3 EXECUTION OF THE WORK

#### 6.13.17.3.1 Selective excavation of soil and other materials

6.13.17.3.1.1 The excavation of soil and residual materials includes the removal of all unconsolidated materials of any kind that are not considered as rock, including erratic blocks, such as compact clays or debris of various kinds that can be loosened and lifted with heavy excavation equipment.

6.13.17.3.1.2 The Contractor shall select the excavation equipment and methods to achieve the objectives of this Contract, while meeting the excavation requirements of the *Safety Code for the Construction Industry*.

6.13.17.3.1.3 The Contractor shall follow the Engineer's instructions regarding the selective excavation of soil levels according to their level of contamination, residual materials, hazardous materials or construction debris, whose nature and environmental characteristics determine the different types of reuse or off-site disposal authorized by the MDDELCC.

6.13.17.3.1.4 The Contractor shall carefully proceed with the selective excavation of the materials presenting different geotechnical or environmental characteristics in order to avoid the mixing of unsuitable materials with materials potentially reusable under this Contract. The storage of materials awaiting reuse shall also be done in such a way as to avoid such mixtures and to prevent any modifications of their characteristics that would render them unusable.

6.13.17.3.1.5 The Contractor is responsible for all costs incurred by the loss of potentially reusable materials, including the costs of loading, transportation, disposal and replacement with imported materials to replace lost quantities. In addition, the Contractor will not be entitled to submit any claims or seek compensation for the costs resulting from the inability of reusing the excavated materials by his actions or inactions.

6.13.17.3.1.6 The Contractor shall follow the Engineer's instructions in case of accidental discovery of buried elements such as tanks and barrels, or in case of unforeseen environmental situations, such as the presence of free contaminants such as hydrocarbons and mercury.

#### 6.13.17.3.2 Loading of excavated materials

6.13.17.3.2.1 In regard to the particular environmental conditions of the soil or of the precision of the prior environmental and geotechnical studies, the excavated soil and residual materials shall:

6.13.17.3.2.1.1 be loaded directly in the trucks for transportation and outside the worksite disposal thereof in authorized sites; or

6.13.17.3.2.1.2 be transported to a temporary storage area authorized by the Engineer.

6.13.17.3.2.2 The Engineer will determine which method of management of soil and other excavated materials applies, and the Contractor shall comply therewith.

#### 6.13.17.3.3 Temporary storage

6.13.17.3.3.1 The temporary storage of the soil shall be performed in the storage areas designated by the Engineer and in accordance with his instructions. The location and dimensions of the storage areas shall be authorized in advance by the Engineer.

6.13.17.3.3.2 The soil and residual materials conveyed to the temporary storage area shall be stockpiled on a watertight surface, such as asphalt or a waterproof membrane compatible for that function, and to a maximum height of 2.5 m, using a hydraulic loader. The volume of each pile made for sampling shall not exceed 100 m<sup>3</sup>.

6.13.17.3.3.3 The soil temporarily stockpiled for reuse as backfill material may be stacked to a maximum height of 3 m without maximum volume restriction per pile.

6.13.17.3.3.4 The time required to obtain the analytical results is generally in the order of five (5) working days following the reception of the samples by the laboratory. After receiving the results and as directed by the Engineer, the Contractor shall keep the soil in the storage area for future backfilling of the work area or dispose of it outside the worksite in an authorized site, in order to free the storage area on the worksite. The Contractor shall ensure to free the storage area so as to always have enough storage space for the continuation of the work without causing delays.

#### 6.13.17.3.4 Covering the stockpiles of excavated materials

6.13.17.3.4.1 All soil and residual materials with a level of contamination exceeding the limit values of *Annexe II* of the *Règlement sur la protection et la réhabilitation des terrains* temporarily stored on the worksite shall be covered at the end of each work day.

6.13.17.3.4.2 To this end, the Contractor shall supply waterproof membranes, tear-proof and sufficiently strong, as well as all ballasting equipment required for securing thereof.

6.13.17.3.4.3 The Contractor shall ensure the maintenance of the cover membranes and make sure to maintain them in a condition that is proper and corresponds to the use for which they are intended, until the end of the work and closure of the worksite.

#### 6.13.17.3.5 Segregation of excavated materials

- 6.13.17.3.5.1 As directed by the Engineer and in order to meet the requirements of the sites authorized to receive these soil and residual materials, the Contractor shall, prior to loading, remove, either by manual or by mechanical means, all coarse debris and residual materials of any kind that are present in the soil and having a diameter greater than 300 mm, or according to the conditions specific to the authorized sites.
- 6.13.17.3.5.2 Unless otherwise specified by the Engineer, coarse debris resulting from this segregation shall be considered as unrecoverable residual materials unless they are broken into pieces smaller than 300 mm.
- 6.13.17.3.5.3 All excavated soil and residual materials shall be segregated according to their pre-established level of contamination, and according to the following characteristics:
- 6.13.17.3.5.3.1 <A soil;
  - 6.13.17.3.5.3.2 A-B soil;
  - 6.13.17.3.5.3.3 B-C soil;
  - 6.13.17.3.5.3.4 C-RBCS soil;
  - 6.13.17.3.5.3.5 > RBCS soil;
  - 6.13.17.3.5.3.6 non-hazardous residual materials;
  - 6.13.17.3.5.3.7 hazardous residual materials.
- 6.13.17.3.5.4 The soil categories refer to generic criteria A, B and C of the *Politique de protection et de réhabilitation des terrains contaminés*. RBCS corresponds to the standards of Appendix I of the *Regulation respecting the Burial of Contaminated Soils*.
- 6.13.17.3.5.5 The categories of residual materials are determined by the *Regulation respecting Hazardous Materials*.
- 6.13.17.3.5.6 In the case where the level of contamination of the excavated soil and residual materials is unknown, they shall be segregated and temporarily stockpiled, for sampling purposes, according to the stratigraphy observed during excavation work. The temporary storage conditions shall be authorized by the Engineer.

6.13.17.3.6 Transportation of the excavated soil and residual materials within the worksite

6.13.17.3.6.1 All excavated soil and other residual materials intended to be transported on the worksite for reuse or temporary storage shall be transported in a dump truck. As liquid could leak from such soil or residual materials, the container or bin shall be watertight.

6.13.17.3.6.2 Prior to departure from the excavation area, each truck shall receive, from the Engineer, a transport manifest and instructions on its destination.

6.13.17.3.7 Outside the worksite transportation of the excavated soil and residual materials

6.13.17.3.7.1 The circulation on public roads of any truck used for transporting excavated soil and residual materials outside the worksite shall, without being limited to, comply with the *Highway Safety Code* and the *Transportation of Dangerous Substances Regulation*.

6.13.17.3.7.2 Pursuant to the *Transportation of Dangerous Substances Regulation*, contaminated soil whose level of contamination is greater than criterion C and hazardous residual materials shall be transported in a dump truck covered with a waterproof tarp which entirely covers the top of the dump box and the load. In this last case, the tarp shall be installed so that rain or snow cannot reach the load or cause loss or leakage of contaminants. As liquid could leak from such soil or hazardous residual materials, the dumb box shall be watertight.

6.13.17.3.7.3 The transportation of non-hazardous residual materials, such as construction debris, is not regulated. Thus, construction debris may be transported by open dump truck.

6.13.17.3.7.4 Prior to departure from the worksite, each truck shall receive from the Engineer a transport manifest and instructions on its destination.

6.13.17.3.7.5 Under no circumstances shall the trucks leave the worksite failing to comply with these procedures.

6.13.17.3.8 Reuse of the excavated materials on the worksite

6.13.17.3.8.1 Contaminated excavated soil

6.13.17.3.8.1.1 In order to reduce off-site transportation of contaminated soil and importation of backfill materials, the Contractor shall reuse a maximum of the excavated soil as backfill on the worksite, subject to meeting, for each soil category, the conditions listed below.

6.13.17.3.8.1.2 During the course of work, the Engineer will determine the methods for managing and reusing the excavated soil. In this regard, the Contractor shall comply with the Engineer's instructions throughout the duration of the work.

- 6.13.17.3.8.1.3 If authorized by the Engineer, the excavated soil may be reused on the originating site.
- 6.13.17.3.9 Outside the worksite disposal of excavated materials
- 6.13.17.3.9.1 The excavated residual materials and the hazardous materials shall be disposed of outside the worksite in sites authorized by the MDDELCC and according to the operating procedures applied at authorized sites.
- 6.13.17.3.9.2 The excavated soil presenting smells such as hydrocarbons, solvents and decaying matters shall be disposed of outside the worksite in sites authorized by the MDDELCC and according to the operating procedures applied at authorized sites. The Engineer will determine the mode of management of odorous soil and residual materials.
- 6.13.17.3.9.3 In the case where odorous soil is designated by the Engineer to be disposed of outside the worksite and the level of contamination is unknown, such soil shall be temporarily stockpiled, for sampling purposes, according to the stratigraphy observed during excavation work. The analytical results will allow proper management of such soil.
- 6.13.17.3.9.4 The outside the worksite transportation of soil and residual materials otherwise acceptable as backfill material on the worksite may be indicated for reasons of site logistics, schedule or under-capacity to receive them as backfill on the worksite. The Engineer is the only one who can authorize the outside the worksite transportation of such soil or residual materials.
- 6.13.17.3.9.5 The Engineer will provide the Contractor, upon request and if necessary, with the information on the nature of the residual materials to be disposed of and on the contaminants present, for the purposes of obtaining the authorizations for the disposal of such soil and residual materials at the selected authorized sites.
- 6.13.17.3.9.6 In selecting the authorized sites, the Contractor shall take into account the soil management guidelines established in the *Grille de gestion des sols contaminés* of MDDELCC's *Politique de protection des sols et de réhabilitation des terrains contaminés*.
- 6.13.17.3.9.7 In selecting the outside the worksite authorized sites for the excavated soil and residual materials, the Contractor shall give preference to the treatment and reuse of soil and materials over burial options.
- 6.13.17.3.9.8 All authorized sites selected by the Contractor shall be located in Québec and be authorized by the Engineer so as to meet the conditions defined in this subsection.

6.13.17.3.9.9 For all residual materials disposed of outside the worksite, a copy of the disposal site weigh bills shall be provided to the Engineer on a regular basis. Such bills shall indicate the name of the authorized site, range of contamination levels of the materials, weight of the materials disposed of, licence plate number of the truck used and date and time of the weighing.

6.13.17.3.9.10 During the course of the work, the Engineer will be the only one to determine the methods for managing the excavated or temporarily stored soil and residual materials and the destinations thereof. In this regard, the Contractor shall comply with the Engineer’s instructions throughout the duration of the work.

6.13.17.3.9.11 Excavated soil

6.13.17.3.9.11.1 The options for outside the worksite management of excavated soil are summarized in the table below:

<b>&lt; Criterion A</b>	1. Use without special environmental restrictions for soils.
<b>Range AB</b> <sup>(3)</sup> ( $\leq$ Criterion B or $\leq$ standard of Annexe I of the RPRT)	1. Use as backfill material on a residential lot undergoing rehabilitation or on any commercial or industrial land, provided, in both cases, that the use thereof does not have the effect of increasing the contamination of the receiving land; 2. Use as backfill material on the commercial or industrial land from which the contamination originates; 3. Use as daily or final cover materials in a technical landfill site (TLS); 4. Disposal in a dry material disposal site (DMDS) or in a construction or demolition landfill (CDL); 5. Disposal for burial in a TLS.
<b>Range BC</b> ( $\leq$ Criterion C or $\leq$ standard of Annexe II of the RPRT)	1. Use as backfill material on the original land, whether used as commercial or industrial land, provided that the use of such material does not have the effect of increasing the contamination of the land; 2. Decontamination in an authorized treatment site; 3. Conditional use as cover materials in a TLS.
<b>Range CD</b> ( $<$ standard of Annexe I of the RPRT or $<$ “Criterion D”)	1. Decontamination in an authorized treatment site; 2. Disposal in an authorized landfill for contaminated soil.
<b>Range “&gt;D”</b> ( $\geq$ standard of Annexe I of the RPRT or $\geq$ “Criterion D”)	1. Decontamination in an authorized treatment site; 2. Disposal in an authorized landfill for contaminated soil if such landfill is located on the contaminated soil original land, or if 90 % and more of the substances has been removed, or if no available technique’s optimal treatment makes it possible to remove 90 % of a substance present.

Notes: 1: The management options for a given soil class are accepted for less contaminated soil classes, but not vice versa.  
2: Subject to meeting other applicable regulatory requirements and subject to the specific site conditions for reuse, disposal or selected treatment.  
3: For inorganic substances, when the analytical results are equal to Criterion A, corresponding to background levels, the soil shall be treated without environmental restrictions.

- 6.13.17.3.9.11.2 The Contractor is responsible for ascertaining the conditions of acceptability of the soil at the authorized sites.
- 6.13.17.3.9.11.3 The Contractor shall note that the level of soil contamination does not constitute the sole acceptance criterion in a reuse, disposal or treatment site. Indeed, regulatory requirements or conditions specific to certain authorized sites may apply with respect to the soil particle size, hydraulic conductivity, organic material content, and type and/or proportions of debris therein contained. In addition to these conditions, the operator of a disposal site may impose constraints on the planned disposal period, volumes involved or any other consideration to be specified at the time of selection of a disposal site.
- 6.13.17.3.9.12 Non-hazardous excavated residual materials
- 6.13.17.3.9.12.1 The residual materials shall be selectively excavated. As for odorous residual materials, the Engineer will determine the applicable management method.
- 6.13.17.3.9.12.2 Such materials shall be disposed of outside the worksite as residual materials in a TLS duly authorized under the *Regulation respecting the Landfilling and Incineration of Residual Materials*.
- 6.13.17.3.9.13 Hazardous excavated residual materials
- 6.13.17.3.9.13.1 The residual materials characterized as hazardous materials shall be selectively excavated and disposed of in a site authorized to receive this type of material under the *Regulation respecting Hazardous Materials*.
- 6.13.17.3.10 Reuse of the excavated materials
- 6.13.17.3.10.1 The reuse of excavated materials on the work site shall be the method to be favored by the Contractor as method of soil management if such soil meets the environmental acceptance criteria established for the site.
- 6.13.17.3.10.2 Any surplus recoverable excavated soil shall be disposed of outside the worksite in sites authorized by the MDDELCC.
- 6.13.17.3.11 Pumped water management
- 6.13.17.3.11.1 The applicable options for the management of pumped water are, without however being limited to, the following:
- 6.13.17.3.11.1.1 pumping and temporary storage of the water in watertight tanks or containers;
- 6.13.17.3.11.1.2 use of a vacuum truck from an authorized service provider in the management of contaminated liquids;
- 6.13.17.3.11.1.3 use of a mobile treatment unit.

- 6.13.17.3.11.2 Due to the possible variable quality of the water pumped on site such as water from excavation, runoff water and groundwater, no direct discharge into the sewer system or into the river is authorized. Any water discharged shall first pass through a treatment unit and present concentrations compliant with both CMM's effluent water standards for discharge into the sewer system and with MDDELCC's *Critères de qualité de l'eau de surface* for discharge into the St. Lawrence River. In the case where the sewer system used discharges directly into a natural environment, the *Critères de qualité de l'eau de surface* criteria apply. The Engineer will specify the parameters for which compliance with these standards applies.
- 6.13.17.3.11.3 For occasional volumes, the Contractor shall consider using vacuum trucks from an authorized service provider in the management of contaminated liquids. The use of this solution shall be approved by the Engineer.
- 6.13.17.3.11.4 The Contractor is responsible for the water quality at the treatment unit output and shall regularly carry out control analyses of the water quality at the treatment unit output. The Engineer will specify the frequency of control sampling.
- 6.13.17.3.11.5 First, in order to validate the effectiveness of the treatment, the Contractor shall await the analytical results of the water at the treatment unit output. If an excavation needs to be drained in the short term, the Contractor shall temporarily store the water in a watertight tank before carrying out any pumping or discharging operations, unless otherwise indicated by the Engineer. To this effect, the Contractor shall plan to conduct this control analyses test prior to starting the work or, if the work has already started, provide for sufficient storage capacity to meet the storage short-term needs.
- 6.13.17.3.11.6 In the case of non-compliance with the applicable standards, the Contractor shall ensure that the operation of the treatment unit is corrected, and repeat the previous step every time the unit is restarted after a non-compliance is detected.
- 6.13.17.3.11.7 In all cases, the Contractor shall, prior to any discharge into the sewer system or into the river, obtain authorization from the Engineer. The Contractor shall further, upon request from the Engineer, provide the documents authorizing the discharge into the sewer system or into the river, even if the chemical analyses confirm that the water complies with all applicable criteria. The Contractor shall also notify and obtain approval from the Engineer for the discharge points that the Contractor intends on using.
- 6.13.17.3.11.8 The Contractor shall have obtained the necessary authorizations from the organizations responsible for the application of the standards before proceeding with the discharge into the sewer system, the St. Lawrence River or any other waterway in the vicinity of the work area.



#### 6.13.17.3.12 Tire cleaning station

- 6.13.17.3.12.1 A station for cleaning the tires of trucks and machinery shall be set up by the Contractor on the worksite in a location authorized by the Engineer. The purpose of this station is mainly to clean the tires of the Contractor's vehicles likely to transport contaminated soil outside of the worksite.
- 6.13.17.3.12.2 Depending on the worksite characteristics, such station may include the use of simple manually operated brushes or, in certain cases, require the use of water blasting. The specifications and operating method of the cleaning station shall be developed by the Contractor and authorized by the Engineer. The selected method shall allow for the containment, in the cleaning area, of the contaminated soil and, where applicable, of any water and mud generated.
- 6.13.17.3.12.3 The management of the potential outside the worksite disposal of the soil, wash water and scrubber sludges after drainage shall meet the requirements for the management of the soil temporarily stored at the worksite and water pumped from excavations. The Contractor shall comply with the indications on the drawings and in the specifications and with the instructions from the Engineer regarding the management of such materials.

#### 6.13.17.3.13 Borrow, backfilling and excavation compaction materials

- 6.13.17.3.13.1 The borrow materials include the following: "new" materials, materials from recognized borrow pits, quarries or sandpits, as well as soil temporarily stored on the worksite and whose characteristics are compatible with the backfilling objectives. The characteristics thereof shall be provided to the Engineer for review.
- 6.13.17.3.13.2 Cement concrete and asphalt concrete may be recycled as backfill material only if the Engineer authorizes the use thereof. If such materials come from outside the worksite, the Contractor shall carry out chemical analyses to confirm the condition thereof.
- 6.13.17.3.13.3 The use of <B soil imported from another site may also be considered as backfill material. In such a case, the Contractor shall, prior to importing the soil on site, submit to the Engineer the information on the provenance of the soil, volumes to import, particle size, environmental quality and geotechnical characteristics. Any importation of soil on the worksite shall be authorized in advance by the Engineer.
- 6.13.17.3.13.4 The use of recycled materials is prohibited unless authorized in writing by the Owner.

## 6.13.18 ATMOSPHERIC EMISSIONS

- 6.13.18.1 The Contractor shall include in its environmental protection action plan the measures that the Contractor plans to put in place to manage the emission of dust from the worksite, notably dust from the construction work and equipment. The Contractor is, throughout the duration of the work, responsible for dust control on the worksite, in areas where materials are stockpiled on the worksite as well as on the roads to access the worksite during working hours.
- 6.13.18.2 In the case of uncontrolled atmospheric emissions such as dust, droplets, fumes and gas from the work, equipment and defective containers, the Contractor shall take immediate measures to stop the emission and, where possible, recover the contaminants emitted. The Contractor shall notify the Engineer of the situation.
- 6.13.18.3 The Contractor shall install protective tarps on the stockpiles of unconsolidated materials such as sand and earth. The Contractor shall use equipment equipped with dust collection systems, where available, and promote the use of wet spray equipment to minimize dust emissions.
- 6.13.18.4 The Contractor shall comply with standards and regulations on atmospheric emissions during the work. The Contractor shall take all necessary measures to prevent discharges into the outdoor air of dust, silica, asbestos, and other contaminants. The Contractor and subcontractors that carry out work likely to produce particle emissions shall submit their working method to the Engineer for review.
- 6.13.18.5 This requirement notably applies to, without however being limited to, excavation and backfilling, demolition, removal of asbestos-containing materials and to the removal of other contaminated materials, as well as on the entire worksite of this Contract.
- 6.13.18.6 The Contractor shall contact the City of Montréal's *Division du contrôle des rejets industriels* for more information and, where applicable, to apply for a permit.
- 6.13.18.7 The Contractor shall avoid the excavation, manipulation and transportation of materials that may easily erode in very windy conditions or when a dust plume is visible.
- 6.13.18.8 The stripping of metallic surfaces involving brushing or grinding shall be carried out by adequate means of containment, such as tarps or nets. The stripping work using abrasive blasting as well as painting and coating applications using spray guns or rollers shall be carried out inside a sealed shelter (enclosure, scaffolding) in order to avoid the dispersion of particles or small droplets and thus prevent the contamination of persons, traffic, property and natural environment.
- 6.13.18.9 The Contractor shall ensure that fine materials (cement, other materials or similar products) used for construction purposes as well as residues are contained during transportation to avoid the spreading of dust.

6.13.18.10 The Contractor shall ensure that the exhaust and antipollution systems of the construction equipment are maintained in good working order. Equipment that emits excessive amounts of exhaust gas, for example due to improper adjustment, shall either be repaired as soon as possible or replaced.

6.13.18.11 The Contractor shall avoid leaving the engines of its vehicles running unnecessarily.

6.13.18.12 Open fires or burning construction waste or any other objects on any portion of the property belonging to the Owner is prohibited.

6.13.18.13 DUST SUPPRESSANTS

6.13.18.13.1 The Contractor shall use working methods that generate the least amount of dust possible. If the nature of the work so requires, the Contractor shall use dust suppressants.

6.13.18.13.2 Should the application of dust suppressants other than water be required, the materials used shall meet the ecotoxicological requirements of NQ standard 2410-300 *Abat-poussières pour routes non asphaltées et autres surfaces similaires* and be certified by the *Bureau de normalisation du Québec*.

6.13.18.13.3 This requirement notably applies to, without however being limited to, the following: excavation, demolition, earthworks, structure stripping, pavement scarification, as well as the transportation operations related to this Contract.

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**END OF SUBSECTION**